

2015-2016 CDT Technical Report

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GLOSSARY OF COMMON TERMS

The following table contains some terms used in this technical report and their meanings. Some of these terms are used universally in the assessment community, and some of these terms are used commonly by psychometric professionals.

Term	Common Definition
Ability	In Rasch scaling, <i>ability</i> is a generic term indicating the level of an individual on the construct measured by an exam. As an example for the CDT, a student's reading ability is measured by how the student performed on the CDT Reading/Literature test.
Alternative Forms	Alternative forms are two or more versions of a test that are considered exchangeable; for example, they measure the same constructs in the same ways, are intended for the same purposes, and are administered using the same directions. More specific terminology applies depending on the degree of statistical similarity between the test forms (e.g., parallel forms, equivalent forms, comparable forms), where parallel forms refers to the situation in which the test forms have the highest degree of similarity to each other.
Average	Average is a measure of central tendency in a score distribution that usually refers to the arithmetic mean of a set of scores. In this case, it is determined by adding all the scores in a distribution and then dividing the obtained value by the total number of scores. Sometimes people use the word average to refer to other measures of central tendency such as the median (the score in the middle of a distribution) or mode (the score value with the greatest frequency).
Benchmark Activity	Also referred to as benchmarking, <i>benchmark activity</i> is a procedure used in the determination of the cut score(s) for a given assessment. It is used to measure students' progress towards certain performance standards. Methods vary (e.g., modified Angoff, Bookmark Method), but most use a panel of educators and expert judgments to operationalize the level of achievement students must demonstrate in order to be categorized within each performance level.
Benchmark Cut	A benchmark cut marks a specified point on a score scale where scores at or above that point are interpreted differently from scores below that point (e.g., a score designated as the minimum level of performance needed to pass a competency test). A test can be divided into multiple proficiency levels by setting one or more cut scores. Methods for establishing cut scores vary. For the CDT, one benchmark cut was set that separates students into two categories: solidly ready for the next grade or course and not solidly ready for the next grade or course.
Bias	In a statistical context, <i>bias</i> refers to any source of systematic error in the measurement of a test score. In discussing test fairness, bias may refer to construct-irrelevant components of test scores that differentially affect the performance of different groups of test takers (e.g., gender, ethnicity). Attempts are made to reduce bias by conducting item fairness reviews and various differential item functioning (DIF) analyses, detecting potential areas of concern, and either removing or revising the flagged test items prior to including them in the final operational pools (see also <i>Differential Item Functioning</i>).
Computer Adaptive Test (CAT)	A computer adaptive test (CAT) is a computer-based test with an item selection routine that adjusts (adapts) to a student's performance during the test. For this reason, it has also been called a tailored test. Rather than all students taking the same set of items (fixed form), each student's test is individually tailored with items selected from a large item pool based on the student's performance.
Constructed-Response Item	A <i>constructed-response item</i> —referred to by some as an open-ended response item—is an item format that requires examinees to create their own responses, which can be expressed in various forms. This format is in contrast to multiple-choice items, which require students to make a choice from a supplied set of answer options. There are no constructed-response items on the CDT.
Content Validity Evidence	Content validity evidence shows the extent to which an exam provides an appropriate sampling of a content domain of interest (e.g., assessable portions of a state's grade 6 mathematics curriculum in terms of the knowledge, skills, objectives, and processes sampled).
Criterion-Referenced Interpretation	The <i>criterion-referenced interpretation</i> is a measure of a student's performance against an expected level of mastery, educational objective, or standard. The types of resulting score interpretations provide information about what a student knows or can do in a given content area.

Term	Common Definition
Decision Consistency	Decision consistency is the extent to which classifications based on test scores would match the decisions on students' proficiency levels based on scores from a second parallel form of the same test. It is often expressed as the proportion of examinees who are classified the same way from the two test administrations.
Diagnostic Category	A diagnostic category is a grouping used for reporting results on the CDT. Each CDT test has four or five diagnostic categories which are based on the Pennsylvania Academic Standards (Mathematics, Reading, and Writing) or the Pennsylvania Academic Standards (Science).
Differential Item Functioning (DIF)	Differential item functioning (DIF) is a statistical property of a test item in which different groups of test takers (who have the same total test score) have different average item scores. In other words, students with the same ability level but different group memberships do not have the same probability of answering the item correctly (see also Bias).
Distractor	A distractor is an incorrect option in a multiple-choice item (also called a foil).
Equating	Equating is the strongest of several linking methods used to establish comparability between scores from multiple tests. Equated test scores should be considered exchangeable. Consequently, the criteria needed to refer to a linkage as equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that it should be a "matter of indifference" to a student if he/she takes any of the equated tests (see also Linking).
Evidence-Based Selected-Response Item	A type of item that has two parts and requires the test taker to select a response from a group of possible answer choices in Part One, one of which is the correct answer (or key) to the question posed, and to then select one or two responses from a group of possible answer choices in Part Two, which provide evidence to support the correct answer in Part One.
Field-Test item	A <i>field-test item</i> is a newly developed item that is ready to be tried out to determine its statistical properties (e.g., see <i>p</i> -value and Point-Biserial Correlation). Items are field tested prior to operational administration. Items with acceptable statistical properties in field-test form the pool of CDT operational items.
Frequency	Frequency is the number of times that a certain value or range of values (score interval) occurs in a distribution of scores.
Frequency Distribution	Frequency distribution is a tabulation of scores from low to high or high to low with the number and/or percent of individuals who obtain each score or who fall within each score interval.
Infit/Outfit	Infit and outfit are statistical indicators of the agreement of the data and the measurement model. Infit and outfit are highly correlated, and they both are highly correlated with the point-biserial correlation. Underfit can be caused when low-ability students correctly answer difficult items (perhaps by guessing or atypical experience) or high-ability students incorrectly answer easy items (perhaps because of carelessness or gaps in instruction). Any model expects some level of variability, so overfit can occur when nearly all low-ability students miss an item while nearly all high-ability students get the item correct.
Item Difficulty	For the Rasch model, the dichotomous <i>item difficulty</i> represents the point along the latent trait continuum where an examinee has a 0.50 probability of making a correct response.
Key	The key is the correct response option or answer to a test item.
Learning Progression	A <i>learning progression</i> shows the developmental sequences or building blocks of content/skills students need to master as they progress toward career and college readiness and is tied directly to the Assessment Anchors and Eligible Content as well as the Voluntary Model Curriculum Units and Lesson Plans.
Linking	Linking is a generic term referring to one of a number of processes by which scores from one or more tests are made comparable to some degree. Linking includes several classes of transformations (equating, scale alignment, prediction, etc.). Equating is associated with the strongest degree of comparability (exchangeable scores). Other linkages may be very strong but fail to meet one or more of the strict criteria required of equating (see also Equating).
Logit	In Rasch scaling, <i>logits</i> are units used to express both examinee ability and item difficulty. When expressing examinee ability, if two students take the same set of items, a student who answers more items correctly has a higher logit than a student who answers fewer items correctly. Logits are transformed into scale scores through a linear transformation. When expressing item difficulty, logits are transformed <i>p</i> -value (see also <i>P-value</i>). The logit difficulty scale is inversely related to <i>p</i> -values. A higher logit value would represent a relatively harder item, while a lower logit value would represent a relatively easier item.

Term	Common Definition
Mean	Mean is also referred to as the arithmetic mean of a set of scores. It is found by adding all the score values in a distribution and dividing by the total number of scores. For example, the mean of the set {66, 76, 85, and 97} is 81. The value of a mean can be influenced by extreme values in a score distribution.
Measure	In Rasch scaling, <i>measure</i> generally refers to a specific estimate of an examinee's ability (often expressed as logits) or an item's difficulty (again, often expressed as logits). As an example for the CDT, a student's literature measure might be equal to 0.525 logit. Or, a CDT literature test item might have a logit equal to -0.905.
Median	The <i>median</i> is the middle point or score in a set of rank-ordered observations that divides the distribution into two equal parts; each part contains 50 percent of the total data set. More simply put, half of the scores are below the median value and half of the scores are above the median value. As an example, the median for the following ranked set of scores {2, 3, 6, 8, 9} is 6.
Multiple-Choice Item	A <i>multiple-choice item</i> is a type of item format that requires the test taker to select a response from a group of possible choices, one of which is the correct answer (or key) to the question posed. All items on the CDT are multiple-choice items.
<i>N</i> -count	Sometimes designated as N or n , it is the number of observations (usually individuals or students) in a particular group. Some examples include the number of students tested, the number of students tested from a specific subpopulation (e.g., females), and the number of students who attained a specific score. In the following set $\{23, 32, 56, 65, 78, 87\}$, $n = 6$.
Operational Item	After initial item tryout (field test), all items with acceptable statistical properties form the pool of CDT operational items. Students' tests are selected from this pool.
Percent Correct	When referring to an individual item, the <i>percent correct</i> is the item's <i>p</i> -value from the field test administration expressed as a percent (instead of a proportion). Under a computer adaptive administration, percent correct scores are not appropriate for individual items or students.
Percentile	Percentile is the score or point in a score distribution at or below which a given percentage of scores fall. It should be emphasized that it is a value on the score scale, not the associated percentage (although sometimes in casual usage this misinterpretation is made). For example, if 72 percent of the students score at or below a scale score of 1500 on a given test, then the scale score of 1500 would be considered the 72nd percentile. As another example, the median is the 50th percentile.
Percentile Rank	The <i>percentile rank</i> is the percentage of scores in a specified distribution that fall at/below a certain point on a score distribution. Percentile ranks range in value from 1 to 99. They indicate the status or relative standing of an individual within a specified group by indicating the percent of individuals in that group who obtained equal or lower scores. An individual's percentile rank can vary depending on which group is used to determine the ranking. As suggested above, percentiles and percentile ranks are sometimes used interchangeably; however, strictly speaking, a percentile is a value on the score scale.
Point-Biserial Correlation	In classical test theory, <i>point-biserial correlation</i> is an item discrimination index. It is the correlation between a dichotomously scored item and a continuous criterion, usually represented by the total test score (or the corrected total test score with the reference item removed). It reflects the extent to which an item differentiates between high-scoring and low-scoring examinees. This discrimination index ranges from –1.00 to +1.00. The higher the discrimination index (the closer to +1.00), the better the item is considered to be performing. For multiple-choice items scored as 0 or 1, it is rare for the value of this index to exceed 0.5.
<i>P</i> -value	A <i>p-value</i> is an index indicating an item's difficulty for some specified group (perhaps grade). It is calculated as the proportion (sometimes percent) of students in the group who answer an item correctly. <i>P</i> -values range from 0.0 to 1.0 on the proportion scale. Lower values correspond to more difficult items and higher values correspond to easier items. <i>P</i> -values are usually provided for multiple-choice items or other items worth one point. For open-ended items or items worth more than one point, difficulty on a <i>p</i> -value-like scale can be estimated by dividing the item mean score by the maximum number of points possible for the item (see also <i>Logit</i>).
Raw Score	Raw score is an unadjusted score usually determined by tallying the number of questions answered correctly or by the sum of item scores (i.e., points). Raw scores typically have little or no meaning by themselves and require additional information like the number of items on the test and the difficulty of the test items. Under a computer adaptive administration, where each student takes a unique set of items, raw scores are not comparable across students.

Term	Common Definition
Reliability	Reliability is the expected degree to which test scores for a group of examinees are consistent over exchangeable replications of an assessment procedure and, therefore, considered dependable and repeatable for an individual examinee. A test that produces highly consistent, stable results (i.e., relatively free from random error) is said to be highly reliable. The reliability of a test is typically expressed as a reliability coefficient or by the standard error of measurement derived by that coefficient.
Reliability Coefficient	Reliability coefficient is a statistical index that reflects the degree to which scores are free from random measurement error. Theoretically, it expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). This statistic is often expressed as a correlation coefficient (e.g., correlation between two forms of a test) or with an index that resembles a correlation coefficient (e.g., calculation of a test's internal consistency using coefficient alpha). Expressed this way, the reliability coefficient is a "unitless" index. The higher the value of the index (closer to 1.0), the greater the reliability of the test (see also Standard Error of Measurement).
Scale Score	Scale score is a mathematical transformation of a Rasch ability estimate developed through a process called scaling. Scale scores are most useful when comparing test results over time. Several different methods of scaling exist, but each is intended to provide a continuous and meaningful score scale across different forms of a test.
Standard Deviation	Standard deviation is a statistic that measures the degree of spread or dispersion of a set of scores. The value of this statistic is always greater than or equal to zero. If all of the scores in a distribution are identical, the standard deviation is equal to zero. The further the scores are away from one another in value, the greater the standard deviation. This statistic is calculated using the information about the deviations (distances) between each score and the distribution's mean. It is equivalent to the square root of the variance statistic. The standard deviation is a commonly used method of examining a distribution's variability since the standard deviation is expressed in the same units as the data.
Standard Error of Measurement (SEM)	Standard error of measurement (SEM) is the amount an observed score is expected to fluctuate around the true score. As an example, across replications of a measurement procedure, the true score will not differ by more than plus or minus one standard error from the observed score about 68 percent of the time (assuming normally distributed errors). The SEM is frequently used to obtain an idea of the consistency of a person's score in actual score units, or to set a confidence band around a score in terms of the error of measurement. Often a single SEM value is calculated for all test scores. On other occasions, however, the value of the SEM can vary along a score scale. Conditional standard error of measurement (CSEM) also indicates the degree of measurement error in scale score units but varies as a function of a student's unique set of items and actual scale score.
Technical Advisory Committee (TAC)	The <i>technical advisory committee</i> (<i>TAC</i>) is a group of individuals (most often professionals in the field of testing) that are either appointed or selected to make recommendations for and to guide the technical development of a given testing program.
Validity	Validity is the degree to which accumulated evidence and theory support specific interpretations of test scores entailed by the purpose of a test. There are various ways of gathering validity evidence.

PREFACE: AN OVERVIEW OF THE CDT

CLASSROOM DIAGNOSTIC TOOLS (CDT) OVERVIEW

The Pennsylvania Classroom Diagnostic Tools (CDT) is a set of online assessments, divided by content area, designed to provide diagnostic information in order to guide instruction and remediation. The CDT reporting system is fully integrated in Pennsylvania's Standards Aligned System (SAS). It assists educators in identifying student academic strengths and areas in need of improvement by providing links to classroom resources. The diagnostic reports feature easy-to-follow links to targeted curricular resources and materials, including units and lesson plans found within the SAS system. Students in grades 3 through high school at all Pennsylvania schools may take the CDT up to five times throughout the school year at no cost.

The purpose of the CDT is to provide information that will help guide instruction by providing support to students and teachers. The CDT reports are designed to provide a picture or snapshot of how students are performing in relation to the Pennsylvania Assessment Anchors and Eligible Content and Keystone Assessment Anchors and Eligible Content. The CDT goes beyond focusing only on **What** students should know and be able to do at a particular grade and/or course. It also provides a snapshot of **How** and **Why** students may still be struggling or extending beyond the grade and/or course Eligible Content. This valuable information is typically not identified through other types of assessments. Teachers, through the use of the CDT reports, may access additional information through the Learning Progression Map. The Learning Progression Map allows teachers to pinpoint where students are struggling or where they are extending beyond the learning continuum. The CDT helps identify and provides suggestions for next steps in student academic development.

The CDT consists of only multiple-choice questions. The questions were developed to specifically align to the Pennsylvania Assessment Anchors and Eligible Content at kindergarten through high school and the Keystone Assessment Anchors and Eligible Content for end-of-course. The CDT is based on content assessed by the Pennsylvania System of School Assessments (PSSA) and the Keystone Exams. It includes interactive and dynamic reporting for various diagnostic reporting categories.

CDT Activities for the 2015-2016 School Year

Description	Date
Test Setup System Available	August 19, 2015
PA Online Assessment Software Available for Download	August 24, 2015
First Day of Testing	August 24, 2015

CHAPTER ONE: BACKGROUND OF THE CLASSROOM DIAGNOSTIC TOOLS

This brief overview of the Pennsylvania Classroom Diagnostic Tools summarizes the program's intent and purpose, as well as key dates in the development process.

THE CLASSROOM DIAGNOSTIC TOOLS

The Classroom Diagnostic Tools (CDT) is a set of online assessments, divided by content area, designed to provide diagnostic information in order to a guide instruction and enrichment. The CDT reporting system is fully integrated in the Standards Aligned System (SAS). It assists educators in identifying student academic strengths and areas in need of improvement by providing links to classroom resources. The diagnostic reports feature easy-to-follow links to targeted curricular resources and materials, including units and lesson plans found within the SAS system. The CDT is available to districts at no cost.

The CDT is:

- Offered to students in grades 3 through high school Available for use in the classroom throughout the school year on a voluntary basis
- Based on content assessed by the Keystone Exams and the Pennsylvania System of School Assessment (PSSA)
- Comprised of multiple-choice items and evidence-based selected-response items (in Reading and Literature only)
- Delivered as an online Computer Adaptive Test (CAT), ensuring valid and reliable measures of a student's skills while minimizing testing time
- Designed to provide real-time results for students and teachers with links to Materials and Resources in SAS
- Available for Mathematics Lower Grades¹, Mathematics, Algebra I, Geometry, Algebra II, Reading Lower Grades, Reading/Literature, Science Lower Grades, Science, Biology, Chemistry, Writing Lower Grades, and Writing/English Composition

KEY DATES

The items for each course of the CDT were field tested online using fixed-form computer-based tests prior to their use in operational computer adaptive tests. Additional items were field tested as items embedded within the operational CDT to increase the pool of items aligned to the Pennsylvania Core Standards and to allow the extension of the CDT to students in grades 3 through 5. The timeline for implementation of the field tests and operational availability is shown in the following table.

¹ CDTs with the "Lower Grades" designation are for students in grades 3 through 5.

Course	Field Test Dates	Operational Rollout Dates
Mathematics, Algebra I, Geometry, Algebra II	Spring 2010	Fall 2010
Reading/Literature	Fall 2010	Spring 2011
Science, Biology, Chemistry	Fall 2010	Spring 2011
Writing/English Composition	Spring 2011	Fall 2011
Mathematics, Reading/Literature, and Writing/English Composition aligned to the Pennsylvania Core Standards ²	Spring 2013	Fall 2013
Mathematics Lower Grades, Reading Lower Grades, Science Lower Grades, and Writing Lower Grades	Fall 2013	Spring 2014

For more details on field-test events, see Chapter Six.

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² The alignment of Mathematics, Reading/Literature, and Writing/English Composition to the Pennsylvania Core Standards did not include field-test items for Writing/English Composition, as the Writing/English Composition pool did not require additional items to be fully aligned to the Pennsylvania Core Standards.

CHAPTER TWO: TEST DEVELOPMENT OVERVIEW OF THE PENNSYLVANIA CDT FRAMEWORK

The Pennsylvania Classroom Diagnostic Tools (CDT) is available for Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Reading Lower Grades, Reading/Literature, Science Lower Grades, Science, Biology, Chemistry, Writing Lower Grades, and Writing/English Composition for students in grades 3 through high school. The assessments are administered online in a computer adaptive test (CAT) format.

The Pennsylvania CDT consists of multiple-choice questions that align to the Pennsylvania Assessment Anchors and Eligible Content at grades 3 through high school for mathematics, reading, writing, and science and the Keystone Assessment Anchors and Eligible Content for end-of-course for Algebra I, Algebra II, Geometry, Literature, English Composition, Biology, and Chemistry and evidence-based selected-response questions that align to the Pennsylvania Assessment Anchors and Eligible Content at grade 3 through 8 for reading. With the exception of grades 3, 5, 6, and 7 for Science, these Pennsylvania Assessment Anchors and Eligible Content were developed previously for the PSSA and Keystone Exams as described in the following sections. In addition, Learning Progressions were developed to show the pathways along which students travel as they progress towards mastery of the skills in each content area.

BACKGROUND FOR THE PSSA ASSESSMENT ANCHORS AND ELIGIBLE CONTENT

The PSSA Assessment Anchor Content Standards and Eligible Content in Mathematics, Reading, and Writing are based on the Pennsylvania Core Standards. The PSSA Assessment Anchor Content Standards and Eligible Content in Science are based on the Pennsylvania Academic Standards. Although the Pennsylvania Core Standards and the Pennsylvania Academic Standards indicate what students should know and be able to do, educator concerns regarding the number and breadth of Academic Standards led to an initiative by the Pennsylvania Department of Education (PDE) to develop Assessment Anchor Content Standards (Assessment Anchors) to indicate which parts of the Academic Standards (Instructional Standards) would be assessed on the PSSA. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Assessment Anchors clarify what is expected across each grade span and focus the content of the standards into what is assessable on a large-scale test. The Assessment Anchor documents also serve to communicate Eligible Content, also called assessment limits, or the range of knowledge and skills from which the PSSA would be designed.

The Assessment Anchor's coding is read like an outline. The coding includes the content, grade level, Reporting Category, Assessment Anchor, descriptor (Sub-Assessment Anchor), and Eligible Content. Thus, S.4.A.1.3.1 would be Science, Grade 4, Reporting Category A, Assessment Anchor 1, descriptor (Sub-Assessment Anchor) 3, and Eligible Content 1.

Each of the Assessment Anchors has one or more descriptors (Sub-Assessment Anchors) and Eligible Content varying to reflect grade-level appropriateness. The Assessment Anchors form the basis of the test design for the grades undergoing new test development. In turn, this hierarchy is the basis for organizing the total content scores (based on the core [common] sections).

With Pennsylvania's decision to adopt the Pennsylvania Core Standards based on the Common Core State Standards, committees of Pennsylvania educators met in October 2011 to write, review, and approve the Assessment Anchors and Eligible Content statements. To provide initial focus, each content and grade span committee was presented with materials specific to the content and grade span in question, including a basic blueprint structure, the Pennsylvania Academic Standards, the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards, the Common Core State Standards, and draft Eligible Content statements. Committees then completed an iterative process of reviewing and revising the draft Eligible Content statements followed by discussions across grade-span committees to ensure vertical articulation across the grades. The results from the committee work were evaluated by national, state, and local subject matter experts, and, following revisions, they were ultimately validated by another committee of Pennsylvania educators. Following committee approval, the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content for English Language Arts and Mathematics were approved by the State Board of Education in September 2013.

The complete set of Assessment Anchors and Eligible Content can be referenced at PDE's website: www.education.pa.gov.

- Click on 'K-12' in the dark blue bar across the top of the page.
- Select 'Assessment and Accountability.'
- Click on the PSSA Link 'Continue to Pennsylvania System of School Assessment (PSSA) Information...'
 under the paragraph titled, "PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT (PSSA)."

For Science, Assessment Anchors and Eligible Content had only been previously developed at grades 4, 8, and 11 for the PSSA and for the Biology and Chemistry Keystone Exams. Therefore, to provide a vertical articulation of science content from grade to grade, a group of Pennsylvania educators were brought together to develop Assessment Anchors and Eligible Content for the off grades (those that do not assess Science on the PSSA). These educators, in collaboration with DRC Science Test Development staff, used the Assessment Anchors and Eligible Content for grades 4, 8, and 11 as the foundation to develop Assessment Anchors and Eligible Content for grades 3, 5, 6, and 7.

With the extension of the CDT to allow students in grades 3 through 5 to participate in the assessments, it was necessary to include items appropriate to assess skills and understandings that students should learn in kindergarten through grade 2. For Mathematics, Reading, and Writing, test questions were developed based to align to the Pennsylvania Core Standards for grades K through 2. For Science, a group of Pennsylvania educators was brought together in March 2013 to develop the Science Grades K–2 Assessment Anchors and Eligible Content, which are organized as a single grade band and contain foundational science concepts in order to promote flexibility in classroom instruction for these early grade levels.

BACKGROUND FOR THE KEYSTONE ASSESSMENT ANCHORS AND ELIGIBLE CONTENT

The Keystone Test Blueprints—known as the Keystone Assessment Anchors and Eligible Content—are based on Pennsylvania Keystone Course Standards and the Common Core State Standards. Prior to the development of the Assessment Anchors, multiple groups of Pennsylvania educators convened to create a set of standards for each of the Keystone Exams. Derived from a review of existing standards, these Enhanced Standards (Course Standards) focus on what students need to know and be able to do in order to be college and career ready.

Although the Keystone Course Standards indicate what students should know and be able to do, Assessment Anchors are designed to indicate which parts of the Keystone Course Standards (Instructional Standards) will be assessed on the Keystone Exams. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Assessment Anchors clarify what is expected and focus the content of the standards into what is assessable on a large-scale exam. The Assessment Anchor documents also serve to communicate Eligible Content, or the range of knowledge and skills from which the Keystone Exams are designed.

The Keystone Assessment Anchors and Eligible Content have been designed to hold together or *anchor* the state assessment system and curriculum/instructional practices in schools following these design parameters:

- Clear: The Assessment Anchors are easy to read and are user-friendly; they clearly detail which standards are assessed on the Keystone Exams.
- Focused: The Assessment Anchors identify a core set of standards that could be reasonably assessed
 on a large-scale assessment, which will keep educators from having to guess which standards are
 critical.
- Rigorous: The Assessment Anchors support the rigor of the state standards by assessing higher order and reasoning skills.
- Manageable: The Assessment Anchors define the standards in a way that can be easily incorporated into a course to prepare students for success.

The Assessment Anchors and Eligible Content are organized into cohesive blueprints, each structured with a common labeling system. This framework is organized first by Module (Reporting Category), then by Assessment Anchor, followed by Anchor Descriptor, and then finally, at the greatest level of detail, by an Eligible Content statement. The common format of this outline is followed across the Keystone Exams.

Here is a description of each level in the labeling system for the Keystone Exams.

- Module: The Assessment Anchors are organized into two thematic modules for each of the Keystone
 Exams, and these modules serve as the Reporting Categories for the Keystone Exams. The module
 title appears at the top of each page in the Assessment Anchor document. The module level is also
 important because the Keystone Exams are built using a module format, with each of the Keystone
 Exams divided into two equally sized test modules. Each module is made up of two or more Assessment
 Anchors.
- Assessment Anchor: The Assessment Anchor appears in the shaded bar across the top of each
 Assessment Anchor table in the Assessment Anchor document. The Assessment Anchors represent
 categories of subject matter that anchor the content of the Keystone Exams. Each Assessment Anchor
 is part of a module and has one or more Anchor Descriptors unified under it.
- Anchor Descriptor: Below each Assessment Anchor in the Assessment Anchor document is a specific Anchor Descriptor. The Anchor Descriptor level provides further details that delineate the scope of content covered by the Assessment Anchor. Each Anchor Descriptor is part of an Assessment Anchor and has one or more Eligible Content statements unified under it.
- Eligible Content: The column to the right of the Anchor Descriptor in the Assessment Anchor document contains the Eligible Content statements. The Eligible Content is the most specific description of the content that is assessed on the Keystone Exams. This level is considered the assessment limit and helps educators identify the range of content covered on the Keystone Exams.
- Enhanced Standard: In the column to the right of each Eligible Content statement is a code
 representing one or more Enhanced Standards that correlate to the Eligible Content statement. Some
 Eligible Content statements include annotations that indicate certain clarifications about the scope of an
 Eligible Content.
- **Notes:** There are three types of notes included in the Assessment Anchor document: "e.g." ("for example")—sample approach, but not a limit to the Eligible Content "i.e." ("that is")—specific limit to the Eligible Content "Note"—content exclusions or definable range of the Eligible Content

The Assessment Anchor's coding is read like an outline. The coding includes the Subject (Exam), Reporting Category/Module, Assessment Anchor, Anchor Descriptor, and Eligible Content. Each exam has two modules. Each module has two or more Assessment Anchors. Each of the Assessment Anchors has one or more Anchor Descriptors, and each Anchor Descriptor has at least one Eligible Content statements (generally more than one). The Assessment Anchors form the basis of the test design for the exams undergoing test development. In turn, this hierarchy is the basis for organizing the total module and exam scores.

Table 2–1. Sample Keystone Assessment Anchor Coding

Sample Code	Subject (Exam)	Reporting Category (Module)	Assessment Anchor (AA)	Anchor Descriptor (AD)	Eligible Content (EC)		
A1.1.1.2.1	A1 –Algebra I	1 – Operations and Linear Equations & Inequalities	1 – Linear Equations	2 – Write, solve, and/or graph linear equations using various methods.	1 – Write, solve, and/or apply a linear equation (including problem situations).		
BIO.A.2.1.1	BIO -Biology	A – Cells and Cell Processes	2 – The Chemical Basis for Life	1 – Describe how the unique properties of water support life on Earth.	1 – Describe the unique properties of water and how these properties support life on Earth (e.g., freezing point, high specific heat, cohesion).		
L.F.2.4.1	L –Literature	F – Fiction	2 – Analyzing and Interpreting Literature— Fiction	4 – Use appropriate strategies to interpret and analyze the universal significance of literary fiction.	1 – Interpret and analyze works from a variety of genres for literary, historical, and/or cultural significance.		

The complete set of Assessment Anchors and Eligible Content can be referenced at PDE's Standards Aligned System (SAS) website at http://www.pdesas.org/Standard. Assessment Anchors and Eligible Content for Grades 3–8 can be found by selecting "Download PSSA and PASA Anchors and Eligible Content" while Assessment Anchors and Eligible Content for high school courses can be found by selecting "Download Keystone Anchors."

DIAGNOSTIC CATEGORIES FOR THE CLASSROOM DIAGNOSTIC TOOLS

The Classroom Diagnostic Tools provide information for teachers, students, and other stakeholders regarding student performance at the Overall Score level and also for each diagnostic category within the selected assessment. These diagnostic categories provide more detailed information about student strengths and areas of need for a related group of Eligible Content. A description of the diagnostic categories for each assessment follows.

MATHEMATICS LOWER GRADES AND MATHEMATICS

There are four diagnostic categories for the mathematics assessments. These are *Numbers & Operations*, *Algebraic Concepts*, Geometry, and *Measurement*, *Data*, *and Probability*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the table below.

Table 2–2. Number of Eligible Content per Diagnostic Category by Grade for Mathematics Lower Grades and Mathematics

Diagnostic Category	Kindergarten*	Grade 1*	Grade 2*	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Numbers & Operations	1	3	3	9	20	13	15	9	5	6
Algebraic Concepts	1	2	3	14	8	4	11	5	17	46
Geometry	2	2	2	3	3	3	6	8	8	29
Measurement, Data, and Probability	2	3	5	15	9	5	4	7	4	12

^{*} Eligible Content for Kindergarten, Grade 1, and Grade 2 are not included in the Mathematics CDT.

ALGEBRA I

The Keystone Algebra I Assessment Anchors and Eligible Content has two reporting categories: Module 1, Operations and Linear Equations & Inequalities, and Module 2, Linear Functions and Data Organizations. These modules are each divided into two diagnostic categories. Module 1 is divided into *Operations with Real Numbers and Expressions* and *Linear Equations & Inequalities*. Module 2 is divided into *Functions & Coordinate Geometry* and *Data Analysis*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2-3. Number of Eligible Content per Diagnostic Category by Grade for Algebra I

Diagnostic Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1 – Operations with Real Numbers and Expressions	13	11	5	17	10	7	18
Module 1 – Linear Equations & Inequalities	0	0	0	3	3	8	16
Module 2 – Functions & Coordinate Geometry	0	3	1	4	1	10	21
Module 2 – Data Analysis	3	0	1	4	7	4	11

GEOMETRY

The Keystone Geometry Assessment Anchors and Eligible Content has two reporting categories: Module 1, Geometric Properties & Reasoning, and Module 2, Coordinate Geometry & Measurement. These modules are each divided into two diagnostic categories. Module 1 is divided into *Geometric Properties* and *Congruence, Similarity, & Proofs*. Module 2 is divided into *Coordinate Geometry & Right Triangles* and *Measurement*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2-4. Number of Eligible Content per Diagnostic Category by Grade for Geometry

Diagnostic Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1 – Geometric Properties	2	2	1	1	5	1	18
Module 1 – Congruence, Similarity, & Proofs	0	1	0	0	0	2	3
Module 2 – Coordinate Geometry & Right Triangles	0	0	1	3	1	7	5
Module 2 – Measurement	6	4	2	4	3	0	13

ALGEBRA II

The Keystone Algebra II Assessment Anchors and Eligible Content has two reporting categories: Module 1, Number Systems and Non-Linear Expressions & Equations, and Module 2, Functions and Data Analysis. These modules are each divided into two diagnostic categories. Module 1 is divided into *Operations with Complex Numbers* and *Non-Linear Expressions & Equations*. Module 2 is divided into *Functions* and *Data Analysis*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2-5. Number of Eligible Content per Diagnostic Category by Grade for Algebra II

Diagnostic Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1 – Operations with Complex Numbers	0	0	0	0	0	0	4
Module 1 – Non-Linear Expressions & Equations	0	1	1	16	9	8	30
Module 2 – Functions	0	3	0	1	0	5	20
Module 2 – Data Analysis	3	0	1	4	7	3	11

SCIENCE LOWER GRADES AND SCIENCE

There are four diagnostic categories for the science assessments. These are *The Nature of Science*, *Biological Sciences*, *Physical Sciences*, and *Earth/Space Sciences*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the table below.

Table 2–6. Number of Eligible Content per Diagnostic Category by Grade for Science Lower Grades and Science

Diagnostic Category	K-2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
The Nature of Science	7	9	20	8	10	19	31	27
Biological Sciences	7	14	18	11	7	21	21	38
Physical Sciences	1	10	9	12	12	12	12	46
Earth/Space Sciences	8	13	16	8	7	11	13	14

BIOLOGY

The Keystone Biology Exam has two reporting categories: Module 1[A], Cells and Cell Processes, and Module 2[B], Continuity and Unity of Life. These modules are each divided into two diagnostic categories. Module 1 is divided into *Basic Biological Principles/Chemical Basis for Life* and *Bioenergetics/Homeostasis & Transport*. Module 2 is divided into *Cell Growth & Reproduction/Genetics* and *Theory of Evolution/Ecology*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2-7. Number of Eligible Content per Diagnostic Category by Grade for Biology

Diagnostic Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1 – Basic Biological Principles/Chemical Basis for Life	5	5	3	3	5	5	9
Module 1 – Bioenergetics/Homeostasis & Transport	0	0	0	0	0	0	7
Module 2 – Cell Growth & Reproduction/Genetics	2	1	1	0	5	4	10
Module 2 – Theory of Evolution/Ecology	8	13	5	3	18	18	12

CHEMISTRY

The Keystone Chemistry Assessment Anchors and Eligible Content has two reporting categories: Module 1[A], Structure and Properties of Matter, and Module 2[B], The Mole Concept and Chemical Interactions. These modules are each divided into two diagnostic categories. Module 1 is divided into *Properties & Classification of Matter* and *Atomic Structure & the Periodic Table*. Module 2 is divided into *The Mole & Chemical Bonding* and *Chemical Relationships & Reactions*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2-8. Number of Eligible Content per Diagnostic Category by Grade for Chemistry

Diagnostic Category	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1 – Properties & Classification of Matter	7	4	7	7	3	3	10
Module 1 – Atomic Structure & The Periodic Table	0	0	0	0	1	0	8
Module 1 – The Mole & Chemical Bonding	0	0	0	0	1	1	9
Module 2 – Chemical Relationships & Reactions	0	0	1	0	1	1	7

READING LOWER GRADES AND READING/LITERATURE

The Reading Lower Grades and Reading/Literature Assessments use the same diagnostic categories across grades 3 through 8 and the high school Literature course. These diagnostic categories are not divided across the two Keystone Literature Modules (reporting categories) of Fiction and Non-fiction. The diagnostic categories for Reading Lower Grades and Reading/Literature are Key Ideas and Details – Literature Text; Key Ideas and Details – Informational Text; Craft and Structure/Integration of Knowledge and Ideas – Literature Text; Craft and Structure/Integration of Knowledge and Ideas – Informational Text; and Vocabulary Acquisition and Use. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–9. Number of Eligible Content per Diagnostic Category by Grade for Reading Lower Grades and Reading/Literature

Diagnostic Category	Kindergarten*	Grade 1*	Grade 2*	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Key Ideas and Details— Literature Text	3	3	3	3	3	3	3	3	3	8
Key Ideas and Details— Informational Text	3	3	3	3	3	3	3	3	3	12
Craft and Structure/Integration of Knowledge and Ideas— Literature Text	2	2	2	2	2	2	4	4	4	14
Craft and Structure/Integration of Knowledge and Ideas—Informational Text	4	4	4	5	5	5	5	5	5	18
Vocabulary Acquisition and Use	2	2	2	4	4	4	4	4	4	6

^{*} Eligible Content for Kindergarten, Grade 1, and Grade 2 are not included in the Reading/Literature CDT.

WRITING LOWER GRADES AND WRITING/ENGLISH COMPOSITION

The Writing Lower Grades and Writing/English Composition Assessments use the same diagnostic categories across grades 3 through 8 and the high school English Composition course. The diagnostic categories for Writing Lower Grades and Writing/English Composition are *Quality of Writing: Focus and Organization*, *Quality of Writing: Content and Style*, *Quality of Writing: Editing*, *Conventions: Punctuation*, *Capitalization*, and *Spelling*, and *Conventions: Grammar and Sentence Formation*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–10. Number of Eligible Content per Diagnostic Category by Grade for Writing Lower Grades and Writing/English Composition

Diagnostic Category	Kindergarten*	Grade 1*	Grade 2*	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Quality of Writing: Focus and Organization	3	6	6	6	6	6	6	6	6	4
Quality of Writing: Content and Style	2	3	3	3	3	5	5	5	5	4
Quality of Writing: Editing	0	3	3	4	10	12	11	10	6	13
Conventions: Punctuation, Capitalization, and Spelling	1	3	2	6	4	5	3	3	3	5
Conventions: Grammar and Sentence Formation	2	3	2	10	9	9	9	7	5	2

^{*} Eligible Content for Kindergarten, Grade 1, and Grade 2 are not included in the Writing/English Composition CDT.

CHAPTER THREE: GENERAL CLASSROOM DIAGNOSTIC TOOLS TEST DEVELOPMENT PROCESSES

The operational item pool for each Classroom Diagnostic Tool (CDT) subject is made up of multiple-choice items that were field tested in a stand-alone field test administration in addition to a smaller number of multiple choice and evidence-based selected-response (Reading only) items embedded later in operational assessments. Due to the large number of items needed for each CDT Computer Adaptive Test (CAT) to provide reliable information about student strengths and areas of need, it was decided to stagger the content areas for both development and field testing. Appendix A shows a graphic representation of the basic process flow and overlap of the development cycles.

Mathematics (comprising Mathematics, Algebra I, Algebra II, and Geometry) was developed first. After initial development and internal reviews by DRC, the items were taken to be reviewed by Pennsylvania educators. Upon completion of the educator reviews, edits were incorporated and items were placed into fixed-form, online field-test forms for a stand-alone, voluntary field test. For more information regarding the field test, see Chapter Six. After the field test, item statistics were reviewed, and those items that had questionable data were taken to an item data review with Pennsylvania educators. See Chapter Six for more information about this meeting. Following the item data review, all items administered during the field test were reviewed by a committee of Pennsylvania educators for alignment to the Learning Progression Maps. More information about this meeting is found later in this chapter. After the alignment review, committees of Pennsylvania educators participated in a benchmarking activity to determine the points on the scale at which students in each of grades 5 through high school could be considered solidly ready for the next course. For more information about the benchmarking process, see Chapter Ten. Following this set of meetings, the statuses of items were updated, and accepted items were included in the item pool for the operational administrations.

This same process was then repeated for Literature (comprising Reading and Literature) and for Science (comprising Science, Biology, and Chemistry), and then finally for Writing (comprising Writing and English Composition). See Appendix A for more information about the basic development cycles for these three subjects.

Additional items in Mathematics and Reading/Literature were developed for an embedded field test in spring 2013. The purpose of this development was to supplement the pool with additional items aligned to the Pennsylvania Core Standards in preparation for the transition to align all Mathematics and Literacy (Reading/Literature and Writing/English Composition) assessments with the Pennsylvania Core Standards. Following the field test, the items that had questionable data were taken to an item data review with Pennsylvania educators (more information about this meeting can be found in Chapter Six). Following the item data review, all items administered during the field test were reviewed by a committee of Pennsylvania educators for alignment to the Learning Progression Maps using the same procedure that was used for the initial development of each pool of items.

In fall 2013, a voluntary stand-alone field test was conducted for items aligned to the Mathematics and English Language Arts (Reading and Writing) Pennsylvania Core Standards in kindergarten through grade 2, the K–2 Science Assessment Anchors and Eligible Content, and the Mathematics, English Language Arts, and Science Assessment Anchors and Eligible Content for grades 3 and 4. These were administered to students in grades 3 through 5, as described in Chapter Six. At the same time, items developed to align to the Mathematics, English Language Arts, and Science Assessment Anchors and Eligible Content for grade 5 were administered as part of an embedded field test to students in grade 6 that completed an operational CDT administration. The purpose of these two field test administrations was to provide enough items to allow students in grades 3 through 5 to be included in the CDT assessments. The Mathematics Lower Grades, Reading Lower Grades, Science Lower Grades, and Writing Lower Grades assessments became available in spring 2014.

Additional items in were developed in 2015 for an embedded field test in 2016. The purpose of this development was to supplement the pool with additional items including Evidence Based Selected Response (EBSR) items aligned to the Pennsylvania Core Standards for the reading/literature CDT. These EBSR items were developed to align to the English Language Arts Assessment Anchors and Eligible Content for grades 3 through 8 and were administered as part of an embedded field test to students that completed an operational CDT administration. Additional multiple-choice items were also field tested in mathematics and science.

ITEM DEVELOPMENT CONSIDERATIONS

Alignment to the PSSA and Keystone Assessment Anchors and Eligible Content, grade- or course-level appropriateness (as specified by PDE), depth of knowledge (DOK), item/task level of complexity, estimated difficulty level, relevancy of context, rationale for distractors, style, accuracy, and correct terminology were major considerations in the item development process. The *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999) and the *Principles of Universal Design* (Thompson, Johnstone, & Thurlow, 2002) guided the development process. In addition, DRC's *Bias, Fairness, and Sensitivity Guidelines* were used for developing items. All items were reviewed for fairness by bias and sensitivity committees and for content by Pennsylvania educators and field specialists.

BIAS, FAIRNESS, AND SENSITIVITY OVERVIEW

At every stage of the item and test development process, DRC employs procedures that are designed to ensure that items and tests meet Standard 7.4 of the Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999).

Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.

To meet Standard 7.4, DRC employs a series of internal quality steps. DRC provides specific training for test developers, item writers, and reviewers on how to write, review, revise, and edit items for issues of bias, fairness, and sensitivity (as well as for technical quality). Training also includes an awareness of and sensitivity to issues of cultural diversity. In addition to providing *internal* training in reviewing items in order to eliminate potential bias, DRC also provides *external* training to the review panels of minority experts, teachers, and other stakeholders.

DRC's guidelines for bias, fairness, and sensitivity includes instruction concerning how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Areas of bias that are specifically targeted include, but are not limited to, stereotyping, gender, regional/geographic, ethnic/cultural, socioeconomic/class, religious, experiential, and biases against a particular age group (ageism) or persons with disabilities. DRC catalogues topics that should be avoided and maintains balance in gender and ethnic emphasis within the pool of available items and passages.

UNIVERSAL DESIGN OVERVIEW

The Principles of Universal Design were incorporated throughout the item development process to allow participation of the widest possible range of students in the Classroom Diagnostic Tools. The following checklist was used as a guideline:

- Items measure what they are intended to measure.
- Items respect the diversity of the assessment population.
- Items have a clear format for text.
- Stimuli and items have clear pictures and graphics.
- Items have concise and readable text.
- The arrangement of the items on the test has an overall appearance that is clean and well organized.

A more extensive description of the application of the Principles of Universal Design is found in Chapter Four.

DEPTH OF KNOWLEDGE (DOK) OVERVIEW

An important element in statewide assessments is the alignment between the overall assessment system and the state's standards. A methodology developed by Norman Webb (1999, 2006) offers a comprehensive model that can be applied to a wide variety of contexts. With regard to the alignment between standards statements and the assessment instruments, Webb's criteria include five categories, one of which deals with content. Within the content category is a useful set of levels for evaluating depth of knowledge (DOK). According to Webb (1999), "depth-of-knowledge consistency between standards and assessments indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards" (p. 7–8). The four levels of cognitive complexity (i.e., depths of knowledge) are as follows:

- Level 1: Recall
- Level 2: Application of Skill/Concept
- Level 3: Strategic Thinking
- Level 4: Extended Thinking

Depth-of-knowledge levels were incorporated in the item writing and review process, and items were coded with respect to the level each represented.

PASSAGE READABILITY OVERVIEW

Evaluating the readability of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is linguistically appropriate. Although various readability indices were computed and reviewed, it is recognized that such methods measure different aspects of readability and are often fraught with particular interpretive liabilities. Thus, the commonly available readability formulas were not used in a rigid way, but more informally to provide for several snapshots of a passage that senior test development staff considered along with experience-based judgments in guiding the passage selection process. In addition, passages were reviewed by committees of Pennsylvania educators who evaluated each passage for readability and grade-level appropriateness.

TEST ITEM READABILITY OVERVIEW

Careful attention was given to the readability of the items to make certain that the assessment focus of the item did not shift based on the difficulty of reading the item. Subject/course areas such as Mathematics, Algebra I, Science, or Biology contain many content-specific vocabulary terms. As a result, readability formulas were not used. However, wherever it was practicable and reasonable, every effort was made to keep the vocabulary at or one level below the grade or course level for non-Reading/Literature items. There was a conscious consideration made to ensure that each question was evaluating a student's ability to build toward mastery of the course standards versus the student's reading ability. Resources used to verify the vocabulary level were the EDL Core Vocabularies and the Children's Writer's Word Book.

In addition, every test question is brought before committees comprised of Pennsylvania educators who are course-level/grade-level experts in the content field in question. They review each question from the perspective of the students they teach, and they determine the validity of the vocabulary used and work to minimize the level of reading required.

ITEM AND TEST DEVELOPMENT CYCLE

The item development process for items followed a logical cycle and timeline, which is outlined in the figure on the following page. On the front end of the schedule, tasks were generally completed with the goal of presenting field test candidate items to committees of Pennsylvania educators. On the back end of the schedule, all tasks lead to the field test data review and operational test construction. This presentation represents a typical life cycle for a field test event.

DRC Item and Test Development Primary Cycle

Review RFP requirements, Assessment Anchor Content Standards, Eligible Content, and other information describing the scope and criteria of the Classroom Diagnostic Tools



Establish detailed test and item/passage/scenario development specifications and style guides, and prepare project-specific item writer training manuals



Train item writers and/or passage/scenario developers in the project requirements and specifications



Passage/scenario development and/or item writing



Item review, editing, coding, graphics production, and tracking (sample items shared with PDE for state-directed feedback)



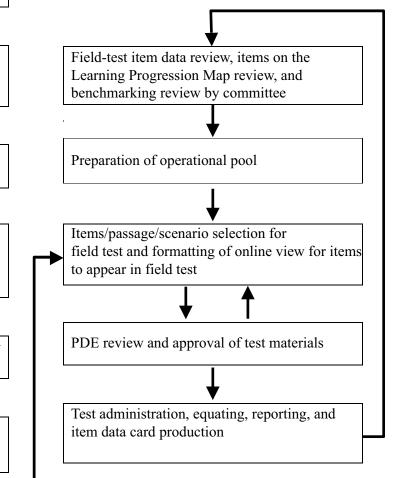
Item card production of committee review-ready items/passages/scenarios



Item and bias/fairness/sensitivity review by PDE, Pennsylvania educators, and experts in issues of bias, fairness, and sensitivity



Modify items based on committee/PDE recommendations



GENERAL ITEM AND TEST DEVELOPMENT PROCESS

The following describes the processes which lead up to an operational assessment. These processes were used to develop the entire pool of items that appeared within the field test administrations for potential inclusion in the operational item pool.

ITEM DEVELOPMENT PLANNING MEETING

Prior to the start of any item development work, DRC's test development staff meets with PDE's assessment office to discuss the test development plans, including the test blueprint, the field test plan (including development counts), procedures, timelines, etc.

ITEM WRITER TRAINING

Item writers were selected and trained for the subject areas of Mathematics, Algebra I, Algebra II, Geometry, Science, Biology, Chemistry, Reading, Literature, Writing, and English Composition. Qualified writers were college graduates with teaching experience and a demonstrated base of knowledge in the content area. Many of these writers were content assessment specialists and curriculum specialists. The writers were trained individually and had previous experience in writing multiple-choice items. Prior to developing items for the Classroom Diagnostic Tools, the cadre of item writers was trained with regard to the following:

- PSSA and Keystone Assessment Anchors and Eligible Content
- Webb's Levels of Cognitive Complexity, Depth of Knowledge
- Bias, Fairness, and Sensitivity Guidelines
- Principles of Universal Design
- Item Quality Technical Style Guidelines
- Reference Information
- Sample Items

LITERATURE PASSAGE DEVELOPMENT

The task of developing passages was conducted by DRC professionals with classroom experience in reading/English language arts. These professionals also underwent specialized training (provided by DRC) in the characteristics of acceptable passages. Guidelines for passage development included appropriate length, text structure, density, and vocabulary. A judgment was also made about whether the reading level required by a particular passage was at the independent level—that is, where the average student should be able to read 90 percent of words in the text independently. Passage writers were given the task of writing a specified number of passages for each genre. Passages were commissioned by experienced authors.

Passages underwent an internal review by several test development content editors to judge their merit with regard to the following criteria:

- Passages have interest value for students.
- Passages are appropriate in terms of vocabulary and language characteristics.
- Passages are free of bias, fairness, and sensitivity issues.
- Passages represent different cultures.
- Passages are able to stand the test of time.
- Passages are sufficiently rich to generate a variety of multiple-choice items.
- Passages avoid dated subject matter unless a relevant historical context is provided.
- Passages should not require students to have extensive background knowledge in a certain discipline or area to understand a text.

Once through the internal review process, those passages deemed potentially acceptable were reviewed by the Reading Content Committee and Bias, Fairness, and Sensitivity Committee for final approval.

ITEM AUTHORING AND TRACKING

Initially, items are generated with software-prepared Classroom Diagnostic Tools Item Cards, which allows for preliminary sorting and reviewing. A column against the right margin includes codes to identify the subject area, grade, content categories, passage information (in the case of reading), item type, depth of knowledge (cognitive complexity), estimated difficulty, answer key, and calculator use (for mathematics items).

All items undergoing field testing were entered into the DRC Item Development and Educational Assessment System (IDEAS), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IDEAS manages the transition of an item from its developmental stage to its approval for use within a test form. The system supports item history records that include item usage within a form, item-level notes, content categories and subcategories, item statistics from both classical and Rasch item analyses, and classifications derived from analyses of differential item functioning (DIF).

INTERNAL REVIEWS

To ensure that the items produced were sufficient in number and adequately distributed across subcategories and levels of difficulty, item writers were informed of the required quantities of items. As items were written, an item authoring card was completed. It contained information about the item, such as subject, content category, and subcategories. Based on the item writer's classroom teaching experience, knowledge of the content area curriculum, and cognitive demands required by the item, estimates were recorded for level of cognitive complexity and difficulty level. Items were written to provide for a range of difficulties and cognitive complexities.

As part of the item construction process, each item was reviewed by content specialists and editors at DRC. Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and Assessment Anchor. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided only one correct answer. In addition, the difficulty level, depth of knowledge, graphics, language demand, and distractors were also evaluated. Other elements considered in this process include, but are not limited to, Universal Design, bias, source of challenge, grammar/punctuation, and Pennsylvania style. Following these reviews, the items were prepared for the content review meetings conducted with Pennsylvania educators.

ITEM CONTENT REVIEWS

Prior to the 2010, 2011, 2013, and 2015 field testing, all newly developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania educators from school districts throughout the Commonwealth of Pennsylvania, some with postsecondary university affiliations. The primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level or course appropriateness, estimated difficulty, depth of knowledge, and source of challenge. With source of challenge, items are identified where the cognitive demand is focused on an unintended content, concept, or skill (Webb, 2002). In addition, source of challenge may be attributed if the reason that an answer could be given results from a cultural bias, an inappropriate reading level, or a flawed graphic in an item, or if an item requires specialized, non-content-related knowledge to answer. Source of challenge could result in a student who has mastered the intended content or skill answering the item incorrectly or a student who has not mastered the intended content or skill answering the item correctly. Committee members were asked to note any items with a source of challenge and to suggest revisions to remove the source of challenge. They also suggested revisions and made recommendations for reclassification of items. The committee members also reviewed the items for adherence to the Principles of Universal Design, including language demand and issues of bias, fairness, and sensitivity.

The content review meetings were held in January 2010 for Mathematics, Algebra I, Algebra II, and Geometry, in May/June 2010 for Reading/Literature, Science, Biology, and Chemistry, and in January 2011 for Writing/ English Composition. Additional content review meetings were held in November 2012 (for the additional items aligned to the Pennsylvania Core Standards) and in July 2013 (for the items to allow students in grades 3 through 5 to participate in the CDT). Content review meetings were again held in May of 2015 for Writing items and June of 2015 for Science, Reading, and Math (for additional items aligned to the Pennsylvania Core Standards and the Assessment Anchors and Eligible Content to supplement the pool). Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal staff members for attendance. The meeting commenced with a welcome by PDE and DRC. This was followed by an overview of the test development process by DRC. PDE, along with DRC, also provided training on the procedures and forms to be used for item content review.

DRC content assessment specialists facilitated the reviews and were assisted by representatives of PDE. Committee members, grouped by content area, received training by working through and reviewing a group of items for quality and content, as well as for the following categories:

- Assessment Anchor Alignment
- Content Limits
- Grade-Level (Course-Level) Appropriateness
- Difficulty Level
- Depth of Knowledge
- Appropriate Source of Challenge
- Correct Answer
- Quality of Distractors
- Graphics in Regards to Appropriateness
- Appropriate Language Demand
- Freedom from Bias

The members then received a binder containing items to independently review and provided their recommendation for the status of each item: Approved, Accepted with Revision, or Rejected. All comments were reviewed and addressed by DRC content staff, and, when necessary, PDE staff were consulted.

Security was addressed by adhering to a strict set of procedures. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials not in use at any time were stored in a locked room. Secure materials that did not need to be retained after the meetings were deposited in secure barrels, the contents of which were shredded.

BIAS, FAIRNESS, AND SENSITIVITY REVIEWS

Prior to the 2010, 2011, and 2013 field testing, all newly developed test items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. These reviews took place prior to the Item Content Review for each content area. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes or deletion of items in order to remove the potential for issues of bias, fairness, and/or sensitivity. Included in the review were proposed reading passages. An expert, multi-ethnic committee composed of men and women was trained by a DRC test development lead to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed by DRC (DRC, 2003-2013). Members of the committee also had expertise with special-needs students and English Language Learners. All items were read by a cross-section of committee members. Each member noted bias, fairness, and/or sensitivity comments on tracking sheets and on the item, if needed, for clarification. Committee members individually categorized any concerns as related to ageism, disability, ethnicity/culture, gender, region, religion, socioeconomics, or stereotypes. These categories were the framework through which recommendations for modification or rejection of items occurred during the subsequent committee consensus process. The committee discussed each of the issues as a group and came to a consensus as to which issues should represent the view of the committee. All consensus comments were then compiled, and the suggested actions on these items were recorded and submitted to DRC content staff. This review followed the same security procedures as outlined above.

ITEMS ALIGNED TO LEARNING PROGRESSION MAPS

Following the field test of items, all items were brought before a committee of Pennsylvania educators for review of each item's alignment to the Learning Progression Map. DRC and PDE provided a general overview of the item and test development process for the Classroom Diagnostic Tools and provided information about the Learning Progression Maps and the purpose of the Classroom Diagnostic Tools. Then the committee reviewed the Learning Progression Map, which shows the vertical articulation of the Assessment Anchors and Eligible Content across grades within a given subject area. Once it was determined that the Learning Progression Map containing the Assessment Anchors and Eligible Content was an accurate representation of how the content progressed across grades, teachers worked in grade-span committees to review items for their alignment with the Assessment Anchor and Eligible Content. When reviewing the alignment to the Assessment Anchor and Eligible Content, educators considered whether the test item measured the content that it purported to measure, as well as the appropriateness of the difficulty and cognitive complexity of the item in relation to the Assessment Anchor and Eligible Content to which the item was aligned. Committees came to a consensus regarding the status of each item: Accepted, Accepted with Revised Alignment, or Rejected.

Security was addressed by adhering to a strict set of procedures. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials not in use at any time were stored in a locked room. Secure materials that did not need to be retained after the meetings were deposited in secure barrels, the contents of which were shredded.

CHAPTER FOUR: UNIVERSAL DESIGN PROCEDURES APPLIED TO THE CLASSROOM DIAGNOSTIC TOOLS TEST DEVELOPMENT PROCESS

UNIVERSAL DESIGN

Universally designed assessments allow participation of the widest possible range of students and contribute to valid inferences about participating students. Principles of Universal Design are based on the premise that each child in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability (Thompson, Johnstone, & Thurlow, 2002). At every stage of the item and test development process, procedures were employed to ensure that items and subsequent tests were designed and developed using the elements of universally designed assessments developed by the National Center for Educational Outcomes (NCEO).

Federal legislation addresses the need for universally designed assessments. The No Child Left Behind Act (Elementary and Secondary Education Act) requires that each state must "provide for the participation in [statewide] assessments of all students" [Section 1111(b)(3)(C)(ix)(I)]. Both Title I and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including students with disabilities and English Language Learners. The benefits of universally designed assessments not only apply to these groups of students, but to all individuals with wide-ranging characteristics. Therefore, it is important that the development of all assessments, including voluntary assessments such as the Classroom Diagnostic Tools, be guided by the Principles of Universal Design.

DRC's test development team was trained in the elements of Universal Design as it relates to developing large-scale statewide assessments. Team leaders were trained directly by NCEO, and other team members were subsequently trained by team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and English Language Learners. Likewise some members of the Bias, Fairness, and Sensitivity Committee were conversant with these issues. What follows are the Universal Design guidelines followed during all stages of the item development process for the Classroom Diagnostic Tools.

ELEMENTS OF UNIVERSALLY DESIGNED ASSESSMENTS

After a review of research relevant to the assessment development process and the Principles of Universal Design (Center for Universal Design, 1997), NCEO has produced seven elements of Universal Design as they apply to assessments (Thompson, Johnstone & Thurlow, 2002). These elements served to guide item development for the Classroom Diagnostic Tools.

• Inclusive Assessment Population

The target population includes students attending Commonwealth schools in grades 3 through 12 who will be participating in either the Pennsylvania System of School Assessment or the Keystone exams.

Precisely Defined Constructs

An important function of well-designed assessments is that they actually measure what they are intended to measure. The Assessment Anchor Content Standards and Eligible Content for both PSSA and the Keystone Exams, as well as the Pennsylvania Academic Standards for Writing, provided clear descriptions of the constructs to be measured by the Classroom Diagnostic Tools assessments. Universally designed assessments must remove all non-construct-oriented cognitive, sensory, emotional, and physical barriers.

Accessible, Non-biased Items

DRC conducted both internal and external reviews of items and test specifications to ensure that they did not create barriers because of lack of sensitivity to disability, culture, or other subgroups. Items and test specifications were developed by a team of individuals who understand the varied characteristics of items that might create difficulties for any group of students. Accessibility is incorporated as a primary dimension of test specifications, so accessibility was woven into the fabric of the test rather than being added after the fact.

Amenable to Accommodations

Even though items on universally designed assessments are accessible for most students, there are some students who continue to need accommodations. This essential element of a universally designed assessment requires that the exam is compatible with accommodations and a variety of widely used adaptive equipment and assistive technology.

Simple, Clear, and Intuitive Instructions and Procedures

Assessment instructions should be easy to understand, regardless of a student's experience, knowledge, language skills, or current concentration level. Questions that are posed using complex language can invalidate the test if students cannot understand how they are expected to respond to a question. To meet this guideline, directions and questions were prepared in simple, clear, and understandable language that underwent multiple reviews.

Maximum Readability and Comprehensibility

A variety of guidelines exist to ensure the maximum readability and comprehensibility of a test. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many factors, including student background, sentence difficulty, text organization, and others. All of these features were considered as item text was developed.

Plain language is a concept now being highlighted in research on assessments. Plain language has been defined as language that is straightforward and concise. The following strategies for editing text to produce plain language were used during the editing process of the Classroom Diagnostic Tools items:

- Reduction of excessive length
- Use of common words
- Avoidance of ambiguous words
- Avoidance of irregularly spelled words
- Avoidance of proper names
- Avoidance of inconsistent naming and graphic conventions
- Avoidance of unclear signals about how to direct attention

Maximum Legibility

Legibility is the physical appearance of text, the way that the shapes of letters and numbers enable people to read text easily. Bias can result when tests contain physical features that interfere with a student's focus on or understanding of the constructs that test items are intended to assess. A style guide was developed and was utilized which included dimensions of style consistent with Universal Design.

GUIDELINES FOR UNIVERSALLY DESIGNED ITEMS

All test items written and reviewed adhered closely to the following guidelines for Universal Design. Item writers and reviewers used a checklist during the item development process to ensure that each aspect was attended to.

1. Items measure what they are intended to measure. Item writing training included ensuring that writers and reviewers had a clear understanding of Pennsylvania's Core Standards, Pennsylvania's Academic Standards, and the PSSA and Keystone Assessment Anchors and Eligible Content. During all phases of test development, items were presented with content-standard information to ensure that each item reflected the intended Academic Standard (Mathematics, Reading, and Writing items aligned to Kindergarten, grade 1, or grade 2) or Eligible Content (all other grades and content areas). Careful consideration of the content standards was important in determining which skills involved in responding to an item were extraneous and which were relevant to what was being tested. In certain types of items an additional skill is necessary, such as the Algebra I test, which requires the student to read.

- 2. **Items respect the diversity of the assessment population.** To develop items that avoid content that might unfairly advantage or disadvantage any student subgroup, item writers, test developers, and reviewers were trained to write and review items to avoid issues of bias, fairness, and sensitivity. Training also included an awareness of, and sensitivity to, issues of cultural and regional diversity.
- 3. Items have a clear format for text. Decisions about how items are presented to students must allow for maximum readability for all students. Appropriate fonts and point sizes were employed with minimal use of italics, which is far less legible and is read considerably more slowly than standard typeface. Captions, keys, and legends were at least a 12-point size, while footnotes and sentence numbers use a 10-point font. Legibility was enhanced by sufficient spacing between letters, words, and lines. Blank space around paragraphs and between columns and staggered right margins were used.
- 4. Stimuli and items have clear pictures and graphics. When pictures and graphics were used, they were designed to provide essential information in a clear and uncluttered manner. Illustrations were placed directly next to the information to which they referred, and labels were used where possible. Sufficient contrast between background and text, with minimal use of shading, increased readability for students with visual impairments. Color was not used to convey important information.
- 5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used.
 - Simple, clear, commonly used words were used whenever possible.
 - Extraneous text was omitted.
 - Vocabulary and sentence complexity were appropriate for the grade level being assessed.
 - Technical terms and abbreviations were used only if they were related to the content being measured.
 - Definitions and examples were clear and understandable.
 - Idioms were avoided unless idiomatic speech was being assessed.
 - The questions to be answered were clearly identifiable.
- 6. Items allow changes to format without changing meaning or difficulty. An audio accommodation is available in Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Science Lower Grades, Science, Biology, and Chemistry for any student with Individualized Education Program (IEP) requirements related to receiving audio assistance during testing. Additionally, a Magnifier tool that can be used to enlarge an area of the screen is available to all students. This tool can be used at the same time as other tools, such as the Highlighter or Line Guide.
- 7. **The test has an overall appearance that is clean and organized.** Images, pictures, and text that may not be necessary (e.g., sidebars, overlays, callout boxes, shading, visual crowding caused by excess information) and that could be potentially distracting to students were avoided. Also avoided were purely decorative features that did not serve a purpose. Information was organized in a left-right, top-bottom format.

ITEM DEVELOPMENT

DRC works closely with the Pennsylvania Department of Education to help ensure that the Classroom Diagnostic Tools comply with nationally recognized Principles of Universal Design. In addition to the Principles of Universal Design as described in the Classroom Diagnostic Tools Technical Report, DRC applies to each exam the standards for test accessibility as described in *Tests Access: Making Tests Accessible for Students with Visual Impairments—A Guide for Test Publishers, Test Developers, and State Assessment Personnel* (Allman, 2004).

To this end, DRC ensures that committee members at item and bias reviews are made aware of the Principles of Universal Design and of issues that may adversely affect students with disabilities with the goal of ensuring that Classroom Diagnostic Tools assessments are bias-free for all students.

¹ While font size follows specific requirements during online setup of an exam, the screen resolution used at the local level can impact the effective font size visible to the student.

ITEM FORMAT

For all Classroom Diagnostic Tools assessments, DRC formats the items to maximize accessibility for all students by using text that is in a size and font style that is easily readable. DRC limits shading, graphics, and charts. DRC ensures that graphics, pictures, diagrams, charts, and tables are positioned on the page with the associated test items. DRC uses high contrast for text and background where possible to convey pertinent information.

DRC ensures consistency across Classroom Diagnostic Tools assessments by following these Principles of Universal Design:

- High contrast and clarity is used to convey detailed information.
- Typically, shading is avoided; when necessary for content purposes, 10-percent screens are used as the standard.
- Overlaid print on diagrams, charts, and graphs is avoided.
- Charts, graphs, diagrams, and tables are clearly labeled with titles and with short descriptions where applicable.
- Only relevant information is included in diagrams, pictures, and graphics.
- Symbols used in keys and legends are meaningful and provide reasonable representations of the topics they depict.

ASSESSMENT ACCOMMODATIONS

While universally designed assessments provide for participation of the widest range of students, many students require accommodations in order to participate in the regular assessment. Clearly, the intent of providing accommodations for students is to ensure that students are not unfairly disadvantaged during testing and that the accommodations used during instruction, if appropriate, are made available as students take the test. The literature related to assessment accommodations is still evolving and often focuses on state policies regulating accommodations rather than on providing empirical data that supports the reliability and validity of the use of accommodations. On a yearly basis, the Pennsylvania Department of Education examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. At this time, an audio accommodation is available in Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Science Lower Grades, Science, Biology, and Chemistry for any student with Individualized Education Program (IEP) requirements related to receiving audio assistance during testing. A separate audio accommodation is available for all CDT assessments for students with visual impairments. Additionally, a color choices accommodation allows students who would benefit from a background other than white to select a background color from five available choices (in addition to the white background). A contrasting color allows students who would benefit from different text and background color combinations to select from seven options (in addition to black text on a white background).

CHAPTER FIVE: TEST ADMINISTRATION PROCEDURES

TEST SETUP

The process to set up students to take the Classroom Diagnostic Tools (CDT) is accomplished through an online interface located on the eDIRECT site (https://pa.drcedirect.com). The eDIRECT site is a permission-based site that enables districts to assign users different roles and permissions depending on their role in the setup process. Each district can set up users with as much or as little permission as deemed necessary. A user's role and permission may be modified at any time.

The student and teacher information is imported by user upload at any time. Once the data is imported, users organize students into student groups and test sessions. Student groups and test sessions can be created by class, grade, school, or any other variation.

Each student group is assigned to a specific teacher. Students may belong to multiple student groups and multiple teachers can be assigned to the same student group. This allows districts/schools the ability to allow multiple users to view the data by class, grade, or even school. Student groups may be created and modified at any time during the administration window.

Test sessions are generated to create test tickets that will be distributed to students prior to testing. A test ticket contains the student's full name, user name, password, and the assessment he/she will be taking. The test session, like the student group, may also be created by class, grade, and school. Each time an assessment is administered, a new test session must be created. Test sessions can be copied to simplify administering the CDT to the same students multiple times each year.

SAMPLE TEST SESSION TICKET

CDT

ASHLEE ABBOTT

Reading/Literature

Username: 3924540101 Password: SWAM8481

Each CDT should take the typical student 50 to 90 minutes to complete; however, the test is untimed. Each CDT is between 48 and 60 items in length. The CDT may be administered in one sitting, but it is possible to administer the CDT over multiple days and recommended for the Grades 3-5 assessments.

It is recommended that a student take one of the available CDTs three times in a given school year. There should be enough time between CDT administrations to allow for instructional impact to be reflected in the student's results. Though there are no restrictions on the time between CDTs, there is a restriction in the Test Setup system that only allows a student to be associated with a single CDT a maximum of five (5) times within a given school year.

PA ONLINE ASSESSMENTS SOFTWARE

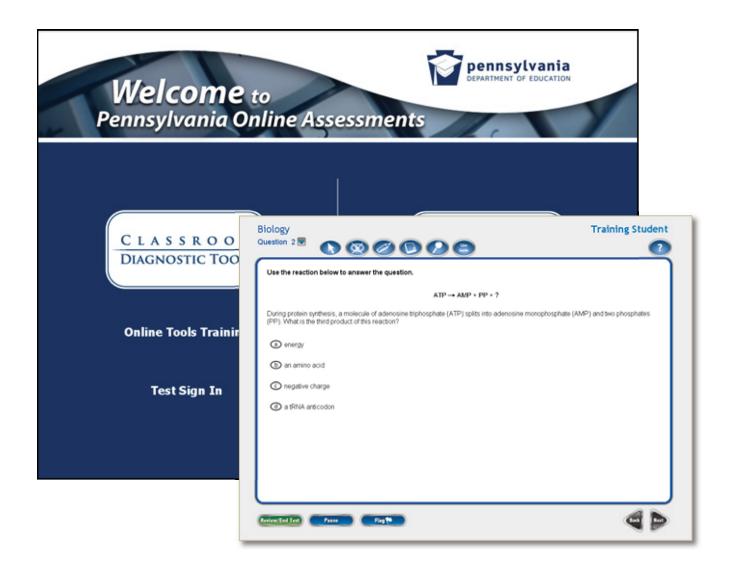
Prior to testing, each student computer needs to have the PA Online Assessments software installed. The testing software downloads are located on the eDIRECT site. The installer is an MSI file that can be pushed out across a server to expedite the installation process. Once the software is installed, users also have access to the PA Assessment Online Student Tutorials and the PA Assessment Online Tools Training (OTT). Users are encouraged to run the Online Tools Training prior to testing as it does interact with DRC servers exactly like an actual CDT assessment. Completion of the OTT will provide a good indication that the software installed correctly and

everything is configured properly on the network.

The web-based PA Online Assessment Student Tutorials are available for each operational assessment and are designed to be used by students at all grade levels. They use pictures, motion, and sound to present visual and verbal descriptions of the features and functionality of the PA Online Assessment system. It is recommended to allow a minimum of 20 minutes to view the tutorials. Tutorials may be reviewed as often as needed.



The PA Assessment Online Tools Training (OTT) is designed to provide an introductory experience using the online assessment software in preparation for taking the CDT. The purpose of the OTT is for students to observe and experiment with the features of the online assessment software prior to the actual assessment. The OTT is NOT designed to demonstrate complete coverage of the tested content, and it is NOT scored. Rather, sample items have been chosen to demonstrate online assessment features and uses.



TRAINING AND CUSTOMER SERVICE SUPPORT

Prior to testing, training was provided to District Technology Coordinators and District Assessment Coordinators. All training is administered via web conference and lasts approximately 1½ hours. Test Coordinator Training goes over tasks that need to be completed prior to testing. A large portion of the training is dedicated to the setup of users and the creation of student groups and test sessions.

Technology Coordinator Training focuses on all technical aspects required for the setup of the CDT. Detailed installation instructions of the PA Online Assessments Software and Testing Site Manager (TSM) are provided. The TSM runs on a server within the local network and helps mitigate internet traffic by allowing student machines to retrieve items from the TSM rather than from DRC servers. The CDT requires an internet connection at all times.

Student Interface System Requirements

Windows / Linux Installer System Requirements

- 4 GB of RAM recommended
- Screen resolution of 1024 X 768 or higher
- Mouse; Keyboard
- 20 GB of available hard disk space or greater
- Dual-core i5 at 2 GHz or equivalent

Window/Linus Supported Operating Systems

- Windows Vista, SP2
- Windows 7, SP1
- Windows 8 (including 8.1)
- Windows 10 (version 1507, 1511, and Redstone 1)
- Windows Server 2008 (SP2, R2, SP1)
- Windows Server 2012 (R2)
- Ubuntu (12.04 and 12.04) LTS version, with 32- and 64-bit Gnome 3.4, Unity Shell

Macintosh Installer System Requirements

- 4 GB of RAM recommended
- Screen resolution of 1024 X 768 or higher
- Mouse; Keyboard
- 20 GB of available hard disk space or greater
- Dual-core i5 at 2 GHz or equivalent

Supported Operating Systems

- Apple® Mac OS X® 10.7
- Apple® Mac OS X® 10.8
- Apple® Mac OS X® 10.9
- Apple® Mac OS X® 10.10
- Apple® Mac OS X® 10.11

Chrome OS Installer System Requirements

- 4 GB of RAM or more
- Screen resolution 1024 x 768 or higher
- 2 GHz or faster processor

Chrome OS Supported Operating Systems

Chrome OS recent stable channel

Apple iOS Installer System Requirements

Screen resolution of 1024 x 768 or higher

Apple iOS Supported Operating System

■ 9.3.x

Android Installer System Requirements

Screen resolution of 1024 x 768 or higher

Android Supported Operating System

■ Lollipop 5.x

Users are encouraged to call or email with any questions or error messages that cannot be resolved. If the problem cannot be resolved via a customer service representative, the issue is escalated to DRC developers. Ninety percent of the time, a solution is provided within twenty-four hours. If the issue requires more research, DRC will contact the caller daily to provide an update.

CHAPTER SIX: FIELD TEST

FIELD TEST OVERVIEW

All items appearing in the 2015–2016 Classroom Diagnostic Tools (CDT) operational item pools were field tested prior to their use on the operational CDT. The purpose of administering field-test items is to obtain statistics for them so they can be reviewed and approved before becoming operational. Based on this statistical review, many of the field-test items were selected for use in the 2015–2016 CDT operational item pools.

There were six separate CDT field-test events that contributed items to the 2015–2016 operational item pools—four stand-alone field-test events and two embedded field-test events. Separate field-test events were needed because the operational CDT was rolled out in phases by content area and available grades.

There were three stand-alone field-test events to build the item pools for students in grade 6 and above. Items in mathematics were field tested in spring 2010. Items in reading and science were field tested in fall 2010. Items in writing were field tested in spring 2011. During these three field-test events, CDT items were field tested on stand-alone fixed forms. The forms were administered in computer-based format only. No paper/pencil versions were available. Field test administration mode was limited to computer-based to mirror the operational CDT, which is an adaptive test requiring computer administration. CDT stand-alone field tests were designed to build vertical scales across all grades and courses within a content area. In order to accomplish this, some field-test forms had items from one grade above or below in addition to on-grade level items. For example, some grade 7 mathematics forms contained items from grade 6 in addition to items from grade 7. Other grade 7 mathematics forms contained items from both grade 7 and grade 8. See Chapter Nine for more details.

There was one stand-alone field-test event to build the item pools for students in grades 3 through 5. Items in mathematics, reading, science, and writing were field tested in fall 2013. Again, CDT items were field tested on stand-alone fixed forms. The forms were administered in computer-based format only. No paper/pencil versions were available. In order to link to the existing operational scales, some operational grade-level items were included in the field-test forms. See Chapter Twelve for more details.

In addition to the four stand-alone field-test events that contributed items to the 2015-2016 operational item pools, there were two field-test events in which a small number of field-test items were included (embedded) within the operational CDT. In spring 2013, field-test items were included in mathematics and reading. The purpose of this embedded field test was to add items to the operational item pools that align to the Pennsylvania Core Standards. In fall 2013, field-test items were included in mathematics, reading, science, and writing. The purpose of this embedded field test was to field test additional items in grade 5 that could be used in the item pools for students in grades 3 through 5.

In 2015-2016, seven of the thirteen CDTs included a small number of embedded field-test items in addition to the operational items used to generate a student's score. The purpose of the embedded field test was to supplement the existing item pools and to introduce the evidence-based selected-response (EBSR) item type in the reading content area. As in previous embedded field tests, field-test items were included within the operational administration and students did not know which items were field-test items (items that do not count toward a student's score). Therefore, the embedded field-test items can be linked to the existing operational scales. See Chapter Twelve for details.

CDT STAND-ALONE FIELD TESTS

SPRING 2010 - MATHEMATICS

The stand-alone field test administered in spring 2010 was designed to yield enough items to populate the item pool for CDT Mathematics. Items covering the Eligible Content in grades 3 through 8 and courses Algebra I, Geometry, and Algebra II were field tested. Items covering grade 11 Eligible Content that were NOT covered in Algebra I, Geometry, or Algebra II were also field tested.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate.

In order to encourage participation, field-test forms were limited in length. Forms for grades 3, 4, and 5 had 25 items. Forms for grades 6, 7, and 8 and Algebra I, Geometry, and Algebra II courses had 35 items. There were not separate grade 11 forms. Instead, grade 11 items were included on grade 8, Algebra I, Geometry, and Algebra II forms.

Since testing occurred in spring, students had nearly a full year of instruction. Therefore, grade-level forms were assigned to students in the corresponding grade (e.g., students in grade 7 took grade 7 forms). Course-level forms were assigned to students currently taking the course (e.g., students in a Geometry course took Geometry forms).

Each student was randomly assigned one of the appropriate grade- or course-level forms at the time of testing.

Table 6-1. Spring 2010 Mathematics Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	86	8	4
Grade 4	86	10	8
Grade 5	85	10	8
Grade 6	259	16	8
Grade 7	258	16	8
Grade 8	257	18	12
Grade 11*	149	0	0
Algebra I	256	18	8
Geometry	257	16	4
Algebra II	256	16	4

^{*} Grade 11 items were tested on grade 8, Algebra I, Geometry, and Algebra II forms.

FALL 2010 - READING AND SCIENCE

The stand-alone field tests administered in fall 2010 were designed to yield enough items to populate the item pools for CDT Reading/Literature and CDT Science. Reading items covering the Eligible Content in grades 3 through 8 and Literature were field tested. Science items covering the Eligible Content in grades 3 through 8 and Biology and Chemistry courses were field tested. Items covering grade 11 science Eligible Content that were NOT covered in Biology or Chemistry were also field tested.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate. Schools were allowed to field test in both content areas.

In order to encourage participation, field-test forms were limited in length. Forms for grades 3, 4, and 5 had 25 items. Forms for grades 6, 7, and 8 and Literature, Biology, and Chemistry courses had 35 items. There were not separate grade 11 science forms. Instead, grade 11 science items were included on grade 8 science forms.

Since testing occurred in fall, students did NOT have a full year of instruction at their current grade level. Grade-level forms were therefore assigned one grade lower (e.g., students in grade 7 took grade 6 forms). Course-level forms were assigned to students who had completed the course during the prior school year.

Each student was randomly assigned one of the appropriate grade- or course-level forms at the time of testing.

Table 6-2. Fall 2010 Reading/Literature Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	
Grade 3	86	7	2
Grade 4	87	8	4
Grade 5	86	8	4
Grade 6	210	10	4
Grade 7	192	9	4
Grade 8	192	9	4
Literature	348	15	2

Table 6-3. Fall 2010 Science Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	91	7	2
Grade 4	123	11	4
Grade 5	102	9	4
Grade 6	178	9	4
Grade 7	327	15	4
Grade 8	377	22	6
Grade 11*	115	0	0
Biology	390	16	2
Chemistry	335	14	2

^{*} Grade 11 items were tested on grade 8 forms.

SPRING 2011 - WRITING

The stand-alone field test administered in spring 2011 was designed to yield enough items to populate the item pool for CDT Writing/English Composition. Items covering the Pennsylvania Academic Standards for Writing in grades 3 through 8 and the Eligible Content for English Composition were field tested.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate.

In order to encourage participation, field-test forms were limited in length. Forms for grades 3, 4, and 5 had 25 items. Forms for grades 6, 7, and 8 and English Composition had 35 items.

Since testing occurred in spring, students had nearly a full year of instruction. Therefore, grade-level forms were assigned to students in the corresponding grade (e.g., students in grade 7 took grade 7 forms).

Each student was randomly assigned one of the appropriate grade- or course-level forms at the time of testing.

Table 6-4. Spring 2011 Writing/English Composition Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	140	10	2
Grade 4	149	12	4
Grade 5	165	13	4
Grade 6	193	9	4
Grade 7	176	9	4
Grade 8	195	9	4
English Composition	365	15	2

FALL 2013 - MATHEMATICS, READING, SCIENCE, AND WRITING

The stand-alone field tests administered in fall 2013 were designed to yield enough items to populate the item pools for each CDT for students in grades 3 through 5 in mathematics, reading, science, and writing. Items covering the Eligible Content in kindergarten through grade 4 were field tested 1. In order to link to the existing operational scales, some operational grade-level items were included in the field-test forms.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate. Schools were allowed to field test in all content areas. In order to encourage participation, field-test forms were limited in length. All field-test forms had 25 items.

Since testing occurred in fall, students did NOT have a full year of instruction at their current grade level. Grade-level forms were therefore assigned one grade lower (e.g., students in grade 4 took forms containing grade 3 items). Each student was randomly assigned one of the appropriate grade-level forms at the time of testing.

¹ Items in grade 5 were part of the fall 2013 embedded field test.

Table 6-5. Fall 2013 Mathematics Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K, 1, 2	Field Test	60, 90, 130	14
Grade 3	3	Link to Op Scale	15	14
Grade 4	3	Field Test	235	12
Grade 4	3	Link to Op Scale	15	12
Grade 5	4	Field Test	248	13
Grade 5	4	Link to Op Scale	15	13

Table 6–6. Fall 2013 Reading Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K, 1, 2	Field Test	84, 98, 98	14
Grade 3	3	Link to Op Scale	15	14
Grade 4	3	Field Test	178	9
Grade 4	3	Link to Op Scale	15	9
Grade 5	4	Field Test	189	10
Grade 5	4	Link to Op Scale	15	10

Table 6-7. Fall 2013 Science Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K–2 grade span	Field Test	280	14
Grade 3	3	Link to Op Scale	15	14
Grade 4	3	Field Test	155	8
Grade 4	3	Link to Op Scale	15	8
Grade 5	4	Field Test	213	11
Grade 5	4	Link to Op Scale	15	11

Table 6-8. Fall 2013 Writing Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K, 1, 2	Field Test	44, 118, 117	14
Grade 3	3	Link to Op Scale	15	14
Grade 4	3	Field Test	60	3
Grade 4	3	Link to Op Scale	15	3
Grade 5	4	Field Test	60	3
Grade 5	4	Link to Op Scale	15	3

CDT EMBEDDED FIELD TESTS

SPRING 2013 - MATHEMATICS AND READING

The embedded field test administered in spring 2013 was designed to augment the existing mathematics and reading/literature item pools. Items were aligned to the Pennsylvania Core Standards. Starting on February 14, 2013, all students testing CDT Mathematics took 5 field-test items. All students testing CDT Reading/Literature took 5–7 field-test items, depending on passage length. Students did not know which items were operational and which were field test. Field-test items did not count in calculation of total or diagnostic category scores. Since testing occurred in spring, students had received nearly a full year of instruction. Therefore, grade-level items were assigned to students in the corresponding grade wherever possible.

Table 6-9. Spring 2013 Embedded Field Test Details

Content Area	Grade/Course	Number of Items
Mathematics	Grade 3*	56
Mathematics	Grade 4*	67
Mathematics	Grade 5*	41
Mathematics	Grade 6	156
Mathematics	Grade 7	73
Mathematics	Grade 8	157
Reading	Grade 3*	58
Reading	Grade 4*	71
Reading	Grade 5*	60
Reading	Grade 6	56
Reading	Grade 7	58
Reading	Grade 8	57

^{*}Items in grades 3 through 5 were initially field tested with students in grade 6 because CDT is available to students in grade 6 and above. However, this plan was revised after a few weeks of testing in favor of stand-alone field tests in fall 2013 with students in grades 3 through 5.

FALL 2013 - MATHEMATICS, READING, SCIENCE, AND WRITING

The embedded field test administered in fall 2013 was designed to field test the grade 5 items needed to populate the item pools for each CDT for students in grades 3 through 5 in mathematics, reading, science, and writing. Starting on August 26, 2013, students in grade 6 testing CDT Mathematics, CDT Science, or CDT Writing/English Composition took 5 field-test items. Students in grade 6 testing CDT Reading/Literature took 5–7 field-test items, depending on passage length. Students did not know which items were operational and which were field test. Field-test items did not count in calculation of total or diagnostic category scores. Since testing occurred in fall, students had not received a full year of instruction. Therefore, grade 5 items were assigned to grade 6 students.

Table 6-10. Fall 2013 Embedded Field Test Details

CDT	Grade	Number of Items
Mathematics	Grade 5	221
Reading/Literature	Grade 5	134
Science	Grade 5	152
Writing/English Composition	Grade 5	71

FALL 2015 - MATHEMATICS, READING, SCIENCE, AND WRITING

The embedded field test administered in fall 2015 was designed to field test new items to supplement the item pools in grades 6 and above in mathematics, reading, science, and writing as well as courses Algebra I and Biology. Additionally, the evidence-based selected-response item type was field tested in grades 3 through 8 reading.

Table 6-11. Fall 2015 Embedded Field Test Item Pools

Content Area	Item Grade/Course	Number of MC Items	Number of EBSR Items	Total Number of Items
Mathematics	6	122	0	122
Mathematics	7	177	0	177
Mathematics	8	151	0	151
Mathematics	Algebra I	150	0	150
Reading	3	0	22	22
Reading	4	0	22	22
Reading	5	0	22	22
Reading	6	105	21	126
Reading	7	105	21	126
Reading	8	105	21	126
Reading	Literature	126	0	126
Science	6	72	0	72
Science	7	159	0	159
Science	8	238	0	238
Science	Biology	136	0	136
Writing	6	93	0	93
Writing	7	93	0	93
Writing	8	110	0	110
Writing	English Composition	104	0	104

Starting on August 24, 2015, seven of the thirteen CDTs included embedded field-test items as detailed below. In all cases, students did not know which items were operational and which were field test. Field test items did not count in calculation of total or diagnostic category scores.

MATH GRADES 6-8

Students using CDT Math Grades 6-8 took 5 field-test items. Since testing occurred throughout the year, items were given to students whose grade matched the item's grade and to students one grade above the item's grade (e.g., grade 7 items were given to students in grades 7 and 8).

ALGEBRA I

Students using CDT Algebra I took 5 field-test items.

READING GRADES 3-5

The only field-test items in grades 3 through 5 reading were EBSR items associated with existing operational passages. Students using CDT Reading Grades 3-5 were eligible to receive field-test EBSR items. However, operational passages that were not a good fit based on a student's performance were not administered just for the sake of field-test items. Instead, a field-test EBSR was administered only if the operational passage was selected for the student. The number of field-test EBSRs was limited to 3 per test.

READING/LIT GRADES 6-HS

Students using CDT Reading/Lit Grades 6-HS took one field-test passage and six associated items. Since testing occurred throughout the year, items were given to students whose grade matched the item's grade and to students one grade above the item's grade (e.g., grade 7 items were given to students in grades 7 and 8).

SCIENCE GRADES 6-HS

Students using CDT Science Grades 6-HS took 5 field-test items. Since testing occurred throughout the year, items were given to students whose grade matched the item's grade and to students one grade above the item's grade (e.g., grade 7 items were given to students in grades 7 and 8).

BIOLOGY

Students using CDT Biology took 5 field-test items.

WRITING/ENG COMP GR 6-HS

Students using CDT Writing/Eng Comp Grades 6-HS took 5 field-test items. Since testing occurred throughout the year, items were given to students whose grade matched the item's grade and to students one grade above the item's grade (e.g., grade 7 items were given to students in grades 7 and 8).

Table 6-12. Fall 2015 Embedded Field Test Design

Content Area	CDT	Item Grade/Course	Number of Items Embedded	Student Test Grade(s)
Mathematics	Math Grades 6-8	6	5 MC	6,7
Mathematics	Math Grades 6-8	7	5 MC	7, 8
Mathematics	Math Grades 6-8	8	5 MC	8, 9+
Mathematics	Algebra I	Algebra I	5 MC	Algebra I
Reading	Reading Grades 3-5	3	0-3 EBSR	3,4,5
Reading	Reading Grades 3-5	4	0-3 EBSR	3,4,5
Reading	Reading Grades 3-5	5	0-3 EBSR	3,4,5
Reading	Reading/Lit Grades 6-HS	6	1 passage*	6,7
Reading	Reading/Lit Grades 6-HS	7	1 passage*	7, 8
Reading	Reading/Lit Grades 6-HS	8	1 passage*	8, 9+
Reading	Reading/Lit Grades 6-HS	Literature	1 passage*	9+
Science	Science Grades 6-HS	6	5 MC	6,7
Science	Science Grades 6-HS	7	5 MC	7, 8
Science	Science Grades 6-HS	8	5 MC	8, 9+
Science	Biology	Biology	5 MC	Biology
Writing	Writing/Eng Comp Gr 6-HS	6	5 MC	6,7
Writing	Writing/Eng Comp Gr 6-HS	7	5 MC	7, 8
Writing	Writing/Eng Comp Gr 6-HS	8	5 MC	8, 9+
Writing	Writing/Eng Comp Gr 6-HS	English Composition	5 MC	9+

^{*} FT reading passages include six multiple-choice items OR five multiple-choice items and one evidence-based selected-response item.

STATISTICAL ANALYSIS OF ITEM DATA

All field-tested items were analyzed statistically following conventional item analysis methods. For MC items, traditional or classical item statistics included the point-biserial correlation (Pt. Bis.) for the correct and incorrect responses (distractors), percent correct (*p*-value), and the percent selecting each incorrect response. For EBSR items, the statistical indices included the item-test correlation, the point-biserial correlation for each score category, and the percent in each score category.

In general, more capable students are expected to respond correctly to easy items and less capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the potential problem and the characteristics of the students affected. The primary way of detecting such conditions is through the point-biserial correlation coefficient for MC items and the item-test correlation for EBSR items. In each case the statistic will be positive if the total-test mean score is higher for the students who respond correctly to MC items or attain a higher EBSR score and negative when the reverse is true.

Item statistics are used as a means of detecting items that deserve closer scrutiny rather than as a mechanism for automatic retention or rejection. Toward this end, a set of criteria was used as a screening tool to identify items needing a closer review by committees of Pennsylvania educators.

For an MC item to be flagged, the criteria included any of the following:

- Point-biserial correlation for the correct response of less than 0.10
- Point-biserial correlation for any incorrect response greater than the point-biserial correlation for the correct response
- Differential item functioning (DIF) code of either C- or C+²

For an EBSR item to be flagged, the criteria included any of the following:

- Part One point-biserial correlation for the correct response of less than 0.10
- Part One point-biserial correlation for any incorrect response greater than the point-biserial correlation for the correct response
- Score proportion less than 0.05
- Differential item functioning (DIF) code of either C- or C+

These criteria differ slightly from the criteria used for end-of-year/course summative tests such as the Pennsylvania System of School Assessment (PSSA) or the Keystone Exams. For example, CDT items are not flagged for low and high *p*-values. While very easy and very difficult items may not be appropriate for summative tests, they are needed in diagnostic item pools so the computer adaptive item selection routine can find appropriate items for students at various levels.

Item analysis results for field-test items are presented in Appendix B.

REVIEW OF ITEMS WITH DATA

In the preceding section on Statistical Analysis of Item Data, it was stated that content-area test development specialists used certain statistics from item and DIF analyses of the field tests to identify items for further review. Specific flagging criteria for this purpose were specified in the previous section. Items not identified for this review were those that had good statistical characteristics and, consequently, were regarded as statistically acceptable, or had extremely poor statistical quality and, consequently were regarded as unacceptable, were removed from the CDT item pools, and needed no further review. However, there were some items that DRC content-area test development specialists and DRC psychometric specialists regarded as needing further review by committees of Pennsylvania educators.

² Items classified as C+ or C- have strong evidence of DIF. The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white). For more details, see the section in this chapter on Differential Item Functioning.

There were separate meetings to review items with data for each field-test event and content area. CDT mathematics items from the spring 2010 stand-alone field test were reviewed by fourteen Pennsylvania educators on August 9, 2010. CDT reading and science items from the fall 2010 stand-alone field test were reviewed by sixteen and fourteen Pennsylvania educators respectively on January 24, 2011. CDT writing items from the spring 2011 stand-alone field test were reviewed by fourteen Pennsylvania educators on August 1, 2011. CDT mathematics and reading items from the spring 2013 embedded field test were reviewed by twenty-two educators respectively on July 16–18, 2013. CDT mathematics, reading, science, and writing items from both the stand-alone and embedded field tests of fall 2013 were reviewed by seven, seven, seven, and eight Pennsylvania educators respectively on January 21–23, 2014. CDT mathematics, reading, science, and writing items from the embedded field tests of fall 2015 were reviewed by 10 Pennsylvania educators for each content group of June 9-10, 2016.

At each of the item data review meetings committee members were first trained with regard to the statistical indices used in item evaluation. This was followed by a discussion with examples concerning reasons that an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible sensitivity/bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of field-test items and made recommendations (i.e., accept or reject) for each item.

Table 6-13a. CDT Data Review Results for Mathematics in August 2010

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
3	86	4	4.7%	0	0.0%	0	0.0%
4	86	7	8.1%	0	0.0%	0	0.0%
5	85	0	0.0%	0	0.0%	0	0.0%
6	259	6	2.3%	0	0.0%	0	0.0%
7	258	19	7.4%	1	0.4%	1	0.4%
8	257	20	7.8%	1	0.4%	1	0.4%
11	149	13	8.7%	0	0.0%	0	0.0%
Algebra I	256	19	7.4%	6	2.3%	6	2.3%
Geometry	257	12	4.7%	3	1.2%	19	7.4%
Algebra II	256	15	5.9%	1	0.4%	2	0.8%

^{*}Data Review Committee, PDE, and DRC

Table 6-13b. CDT Data Review Results for Reading in January 2011

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
3	86	0	0.0%	0	0.0%	0	0.0%
4	87	2	2.3%	0	0.0%	0	0.0%
5	86	3	3.5%	0	0.0%	0	0.0%
6	210	13	6.2%	1	0.5%	4	1.9%
7	192	8	4.2%	1	0.5%	2	1.0%
8	192	3	1.6%	0	0.0%	2	1.0%
Literature	348	16	4.6%	1	0.3%	8	2.3%

^{*}Data Review Committee, PDE, and DRC

Table 6-13c. CDT Data Review Results for Science in January 2011

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
3	91	4	4.4%	1	1.1%	5	5.5%
4	123	6	4.9%	6	4.9%	9	7.3%
5	102	8	7.8%	3	2.9%	4	3.9%
6	178	13	7.3%	4	2.2%	10	5.6%
7	327	34	10.4%	28	8.6%	64	19.6%
8	377	43	11.4%	33	8.8%	56	14.9%
11	115	26	22.6%	9	7.8%	29	25.2%
Biology	390	43	11.0%	4	1.0%	61	15.6%
Chemistry	335	33	9.9%	8	2.4%	13	3.9%

^{*}Data Review Committee, PDE, and DRC

Table 6-13d. CDT Data Review Results for Writing in August 2011

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
3	140	4	2.9%	1	0.7%	1	0.7%
4	149	10	6.7%	1	0.7%	1	0.7%
5	165	11	6.7%	4	2.4%	4	2.4%
6	193	13	6.7%	5	2.6%	5	2.6%
7	176	16	9.1%	5	2.8%	5	2.8%
8	195	21	10.8%	2	1.0%	2	1.0%
Eng. Comp	365	28	7.7%	10	2.7%	10	2.7%

^{*}Data Review Committee, PDE, and DRC

Table 6-13e. CDT Data Review Results for Mathematics in July 2013

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
6	156	27	17.3%	7	4.5%	7	4.5%
7	73	15	20.5%	2	2.7%	2	2.7%
8	157	39	24.8%	4	2.5%	4	2.5%

^{*}Data Review Committee, PDE, and DRC

Table 6-13f. CDT Data Review Results for Reading in July 2013

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
6	56	1	1.8%	1	1.8%	2	3.6%
7	58	4	6.9%	3	5.2%	4	6.9%
8	57	2	3.5%	1	1.8%	1	1.8%

^{*}Data Review Committee, PDE, and DRC

Table 6-13g. CDT Data Review Results for Mathematics in January 2014

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
K	60	14	23.3%	0	0.0%	1	1.7%
1	90	15	16.7%	0	0.0%	0	0.0%
2	130	11	8.5%	4	3.1%	5	3.8%
3	235	31	13.2%	3	1.3%	6	2.6%
4	248	20	8.1%	4	1.6%	11	4.4%
5	221	21	9.5%	4	1.8%	10	4.5%

^{*}Data Review Committee, PDE, and DRC

Table 6-13h. CDT Data Review Results for Reading in January 2014

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
K	84	11	13.1%	0	0.0%	0	0.0%
1	98	8	8.2%	3	3.1%	3	3.1%
2	98	1	1.0%	0	0.0%	0	0.0%
3	178	17	9.6%	2	1.1%	2	1.1%
4	189	11	5.8%	2	1.1%	2	1.1%
5	134	15	11.2%	0	0.0%	0	0.0%

^{*}Data Review Committee, PDE, and DRC

Table 6-13i. CDT Data Review Results for Science in January 2014

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
K-2	280	31	11.1%	5	1.8%	9	3.2%
3	155	9	5.8%	1	0.6%	4	2.6%
4	213	23	10.8%	4	1.9%	13	6.1%
5	152	44	28.9%	7	4.6%	10	6.6%

^{*}Data Review Committee, PDE, and DRC

Table 6-13j. CDT Data Review Results for Writing in January 2014

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
K	44	13	29.5%	2	4.5%	2	4.5%
1	118	18	15.3%	6	5.1%	6	5.1%
2	117	7	6.0%	3	2.6%	4	3.4%
3	60	4	6.7%	2	3.3%	2	3.3%
4	60	10	16.7%	3	5.0%	3	5.0%
5	71	15	21.1%	6	8.5%	6	8.5%

^{*}Data Review Committee, PDE, and DRC

Table 6-13k. CDT Data Review Results for Mathematics in June 2016

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
6	122	17	13.9%	4	3.3%	4	3.3%
7	177	41	23.3%	10	5.7%	11	6.3%
8	151	31	20.4%	3	2.0%	4	2.6%
Algebra I	150	28	18.7%	1	0.7%	2	1.3%

^{*}Data Review Committee, PDE, and DRC

Table 6-13I. CDT Data Review Results for Reading in June 2016

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
3	22	5	22.7%	0	0.0%	0	0.0%
4	22	6	27.3%	1	4.5%	1	4.5%
5	22	3	13.6%	0	0.0%	1	4.5%
6	126	10	7.9%	1	0.8%	4	3.2%
7	126	10	7.9%	1	0.8%	1	0.8%
8	126	12	9.5%	1	0.8%	3	2.4%
Literature	126	14	11.1%	1	0.8%	2	1.6%

^{*}Data Review Committee, PDE, and DRC

Table 6-13m. CDT Data Review Results for Science in June 2016

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
6	72	12	16.7%	5	6.9%	6	8.3%
7	159	35	22.0%	6	3.8%	6	3.8%
8	238	65	27.3%	12	5.0%	12	5.0%
Biology	136	15	11.0%	1	0.7%	1	0.7%

^{*}Data Review Committee, PDE, and DRC

Table 6-13n. CDT Data Review Results for Writing in June 2016

Grade/Course	Number of Items Field Tested	Number Flagged and Examined at Data Review Committee	Percent Flagged and Examined at Data Review Committee	Number Rejected by Data Review Committee	Percent Rejected by Data Review Committee	Number Removed from CDT Item Pools (all sources)*	Percent Removed from CDT Item Pools (all sources)*
6	93	10	10.8%	3	3.2%	3	3.2%
7	93	9	9.7%	1	1.1%	1	1.1%
8	110	13	11.8%	3	2.7%	4	3.6%
Eng. Comp	104	12	11.5%	2	1.9%	2	1.9%

^{*}Data Review Committee, PDE, and DRC

DIFFERENTIAL ITEM FUNCTIONING

Differential item functioning occurs when examinees with the same ability level but different group memberships do not have the same probability of answering an item correctly. This pattern of results may suggest the presence of item bias. As a statistical concept, however, DIF can be differentiated from item sensitivity/bias, which is a content issue that can arise when an item presents negative group stereotypes, uses language that is more familiar to one subpopulation than to another, or is presented in a format that disadvantages certain learning styles. While the source of item sensitivity/bias is often easily recognized by trained judges, DIF may have no clear cause. However, studying how DIF arises and how it presents itself can help to detect and correct for it.

LIMITATIONS OF STATISTICAL DETECTION

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help organize the review so the effort is concentrated on the most problematic cases. Further, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of DIF is an inexact science. There have been a variety of methods proposed for detecting DIF, but no one statistic can be considered either necessary or sufficient. Different methods are more or less successful depending on the situation. No analysis can guarantee that a test is free of bias, but almost any thoughtful analysis will uncover the most flagrant problems.

A fundamental shortcoming of all statistical methods used in DIF evaluation is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two DIF items, any method will locate the problems. If, however, all items on the test show consistent DIF to the disadvantage of a given subpopulation, a statistical analysis of the items will not be able to separate DIF effects from true differences in achievement.

MANTEL-HAENSZEL PROCEDURE OF DIFFERENTIAL ITEM FUNCTIONING

For MC items, the Mantel-Haenszel (MH) procedure (Mantel & Haenszel, 1959) for detecting differential item functioning is a commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. However, it does have significant philosophical overlap with the Rasch model since it uses a test's total score to organize the analysis.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. In these analyses, the focal group was female for gender-based DIF and black for ethnicity-based DIF; reference groups were male and white respectively. The MH statistic for each item is computed from a contingency table. It has two groups (focal and reference) and two outcomes (right or wrong). The ability groups are defined by the test's score distribution for the total examinee population.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups.

For EBSR items, a comparable statistic is computed based on the standardized mean difference (SMD) (Dorans, Schmitt, & Bleistein, 1992), which is computed as the differences in mean scores for the focal and reference groups if both groups had the same score distribution.

To assist the review committees in interpreting the analyses, the items are assigned a severity code based on the magnitude of the DIF statistic. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and possibly rejected from the eligible item pool. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

RESULTS AND OBSERVATIONS

Counts of the number of items field tested from each content area and grade/course that were assigned to each severity code are shown in Table 6–14. Some field-test items are classified as N/A (not applicable) because the number of students in either the reference or focal groups who took the item was insufficient for analysis. Where there are sufficient data to run DIF analyses, relatively few items had B or C DIF for the Male/Female or White/Black reference and focal groups.

Table 6-14a. DIF Summary for Mathematics in August 2010

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*	White/Black A+	White/Black A-	White/Black B+	White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	86	49	22	12	1	1	1	0	25	44	3	12	0	2	0
4	86	40	31	7	5	0	3	0	31	33	3	10	0	3	6
5	85	42	36	5	2	0	0	0	19	54	2	10	0	0	0
6	259	121	112	14	8	3	1	0	79	143	8	27	0	2	0
7	258	109	112	18	9	4	6	0	88	124	13	20	0	2	11
8	257	101	104	31	15	5	1	0	62	65	7	14	0	0	109
11	149	53	75	4	11	0	6	0	20	41	1	8	0	1	78
Algebra I	256	122	120	7	6	1	0	0	107	110	9	11	1	3	15
Geometry	257	115	123	7	8	1	3	0	93	109	6	15	1	2	31
Algebra II	256	124	115	6	9	0	2	0	58	89	4	14	2	4	85

N/A* Items with insufficient counts for DIF analysis

Table 6-14b. DIF Summary for Reading in January 2011

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-		White/Black A+	White/Black A-	White/Black B+	White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	86	41	34	5	6	0	0	0	26	31	2	6	0	0	21
4	87	47	37	1	1	0	1	0	21	45	1	7	1	0	12
5	86	47	27	9	2	1	0	0	28	45	4	7	1	1	0
6	210	103	87	7	10	0	3	0	72	100	7	25	1	5	0
7	192	90	78	9	11	2	2	0	69	68	4	11	1	2	37
8	192	109	67	10	6	0	0	0	22	34	2	6	0	1	127
Literature	348	147	146	21	25	3	6	0	5	5	0	0	0	0	338

N/A* Items with insufficient counts for DIF analysis

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6-14c. DIF Summary for Science in January 2011

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*	White/Black A+	White/Black A-	White/Black B+	White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	91	47	41	1	2	0	0	0	20	29	2	4	0	3	33
4	123	55	53	6	5	3	1	0	15	22	1	5	0	1	79
5	102	48	45	4	2	2	1	0	25	36	3	4	0	0	34
6	178	80	84	4	7	1	2	0	10	11	1	1	0	0	155
7	327	123	143	28	27	2	4	0	58	56	2	15	0	0	196
8	377	155	154	28	32	3	5	0	5	6	0	0	0	1	365
11	115	47	49	4	12	1	2	0	0	0	0	0	0	0	115
Biology	390	154	183	22	23	2	6	0	4	6	0	0	0	0	380
Chemistry	335	143	148	17	21	2	4	0	6	4	2	0	0	0	323

N/A* Items with insufficient counts for DIF analysis

Table 6-14d. DIF Summary for Writing in August 2011

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*	White/Black A+	White/Black A-	White/Black B+	White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	140	71	59	4	4	1	1	0	24	44	3	4	0	0	65
4	149	69	67	7	5	1	0	0	15	26	3	2	0	0	103
5	165	78	62	15	7	3	0	0	12	14	1	2	0	1	135
6	193	94	82	8	7	1	1	0	53	67	4	12	0	4	53
7	176	73	81	16	3	3	0	0	11	20	1	3	0	0	141
8	195	95	81	10	3	3	3	0	4	3	0	2	0	1	185
Eng Comp	365	157	155	29	18	4	2	0	3	5	1	0	0	1	355

N/A* Items with insufficient counts for DIF analysis

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6–14e. DIF Summary for Mathematics in July 2013

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*	White/Black A+	White/Black A-	White/Black B+	White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	56	0	0	0	0	0	0	56	0	0	0	0	0	0	56
4	67	0	0	0	0	0	0	67	0	0	0	0	0	0	67
5	41	0	0	0	0	0	0	41	0	0	0	0	0	0	41
6	156	67	65	9	14	1	0	0	2	1	0	2	0	0	151
7	73	37	32	2	1	0	1	0	13	16	1	4	0	0	39
8	157	72	63	8	12	2	0	0	2	5	0	1	0	0	149

N/A* Items with insufficient counts for DIF analysis or those that were re-field tested in fall 2013.

Table 6–14f. DIF Summary for Reading in July 2013

Grade/ Course	Number of Field-test items		Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-			White/Black A-		White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	58	0	0	0	0	0	0	58	0	0	0	0	0	0	58
4	71	0	0	0	0	0	0	71	0	0	0	0	0	0	71
5	60	0	0	0	0	0	0	60	0	0	0	0	0	0	60
6	56	29	21	4	2	0	0	0	4	6	0	2	0	0	44
7	58	29	21	4	3	1	0	0	11	34	1	3	0	0	9
8	57	34	20	2	1	0	0	0	13	38	0	5	0	1	0

N/A* Items with insufficient counts for DIF analysis or those that were re-field tested in fall 2013.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6-14g. DIF Summary for Mathematics in January 2014

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*		White/Black A-		White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
K	60	31	19	6	3	1	0	0	6	14	1	5	0	2	32
1	90	40	38	8	4	0	0	0	18	25	0	5	0	0	42
2	130	47	56	7	16	1	3	0	24	32	3	4	0	1	66
3	235	101	101	11	15	4	3	0	28	41	2	5	1	1	157
4	248	105	110	16	14	2	1	0	37	44	7	11	0	2	147
5	221	108	84	13	12	2	2	0	31	41	3	8	0	1	137

N/A* Items with insufficient counts for DIF analysis or those that were re-field tested in fall 2013.

Table 6-14h. DIF Summary for Reading in January 2014

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*		White/Black A-		White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
K	84	50	21	9	2	2	0	0	9	10	0	3	0	0	62
1	98	57	31	6	3	1	0	0	7	11	0	0	0	0	80
2	98	47	43	3	4	0	1	0	5	13	0	2	0	0	78
3	178	81	75	8	10	3	1	0	54	69	5	11	0	1	38
4	189	93	78	12	6	0	0	0	40	54	2	7	0	2	84
5	134	75	49	6	2	0	2	0	23	53	1	6	0	2	49

N/A* Items with insufficient counts for DIF analysis.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6-14i. DIF Summary for Science in January 2014

Grade/ Course			Male/ Female A-	Male/ Female B+	Male/ Female B-		Male/ Female C-	Female				White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
	items							N/A*							
K-2	280	130	108	8	13	1	0	20	0	0	0	0	0	0	280
3	155	69	70	9	4	2	1	0	3	2	0	0	0	0	150
4	213	94	93	12	12	1	1	0	0	0	0	0	0	0	213
5	152	58	61	6	8	0	0	19	1	0	0	0	0	0	151

N/A* Items with insufficient counts for DIF analysis.

Table 6-14j. DIF Summary for Writing in January 2014

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-	Male/ Female N/A*	White/Black A+	White/Black A-		White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
K	44	20	22	2	0	0	0	0	0	0	0	0	0	0	44
1	118	71	42	2	3	0	0	0	0	0	0	0	0	0	118
2	117	56	49	6	5	1	0	0	0	0	0	0	0	0	117
3	60	33	22	3	1	0	1	0	12	17	4	7	0	0	20
4	60	24	29	4	1	2	0	0	20	14	0	6	0	0	20
5	71	40	22	5	3	1	0	0	0	0	0	0	0	0	71

N/A* Items with insufficient counts for DIF analysis.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white)

Table 6-14k. DIF Summary for Mathematics in June 2016

Grade/ Course	Number of Field-test items		Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-			White/Black A-		White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
6	122	74	48	0	0	0	0	0	48	69	0	3	0	2	0
7	177	74	82	5	9	3	3	1	46	105	1	15	0	6	4
8	151	63	76	4	4	1	2	1	49	55	6	11	0	3	27
Algebra I	150	82	65	1	1	0	0	1	50	96	0	3	0	0	1

N/A* Items with insufficient counts for DIF analysis or those that were re-field tested in fall 2013.

Table 6-14I. DIF Summary for Reading in June 2016

Grade/ Course	Number of Field-test items	Male/ Female A+	Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-			White/Black A-		White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
3	22	9	10	0	2	0	0	1	2	11	0	3	0	0	6
4	22	8	7	2	0	0	1	4	3	4	1	0	0	0	14
5	22	10	8	0	0	0	0	4	4	7	0	1	0	0	10
6	126	63	56	3	0	0	1	3	42	75	0	5	0	1	3
7	126	81	37	7	1	0	0	0	48	71	0	7	0	0	0
8	126	68	52	3	1	0	0	2	44	75	0	5	0	0	2
Literature	126	68	51	5	1	0	0	1	41	82	0	2	0	0	1

N/A* Items with insufficient counts for DIF analysis.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6–14m. DIF Summary for Science in June 2016

Grade/ Course	Number of Field-test		Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-					White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
	items							N/A*							
6	72	37	31	2	2	0	0	0	19	30	2	6	0	0	15
7	159	75	67	5	10	0	2	0	31	54	2	13	0	1	58
8	238	106	106	11	8	4	3	0	36	69	4	17	0	0	112
Biology	136	64	70	1	1	0	0	0	34	101	0	1	0	0	0

N/A* Items with insufficient counts for DIF analysis.

Table 6-14n. DIF Summary for Writing in June 2016

Grade/ Course	Number of Field-test items		Male/ Female A-	Male/ Female B+	Male/ Female B-	Male/ Female C+	Male/ Female C-				White/Black B+	White/Black B-	White/Black C+	White/Black C-	White/Black N/A*
6	93	53	34	2	4	0	0	0	26	27	2	11	0	0	27
7	93	48	38	2	3	2	0	0	6	13	1	3	0	0	70
8	110	66	38	3	1	1	1	0	3	6	0	2	0	0	99
Eng Comp	104	50	40	9	3	1	1	0	0	0	0	0	0	0	104

N/A* Items with insufficient counts for DIF analysis.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

CHAPTER SEVEN: CLASSICAL ITEM STATISTICS

This chapter provides an overview of the two most familiar item-level statistics obtained from classical (traditional) item analysis: item difficulty and item discrimination. The following results pertain to all items field tested in the stand-alone and embedded field-test events. Other statistics such as Rasch item statistics are discussed in Chapter Eight.

ITEM-LEVEL STATISTICS

Appendix B provides classical item statistics for all items in mathematics, reading, science, and writing. Results are organized by content area, field-test event, and item type (multiple-choice and evidence-based selected-response). These statistics represent the item characteristics most often used to determine whether an item functioned properly and/or how a group of students performed on a particular item. The item statistics in Appendix B include:

- Number of students taking the item (denoted as N)
- Indicators of item difficulty (denoted as PVal)
 - p-values for multiple-choice (MC) items
 - item mean divided by maximum possible item score for evidence-based selected-response (EBSR) items
- Proportions by response option or score point
 - proportions of students who chose each response option for MC items (denoted as P(A), P(B), P(C), P(D))
 - proportions of students who gained each score point for EBSR items (denoted as P(0), P(1), P(2), and/or P(3))
 - Proportions of students who did not respond to an item (denoted as P(-))
- Indicators of item discrimination
 - item-total correlations (denoted as PtBis)
 - point-biserial correlation for each response option for MC items (denoted as PT(A), PT(B), PT(C), and PT(D))
 - o point-biserial correlation for each score point for EBSR items (denoted as PT(0), PT(1), PT(2), and PT(3))

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\overline{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (n). For MC items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0/1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. So, this is also the *proportion correct* for the item, or as it is better known, the p-value. In theory, p-values can range from 0.00^1 to 1.00 on the proportion-correct scale. For example, if an item has a p-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item is relatively easy and/or the students who attempted the item are relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

¹ For multiple-choice (MC) items with four response options, pure random guessing would lead to an expected p-value of 0.25.

For EBSR items, mean scores can range from the minimum possible score of zero to the maximum possible score of either two or three depending upon the item. A *pseudo p*-value is provided for an EBSR item by dividing the mean item score by the maximum possible item score.

The minimum and maximum extremes of the difficulty scale are virtually never seen in applied practice. However, understanding what those values are helps illustrate that relatively lower values correspond to more difficult items and that relatively higher values correspond to easier items. (Because of this, some assert that this index would be better referred to as the item's *easiness*.)

Item difficulty is an important consideration for the Classroom Diagnostic Tools (CDT) because it is a computer adaptive test. The item selection routine selects items based on student performance during the test. While very easy or very difficult items may not be appropriate for many students, they are needed in the CDT item pools to ensure that the item selection routine can find appropriate items for students at various levels.

Utilizing the proportion of students who chose each MC option can be helpful for verifying keys. For example, if a large proportion of students chose a distractor instead of the key answer, it may, but not always, indicate the key is not correct.

ITEM DISCRIMINATION

At the most general level, item discrimination² indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the CDT overall) would be more likely to answer any given CDT item correctly, while students with low ability (i.e., those who perform poorly on the CDT overall) would be more likely to answer the same item incorrectly. For the CDT, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. The correlation coefficient can range from -1.0 to +1.0. If the aforementioned expectation is met (high-scoring students tend to get the item right while low-scoring students do not), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high- and low-ability students.

Item total correlation for each option is another indicator of an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the CDT overall) would be less likely to choose any distractors, while students with low ability (i.e., those who perform poorly on the CDT overall) would be more likely to choose a distractor. In other words, the item total correlations for the distractors are expected to be negative.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.³ In other words, this indicates that students who did well on the total test tended to do well on the item, as well. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., they have extreme *p*-values) can have reduced power to discriminate, and, thus, can have lower correlations.

Discrimination is an important consideration for the operational CDT because the use of more discriminating items on a test is associated with more precise score estimates (i.e., there will be smaller confidence intervals around the scores).

OBSERVATIONS AND INTERPRETATIONS

Table 7–1 provides the mean p-values and point-biserial correlations for the CDT item pools in each content area. The mean p-value ranged from about 0.354 to 0.824. The mean point-biserial correlations ranged from 0.204 to 0.462.

² As noted earlier, the discrimination index for dichotomous MC items is typically referred to as the *point-biserial correlation* coefficient. For EBSR items, the *item-test correlation* is sometimes used.

³ It is legitimate to view the point-biserial correlation as a standardized mean. A positive value indicates students who chose that response had a higher mean score than the average student; a negative value indicates students who chose that response had a lower-than-average mean score.

It is difficult to make global conclusions about overall quality from these item statistics alone. With that caveat in mind, the results presented in this chapter indicate that the CDT item pools contain items within expected and acceptable ranges of item difficulty and discrimination.

Table 7-1. Mean Pvalue and Point-Biserial

Meeting Date	Content Area	Grade/Course	Number of Items Field Tested	Mean <i>P</i> -value	Mean Point- Biserial
Aug 2010	Mathematics	3	86	0.824	0.415
Aug 2010	Mathematics	4	86	0.737	0.414
Aug 2010	Mathematics	5	85	0.717	0.439
Aug 2010	Mathematics	6	259	0.684	0.413
Aug 2010	Mathematics	7	258	0.575	0.432
Aug 2010	Mathematics	8	257	0.497	0.361
Aug 2010	Mathematics	11	149	0.521	0.339
Aug 2010	Mathematics	Algebra I	256	0.411	0.317
Aug 2010	Mathematics	Geometry	257	0.439	0.349
Aug 2010	Mathematics	Algebra II	256	0.419	0.369
Jan 2011	Reading	3	86	0.595	0.437
Jan 2011	Reading	4	87	0.665	0.440
Jan 2011	Reading	5	86	0.666	0.433
Jan 2011	Reading	6	210	0.607	0.423
Jan 2011	Reading	7	192	0.679	0.395
Jan 2011	Reading	8	192	0.623	0.404
Jan 2011	Reading	Literature	348	0.568	0.408
Jan 2011	Science	3	91	0.637	0.371
Jan 2011	Science	4	123	0.602	0.348
Jan 2011	Science	5	102	0.482	0.335
Jan 2011	Science	6	178	0.503	0.322
Jan 2011	Science	7	327	0.486	0.322
Jan 2011	Science	8	377	0.504	0.335
Jan 2011	Science	11	115	0.381	0.238
Jan 2011	Science	Biology	390	0.420	0.294
Jan 2011	Science	Chemistry	335	0.355	0.255
Aug 2011	Writing	3	140	0.584	0.392
Aug 2011	Writing	4	149	0.566	0.372
Aug 2011	Writing	5	165	0.566	0.380
Aug 2011	Writing	6	193	0.556	0.369
Aug 2011	Writing	7	176	0.550	0.346
Aug 2011	Writing	8	195	0.538	0.332
Aug 2011	Writing	English Composition	365	0.514	0.357
July 2013	Mathematics	6	156	0.448	0.290

Table 7–1 (continued). Mean P-value and Point-Biserial

Meeting Date	Content Area	Grade/Course	Number of Items Field Tested	Mean <i>P</i> -value	Mean Point- Biserial
July 2013	Mathematics	7	73	0.431	0.257
July 2013	Mathematics	8	157	0.354	0.204
July 2013	Reading	6	56	0.585	0.351
July 2013	Reading	7	58	0.545	0.339
July 2013	Reading	8	57	0.577	0.358
Jan 2014	Mathematics	К	60	0.798	0.408
Jan 2014	Mathematics	1	90	0.801	0.426
Jan 2014	Mathematics	2	130	0.695	0.437
Jan 2014	Mathematics	3	235	0.596	0.413
Jan 2014	Mathematics	4	248	0.595	0.413
Jan 2014	Mathematics	5	221	0.508	0.326
Jan 2014	Reading	К	84	0.734	0.426
Jan 2014	Reading	1	98	0.575	0.415
Jan 2014	Reading	2	98	0.506	0.441
Jan 2014	Reading	3	178	0.546	0.398
Jan 2014	Reading	4	189	0.577	0.413
Jan 2014	Reading	5	134	0.566	0.364
Jan 2014	Science	K-2 span	280	0.619	0.404
Jan 2014	Science	3	155	0.641	0.391
Jan 2014	Science	4	213	0.570	0.362
Jan 2014	Science	5	152	0.424	0.240
Jan 2014	Writing	К	44	0.823	0.462
Jan 2014	Writing	1	118	0.729	0.444
Jan 2014	Writing	2	117	0.642	0.444
Jan 2014	Writing	3	60	0.626	0.415
Jan 2014	Writing	4	60	0.642	0.398
Jan 2014	Writing	5	71	0.550	0.326
June 2016	Mathematics	6	122	0.473	0.298
June 2016	Mathematics	7	177	0.456	0.286
June 2016	Mathematics	8	151	0.396	0.232
June 2016	Mathematics	Algebra I	150	0.414	0.228
June 2016	Reading	3	22	0.467	0.430
June 2016	Reading	4	22	0.568	0.421
June 2016	Reading	5	22	0.603	0.394
June 2016	Reading	6	126	0.535	0.360
June 2016	Reading	7	126	0.557	0.397
June 2016	Reading	8	126	0.577	0.398

Table 7–1 (continued). Mean P-value and Point-Biserial

Meeting Date	Content Area	Grade/Course	Number of Items Field Tested	Mean <i>P</i> -value	Mean Point- Biserial
June 2016	Reading	Literature	126	0.532	0.339
June 2016	Science	6	72	0.431	0.233
June 2016	Science	7	159	0.446	0.231
June 2016	Science	8	238	0.447	0.236
June 2016	Science	Biology	136	0.439	0.246
June 2016	Writing	6	93	0.531	0.327
June 2016	Writing	7	93	0.522	0.322
June 2016	Writing	8	110	0.504	0.308
June 2016	Writing	English Composition	104	0.485	0.298

CHAPTER EIGHT: RASCH ITEM CALIBRATION

The particular item response theory (IRT) model used for the Classroom Diagnostic Tools (CDT) is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs and have been the methodology used to calibrate the Pennsylvania System of School Assessment (PSSA) items and Keystone Exam items. Consequently, this model was chosen to be used for the CDT. IRT has several advantages over classical test theory, so it has become the standard procedure for analyzing item response data in large-scale assessments. However, IRT models make a number of strong assumptions related to dimensionality, local independence, and model-data fit. Resulting inferences derived from any application of IRT rest strongly on the degree to which the underlying assumptions are met.

This chapter outlines the procedures used for calibrating the CDT items. Generally, item calibration is the process of assigning a difficulty-parameter estimate to each item so that they are placed onto a common scale. This chapter briefly introduces the Rasch model and reports the results from evaluations of the adequacy of the Rasch assumptions. See Chapter Nine for a description of the common scale across grades and courses within a content area and for summaries of the Rasch item statistics for the CDT item pools.

DESCRIPTION OF THE RASCH MODEL

The Rasch partial credit model (RPCM) (Wright & Masters, 1982) was used to calibrate CDT items because both multiple-choice (MC) and evidence-based selected-response (EBSR) items were part of the item pools. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous EBSR items. Under the RPCM, for a given item i with m_i score categories, the probability of person n scoring x ($x = 0, 1, 2, ..., m_i$) is given by:

$$P_{ni}(X = x) = \frac{\exp \sum_{j=0}^{x} (\theta_n - D_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^{k} (\theta_n - D_{ij})}, x = 0, 1, ..., m_i$$

where θ_n represents a student's proficiency (ability) level, and D_{ij} is the step difficulty of the j^{th} step on item i. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person n getting item i correct as follows:

$$P_{ni}(X=1) = \frac{\exp(\theta_n - D_{ij})}{1 + \exp(\theta_n - D_{ij})}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, it also provides person ability estimates that are independent of the items employed in the assessment, and, conversely, estimates item difficulty independently of the sample of examinees.

SOFTWARE AND ESTIMATION ALGORITHM

Item calibration was implemented via the WINSTEPS 3.69 computer program (Linacre, 2009). The unconditional, joint maximum likelihood (UCON) estimation procedure estimates the person parameters (i.e., ability) simultaneously with the item parameters (i.e., difficulty).

CHECKING RASCH ASSUMPTIONS

Because the Rasch model was the basis of all calibration, scoring, and scaling analyses associated with the CDT, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met and how well the model fits the test data. Therefore, it is important to check these assumptions. This section evaluates the dimensionality of the data, local item independence, and model-data fit at the item level. Though a variety of methods are available for assessing these issues, the Rasch analyses and criteria available from WINSTEPS were used here.

UNIDIMENSIONALITY

Rasch models assume that one dominant dimension determines the difference in students' performances. WINSTEPS provides results from a principal components analysis (PCA) that can be used to assess the unidimensionality assumption. Different from standard applications of PCA, WINSTEPS conducts its PCA on the response residuals, not the original observations. That is, the primary dimension from the Rasch model is removed first and then the residual variance is analyzed. The purpose of the analysis is to verify whether any other dominant components exist among the residuals (i.e., they account for a practically significant amount of residual variance). If any other dimensions are found, the unidimensionality assumption would be violated.

WINSTEPS provides three PCA residuals: raw, standardized, and logit. All three should yield similar results. The mixed residual setting was used for the PCA because previous research has demonstrated that raw residuals (PRCOMP=R) give a more realistic estimate of explained variance than do standardized residuals (PRCOMP=S), and standardized residuals are better for decomposing the unexplained variance into contrasts (Linacre, 2009).

Table 8–1 presents the PCA results for the CDT Mathematics item pool. The results include the total variance, variance explained by the model, unexplained total variance, and unexplained variance explained by the first factor (both eigenvalue units and percentage values are shown in the table). In addition, the modeled column provides variance components that would be explained if the data complied with the Rasch definition of unidimensionality.

As can been seen from Table 8–1, the primary dimension in the Rasch model explained between 21 and 63 percent of the total variances across the grades and courses. The empirical and model-based percentages were close, suggesting that the estimation of a primary Rasch dimension was successful. The unexplained variances were between 38 and 79 percent. This includes the Rasch-predicted randomness and any departures in the data from the Rasch model (e.g., departure from unidimensionality).

The most important variance for evaluating dimensionality is in the row named "unexplained variance explained by 1st factor." The eigenvalue of unexplained total variance equals the total number of items, since PCA was conducted with residuals. The eigenvalues of the first factor in the residual (again, this is the second dimension beyond the first Rasch model dimension in WINSTEPS PCA) were between 0.3 and 0.9 percent. Overall, WINSTEPS PCA suggests that there is one clearly dominant dimension for the CDT mathematics item pool.

Table 8-1. Results from PCA of Residuals in WINSTEPS for Mathematics

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Aug 2010	3	Total variance in observations	208.5	100.0%	100.0%
Aug 2010	3	Variance explained by model	122.5	58.7%	58.5%
Aug 2010	3	Unexplained variance (total)	86	41.3%	41.5%
Aug 2010	3	Unexplained variance explained by 1st factor	1.6	0.8%	
Aug 2010	4	Total variance in observations	167.8	100.0%	100.0%
Aug 2010	4	Variance explained by model	81.8	48.7%	48.1%
Aug 2010	4	Unexplained variance (total)	86	51.3%	51.9%
Aug 2010	4	Unexplained variance explained by 1st factor	1.5	0.9%	
Aug 2010	5	Total variance in observations	177.3	100.0%	100.0%
Aug 2010	5	Variance explained by model	92.3	52.1%	52.9%
Aug 2010	5	Unexplained variance (total)	85	47.9%	47.1%
Aug 2010	5	Unexplained variance explained by 1st factor	1.5	0.9%	
Aug 2010	6	Total variance in observations	606.2	100.0%	100.0%
Aug 2010	6	Variance explained by model	347.2	57.3%	58.0%
Aug 2010	6	Unexplained variance (total)	259	42.7%	42.0%
Aug 2010	6	Unexplained variance explained by 1st factor	2.0	0.3%	
Aug 2010	7	Total variance in observations	529.8	100.0%	100.0%
Aug 2010	7	Variance explained by model	271.8	51.3%	52.3%
Aug 2010	7	Unexplained variance (total)	258	48.7%	47.7%
Aug 2010	7	Unexplained variance explained by 1st factor	2.2	0.4%	
Aug 2010	8	Total variance in observations	476.9	100.0%	100.0%
Aug 2010	8	Variance explained by model	219.9	46.1%	47.3%
Aug 2010	8	Unexplained variance (total)	257	53.9%	52.7%
Aug 2010	8	Unexplained variance explained by 1st factor	2.1	0.4%	
Aug 2010	Algebra I*	Total variance in observations	365.4	100.0%	100.0%
Aug 2010	Algebra I*	Variance explained by model	109.4	29.9%	30.6%
Aug 2010	Algebra I*	Unexplained variance (total)	256	70.1%	69.4%
Aug 2010	Algebra I*	Unexplained variance explained by 1st factor	1.9	0.5%	
Aug 2010	Geometry*	Total variance in observations	408.9	100.0%	100.0%
Aug 2010	Geometry*	Variance explained by model	151.9	37.2%	38.3%
Aug 2010	Geometry*	Unexplained variance (total)	257	62.8%	61.7%
Aug 2010	Geometry*	Unexplained variance explained by 1st factor	1.9	0.5%	

^{*}Grade 11 items were tested on grade 8, Algebra I, Geometry, and Algebra II forms.

Table 8-1 (continued). Results from PCA of Residuals in WINSTEPS for Mathematics

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Aug 2010	Algebra II*	Total variance in observations	464.8	100.0%	100.0%
Aug 2010	Algebra II*	Variance explained by model	208.8	44.9%	46.1%
Aug 2010	Algebra II*	Unexplained variance (total)	256	55.1%	53.9%
Aug 2010	Algebra II*	Unexplained variance explained by 1st factor	2.0	0.4%	
July 2013	6	Total variance in observations	323.3	100.0%	100.0%
July 2013	6	Variance explained by model	167.3	51.7%	48.4%
July 2013	6	Unexplained variance (total)	156	48.3%	51.6%
July 2013	6	Unexplained variance explained by 1st factor	1.3	0.4%	
July 2013	7	Total variance in observations	148.3	100.0%	100.0%
July 2013	7	Variance explained by model	75.3	50.8%	48.7%
July 2013	7	Unexplained variance (total)	73	49.2%	51.3%
July 2013	7	Unexplained variance explained by 1st factor	1.1	0.8%	
July 2013	8	Total variance in observations	243.3	100.0%	100.0%
July 2013	8	Variance explained by model	86.3	35.5%	33.0%
July 2013	8	Unexplained variance (total)	157	64.5%	67.0%
July 2013	8	Unexplained variance explained by 1st factor	1.3	0.6%	
Jan 2014	K-2**	Total variance in observations	728.0	100.0%	100.0%
Jan 2014	K-2**	Variance explained by model	448.0	61.5%	60.5%
Jan 2014	K-2**	Unexplained variance (total)	280	38.5%	39.5%
Jan 2014	K-2**	Unexplained variance explained by 1st factor	1.8	0.3%	
Jan 2014	3	Total variance in observations	564.0	100.0%	100.0%
Jan 2014	3	Variance explained by model	329.0	58.3%	59.4%
Jan 2014	3	Unexplained variance (total)	235	41.7%	40.6%
Jan 2014	3	Unexplained variance explained by 1st factor	1.9	0.3%	
Jan 2014	4	Total variance in observations	646.9	100.0%	100.0%
Jan 2014	4	Variance explained by model	398.9	61.7%	62.5%
Jan 2014	4	Unexplained variance (total)	248	38.3%	37.5%
Jan 2014	4	Unexplained variance explained by 1st factor	1.9	0.3%	
Jan 2014	5	Total variance in observations	417.9	100.0%	100.0%
Jan 2014	5	Variance explained by model	196.9	47.1%	43.1%
Jan 2014	5	Unexplained variance (total)	221	52.9%	56.9%
Jan 2014	5	Unexplained variance explained by 1st factor	1.2	0.3%	
June 2016	6	Total variance in observations	212.5	100.0%	100.0%
June 2016	6	Variance explained by model	94.5	44.5%	39.8%
June 2016	6	Unexplained variance (total)	118	55.5%	60.2%
June 2016	6	Unexplained variance explained by 1st factor	1.1	0.5%	

^{*}Grade 11 items were tested on grade 8, Algebra I, Geometry, and Algebra II forms.
**Items in kindergarten through grade 2 were co-mingled on forms taken by students in grade 3.

Table 8–1 (continued). Results from PCA of Residuals in WINSTEPS for Mathematics.

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
June 2016	7	Total variance in observations	267.9	100.0%	100.0%
June 2016	7	Variance explained by model	101.9	38.0%	32.0%
June 2016	7	Unexplained variance (total)	166	62.0%	68.0%
June 2016	7	Unexplained variance explained by 1st factor	1.1	0.4%	
June 2016	8	Total variance in observations	197.5	100.0%	100.0%
June 2016	8	Variance explained by model	50.5	25.6%	20.9%
June 2016	8	Unexplained variance (total)	147	74.4%	79.1%
June 2016	8	Unexplained variance explained by 1st factor	1.1	0.6%	
June 2016	Algebra I	Total variance in observations	243.8	100.0%	100.0%
June 2016	Algebra I	Variance explained by model	95.8	39.3%	36.8%
June 2016	Algebra I	Unexplained variance (total)	148	60.7%	63.2%
June 2016	Algebra I	Unexplained variance explained by 1st factor	1.1	0.4%	

Table 8–2 presents the PCA results for the CDT reading item pool. The primary dimension in the Rasch model explained between 37 and 58 percent of the total variances across the grades and courses. The second dimension (the row named "unexplained variance explained by 1st factor") accounted for between 0.3 and 3.2 percent of the total variance in observations. These results suggest that the CDT reading item pool essentially measures a single dominant dimension.

Table 8-2. Results from PCA of Residuals in WINSTEPS for Reading

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Jan 2011	3	Total variance in observations	179.8	100.0%	100.0%
Jan 2011	3	Variance explained by model	93.8	52.2%	51.9%
Jan 2011	3	Unexplained variance (total)	86	47.8%	48.1%
Jan 2011	3	Unexplained variance explained by 1st factor	1.7	0.9%	
Jan 2011	4	Total variance in observations	157.4	100.0%	100.0%
Jan 2011	4	Variance explained by model	70.4	44.7%	43.9%
Jan 2011	4	Unexplained variance (total)	87	55.3%	56.1%
Jan 2011	4	Unexplained variance explained by 1st factor	1.6	1.0%	
Jan 2011	5	Total variance in observations	171.5	100.0%	100.0%
Jan 2011	5	Variance explained by model	85.5	49.8%	50.5%
Jan 2011	5	Unexplained variance (total)	86	50.2%	49.5%
Jan 2011	5	Unexplained variance explained by 1st factor	1.7	1.0%	
Jan 2011	6	Total variance in observations	442.8	100.0%	100.0%
Jan 2011	6	Variance explained by model	232.8	52.6%	53.5%
Jan 2011	6	Unexplained variance (total)	210	47.4%	46.5%
Jan 2011	6	Unexplained variance explained by 1st factor	2.3	0.5%	
Jan 2011	7	Total variance in observations	364.4	100.0%	100.0%
Jan 2011	7	Variance explained by model	172.4	47.3%	46.8%
Jan 2011	7	Unexplained variance (total)	192	52.7%	53.2%

Table 8–2 (continued). Results from PCA of Residuals in WINSTEPS for Reading

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Jan 2011	7	Unexplained variance explained by 1st factor	2.1	0.6%	
Jan 2011	8	Total variance in observations	345.5	100.0%	100.0%
Jan 2011	8	Variance explained by model	153.5	44.4%	44.5%
Jan 2011	8	Unexplained variance (total)	192	55.6%	55.5%
Jan 2011	8	Unexplained variance explained by 1st factor	2.0	0.6%	
Jan 2011	Literature	Total variance in observations	699.1	100.0%	100.0%
Jan 2011	Literature	Variance explained by model	351.1	50.2%	50.2%
Jan 2011	Literature	Unexplained variance (total)	348	49.8%	49.8%
Jan 2011	Literature	Unexplained variance explained by 1st factor	2.2	0.3%	
July 2013	6	Total variance in observations	111.7	100.0%	100.0%
July 2013	6	Variance explained by model	55.7	49.8%	47.3%
July 2013	6	Unexplained variance (total)	56	50.2%	52.7%
July 2013	6	Unexplained variance explained by 1st factor	1.5	1.3%	
July 2013	7	Total variance in observations	103.4	100.0%	100.0%
July 2013	7	Variance explained by model	45.4	43.9%	42.2%
July 2013	7	Unexplained variance (total)	58	56.1%	57.8%
July 2013	7	Unexplained variance explained by 1st factor	1.4	1.4%	
July 2013	8	Total variance in observations	105.4	100.0%	100.0%
July 2013	8	Variance explained by model	48.4	45.9%	44.8%
July 2013	8	Unexplained variance (total)	57	54.1%	55.2%
July 2013	8	Unexplained variance explained by 1st factor	1.4	1.3%	
Jan 2014	K-2*	Total variance in observations	656.5	100.0%	100.0%
Jan 2014	K-2*	Variance explained by model	376.5	57.4%	57.6%
Jan 2014	K-2*	Unexplained variance (total)	280	42.6%	42.4%
Jan 2014	K-2*	Unexplained variance explained by 1st factor	1.9	0.3%	
Jan 2014	3	Total variance in observations	391.5	100.0%	100.0%
Jan 2014	3	Variance explained by model	213.5	54.5%	55.6%
Jan 2014	3	Unexplained variance (total)	178	45.5%	44.4%
Jan 2014	3	Unexplained variance explained by 1st factor	1.9	0.5%	
Jan 2014	4	Total variance in observations	434.7	100.0%	100.0%
Jan 2014	4	Variance explained by model	245.7	56.5%	57.1%
Jan 2014	4	Unexplained variance (total)	189	43.5%	42.9%
Jan 2014	4	Unexplained variance explained by 1st factor	1.7	0.4%	
Jan 2014	4	Total variance in observations	434.7	100.0%	100.0%
Jan 2014	4	Variance explained by model	245.7	56.5%	57.1%
Jan 2014	4	Unexplained variance (total)	189	43.5%	42.9%
Jan 2014	4	Unexplained variance explained by 1st factor	1.7	0.4%	

Table 8-2 (continued). Results from PCA of Residuals in WINSTEPS for Reading

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
June 2016	3	Total variance in observations	53.5	100.0%	100.0%
June 2016	3	Variance explained by model	31.5	58.8%	41.7%
June 2016	3	Unexplained variance (total)	22	41.2%	58.3%
June 2016	3	Unexplained variance explained by 1st factor	1.1	2.1%	
June 2016	4	Total variance in observations	54.3	100.0%	100.0%
June 2016	4	Variance explained by model	33.3	61.4%	37.4%
June 2016	4	Unexplained variance (total)	21	38.6%	62.6%
June 2016	4	Unexplained variance explained by 1st factor	1.7	3.2%	
June 2016	5	Total variance in observations	57.5	100.0%	100.0%
June 2016	5	Variance explained by model	36.5	63.5%	43.5%
June 2016	5	Unexplained variance (total)	21	36.5%	56.6%
June 2016	5	Unexplained variance explained by 1st factor	1.2	2.1%	
June 2016	6	Total variance in observations	232.3	100.0%	100.0%
June 2016	6	Variance explained by model	110.3	47.5%	45.1%
June 2016	6	Unexplained variance (total)	122	52.5%	54.9%
June 2016	6	Unexplained variance explained by 1st factor	1.6	0.7%	
June 2016	7	Total variance in observations	245.8	100.0%	100.0%
June 2016	7	Variance explained by model	120.8	49.1%	47.2%
June 2016	7	Unexplained variance (total)	125	50.9%	52.8%
June 2016	7	Unexplained variance explained by 1st factor	1.6	0.6%	
June 2016	8	Total variance in observations	255.5	100.0%	100.0%
June 2016	8	Variance explained by model	132.5	51.9%	49.8%
June 2016	8	Unexplained variance (total)	123	48.1%	50.2%
June 2016	8	Unexplained variance explained by 1st factor	1.7	0.7%	
June 2016	Literature	Total variance in observations	206.4	100.0%	100.0%
June 2016	Literature	Variance explained by model	82.4	39.9%	39.0%
June 2016	Literature	Unexplained variance (total)	124	60.1%	61.0%
June 2016	Literature	Unexplained variance explained by 1st factor	1.5	0.7%	

^{*}Items in kindergarten through grade 2 were co-mingled on forms taken by students in grade 3.

Table 8–3 presents the PCA results for the CDT science item pool. The primary dimension in the Rasch model explained between 20 and 68 percent of the total variances across the grades and courses. The second dimension (the row named "unexplained variance explained by 1st factor") accounted for between 0.3 and 1.1 percent of the total variance in observations. These results suggest that the CDT science item pool essentially measures a single dominant dimension.

Table 8-3. Results from PCA of Residuals in WINSTEPS for Science

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Jan 2011	3	Total variance in observations	229.1	100.0%	100.0%
Jan 2011	3	Variance explained by model	138.1	60.3%	60.3%
Jan 2011	3	Unexplained variance (total)	91	39.7%	39.7%
Jan 2011	3	Unexplained variance explained by 1st factor	1.7	0.7%	
Jan 2011	4	Total variance in observations	285.9	100.0%	100.0%
Jan 2011	4	Variance explained by model	162.9	57.0%	56.9%
Jan 2011	4	Unexplained variance (total)	123	43.0%	43.1%
Jan 2011	4	Unexplained variance explained by 1st factor	1.5	0.5%	
Jan 2011	5	Total variance in observations	161.9	100.0%	100.0%
Jan 2011	5	Variance explained by model	59.9	37.0%	37.4%
Jan 2011	5	Unexplained variance (total)	102	63.0%	62.6%
Jan 2011	5	Unexplained variance explained by 1st factor	1.5	0.9%	
Jan 2011	6	Total variance in observations	290.8	100.0%	100.0%
Jan 2011	6	Variance explained by model	112.8	38.8%	39.3%
Jan 2011	6	Unexplained variance (total)	178	61.2%	60.7%
Jan 2011	6	Unexplained variance explained by 1st factor	2.1	0.7%	
Jan 2011	7	Total variance in observations	487.1	100.0%	100.0%
Jan 2011	7	Variance explained by model	160.1	32.9%	33.3%
Jan 2011	7	Unexplained variance (total)	327	67.1%	66.7%
Jan 2011	7	Unexplained variance explained by 1st factor	2.2	0.4%	
Jan 2011	8*	Total variance in observations	658.8	100.0%	100.0%
Jan 2011	8*	Variance explained by model	281.8	42.8%	43.9%
Jan 2011	8*	Unexplained variance (total)	377	57.2%	56.1%
Jan 2011	8*	Unexplained variance explained by 1st factor	1.9	0.3%	
Jan 2011	Biology	Total variance in observations	545.2	100.0%	100.0%
Jan 2011	Biology	Variance explained by model	155.2	28.5%	29.7%
Jan 2011	Biology	Unexplained variance (total)	390	71.5%	70.3%
Jan 2011	Biology	Unexplained variance explained by 1st factor	2.0	0.4%	
Jan 2011	Chemistry	Total variance in observations	418.1	100.0%	100.0%
Jan 2011	Chemistry	Variance explained by model	83.1	19.9%	20.1%
Jan 2011	Chemistry	Unexplained variance (total)	335	80.1%	79.9%
Jan 2011	Chemistry	Unexplained variance explained by 1st factor	2.0	0.5%	<u> </u>

^{*}Grade 11 items were tested on Grade 8 forms.

Table 8–3 (continued). Results from PCA of Residuals in WINSTEPS for Science

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Jan 2014	K-2	Total variance in observations	652.2	100.0%	100.0%
Jan 2014	K-2	Variance explained by model	372.2	57.1%	57.4%
Jan 2014	K-2	Unexplained variance (total)	280	42.9%	42.6%
Jan 2014	K-2	Unexplained variance explained by 1st factor	2.6	0.4%	
Jan 2014	3	Total variance in observations	369.9	100.0%	100.0%
Jan 2014	3	Variance explained by model	214.9	58.1%	57.8%
Jan 2014	3	Unexplained variance (total)	155	41.9%	42.2%
Jan 2014	3	Unexplained variance explained by 1st factor	2.0	0.5%	
Jan 2014	4	Total variance in observations	668.3	100.0%	100.0%
Jan 2014	4	Variance explained by model	455.3	68.1%	68.0%
Jan 2014	4	Unexplained variance (total)	213	31.9%	32.0%
Jan 2014	4	Unexplained variance explained by 1st factor	2.0	0.3%	
Jan 2014	5	Total variance in observations	235.5	100.0%	100.0%
Jan 2014	5	Variance explained by model	83.5	35.5%	34.5%
Jan 2014	5	Unexplained variance (total)	152	64.5%	65.5%
Jan 2014	5	Unexplained variance explained by 1st factor	1.3	0.6%	
June 2016	6	Total variance in observations	99.6	100.0%	100.0%
June 2016	6	Variance explained by model	33.6	33.7%	29.2%
June 2016	6	Unexplained variance (total)	66	66.3%	70.8%
June 2016	6	Unexplained variance explained by 1st factor	1.1	1.1%	
June 2016	7	Total variance in observations	218.9	100.0%	100.0%
June 2016	7	Variance explained by model	65.9	30.1%	24.9%
June 2016	7	Unexplained variance (total)	153	69.9%	75.1%
June 2016	7	Unexplained variance explained by 1st factor	1.1	0.5%	
June 2016	8	Total variance in observations	338.2	100.0%	100.0%
June 2016	8	Variance explained by model	112.2	33.2%	28.2%
June 2016	8	Unexplained variance (total)	226	66.8%	71.8%
June 2016	8	Unexplained variance explained by 1st factor	1.2	0.3%	
June 2016	Biology	Total variance in observations	205.4	100.0%	100.0%
June 2016	Biology	Variance explained by model	70.4	34.3%	32.0%
June 2016	Biology	Unexplained variance (total)	135	65.7%	68.0%
June 2016	Biology	Unexplained variance explained by 1st factor	1.1	0.5%	

Table 8–4 presents the PCA results for the CDT writing item pool. The primary dimension in the Rasch model explained between 22 and 55 percent of the total variances across the grades and courses. The second dimension (the row named "unexplained variance explained by 1st factor") accounted for between 0.3 and 1.4 percent of the total variance in observations. These results suggest that the CDT writing item pool essentially measures a single dominant dimension.

Table 8-4. Results from PCA of Residuals in WINSTEPS for Writing

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Aug 2011	3	Total variance in observations	297.7	100.0%	100.0%
Aug 2011	3	Variance explained by model	157.7	53.0%	55.0%
Aug 2011	3	Unexplained variance (total)	140	47.0%	45.0%
Aug 2011	3	Unexplained variance explained by 1st factor	1.7	0.6%	
Aug 2011	4	Total variance in observations	283.6	100.0%	100.0%
Aug 2011	4	Variance explained by model	134.6	47.5%	49.0%
Aug 2011	4	Unexplained variance (total)	149	52.5%	51.0%
Aug 2011	4	Unexplained variance explained by 1st factor	1.8	0.6%	
Aug 2011	5	Total variance in observations	280.7	100.0%	100.0%
Aug 2011	5	Variance explained by model	115.7	41.2%	42.2%
Aug 2011	5	Unexplained variance (total)	165	58.8%	57.8%
Aug 2011	5	Unexplained variance explained by 1st factor	1.8	0.6%	
Aug 2011	6	Total variance in observations	340.5	100.0%	100.0%
Aug 2011	6	Variance explained by model	147.5	43.3%	44.2%
Aug 2011	6	Unexplained variance (total)	193	56.7%	55.8%
Aug 2011	6	Unexplained variance explained by 1st factor	2.0	0.6%	
Aug 2011	7	Total variance in observations	317.9	100.0%	100.0%
Aug 2011	7	Variance explained by model	141.9	44.6%	45.5%
Aug 2011	7	Unexplained variance (total)	176	55.4%	54.5%
Aug 2011	7	Unexplained variance explained by 1st factor	2.1	0.6%	
Aug 2011	8	Total variance in observations	336.0	100.0%	100.0%
Aug 2011	8	Variance explained by model	141.0	42.0%	42.4%
Aug 2011	8	Unexplained variance (total)	195	58.0%	57.6%
Aug 2011	8	Unexplained variance explained by 1st factor	2.3	0.7%	
Aug 2011	English Composition	Total variance in observations	763.2	100.0%	100.0%
Aug 2011	English Composition	Variance explained by model	398.2	52.2%	53.4%
Aug 2011	English Composition	Unexplained variance (total)	365	47.8%	46.6%
Aug 2011	English Composition	Unexplained variance explained by 1st factor	2.3	0.3%	
Jan 2014	K-2*	Total variance in observations	93.2	100.0%	100.0%
Jan 2014	K-2*	Variance explained by model	49.2	52.8%	39.9%
Jan 2014	K-2*	Unexplained variance (total)	44	47.2%	60.1%
Jan 2014	K-2*	Unexplained variance explained by 1st factor	2.0	2.2%	

^{*}Items in kindergarten through grade 2 were co-mingled on forms taken by students in grade 3.

Table 8–4 (continued). Results from PCA of Residuals in WINSTEPS for Writing

Date	Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Jan 2014	3	Total variance in observations	132.5	100.0%	100.0%
Jan 2014	3	Variance explained by model	72.5	54.7%	54.6%
Jan 2014	3	Unexplained variance (total)	60	45.3%	45.4%
Jan 2014	3	Unexplained variance explained by 1st factor	1.8	1.4%	
Jan 2014	4	Total variance in observations	132.4	100.0%	100.0%
Jan 2014	4	Variance explained by model	72.4	54.7%	55.4%
Jan 2014	4	Unexplained variance (total)	60	45.3%	44.6%
Jan 2014	4	Unexplained variance explained by 1st factor	1.7	1.3%	
Jan 2014	5	Total variance in observations	146.5	100.0%	100.0%
Jan 2014	5	Variance explained by model	75.5	51.5%	47.7%
Jan 2014	5	Unexplained variance (total)	71	48.5%	52.3%
Jan 2014	5	Unexplained variance explained by 1st factor	1.3	0.9%	
June 2016	6	Total variance in observations	154.7	100.0%	100.0%
June 2016	6	Variance explained by model	64.7	41.8%	38.2%
June 2016	6	Unexplained variance (total)	90	58.2%	61.8%
June 2016	6	Unexplained variance explained by 1st factor	1.2	0.8%	
June 2016	7	Total variance in observations	126.6	100.0%	100.0%
June 2016	7	Variance explained by model	34.6	27.3%	22.4%
June 2016	7	Unexplained variance (total)	92	72.7%	77.6%
June 2016	7	Unexplained variance explained by 1st factor	1.2	0.9%	
June 2016	8	Total variance in observations	150.7	100.0%	100.0%
June 2016	8	Variance explained by model	44.7	29.7%	25.2%
June 2016	8	Unexplained variance (total)	106	70.3%	74.8%
June 2016	8	Unexplained variance explained by 1st factor	1.2	0.8%	
June 2016	English Composition	Total variance in observations	149.5	100.0%	100.0%
June 2016	English Composition	Variance explained by model	47.5	31.8%	26.3%
June 2016	English Composition	Unexplained variance (total)	102	68.2%	73.7%
June 2016	English Composition	Unexplained variance explained by 1st factor	1.3	0.9%	

LOCAL INDEPENDENCE

Local independence (LI) is a fundamental assumption of IRT. No relationship should exist between examinees' responses to different items after accounting for the abilities measured by a test. In formal statistical terms, a test X that is comprised of items $X_1, X_2, ... X_n$ is locally independent with respect to the latent variable θ if, for all $x = (x_1, x_2, ... x_n)$ and θ ,

$$P(\mathbf{X} = \mathbf{x} \mid \boldsymbol{\theta}) = \prod_{i=1}^{I} P(X_i = x_i \mid \boldsymbol{\theta}).$$

This formula essentially states that the probability of any pattern of responses across all items (x), after conditioning on the abilities measured by the test, should be equal to the product of the conditional probabilities across each item (cf. the multiplication rule for independent events where the joint probabilities are equal to the product of the associated marginal probabilities).

The equation above shows the condition after satisfying the "strong form" of local independence. A "weak form" of local independence (WLI) was proposed by McDonald (1979). The distinction is important, as many indicators of local dependency are actually framed by WLI. The requirement here would be for the conditional covariances of all pairs of item responses, conditioned on the abilities, to be equal to zero. When this assumption is met, the joint probability of responses to an item pair, conditioned on abilities, is the product of the probabilities of responses to these two items, as show below. (This is a "weaker" form because higher-order dependencies among items are allowed.) Based on the WLI, the following expression can be derived:

$$P(X_i = x_i, X_j = x_j \mid \theta) = P(X_i = x_i \mid \theta) P(X_j = x_j \mid \theta).$$

Marais and Andrich (2008) pointed out that local item dependence in the Rasch model can occur in two ways that some may not distinguish. The first way occurs when the assumption of unidimensionality is violated. Here, other nuisance dimensions besides a dominant dimension also determine students' performance (this can be called "trait dependence"). The second violation occurs when responses to an item depend on responses to another. This is a violation of statistical independence and can be called "response dependence." Many people treat the assumptions of "unidimensionality" and "local independence" as one phenomenon and believe that once unidimensionality holds, that local independence also holds. By distinguishing the two sources of local dependence, one can see that while local independence can be related to unidimensionality, the two are different assumptions, and, therefore, require different tests.

Residual item correlations provided in WINSTEPS for each item pair were used to assess the local dependence among the CDT items. In general, these residuals are computed as follows. First, expected item performance based on the Rasch model is determined using ability and item parameter estimates. Next, deviation (residual) between the examinees' expected and observed performance is determined for each item. Finally, for each item pair, a correlation between the respective deviations is computed.

As previously mentioned, three types of residual correlations are available in WINSTEPS: raw, standardized, and logit. Since the three residual correlations are very similar, the default "standardized residual correlation" in WINSTEPS was used for these analyses. Tables 8–5 through 8–8 show the summary statistics—mean, standard deviation (SD), minimum (Min), maximum (Max), and several percentiles (P10, P25, P50, P75, P90)—for all the residual correlations for each content area and grade/course. The total number of item pairs (N) and the number of pairs with the residual correlations greater than 0.20 are also reported in the tables.

Table 8–5. Summary of Item Residual Correlations for Mathematics

Date	Grade/ Course	N	Mean	SD	Min	P ₁₀	P ₂₅	P ₅₀	P ₇₅	P ₉₀	Max	<20	>.20
Aug 2010	3	1,372	-0.03	0.03	-0.15	-0.06	-0.04	-0.03	-0.01	0.01	0.32	0	2
Aug 2010	4	1,122	-0.03	0.04	-0.18	-0.08	-0.06	-0.03	-0.01	0.01	0.28	0	2
Aug 2010	5	1,132	-0.03	0.04	-0.17	-0.07	-0.05	-0.03	-0.01	0.01	0.38	0	1
Aug 2010	6	5,410	-0.02	0.04	-0.15	-0.06	-0.04	-0.02	0.00	0.02	0.34	0	12
Aug 2010	7	5,409	-0.02	0.04	-0.24	-0.07	-0.05	-0.02	0.00	0.03	0.35	3	4
Aug 2010	8	4,935	-0.02	0.06	-0.36	-0.10	-0.06	-0.02	0.01	0.05	0.27	18	3
Aug 2010	Algebra I	5,024	-0.02	0.04	-0.19	-0.07	-0.05	-0.02	0.00	0.02	0.26	0	2
Aug 2010	Geometry	5,470	-0.02	0.04	-0.20	-0.07	-0.04	-0.02	0.00	0.02	0.27	0	1
Aug 2010	Algebra II	5,457	-0.02	0.04	-0.18	-0.07	-0.05	-0.02	0.00	0.02	0.22	0	2
July 2013	6	12,090	-0.01	0.01	-0.12	-0.02	-0.01	0.00	0.00	0.00	0.06	0	0
July 2013	7	2,628	-0.01	0.01	-0.05	-0.03	-0.02	-0.01	-0.01	0.00	0.01	0	0
July 2013	8	12,246	-0.01	0.01	-0.09	-0.02	-0.01	0.00	0.00	0.01	0.06	0	0
Jan 2014	K-2	2,660	-0.04	0.06	-0.23	-0.11	-0.08	-0.05	-0.01	0.02	0.35	4	4
Jan 2014	3	2,278	-0.05	0.06	-0.24	-0.12	-0.09	-0.05	-0.01	0.02	0.27	12	2
Jan 2014	4	2,462	-0.05	0.05	-0.24	-0.11	-0.08	-0.05	-0.01	0.02	0.46	2	2
Jan 2014	5	24,310	0.00	0.01	-0.05	-0.01	-0.01	0.00	0.00	0.00	0.02	0	0
June 2016	6	6,903	-0.01	0.00	-0.03	-0.01	-0.01	-0.01	-0.01	0.00	0.01	0	0
June 2016	7	13,695	-0.01	0.00	-0.03	-0.01	-0.01	-0.01	0.00	0.00	0.01	0	0
June 2016	8	10,731	-0.01	0.01	-0.03	-0.01	-0.01	-0.01	0.00	0.00	0.01	0	0
June 2016	Algebra I	10,878	-0.01	0.00	-0.02	-0.01	-0.01	-0.01	0.00	0.00	0.01	0	0

Table 8–6. Summary of Item Residual Correlations for Reading

Date	Grade/ Course	N	Mean	SD	Min	P ₁₀	P ₂₅	P ₅₀	P ₇₅	P ₉₀	Max	<20	>.20
Jan 2011	3	1,334	-0.02	0.04	-0.17	-0.07	-0.04	-0.02	-0.01	0.01	0.14	0	0
Jan 2011	4	1,272	-0.02	0.03	-0.18	-0.07	-0.04	-0.02	-0.01	0.01	0.27	0	2
Jan 2011	5	1,262	-0.02	0.03	-0.17	-0.06	-0.04	-0.02	-0.01	0.01	0.18	0	0
Jan 2011	6	4,245	-0.02	0.05	-0.24	-0.07	-0.04	-0.02	0.00	0.02	0.35	2	13
Jan 2011	7	3,782	-0.02	0.04	-0.23	-0.07	-0.04	-0.02	0.00	0.02	0.22	2	1
Jan 2011	8	3,782	-0.02	0.04	-0.26	-0.07	-0.04	-0.02	0.00	0.03	0.34	2	5
Jan 2011	Literature	7,517	-0.02	0.05	-0.28	-0.09	-0.04	-0.01	0.01	0.04	0.40	25	10
July 2013	6	1,540	-0.02	0.05	-0.43	-0.03	-0.01	0.00	0.00	0.00	0.05	42	0
July 2013	7	1,653	-0.02	0.05	-0.33	-0.04	-0.01	0.00	0.00	0.00	0.01	38	0
July 2013	8	1,596	-0.02	0.05	-0.32	-0.04	-0.01	0.00	0.00	0.00	0.02	39	0
Jan 2014	K-2	2,660	-0.05	0.06	-0.26	-0.12	-0.09	-0.05	-0.01	0.02	0.29	7	5
Jan 2014	3	1,709	-0.05	0.05	-0.23	-0.11	-0.08	-0.05	-0.02	0.02	0.20	2	0
Jan 2014	4	1,888	-0.05	0.05	-0.23	-0.10	-0.08	-0.05	-0.02	0.01	0.20	1	0
Jan 2014	5	8,911	-0.01	0.02	-0.26	-0.01	-0.01	0.00	0.00	0.00	0.03	33	0
June 2016	3	231	-0.04	0.02	-0.10	-0.08	-0.06	-0.04	-0.02	-0.01	0.00	0	0
June 2016	4	210	-0.04	0.06	-0.74	-0.08	-0.06	-0.03	-0.02	0.00	0.01	1	0
June 2016	5	210	-0.04	0.03	-0.13	-0.09	-0.06	-0.04	-0.02	-0.01	0.00	0	0
June 2016	6	7,381	-0.01	0.04	-0.36	0.00	0.00	0.00	0.00	0.00	0.00	117	0
June 2016	7	7,750	-0.01	0.04	-0.40	0.00	0.00	0.00	0.00	0.00	0.09	123	0
June 2016	8	7,503	-0.01	0.04	-0.38	0.00	0.00	0.00	0.00	0.00	0.04	115	0
June 2016	Literature	7,626	-0.01	0.04	-0.33	0.00	0.00	0.00	0.00	0.00	0.00	161	0

Table 8–7. Summary of Item Residual Correlations for Science

Date	Grade/ Course	N	Mean	SD	Min	P ₁₀	P ₂₅	P ₅₀	P ₇₅	P ₉₀	Max	<20	>.20
Jan 2011	3	1,400	-0.03	0.03	-0.16	-0.07	-0.04	-0.02	-0.01	0.01	0.09	0	0
Jan 2011	4	1,950	-0.02	0.03	-0.19	-0.07	-0.04	-0.02	0.00	0.01	0.09	0	0
Jan 2011	5	1,530	-0.03	0.03	-0.17	-0.07	-0.04	-0.02	-0.01	0.01	0.08	0	0
Jan 2011	6	3,642	-0.02	0.04	-0.18	-0.07	-0.04	-0.02	0.00	0.02	0.19	0	0
Jan 2011	7	6,934	-0.02	0.04	-0.22	-0.08	-0.04	-0.01	0.00	0.03	0.24	7	2
Jan 2011	8	6,881	-0.02	0.05	-0.27	-0.09	-0.04	-0.01	0.00	0.02	0.24	30	2
Jan 2011	Biology	8,255	-0.02	0.05	-0.24	-0.09	-0.04	-0.01	0.00	0.03	0.26	17	1
Jan 2011	Chemistry	7,105	-0.02	0.05	-0.22	-0.08	-0.04	-0.01	0.01	0.03	0.24	8	2
Jan 2014	K-2	2,660	-0.05	0.10	-0.43	-0.17	-0.11	-0.05	0.01	0.08	0.68	152	28
Jan 2014	3	1,510	-0.05	0.06	-0.33	-0.12	-0.09	-0.05	-0.01	0.03	0.25	5	3
Jan 2014	4	2,069	-0.05	0.09	-0.31	-0.16	-0.11	-0.05	0.01	0.07	0.32	83	13
Jan 2014	5	11,476	-0.01	0.01	-0.08	-0.02	-0.01	-0.01	0.00	0.01	0.06	0	0
June 2016	6	2,145	-0.02	0.01	-0.05	-0.03	-0.02	-0.02	-0.01	0.00	0.02	0	0
June 2016	7	11,628	-0.01	0.01	-0.04	-0.01	-0.01	-0.01	0.00	0.00	0.01	0	0
June 2016	8	25,425	0.00	0.01	-0.03	-0.01	-0.01	0.00	0.00	0.00	0.02	0	0
June 2016	Biology	9,045	-0.01	0.00	-0.02	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0	0

Table 8–8. Summary of Item Residual Correlations for Writing

Date	Grade/ Course	N	Mean	SD	Min	P ₁₀	P ₂₅	P ₅₀	P ₇₅	P ₉₀	Max	<20	>.20
Aug 2011	3	2,205	-0.02	0.05	-0.26	-0.08	-0.04	-0.02	0.00	0.02	0.19	6	0
Aug 2011	4	2,315	-0.02	0.05	-0.24	-0.09	-0.04	-0.02	0.00	0.02	0.28	9	2
Aug 2011	5	2,580	-0.02	0.05	-0.25	-0.09	-0.04	-0.02	0.00	0.02	0.19	11	0
Aug 2011	6	3,795	-0.02	0.05	-0.25	-0.08	-0.04	-0.02	0.01	0.03	0.27	4	5
Aug 2011	7	3,544	-0.02	0.05	-0.24	-0.08	-0.04	-0.02	0.00	0.03	0.24	10	2
Aug 2011	8	3,815	-0.02	0.07	-0.29	-0.11	-0.05	-0.02	0.01	0.06	0.29	58	13
Aug 2011	Eng. Comp	7,705	-0.02	0.06	-0.30	-0.10	-0.04	-0.01	0.01	0.05	0.33	72	18
Jan 2014	K-2	2,641	-0.05	0.09	-0.39	-0.15	-0.11	-0.05	0.01	0.06	0.35	84	19
Jan 2014	3	570	-0.05	0.06	-0.20	-0.12	-0.08	-0.05	-0.02	0.02	0.23	1	1
Jan 2014	4	570	-0.05	0.04	-0.18	-0.10	-0.08	-0.05	-0.02	0.01	0.21	0	1
Jan 2014	5	2,485	-0.01	0.02	-0.13	-0.04	-0.02	-0.01	0.00	0.01	0.05	0	0
June 2016	6	4,005	-0.01	0.01	-0.05	-0.02	-0.02	-0.01	-0.01	0.00	0.02	0	0
June 2016	7	4,186	-0.01	0.01	-0.06	-0.02	-0.02	-0.01	0.00	0.00	0.01	0	0
June 2016	8	5,565	-0.01	0.01	-0.05	-0.02	-0.01	-0.01	0.00	0.00	0.01	0	0
June 2016	Eng. Comp	5,151	-0.01	0.01	-0.13	-0.03	-0.02	-0.01	0.00	0.00	0.03	0	0

Across the content areas and grades/courses, the mean residual correlations were slightly negative and the values were close to zero. The vast majority of the correlations were very small, suggesting local item independence generally holds for the CDT mathematics, reading, science, and writing item pools.

ITEM FIT

WINSTEPS provides two item-fit statistics (infit and outfit) for evaluating the degree to which the Rasch model predicts the observed item responses. Each fit statistic can be expressed as a mean square (MnSq) statistic or on a standardized metric (Zstd with mean = 0 and variance = 1). MnSq values are more oriented toward practical significance, while Zstd values are more oriented toward statistical significance. MnSq values are presented in this chapter.

Both infit and outfit MnSq are the average of standardized residual variance (the difference between the observed score and the Rasch estimated score divided by the square root of the Rasch model variance). The difference is that the outfit statistic gives all examinees equal weight in computing the fit and tends to be affected more by unexpected responses far from the person, item, or rating scale category measure (i.e., it is more sensitive to outlying, off-target, low information responses). The infit statistic is weighted by the examinee locations relative to item difficulty and tends to be affected more by unexpected responses close to the person, item, or rating scale category measure (i.e., informative, on-target responses). Some feel that extreme infit values are a greater threat to the measurement process than extreme outfit values since most tests intend to measure the on-target population rather than extreme outliers.

The expected MnSq value is 1.0, and it can range from 0 to infinity. Deviation in excess of the expected value can be interpreted as noise or lack of fit between the items and the model. Values lower than the expected value can be interpreted as item redundancy or overfitting items (too predictable, too much redundancy), and values greater than the expected value indicate underfitting items (too unpredictable, too much noise). Rules of thumb regarding practically significant MnSq values vary. More conservative users might prefer items with MnSq values that range from 0.8 to 1.2. Others believe reasonable test results can be achieved with values from 0.5 to 1.5. In the following results, values outside of 0.7 to 1.3 are given practical importance.

Table 8–9 presents the summary statistics of infit and outfit mean square statistics for the CDT item pools, including the mean, standard deviation, minimum, and maximum values. The number of items within the range of (0.7, 1.3) is also reported in Table 8–9. As can been seen, the mean values for both fit statistics were close to 1.00 for all grades/courses. Nearly all items had infit values falling in the range of (0.7, 1.3). These results indicate that the Rasch model fits the CDT data well.

Table 8–9. Summary of Infit and Outfit Mean Square Statistics

Date	Content Area	Grade/Course	Number of Items	Infit Mean	Infit SD	Infit Min	Infit Max	Infit [0.7,1.3]	Outfit Mean	Outfit SD	Outfit Min	Outfit Max	Outfit [0.7,1.3]
Aug 2010	Mathematics	3	86	0.99	0.08	0.78	1.17	86/86	0.99	0.24	0.21	1.56	71/86
Aug 2010	Mathematics	4	86	0.99	0.08	0.81	1.20	86/86	0.98	0.18	0.50	1.65	78/86
Aug 2010	Mathematics	5	85	0.99	0.12	0.80	1.32	84/85	1.00	0.24	0.46	1.56	69/85
Aug 2010	Mathematics	6	259	0.99	0.11	0.80	1.38	256/259	1.00	0.31	0.40	3.92	217/259
Aug 2010	Mathematics	7	258	1.00	0.12	0.80	1.49	253/258	1.01	0.25	0.56	2.24	213/258
Aug 2010	Mathematics	8	257	1.00	0.11	0.75	1.37	254/257	1.03	0.22	0.48	2.40	226/257
Aug 2010	Mathematics	11	149	0.99	0.10	0.80	1.27	149/149	0.99	0.18	0.67	1.67	141/149
Aug 2010	Mathematics	Algebra I	256	1.00	0.09	0.79	1.28	256/256	1.02	0.14	0.65	1.61	249/256
Aug 2010	Mathematics	Geometry	257	1.00	0.10	0.81	1.31	256/257	1.02	0.17	0.66	1.78	239/257
Aug 2010	Mathematics	Algebra II	256	1.00	0.10	0.78	1.41	254/256	1.03	0.20	0.66	1.99	233/256
Jan 2011	Reading	3	86	0.99	0.12	0.74	1.30	86/86	0.97	0.24	0.40	1.53	66/86
Jan 2011	Reading	4	87	0.99	0.10	0.79	1.28	87/87	0.95	0.22	0.32	1.58	74/87
Jan 2011	Reading	5	86	0.96	0.09	0.78	1.22	86/86	0.91	0.20	0.44	1.64	72/86
Jan 2011	Reading	6	210	1.01	0.13	0.70	1.30	210/210	1.02	0.31	0.37	2.65	151/210
Jan 2011	Reading	7	192	1.00	0.10	0.76	1.30	192/192	0.96	0.23	0.21	2.00	162/192
Jan 2011	Reading	8	192	0.98	0.11	0.75	1.33	191/192	0.96	0.22	0.41	1.84	158/192
Jan 2011	Reading	Literature	348	1.01	0.13	0.75	1.31	347/348	1.01	0.25	0.38	2.00	282/348
Jan 2011	Science	3	91	1.01	0.09	0.83	1.20	91/91	1.00	0.21	0.45	1.48	80/91
Jan 2011	Science	4	123	1.01	0.08	0.85	1.23	123/123	1.00	0.18	0.52	1.81	112/123
Jan 2011	Science	5	102	1.00	0.08	0.84	1.21	102/102	1.02	0.16	0.74	1.85	98/102
Jan 2011	Science	6	178	1.00	0.09	0.80	1.22	178/178	1.02	0.17	0.61	1.82	165/178
Jan 2011	Science	7	327	0.99	0.09	0.78	1.22	327/327	1.01	0.17	0.54	1.83	300/327
Jan 2011	Science	8	377	1.02	0.12	0.77	1.37	372/377	1.06	0.24	0.57	2.12	307/377
Jan 2011	Science	11	115	1.08	0.10	0.81	1.30	115/115	1.19	0.26	0.73	2.19	82/115
Jan 2011	Science	Biology	390	1.00	0.08	0.84	1.28	390/390	1.03	0.14	0.73	1.63	372/390
Jan 2011	Science	Chemistry	335	1.00	0.06	0.85	1.26	335/335	1.02	0.09	0.79	1.48	333/335
Aug 2011	Writing	3	140	0.99	0.11	0.80	1.43	139/140	1.00	0.24	0.42	1.95	115/140
Aug 2011	Writing	4	149	0.99	0.10	0.79	1.26	149/149	1.00	0.24	0.52	1.74	123/149
Aug 2011	Writing	5	165	0.98	0.09	0.80	1.24	165/165	0.97	0.19	0.62	1.92	151/165
Aug 2011	Writing	6	193	0.99	0.10	0.78	1.23	193/193	0.98	0.20	0.53	1.76	170/193
Aug 2011	Writing	7	176	1.00	0.11	0.75	1.36	175/176	1.02	0.23	0.56	1.92	147/176
Aug 2011	Writing	8	195	0.99	0.11	0.77	1.31	194/195	0.99	0.21	0.45	1.68	166/195
Aug 2011	Writing	Eng. Comp.	365	1.00	0.12	0.77	1.38	362/365	1.03	0.25	0.38	2.16	304/365
July 2013	Mathematics	6	156	1.07	0.14	0.78	1.50	144/156	1.35	0.62	0.51	4.77	96/156
July 2013	Mathematics	7	73	1.11	0.13	0.82	1.40	69/73	1.52	0.68	0.76	4.74	33/73
July 2013	Mathematics	8	157	1.14	0.13	0.87	1.45	138/157	1.61	0.58	0.85	3.46	62/157
July 2013	Reading	6	56	1.03	0.13	0.78	1.31	55/56	1.13	0.37	0.58	2.48	35/56

Table 8–9. (continued). Summary of Infit and Outfit Mean Square Statistics

Date	Content Area	Grade/Course	Number of Items	Infit Mean	Infit SD	Infit Min	Infit Max	Infit [0.7,1.3]	Outfit Mean	Outfit SD	Outfit Min	Outfit Max	Outfit [0.7,1.3]
July 2013	Reading	7	58	1.05	0.14	0.82	1.42	55/58	1.17	0.38	0.65	2.91	41/58
July 2013	Reading	8	57	1.03	0.14	0.02	1.42	56/57	1.11	0.30	0.03	2.03	42/57
Jan 2014	Mathematics	K	60	0.98	0.13	0.77	1.34	58/60	0.90	0.30	0.40	1.53	37/60
Jan 2014	Mathematics	1	91	0.97	0.12	0.76	1.33	89/91	0.90	0.30	0.40	2.00	61/91
Jan 2014	Mathematics	2	130	0.99	0.12	0.70	1.29	130/130	0.92	0.30	0.23	1.95	99/130
Jan 2014	Mathematics	3	235	0.99	0.10	0.77	1.44	231/235	1.02	0.27	0.30	3.11	191/235
Jan 2014	Mathematics	4	248	1.00	0.12	0.75	1.31	247/248	1.02	0.31	0.47	2.21	199/248
Jan 2014	Mathematics	5	221	1.02	0.12	0.79	1.37	218/221	1.07	0.27	0.43	2.22	182/221
Jan 2014	Reading	K	84	0.97	0.11	0.73	1.36	83/84	0.91	0.23	0.39	1.51	61/84
Jan 2014	Reading	1	98	0.99	0.11	0.77	1.35	96/98	1.02	0.24	0.36	2.75	73/98
Jan 2014	Reading	2	98	0.98	0.12	0.76	1.24	98/98	1.02	0.33	0.30	1.80	77/98
Jan 2014	Reading	3	178	1.00	0.11	0.70	1.24	178/178	1.02	0.23	0.44	2.44	127/178
Jan 2014	Reading	4	189	1.00	0.12	0.77	1.35	188/189	1.04	0.31	0.43	2.70	149/189
Jan 2014	Reading	5	134	1.00	0.11	0.78	1.28	134/134	1.04	0.24	0.44	1.91	112/134
Jan 2014	Science		280	0.99	0.11	0.77	1.43	273/280	1.04	0.24	0.44	2.79	199/280
Jan 2014	Science	K-2 grade span	155	0.99	0.13	0.73	1.43	155/155	0.98	0.34	0.23	1.99	114/155
Jan 2014	Science	4	213	1.00	0.11	0.72	1.29	213/213	1.01	0.26	0.23	1.88	179/213
Jan 2014	Science	5	152	1.07	0.11	0.70	1.59	141/152	1.16	0.24	0.57	2.39	111/152
Jan 2014	Writing	K	44	0.90	0.15	0.70	1.20	44/44	0.72	0.29	0.33	1.38	20/44
Jan 2014	Writing	1	118	0.96	0.11	0.73	1.42	117/118	0.72	0.20	0.33	1.76	74/118
Jan 2014		2	117	0.98	0.13	0.70	1.42	115/117	0.09	0.32	0.27	1.65	93/117
Jan 2014	Writing	3	60	0.98	0.13	0.70	1.40	60/60	0.98	0.26	0.32	1.03	48/60
Jan 2014	Writing Writing	4	60	1.00	0.12	0.78	1.22	59/60	1.02	0.27	0.60	2.41	51/60
Jan 2014	Writing	5	71	1.03	0.11	0.03	1.37	70/71	1.02	0.29	0.61	2.41	48/71
			122		0.13	0.71			l				
June 2016 June 2016	Mathematics Mathematics	7	176	1.08	0.13	0.84	1.49 1.54	113/122 161/176	1.31	0.36	0.72	2.38 3.42	70/122 89/176
June 2016	Mathematics	8	150	1.13	0.13	0.85	1.61	139/150	1.61	0.48	0.74	3.42	51/150
June 2016	Mathematics		149	1.10	0.12	0.85	1.36	148/149	1.49	0.30	0.62		57/149
June 2016	Reading	Algebra I	22	1.13	0.09	0.85	1.49	18/22	1.49	0.47	0.73	3.45 1.54	16/22
June 2016		4	22	1.10		0.87	1.49	19/22	l	0.19	0.62		19/22
	Reading				0.15				1.15			2.24	
June 2016	Reading	5	21	1.10	0.13	0.96	1.40	20/21	1.14	0.20	0.91	1.67	18/21
June 2016	Reading	7	123	1.06	0.13	0.81	1.54	121/123	1.13	0.29	0.58	2.48	98/123
June 2016			126	1.04	0.15	0.79	1.51	122/126	1.12	0.37	0.40	2.91	90/126
June 2016	Reading	8	124	1.06	0.16	0.79	2.00	115/124	1.16	0.40	0.50	3.14	82/124
June 2016	Reading	Literature	125	1.07	0.12	0.75	1.36	122/125	1.24	0.38	0.60	2.53	83/125
June 2016	Science	6	72 150	1.08	0.10	0.87	1.30	72/72	1.27	0.35	0.73	2.36	45/72
June 2016	Science	7	159	1.08	0.09	0.82	1.34	158/159	1.29	0.32	0.64	2.28	98/159

Table 8-9. (continued). Summary of Infit and Outfit Mean Square Statistics

Date	Content Area	Grade/Course	Number of Items	Infit Mean	Infit SD	Infit Min	Infit Max	Infit [0.7,1.3]	Outfit Mean	Outfit SD	Outfit Min	Outfit Max	Outfit [0.7,1.3]
June 2016	Science	8	238	1.07	0.10	0.77	1.34	236/238	1.27	0.36	0.50	3.55	151/238
June 2016	Science	Biology	136	1.08	0.10	0.87	1.51	135/136	1.25	0.24	0.83	1.94	88/136
June 2016	Writing	6	93	1.06	0.12	0.83	1.34	91/93	1.24	0.47	0.70	4.66	62/93
June 2016	Writing	7	93	1.08	0.10	0.81	1.39	91/93	1.31	0.45	0.70	3.14	59/93
June 2016	Writing	8	110	1.09	0.11	0.88	1.37	106/110	1.37	0.48	0.76	3.93	63/110
June 2016	Writing	Eng. Comp.	104	1.08	0.11	0.75	1.34	103/104	1.46	0.84	0.58	8.30	51/104

RASCH ITEM STATISTICS

As noted earlier, the Rasch model expresses item difficulty (and student ability) in units referred to as logits, rather than on the percent-correct metric. In the simplest case, a logit is a transformed p-value with the average p-value becoming a logit of zero. In this form, logits resemble z-scores or standard normal deviates; a very difficult item might have a logit of +4.0 and a very easy item might have a logit of -4.0. However, they have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over p-values. Logits have an interval scale, meaning that two items with logits of 0.0 and +1.0, respectively, are the same distance apart as two items with logits of +3.0 and +4.0. Logits are not dependent on the ability level of the students. For example, a test form can have a mean logit of zero, whether the average item p-value for the student sample is 0.8 or 0.3.

The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items in any calibration at zero. For each CDT stand-alone field-test event and content area, all grades and courses were calibrated separately with the exception of grade 11 items in Mathematics and Science. As a result, items in each grade or course were centered at zero. See Chapter Nine for a description of how item parameters within a content area were re-scaled across grades and courses to build a single (vertical) scale.

For each CDT embedded field-test event and content area, field-test items were calibrated anchoring on operational items' parameters. As a result, the embedded field-test items were placed on operational vertical scale.

Rasch item difficulty measure on the vertical scale and associated standard error for each item are presented in Appendix B.

CHAPTER NINE: VERTICAL LINKING

The Classroom Diagnostic Tools (CDT) is designed to enable educators to identify students' academic strengths and areas of need. As such, it is necessary for some students to take items out of grade or course level. In order to do this, all items within a content area must be on a common (vertical) scale.

As previously mentioned in Chapter Eight, items from the first stand-alone field-test event for each CDT content area and grade or course were calibrated separately and centered at zero. This chapter outlines the procedures used for vertically linking CDT items across grades and courses within a content area. The end results are four separate vertical scales—one for each content area.

Also mentioned in Chapter Eight, for each content area, the items from all embedded field-test events and the second stand-alone field-test event were calibrated anchoring on operational items' parameters. As a result, all field-test items after the first stand-alone field-test events were placed on the operational vertical scale.

VERTICAL LINKING DESIGN

The first CDT stand-alone field tests were designed to build vertical scales across all grades and courses within a content area. In order to accomplish this, some field-test forms had items from one grade above or below in addition to on-grade or course-level items.

Stand-alone field tests in each content area had two types of forms:

- 1. Vertical linking form
- 2. On-grade-only form

Students who received vertical linking forms took a set of on-grade items and a set of items either one grade above or one grade below. Students who received on-grade-only forms took just on-grade items.

All items in the pool were field tested on one or more forms. In Mathematics, on-grade items were chained across adjacent forms to provide a horizontal link across forms within a grade. There were eight to ten horizontal links across adjacent forms. In all other content areas, 10 on-grade items appeared on each form within a grade or course. These common items provide a horizontal link across forms within a grade.¹

Items used in vertical linking were administered to students one grade above or one grade below in order to link the forms across grades. DRC test development specialists selected items to be administered off-grade level with the following guidelines:

- There are two types of linking sets.
 - Items administered one grade below (e.g., grade 7 items administered to grade 6 students).
 - Items administered one grade above (e.g., grade 7 items administered to grade 8 students).
- Linking sets span the diagnostic categories.
- Linking sets span the estimated difficulty range (item developers estimate easy, medium, or hard).
- Students have a reasonable chance of correctly answering a linking item based on the instruction received.
 - For items administered in the grade above, students should have received instruction the previous year.
 - For items administered in the grade below, they should be extensions of concepts the students have already covered, not something completely new.

¹ The change in horizontal linking design after the Mathematics field test was in response to lower-than-expected participation. Using the same horizontal links on all forms within a grade results in higher *n*-counts.

In Mathematics, each set of linking items appeared on two forms, once located at the beginning and once located at the end to counterbalance possible position effect. In all other content areas, vertical linking items were comingled throughout the form with on-grade items.²

See Tables 6–1 through 6–4 in Chapter Six for details on the stand-alone field tests including number of items, number of forms, and number of vertical linking forms.

VERTICAL LINKING — MATHEMATICS

Links were made between adjacent grades, grade 8 to Algebra I, Algebra I to Algebra II, and grade 8 to Geometry. Table 9–1 below shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 30 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The 30 grade 5 items were in two sets of 15, while the 20 grade 6 items were in two sets of 10. The number of linking items differs across grades because forms in grades 3, 4, and 5 had 25 items total while all of the others had 35. There was no overlap of linking items among the sets.

Table 9-1. Mathematics Linking Item Detail

Link	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	30	20	50
Grade 6 to Grade 7	30	30	60
Grade 8 to Grade 7	30	30	60
Algebra I to Grade 8	30	30	60
Algebra II to Algebra I	30	30	60
Geometry to Grade 8	30	30	60

A visual representation of the vertical linking design is provided in Table 9–2. Rows are item level and columns are forms. For example, looking at the second row, you can see grade 4 items were on grades 3, 4, and 5 forms. Grade 4 items on grade 4 forms were on-grade items. Grade 4 items on grade 5 forms were vertical linking items. These items also appeared on grade 4 forms and were used to calculate the vertical linking shift parameter.

In linking grades 4 and 5, look at the four cells in Table 9–2 where grade 4 and grade 5 rows and columns cross. There were 86 grade 4 items, and of those 86 items, 20 items were also given to grade 5 as linking items. Similarly, there were 85 grade 5 items, and 20 out of the 85 items were given to grade 4 students as linking items.

Items used to link to a lower grade were different from items used to link to an upper grade. For example, the 30 grade 7 items administered on grade 6 forms were not the same as the 30 grade 7 items administered on grade 8 forms.

² The change in vertical linking design after the Mathematics field test was in response to lower-than-expected participation.

Table 9-2. Mathematics Vertical Linking Design

Forms

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Alg I	Geo	Alg II
Gr. 3	Gr. 3 Items (86)	Gr. 3 Items (20)							
Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (86)	Gr. 4 Items (20)						
Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (85)	Gr. 5 Items (30)					
Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (259)	Gr. 6 Items (30)				
Gr. 7				Gr. 7 Items (30)	Gr. 7 Items (258)	Gr. 7 Items (30)			
Gr. 8					Gr. 8 Items (30)	Gr. 8 Items (257)	Gr. 8 Items (30)	Gr. 8 Items (30)	
Gr. 11						Gr. 11 Items (30)	Gr. 11 Items (50)	Gr. 11 Items (50)	Gr. 11 Items (50)
Alg I						Alg I Items (15)	Alg I Items (256)		Alg I Items (30)
Geo						Geo Items (15)		Geo Items (257)	
Alg II							Alg II Items (30)		Alg II Items (256)

VERTICAL LINKING — READING

Links were made between adjacent grades and grade 8 to Literature. Table 9–3 shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 20 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The number of linking items was the same across grades.

Table 9-3. Reading Linking Item Detail

Link	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	20	20	40
Grade 6 to Grade 7	20	20	40
Grade 8 to Grade 7	20	20	40
Literature to Grade 8	20	20	40

A visual representation of the vertical linking design is provided in Table 9–4.

Table 9-4. Reading Vertical Linking Design

Forms

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Lit
Gr. 3	Gr. 3 Items (86)	Gr. 3 Items (20)					
Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (87)	Gr. 4 Items (20)				
Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (86)	Gr. 5 Items (20)			
Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (210)	Gr. 6 Items (20)		
Gr. 7				Gr. 7 Items (20)	Gr. 7 Items (192)	Gr. 7 Items (20)	
Gr. 8					Gr. 8 Items (20)	Gr. 8 Items (192)	Gr. 8 Items (20)
Lit						Lit Items (20)	Lit Items (348)

VERTICAL LINKING — SCIENCE

Links were made between adjacent grades, grade 8 to Biology, and grade 8 to Chemistry. Table 9–5 below shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 20 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The number of linking items was the same across grades.

Table 9-5. Science Linking Item Detail

Link	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	20	20	40
Grade 6 to Grade 7	20	20	40
Grade 8 to Grade 7	20	20	40
Biology to Grade 8	20	20	40
Chemistry to Grade 8	20	20	40

A visual representation of the vertical linking design is provided in Table 9-6.

Table 9-6. Science Vertical Linking Design

Forms

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Bio	Chem
Gr. 3	Gr. 3 Items (91)	Gr. 3 Items (20)						
Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (123)	Gr. 4 Items (20)					
Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (102)	Gr. 5 Items (20)				
Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (178)	Gr. 6 Items (20)			
Gr. 7				Gr. 7 Items (20)	Gr. 7 Items (327)	Gr. 7 Items (20)		
Gr. 8					Gr. 8 Items (20)	Gr. 8 Items (377)	Gr. 8 Items (20)	Gr. 8 Items (20)
Gr. 11						Gr. 11 Items (115)		
Bio						Bio Items (20)	Bio Items (390)	
Chem						Chem Items (20)		Chem Items (335)

VERTICAL LINKING — WRITING

Links were made between adjacent grades and grade 8 to English Composition. Table 9–7 shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 20 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The number of linking items was the same across grades.

Table 9-7. Writing Linking Item Detail

Link	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	20	20	40
Grade 6 to Grade 7	20	20	40
Grade 8 to Grade 7	20	20	40
English Composition to Grade 8	20	20	40

A visual representation of the vertical linking design is provided in Table 9-8.

Table 9-8. Writing Vertical Linking Design

Forms

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Eng
Gr. 3	Gr. 3 Items (140)	Gr. 3 Items (20)					
Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (149)	Gr. 4 Items (20)				
Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (165)	Gr. 5 Items (20)			
Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (193)	Gr. 6 Items (20)		
Gr. 7				Gr. 7 Items (20)	Gr. 7 Items (176)	Gr. 7 Items (20)	
Gr. 8					Gr. 8 Items (20)	Gr. 8 Items (195)	Gr. 8 Items (20)
Eng						Eng Items (20)	Eng Items (365)

THE VERTICAL LINKING PROCEDURE

Each of the CDT content area vertical scales was centered at grade 7. Adjacent-grade shift parameters were calculated and applied such that all items were vertically linked to grade 7. For example, grade 4 science items were placed on the science vertical scale by applying three shift parameters:

- shift between grades 4 and 5 science
- shift between grades 5 and 6 science
- shift between grades 6 and 7 science

The steps used to calculate adjacent-grade shift parameters are described below. All item calibrations were done with WINSTEPS software version 3.69 (Linacre, 2009). The grade 4 to grade 5 link is provided as an example for the steps.

- Calibrate all on-grade items.
 - Calibrate grade 4 items on grade 4 forms.
 - Calibrate grade 5 items on grade 5 forms.
- 2. Calibrate off-grade items anchoring on the on-grade items. Anchor values come from step 1.
 - Calibrate grade 5 items on grade 4 forms anchoring on item parameters determined in grade 4 calibration in step 1.
 - Calibrate grade 4 items on grade 5 forms anchoring on item parameters determined in grade 5 calibration in step 1.

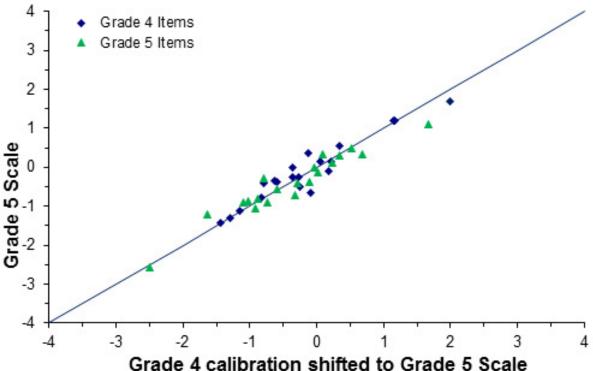
Note: For the linking between grades 4 and 5, the calibration of off-grade items on grade 4 forms includes only grade 5 items. It does not include grade 3 items that appeared on grade 4 forms. That is, grade 3 and grade 5 items that appeared on grade 4 forms are not calibrated together.

For each of the linking items, there are two estimates of item difficulty—one from each of the two calibrations. Correlation between these should be high. If not, vertical linking will be problematic.

- 3. Calculate the difference between the two estimates of item difficulty from step 2 for each linking item. The average of these differences is the adjacent grade shift parameter.
 - If grade is less than 7, determine the shift parameter needed to place items on upper grade scale.
 - If grade is greater than 7, determine the shift parameter needed to place items on lower grade scale.
 - Calculate the difference in item difficulty estimates between step 2, bullet 1 (grade 4 scale) and step 2, bullet 2 (grade 5 scale). An example of an Excel table used for calculations can be found in Appendix C.
- 4. Apply the adjacent grade shift parameter and plot the linking items along with a 45° line. Figure 9–1 below is an example. The 45° line is for visual reference only. Outliers are NOT identified by comparing to the line. See step 5 for details.

Figure 9-1. Sample of Linking Items Plot





Plots for all adjacent grade links can be found in Appendix C.

- 5. Determine if any items should be removed from the vertical linking process. Identify potential outliers using a combination of correlation, ratio of standard deviation, and robust Z. Discuss these items with test development specialists to determine if they should be removed. An item may be removed from the linking process and still remain in the item pool. In this case, the item is not removed from the on-grade calibrations. That is, do not re-run calibrations in step 1. Repeat steps 2 through 4.
- 6. Calculate the final shift parameter to the base grade (center of scale) by chaining together adjacent grade shift parameters
 - Grade 7 is the base grade. The final shift parameter for grade 4 items is the shift parameter between grades 4 and 5 plus the shift parameter between grades 5 and 6 plus the shift parameter between grades 6 and 7.
- 7. Apply the final shift parameters in step 6 to the item parameters calibrated in step 1.

VERTICAL LINKING RESULTS

Table 9–9 shows the number of links, correlation, and shift parameter for the both the initial and final vertical linking for each content area. Initial vertical linking includes all items. Final values were determined after some links were dropped after consultation with test development specialists.

Table 9–9. Vertical Linking Summary

Content Area	Link	Number of Links Initial	Number of Links Final	Correlation Initial	Correlation Final	Shift Parameter Initial	Shift Parameter Final
Mathematics	Grade 3 to Grade 4	40	39	0.960	0.964	-1.245	-1.212
Mathematics	Grade 4 to Grade 5	40	40	0.892	0.892	-0.622	-0.622
Mathematics	Grade 5 to Grade 6	50	49	0.914	0.910	-0.416	-0.395
Mathematics	Grade 6 to Grade 7	60	60	0.935	0.935	-0.782	-0.782
Mathematics	Grade 8 to Grade 7	60	60	0.887	0.887	0.301	0.301
Mathematics	Algebra I to Grade 8	60	58	0.933	0.941	0.766	0.808
Mathematics	Algebra II to Algebra I	60	59	0.880	0.905	0.516	0.544
Mathematics	Geometry to Grade 8	60	60	0.907	0.907	1.022	1.022
Reading	Grade 3 to Grade 4	40	40	0.956	0.956	-0.257	-0.257
Reading	Grade 4 to Grade 5	40	38	0.940	0.954	-0.410	-0.348
Reading	Grade 5 to Grade 6	40	39	0.948	0.965	-0.419	-0.389
Reading	Grade 6 to Grade 7	40	37	0.914	0.945	-0.066	-0.092
Reading	Grade 8 to Grade 7	40	40	0.934	0.934	0.352	0.352
Reading	Literature to Grade 8	40	40	0.929	0.929	0.383	0.383
Science	Grade 3 to Grade 4	40	40	0.952	0.952	-0.570	-0.570
Science	Grade 4 to Grade 5	40	40	0.956	0.956	-0.773	-0.773
Science	Grade 5 to Grade 6	40	40	0.968	0.968	-0.211	-0.211
Science	Grade 6 to Grade 7	40	39	0.938	0.945	-0.135	-0.111
Science	Grade 8 to Grade 7	40	40	0.973	0.973	0.140	0.140
Science	Biology to Grade 8	40	38	0.858	0.904	0.815	0.821
Science	Chemistry to Grade 8	40	37	0.882	0.932	1.172	1.136
Writing	Grade 3 to Grade 4	40	40	0.957	0.957	-0.597	-0.597
Writing	Grade 4 to Grade 5	40	40	0.954	0.954	-0.221	-0.221
Writing	Grade 5 to Grade 6	40	40	0.967	0.967	-0.305	-0.305
Writing	Grade 6 to Grade 7	40	40	0.950	0.950	-0.237	-0.237
Writing	Grade 8 to Grade 7	40	40	0.967	0.967	0.221	0.221
Writing	English Composition to Grade 8	40	40	0.961	0.961	0.176	0.176

Recall that for each content area the vertical scale is centered at grade 7. If the item's grade is less than 7, the shift parameter is the value that is added to place the item on the upper grade scale. For example, -1.212 is added to each grade 3 mathematics item's difficulty to place them on the grade 4 scale. The negative sign indicates that grade 3 items are less difficult than grade 4 items. If the item's grade is greater than 7, the shift parameter is the value added to place the item on the lower grade scale. For example, 0.301 is added to each grade 8 mathematics item's difficulty to place them on the grade 7 scale. The positive sign indicates that grade 8 items are more difficult than grade 7 items.

Items dropped from vertical linking are shown in Table 9–10. Linking plots in Appendix C show all linking items with dropped items in red.

Table 9-10. Items Dropped from Vertical Linking

Content Area	Link	Linking Items Removed
Mathematics	Grade 3 to Grade 4	603609 (gr. 4 item)
Mathematics	Grade 4 to Grade 5	None
Mathematics	Grade 5 to Grade 6	602104 (gr. 6 item)
Mathematics	Grade 6 to Grade 7	None
Mathematics	Grade 8 to Grade 7	None
Mathematics	Algebra I to Grade 8	601126 (gr. 8 item) and 602644 (gr. 11 item*)
Mathematics	Algebra II to Algebra I	603086 (Alg II item)
Mathematics	Geometry to Grade 8	None
Reading	Grade 3 to Grade 4	None
Reading	Grade 4 to Grade 5	611272 (gr. 5 item) and 611274 (gr. 5 item)
Reading	Grade 5 to Grade 6	610309 (gr. 6 item)
Reading	Grade 6 to Grade 7	610135 (gr. 6 item), 609022 (gr. 6 item), and 609023 (gr. 6 item)
Reading	Grade 8 to Grade 7	None
Reading	Literature to Grade 8	None
Science	Grade 3 to Grade 4	None
Science	Grade 4 to Grade 5	None
Science	Grade 5 to Grade 6	None
Science	Grade 6 to Grade 7	615238 (gr. 7 item)
Science	Grade 8 to Grade 7	None
Science	Biology to Grade 8	617395 (Bio item) and 617880 (Bio item)
Science	Chemistry to Grade 8	618699 (Chem item), 616511 (Chem item), and 616365 (Chem item)
Writing	Grade 3 to Grade 4	None
Writing	Grade 4 to Grade 5	None
Writing	Grade 5 to Grade 6	None
Writing	Grade 6 to Grade 7	None
Writing	Grade 8 to Grade 7	None
Writing	English Composition to Grade 8	None

^{*}The grade 11 item was embedded on an Algebra I form

The final shift parameters were calculated by summing adjacent grade shift parameters. For example, grade 4 items were placed on the vertical scale by applying the grade 4 to grade 5 shift, the grade 5 to grade 6 shift, and the grade 6 to grade 7 shift. Similarly, Algebra I items were placed on the vertical scale by applying the Algebra I to grade 8 shift and the grade 8 to grade 7 shift. Table 9–11 shows the final shift parameters for each content area.

Table 9-11. Final Vertical Linking Shift Parameters

Content Area	Grade/Course	Shift
Mathematics	Grade 3	-3.011
Mathematics	Grade 4	-1.799
Mathematics	Grade 5	-1.177
Mathematics	Grade 6	-0.782
Mathematics	Grade 7	0.000
Mathematics	Grade 8	0.301
Mathematics	Algebra I	1.109
Mathematics	Geometry	1.323
Mathematics	Algebra II	1.653
Reading	Grade 3	-1.086
Reading	Grade 4	-0.829
Reading	Grade 5	-0.481
Reading	Grade 6	-0.092
Reading	Grade 7	0.000
Reading	Grade 8	0.352
Reading	Literature	0.735
Science	Grade 3	-1.665
Science	Grade 4	-1.095
Science	Grade 5	-0.322
Science	Grade 6	-0.111
Science	Grade 7	0.000
Science	Grade 8	0.140
Science	Biology	0.961
Science	Chemistry	1.276
Writing	Grade 3	-1.360
Writing	Grade 4	-0.763
Writing	Grade 5	-0.542
Writing	Grade 6	-0.237
Writing	Grade 7	0.000
Writing	Grade 8	0.221
Writing	English Composition	0.397

The final vertical linking shift parameters for grade 7 in each content area is zero because it is the base grade. The final vertical linking parameter applied to grade 11 items in mathematics and science is based on the grade or course where the items were field tested. For example, the Algebra I vertical linking constant is applied to grade 11 mathematics items which appeared on Algebra I forms.

BANKED ITEM PARAMETERS FROM STAND-ALONE FIELD TESTS

Table 9–12 provides summary information based on the first stand-alone field-test events which were used to establish the content area vertical scales. The table shows the mean, standard deviation, minimum, and maximum of the item parameter estimates for each grade or course level on the content area vertical scales.

Table 9–12. Summary Statistics for Vertically Scaled Item Parameters from Stand-Alone Field Test

Content Area	Grade/Course	Mean	SD	Min	Max
Mathematics	Grade 3	-3.011	1.222	-6.641	0.052
Mathematics	Grade 4	-1.799	1.008	-4.388	0.781
Mathematics	Grade 5	-1.177	1.031	-4.367	1.172
Mathematics	Grade 6	-0.782	1.122	-3.821	2.748
Mathematics	Grade 7	0.000	0.979	-2.385	2.800
Mathematics	Grade 8	0.301	0.939	-2.743	2.985
Mathematics	Grade 11	0.939	1.014	-1.175	3.713
Mathematics	Algebra I	1.109	0.763	-0.888	3.099
Mathematics	Geometry	1.323	0.865	-1.125	3.482
Mathematics	Algebra II	1.653	0.955	-1.377	4.181
Reading	Grade 3	-1.086	1.045	-3.761	1.855
Reading	Grade 4	-0.829	0.944	-3.242	2.177
Reading	Grade 5	-0.481	1.039	-3.201	1.964
Reading	Grade 6	-0.092	1.060	-2.653	3.580
Reading	Grade 7	0.000	1.077	-3.744	3.259
Reading	Grade 8	0.352	1.039	-3.127	3.093
Reading	Literature	0.735	0.929	-2.115	3.313
Science	Grade 3	-1.665	1.302	-5.319	0.813
Science	Grade 4	-1.095	1.145	-4.453	1.663
Science	Grade 5	-0.322	0.948	-2.899	1.683
Science	Grade 6	-0.111	0.971	-2.347	2.546
Science	Grade 7	0.000	0.910	-2.531	2.532
Science	Grade 8	0.140	1.035	-2.654	3.309
Science	Grade 11	0.773	0.892	-2.216	2.377
Science	Biology	0.961	0.867	-1.331	3.731
Science	Chemistry	1.276	0.688	-1.101	3.064
Writing	Grade 3	-1.360	1.196	-4.536	2.958
Writing	Grade 4	-0.763	1.140	-3.608	1.899
Writing	Grade 5	-0.542	1.073	-3.780	2.462
Writing	Grade 6	-0.237	1.052	-2.724	4.390
Writing	Grade 7	0.000	1.132	-2.866	3.593
Writing	Grade 8	0.221	1.120	-3.234	2.883
Writing	English Composition	0.397	1.087	-2.531	3.617

Figures 9–2 through 9–5 show the banked item parameter estimates following the first stand-alone field-test events for each grade or course on the content area vertical scales.

Figure 9–2. Mathematics Item Parameters Estimates from Stand-Alone Field Test

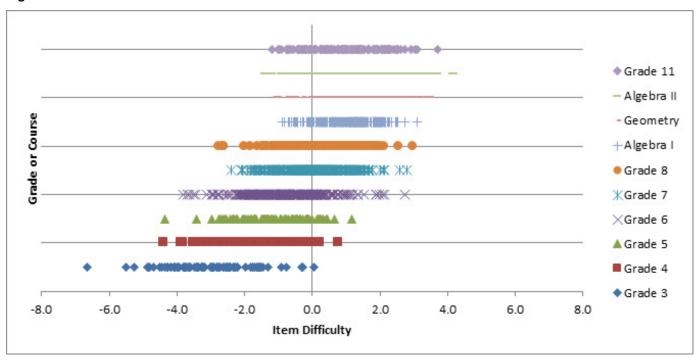


Figure 9-3. Reading Item Parameters Estimates from Stand-Alone Field Test

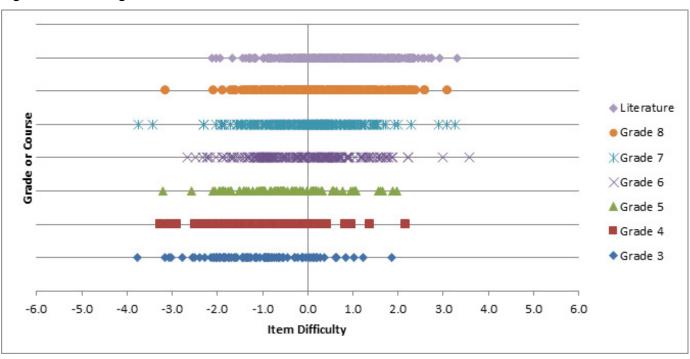


Figure 9-4. Science Item Parameters Estimates from Stand-Alone Field Test

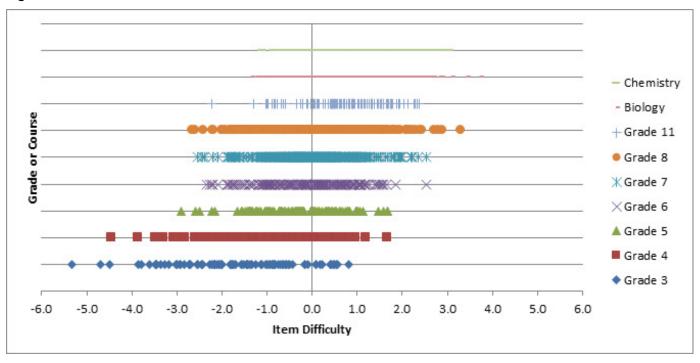
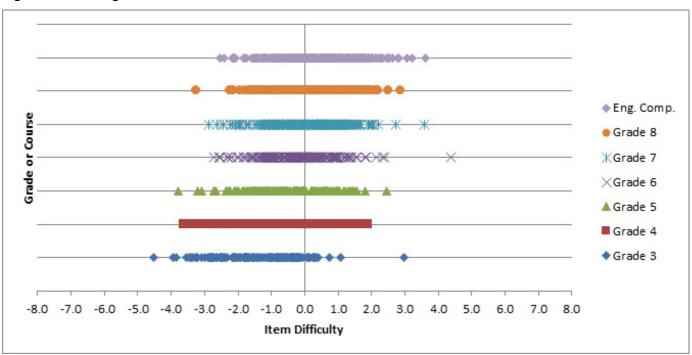


Figure 9-5. Writing Item Parameters Estimates from Stand-Alone Field Test



Rasch item difficulty measure on the vertical scale and associated standard error for each item are presented in Appendix B.

BANKED ITEM PARAMETERS FOR THE 2015-2016 OPERATIONAL ITEM POOLS

A number of changes to the CDT item pools have occurred since the initial stand-alone field-test events and creation of the content area vertical scales. For example, there have been embedded field test events to augment the item pools as well as introduce items in kindergarten, grade 1, and grade 2. (See Chapter Six for details on the various field-test events.) Additionally, prior to the 2013–2014 school year CDT items in mathematics, reading, and writing were re-aligned to the new Pennsylvania Core Standards. Table 9–13 provides summary information based on the operational item pools for the 2015–2016 school year. The table shows the mean, standard deviation, minimum, and maximum of the item parameter estimates for each grade or course level on the content area vertical scales.

Table 9-13. Summary Statistics for Vertically Scaled Item Parameters for 2015-2016 School Year

Content Area	Grade/Course	Mean	SD	Min	Max
Mathematics	Kindergarten	-3.832	1.336	-6.360	-0.611
Mathematics	Grade 1	-3.697	1.083	-5.955	-0.610
Mathematics	Grade 2	-2.929	1.364	-5.987	0.402
Mathematics	Grade 3	-1.590	1.243	-5.492	2.158
Mathematics	Grade 4	-1.154	1.274	-6.641	2.748
Mathematics	Grade 5	-0.614	1.026	-2.990	2.139
Mathematics	Grade 6	-0.123	1.182	-3.821	3.389
Mathematics	Grade 7	0.359	0.961	-2.882	2.893
Mathematics	Grade 8	0.539	0.840	-1.662	3.651
Mathematics	Algebra I	1.097	0.753	-0.888	2.731
Mathematics	Geometry	1.171	0.926	-2.058	3.482
Mathematics	Algebra II	1.622	0.935	-1.377	4.181
Reading	Kindergarten	-2.586	0.942	-4.352	-0.009
Reading	Grade 1	-1.716	1.041	-4.780	0.831
Reading	Grade 2	-1.226	0.853	-3.869	0.533
Reading	Grade 3	-0.909	1.107	-4.500	1.855
Reading	Grade 4	-0.421	1.123	-3.608	2.464
Reading	Grade 5	-0.175	0.974	-3.201	1.964
Reading	Grade 6	-0.150	0.990	-2.653	2.232
Reading	Grade 7	0.071	1.010	-3.744	3.259
Reading	Grade 8	0.368	1.014	-3.127	2.615
Reading	Literature	0.694	0.896	-2.115	2.743
Science	Grades K-2 span	-2.285	1.151	-5.446	1.864
Science	Grade 3	-1.775	1.269	-5.319	0.806
Science	Grade 4	-1.107	1.192	-7.111	1.689
Science	Grade 5	-0.497	0.829	-2.899	1.721
Science	Grade 6	-0.172	0.937	-2.347	1.655
Science	Grade 7	-0.094	0.876	-2.531	2.532
Science	Grade 8	0.032	0.993	-2.654	3.309

Table 9-13 (continued). Summary Statistics for Vertically Scaled Item Parameters for 2015-2016 School Year

Content Area	Grade/Course	Mean	SD	Min	Max
Science	Grade 11	0.672	0.944	-2.216	2.391
Science	Biology	0.954	0.877	-1.331	3.731
Science	Chemistry	1.266	0.685	-1.101	3.064
Writing	Kindergarten	-3.190	1.026	-5.685	0.047
Writing	Grade 1	-2.514	1.025	-5.107	0.693
Writing	Grade 2	-1.885	0.891	-4.436	-0.064
Writing	Grade 3	-1.037	1.300	-4.536	2.958
Writing	Grade 4	-0.609	1.145	-3.683	2.137
Writing	Grade 5	-0.579	1.069	-3.780	1.929
Writing	Grade 6	-0.289	1.012	-2.580	2.162
Writing	Grade 7	-0.039	0.995	-2.625	2.194
Writing	Grade 8	-0.035	1.113	-3.234	2.192
Writing	English Composition	0.341	1.042	-2.531	3.214

Figures 9–6 through 9–9 show the banked item parameter estimates for the operational item pools for the 2015–2016 school year for each grade or course on the content area vertical scales.

Figure 9-6. Mathematics Item Parameters Estimates for 2015-2016 School Year

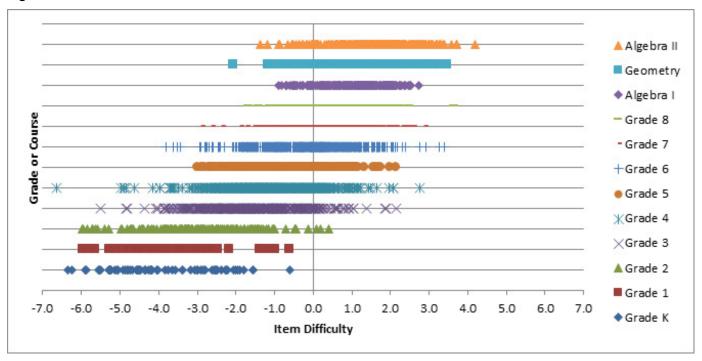


Figure 9-7. Reading Item Parameters Estimates for 2015-2016 School Year

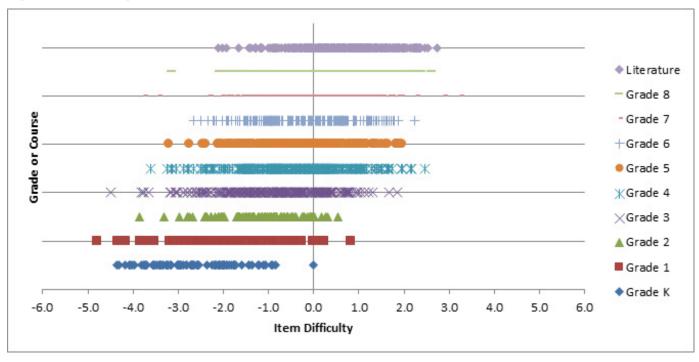


Figure 9-8. Science Item Parameters Estimates for 2015-2016 School Year

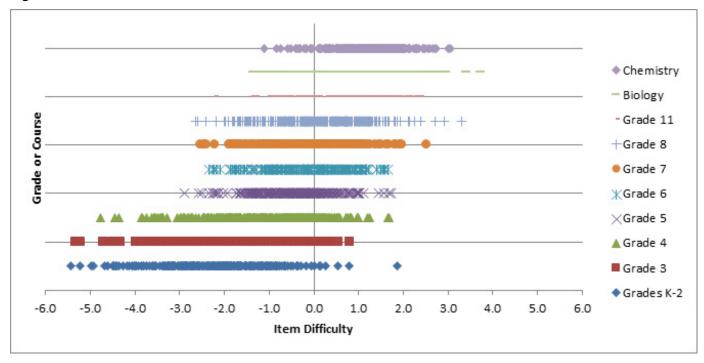
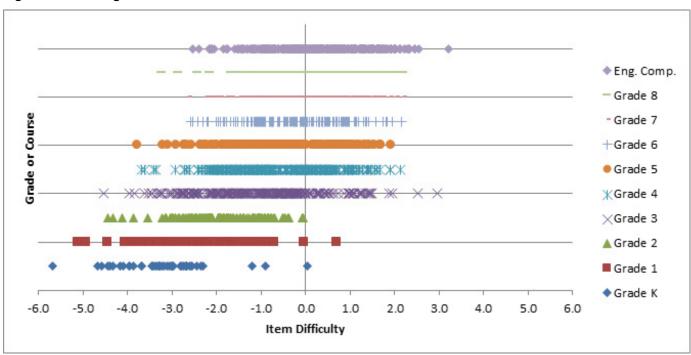


Figure 9-9. Writing Item Parameters Estimates for 2015-2016 School Year



Rasch item difficulty measure on the vertical scale and associated standard error for each item are presented in Appendix B.

CHAPTER TEN: BENCHMARKING

As described in Chapter Fourteen, CDT scores are placed along a continuum from "Areas of Need" to "Strengths to Build On." These are represented in the dynamic reporting suite with colors red, green, and blue. "Areas of Need" are depicted in the red range, while "Strengths to Build On" are depicted in the green and blue ranges. The center of the green range is the point that separates students into two categories: solidly ready for the next grade or course and not solidly ready for the next grade or course. In each content area, the center of the green range for grades 5 and above was established by panels of Pennsylvania educators during benchmarking activities¹.

BENCHMARKING ACTIVITIES

Table 10–1 below presents general information about the preliminary benchmarking activities for mathematics, reading, science, and writing. The cut points established are considered preliminary because they were set prior to the first operational administration of the CDT. This was necessary so teachers and students would have access to immediate scores and reports following operational administration. As operational data become available, preliminary cut points are reevaluated and possibly revised (see Chapter Nineteen for details including the benchmark cuts in place for the 2015-2016 school year).

Table 10-1. General Information About CDT Benchmarking Activities

Category	Information
Event Date	Mathematics: August 12–13, 2010
Event Date	Reading: January 27–28, 2011
Event Date	Science: January 27–28, 2011
Event Date	Writing: August 4–5, 2011
Grades/Courses	Mathematics: Grades 5–8, High School, Algebra I, Geometry, Algebra II
Grades/Courses	Reading: Grades 5–8, Literature
Grades/Courses	Science: Grades 5–8, High School, Biology, Chemistry
Grades/Courses	Writing: Grades 5–8, English Composition
Methodology	Randomly Ordered Item Booklet (ROIB) Angoff (Yes/No) Method
Categories	Not solidly ready for the next grade or course
Categories	Solidly ready for the next grade or course
Number of Panelists	Mathematics: 28
Number of Panelists	Reading: 23
Number of Panelists	Science: 20
Number of Panelists	Writing: 46
Rounds	Two

There were three separate CDT benchmarking events because the operational CDT was rolled out in phases by content area. Each benchmarking event followed the initial stand-alone field-test event for that content area.

When initially launched, the CDT was available to students in grades 6 and above. However, cut points were established for grades 5 and above. This is because CDT is available throughout the school year. Early in the school year it may be more appropriate to evaluate a student's scores based on the prior grade cut. For example, in October, a teacher may choose to evaluate a grade 6 student's scores relative to the grade 5 cut.

¹ The center of the green range for grades 2 through 4 was extrapolated from grades 5 and above prior to the launch of each CDT for students in grades 3 through 5 in spring of 2014. See Chapter Nineteen for details.

The Randomly Ordered Item Booklet (ROIB) Angoff (Yes/No) method was used to set CDT benchmark cut points. Panels of educators worked in grade/course groups to establish cut points for grades 5 through 8, high school, and content area courses Algebra I, Geometry, Algebra II, Literature, Biology, Chemistry, and English Composition. After a training session describing the process and definition of roles, a discussion was held in which panelists were asked to describe what "solidly ready for the next grade or course" means. Thereafter, panelists were asked to review approximately 40 test questions and make individual yes/no judgments as to whether a "solidly ready" student would be successful in answering each question. The judgments were made over two iterations or rounds with a sequence of Round 1 judgments, show and verification of Round 1 results, group discussion, and Round 2 judgments.

After cut points were set for each grade and course within a content area, the vertical articulation of cut points across grades and courses was reviewed. Given that each content area is vertically scaled, it was expected that cut points would increase as grade increased. For example, the grade 8 cut point would not be lower than the grade 7 cut point on the vertical scale. In some cases, post-smoothing was required to ensure increasing cut points across grades/courses and smooth transitions.

Complete descriptions of each benchmarking activity including post-smoothing are available in TAC documents:

- Classroom Diagnostic Tools Results for Preliminary Benchmarking Activity Mathematics
- Classroom Diagnostic Tools Results for Preliminary Benchmarking Activity Reading and Science
- Classroom Diagnostic Tools Results for Preliminary Benchmarking Activity Writing

BENCHMARKING RESULTS

Preliminary cut points in the logit metric for each content area are shown in Figures 10–1 through 10–4. In general, the difference between cut points is greater in the lower grades and then levels off.

Figure 10-1. Preliminary Benchmark Cut Points for Mathematics

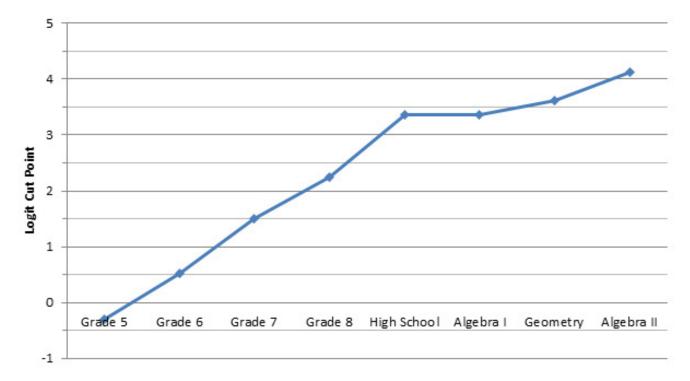


Figure 10-2. Preliminary Benchmark Cut Points for Reading

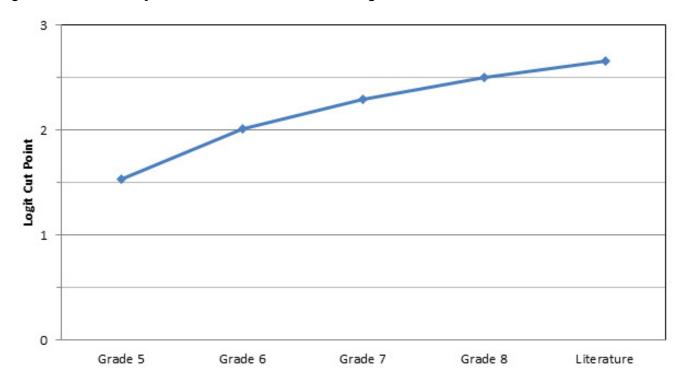


Figure 10-3. Preliminary Benchmark Cut Points for Science

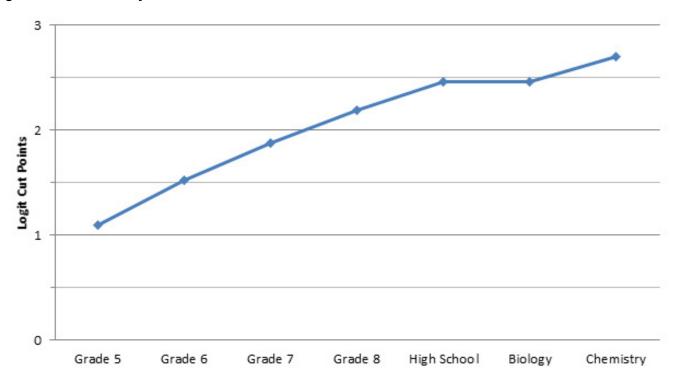


Figure 10-4. Preliminary Benchmark Cut Points for Writing

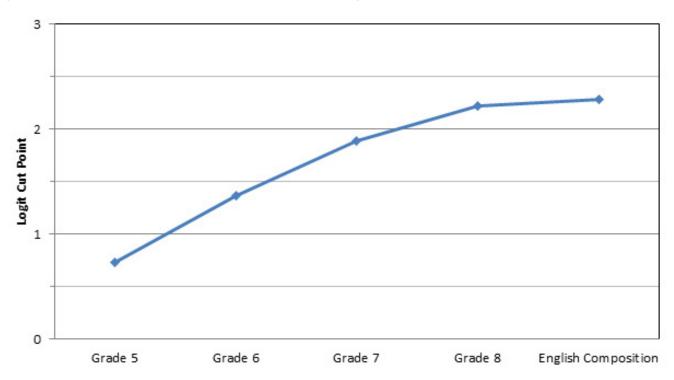


Table 10–2 shows the preliminary benchmark cuts in the logit metric for each content area. Also presented are the scale score ranges for each color on the CDT reports.

Table 10-2. Preliminary Benchmark Cuts and Scale Score Ranges

Content Area	Grade or Course	Logit Cut Point (Center of Green)	Red Scale Score Range	Green Scale Score Range	Blue Scale Score Range
Mathematics	Grade 5	-0.292	400 - 895	896 - 1058	1059 - 2000
Mathematics	Grade 6	0.526	400 - 997	998 - 1160	1161 - 2000
Mathematics	Grade 7	1.495	400 - 1118	1119 - 1281	1282 - 2000
Mathematics	Grade 8	2.238	400 - 1211	1212 - 1374	1375 - 2000
Mathematics	High School	3.363	400 - 1351	1352 - 1514	1515 - 2000
Mathematics	Algebra I	3.363	400 - 1351	1352 - 1514	1515 - 2000
Mathematics	Geometry	3.614	400 - 1383	1384 - 1546	1547 - 2000
Mathematics	Algebra II	4.117	400 - 1446	1447 - 1609	1610 - 2000
Reading	Grade 5	1.529	400 - 982	983 - 1197	1198 - 2000
Reading	Grade 6	2.015	400 - 1051	1052 - 1266	1267 - 2000
Reading	Grade 7	2.299	400 - 1092	1093 - 1307	1308 - 2000
Reading	Grade 8	2.500	400 - 1121	1122 - 1336	1337 - 2000
Reading	Literature	2.657	400 - 1143	1144 - 1358	1359 - 2000
Science	Grade 5	1.099	400 - 1009	1010 - 1182	1183 - 2000
Science	Grade 6	1.522	400 - 1066	1067 - 1239	1240 - 2000
Science	Grade 7	1.879	400 - 1113	1114 - 1286	1287 - 2000

Table 10–2 (continued). Preliminary Benchmark Cuts and Scale Score Ranges

Content Area	Grade or Course	Logit Cut Point (Center of Green)	Red Scale Score Range	Green Scale Score Range	Blue Scale Score Range
Science	Grade 8	2.189	400 - 1154	1155 - 1327	1328 - 2000
Science	High School	2.462	400 - 1190	1191 - 1363	1364 - 2000
Science	Biology	2.462	400 - 1190	1191 - 1363	1364 - 2000
Science	Chemistry	2.706	400 - 1223	1224 - 1396	1397 - 2000
Writing	Grade 5	0.731	400 - 959	960 - 1132	1133 - 2000
Writing	Grade 6	1.363	400 - 1043	1044 - 1216	1217 - 2000
Writing	Grade 7	1.886	400 - 1113	1114 - 1286	1287 - 2000
Writing	Grade 8	2.219	400 - 1157	1158 - 1330	1331 - 2000
Writing	English Composition	2.281	400 - 1166	1167 - 1339	1340 - 2000

CHAPTER ELEVEN: SCALING

Scaling is used to transform test score values onto a scale that can be interpreted by users easily and correctly. Raw scores cannot be used to compare students' achievement on the CDT because they depend on the difficulty of the test items administered. Given the adaptive nature of the CDT, each student receives test items targeted at his or her level of achievement. Therefore, two students may have taken very different sets of items in terms of difficulty but have the same raw score. This makes use of raw scores for comparison across students, across administrations, or to a specific standard (cut point) meaningless. Rasch ability estimates in the logit metric do take into consideration the difficulty of the items administered. Therefore, they may be used to make comparisons. However, scale scores are introduced to report CDT results since scale scores may be easier to understand and interpret than logits.

Essentially, CDT scale scores are derived through a two-step process. First, there is a nonlinear transformation that converts an individual raw score on a unique set of items to Rasch ability (in logits). Second, a linear transformation is used to convert logits to scale scores. These and some additional considerations (e.g., rounding rules) are discussed in more detail below.

RAW SCORES TO RASCH ABILITY ESTIMATES

For each CDT test, the calibrated item difficulties associated with the unique set of items administered were used to obtain Rasch person ability estimates and asymptotic standard errors of measurement for the overall test, as well as each diagnostic category. Calibrated item difficulties were based on the field tests and vertical linking (further discussed in Chapter Eight and Chapter Nine).

Raw scores (total and diagnostic category) on the unique set of items that makes up an individual CDT test were mapped to Rasch ability estimates using unconditional, joint-maximum likelihood estimation. In the case of zero or perfect raw scores, a fractional raw score (a value less than one) was added to zero scores and subtracted from perfect scores to determine the corresponding logit values for these extreme scores. The Rasch ability estimates were then transformed to scale scores as discussed in the next section.

RASCH ABILITY ESTIMATES TO SCALE SCORES

Generally, scale scores are preferred over Rasch ability estimates for reporting purposes. One issue is that Rasch ability estimates are on a scale that includes negative and decimal values. By transforming the Rasch ability estimates to scale scores, all reported values can become positive integers, which makes more sense to teachers, parents, and students. Since Rasch ability estimates are comparative, the transformed scale scores have a common scale across administrations.

Scale scores are usually obtained through some linear transformation of Rasch ability estimates. Before the linear equation was established for each content area, a few points were considered for the CDT:

- Avoid scales that might be confused with scores for other types of assessment; for example:
 - Scale scores ranging from 0 to 100 (because this might be confused with percent correct scores or percentile ranks)
 - Scale scores ranging from 200 to 800 (because this might be confused with SAT scores)
 - Scale scores with similar ranges as the ones for the Pennsylvania System of School Assessment (PSSA) or Keystone Exams
- Avoid scales similar to raw scores.
- Avoid scales that might suggest the scores are more precise than they actually are (in other words, suggesting more precision than can be supported by the test scores).
- Avoid scales with negative numbers and decimals.

In terms of industry standard practice, a common perspective is that scale scores should facilitate score interpretation while at the same time minimize misinterpretation and unwarranted inferences. Often this is done

by incorporating some kind of meaning to the scores¹ (Peterson, Kolen, and Hoover, 1989). The incorporation of content meaning is one way to facilitate score interpretation. This might be done in several different ways. For example, PSSA scaled scores, like those of many other state assessments, try to input some content meaning by having the PSSA performance level cut scores have known values on the scaled score metric. Such an approach appears to make good sense given the purposes of the criterion-reference test like the PSSA.

For CDT, the scale must be sufficiently large to cover the entire vertical scale. As a result, an initial scale score range of 400 to 2000 was established for each content area. When CDT was expanded in spring of 2014 and made available to students in grades 3 through 5, the scale score range was expanded to 200 to 2000 for those students. Initially, the grade 7 benchmark logit cut point was mapped to a scale score of 1200 for all content areas. It is worth noting that, although careful consideration was given to the selection of these values, they are completely arbitrary. For example, the label of 1200 could have been called 100 or any other value without affecting any of the relationships among schools, administrations, students, or items. In other words, changing the scale would simply be changing the labels on the axis of a graph without moving any of the points.

LINEAR TRANSFORMATION FORMULAS

The scale scores for the CDT for each content area are obtained through a linear transformation of the Rasch ability estimates ($\hat{\beta}$). Specifically,

$$SS = m \stackrel{\triangle}{\beta} + b,$$

where m is the slope and b is the intercept. The linear transformation for each CDT content area was derived by anchoring the grade 7 benchmark cut (i.e., Rasch ability estimate) to the scale score 1200 and a Rasch ability estimate of 7.9 to the scale score of 2000. The slopes of the scaling equations influence the variability of the scale scores. It is important that the slopes are sufficiently large to cover the full range of the vertical scale. The CDT scaling equations produce scale score distributions with standard deviations of approximately 150 scale score points and cover logit ranges of approximately -6.5 to 7.9. The final slopes and intercepts for deriving scale scores for the CDT are provided in Table 11–1.

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¹ Not everyone agrees with this sentiment. Some have argued the opposite point—that is, any attempt to add meaning to test scores actually predisposes the scores to be misinterpreted (see Angoff, 1984).

Table 11-1. Scaling Constants by Content Area

Content Area	Slope	Intercept
Mathematics	124.90	1013.30
Reading	142.83	871.63
Science	132.87	950.34
Writing	133.02	949.12

ROUNDING

The linearly transformed scale scores are rounded to the nearest integer value for reporting purposes. Values greater than or equal to 0.50 are rounded up. Values less than 0.50 are rounded down.

LOWEST OBTAINABLE SCALE SCORES

Each general content area CDT (mathematics, reading, science, and writing) has a lowest obtainable scale score (LOSS) of 200. Course specific CDTs (Algebra I, Geometry, Algebra II, Biology, and Chemistry) have a lowest obtainable scale score (LOSS) of 400. Any derived scale score less than LOSS is truncated to this minimum value. The selection of a LOSS is mainly based on two considerations:

- 1. Extremely low scale scores may have an impact on the average of the scale scores if CDT data is summarized at school, district, or state level.
- 2. Score truncation makes sense from a score precision perspective given measurement errors at the extremes are large.

HIGHEST OBTAINABLE SCALE SCORES

A highest obtainable scale score (HOSS), 2000, is set for the CDT for the same reasons as described for the LOSS value.

CHAPTER TWELVE: EQUATING

Equating is a statistical process that is used to adjust scores on test forms so that scores on the forms can be used interchangeably (Kolen & Brennan, 2004), even though the test forms consist of different items. In the case of the CDT, the adaptive nature of the test means that each student takes a unique test form with items targeted at his or her level of achievement.

To make meaningful comparisons of test scores across administrations, various equating models and procedures have been developed in the literature. For example, in terms of design, there are randomly equivalent groups design and common-item non-equivalent groups design. In terms of testing model, the model can be classified as either classical test theory based equating model or modern test theory (e.g., Rasch model or item response theory) based equating model. In terms of when the equating is conducted in the assessment cycle, the model can be classified as pre-equating or post-equating.

Given the requirements of adaptive testing and immediate score reporting, CDT is pre-equated. Also, it was based on the Rasch model. The following sections will focus on the discussion of pre-equating and the equating design for the CDT.

PRE-EQUATING VERSUS POST-EQUATING

Like other Pennsylvania assessment programs, the CDT uses the Rasch model to guide test design, calibration, scaling, and equating. The key element of equating test forms using the Rasch model is to place the item parameters on the same scale. Once this is done, raw scores can be converted to Rasch ability estimates and then to scale scores as described in Chapter Eleven. As a result, the scale scores can be compared across forms and administrations with different items.

A common practice in many K–12 large-scale assessment programs is to have all the items field tested before they are administered in an operational setting. Once the field-test items' difficulties are placed on the base scale or common metric, in theory, one should not expect the Rasch item difficulties for these items to change, except within a reasonable range of measurement error, after they are administered in an operational test, providing the Rasch model fits the data. Based on this theoretical advantage of using Rasch models, equating can be conducted using the item parameters calibrated from field-test data. This statistical procedure is referred to as pre-equating. In contrast, post-equating involves the use of Rasch item difficulties calibrated from the data of the operational test to be equated.

Although, in theory, the two equating procedures should provide identical results when the model fits the data, each of them has its own advantages and disadvantages. The use of pre-equating can facilitate the operational process in terms of adaptive item selection, rapid or immediate score reporting, and more flexibility in the assessment. However, a variety of issues need to be considered when using pre-equating in practice. For example, students may not be motivated to take the field tests, especially stand-alone field tests, which may make the items appear harder in the field test than in the operational test (Eignor, 1985; Eignor and Stocking, 1986; Stocking and Eignor, 1986; Kolen and Harris, 1990). Other concerns for the field-test items include item context, item position, and sample size. In contrast, the use of post-equating, when applicable, does not have the same motivational concerns because students cannot distinguish between operational and field-test items. Also, post-equating is sometimes considered to yield more accurate analysis results given the large number of students who take the operational tests. On the other hand, post-equating does not allow for adaptive item selection or immediate score reporting as required of the CDT.

EQUATING DESIGN FOR THE CDT

The CDT is an adaptive test, meaning that the test items selected are tailored to each student's achievement as the test progresses. This requires that all items in the pool be on the same scale and known at the time of testing. For CDT, this is accomplished by vertical linking the entire item pool within a content area based on the field-test events. See Chapter Eight and Chapter Nine for details. The known (pre-equated) item parameters are used in selecting items targeted for the student and to provide immediate scores to teachers and students.

In implementing the pre-equating model for the CDT, efforts were made to enhance the accuracy of pre-equating results. To address the concerns on students' motivation to take field tests, records were excluded from item calibrations if the student did not answer at least 5 questions. Also, records with high person outfit mean-squares values were excluded following the WINSTEPS suggestion that these may be the result of a few random responses by low performers. To address concerns of sample sizes, windows for field testing were scheduled so they did not overlap other testing in an attempt to increase volunteer participation. Also, field-test windows were extended in cases where schools were unable to complete testing in the allotted time. A small study of mathematics vertical linking items revealed no position effects. However, it should be noted that with adaptive tests students do not take the same items. Even if two students do take the same item, it will likely not be in the same test position.

EVALUATION OF ITEM PARAMETER STABILITY

After each school year, item parameter stability studies are conducted for each content area. If the differences between the newly estimated Rasch item difficulties and the estimates based on the field-test events are not statistically significant, the pre-equating results should be valid. See Chapter Eighteen for results of item parameter stability studies based on operational data from the 2015–2016 school year.

EQUATING ADDITIONAL FIELD-TEST ITEMS

Over time, additional items have been, and will continue to be, needed to replenish the CDT item pools. Plans to field test additional items must include an equating plan. Equating is needed to place the new items onto the existing vertical scale. In the case of stand-alone field-test events, common-item equating was used. That is, field-test forms included items from the current CDT item pool. In the case of embedded field-test events, field-test items were included within an operational administration such that students did not know which items were field test. With both stand-alone and embedded field test, equating was accomplished by running the calibration of field-test items with item parameters of operational items fixed/anchored to the bank values using WINSTEPS. For each content area, the entire item pool, including field-test items, was calibrated using WINSTEPS with operational items anchored on the banked values.

CHAPTER THIRTEEN: OPERATIONAL TEST DESIGN AND CAT CONFIGURATIONS

The Pennsylvania Classroom Diagnostic Tools (CDT) was initially developed to support teachers and students in grades 6 through 12. In spring 2014, CDT was made available to students in grades 3 through 5 as well. The tools are fully integrated and aligned in the Standards Aligned System (SAS) and enable educators to identify students' academic strengths and areas of need as well as provide links to classroom resources. The assessment is voluntary and administered completely online using a computer adaptive test (CAT) model.

The CDT features a number of tests. Tests in Mathematics, Algebra I, Geometry, and Algebra II were introduced in October 2010 for students in grades 6 and above. Tests in Reading/Literature, Science, Biology, and Chemistry were first available in April 2011 for students in grades 6 and above. Tests in Writing /English Composition began in October 2011 for students in grades 6 and above. Tests in Mathematics, Reading, Science, and Writing for students in grades 3 through 5 started in April 2014.

This chapter details the operational CDT test design and configuration of the CAT algorithm. Test design elements include the number of diagnostic categories, the number of operational items to administer per diagnostic category, and the number of embedded field-test items. CAT algorithm elements include entry point, item selection criteria, test navigation, and termination.

OPERATIONAL TEST DESIGN

NUMBER OF DIAGNOSTIC CATEGORIES

The CDT tests include multiple-choice (MC) and evidence-based selected-response (EBSR) items. All items in the content areas of mathematics, reading, and writing are aligned to the Pennsylvania Core Standards. All items in the content area of science are aligned to the Pennsylvania Academic Standards. Each CDT is broken into four or five diagnostic categories and the items in the pool are grouped by these diagnostic categories based on the Assessment Anchors and Eligible Content. The diagnostic categories for each of the CDT tests are listed below.

Math Grades 3-5 and Math Grades 6-8

- Numbers & Operations
- Algebraic Concepts
- Geometry
- Measurement, Data, and Probability

Algebra I

- Operations with Real Numbers and Expressions
- Linear Equations & Inequalities
- Functions & Coordinate Geometry
- Data Analysis

Geometry

- Geometric Properties
- Congruence, Similarity, & Proofs
- Coordinate Geometry & Right Triangles
- Measurement

Algebra II

- Operations with Complex Numbers
- Non-Linear Expressions & Equations
- Functions
- Data Analysis

Reading Grades 3-5 and Reading/Lit Grades 6-HS

- Key Ideas and Details—Literature Text
- Key Ideas and Details—Informational Text
- Craft and Structure/Integration of Knowledge and Ideas—Literature Text
- Craft and Structure/Integration of Knowledge and Ideas—Informational Text
- Vocabulary Acquisition and Use

Science Grades 3-5 and Science Grades 6-HS

- The Nature of Science
- Biological Sciences
- Physical Sciences
- Earth/Space Sciences

Biology

- Basic Biological Principles/Chemical Basis for Life
- Bioenergetics/Homeostasis & Transport
- Cell Growth & Reproduction/Genetics
- Theory of Evolution/Ecology

Chemistry

- Properties & Classification of Matter
- Atomic Structure & The Periodic Table
- The Mole & Chemical Bonding
- Chemical Relationships & Reactions

Writing Grades 3-5 and Writing/Eng Comp Grades 6-HS

- Quality of Writing: Focus and Organization
- Quality of Writing: Content and Style
- Quality of Writing: Editing
- Conventions: Punctuation, Capitalization, and Spelling
- Conventions: Grammar and Sentence Formation

NUMBER OF ITEMS PER DIAGNOSTIC CATEGORY

There were various factors considered when determining the number of operational items to administer per diagnostic category. The goal of the CDT is to provide diagnostic information. Therefore, the test must include a sufficient number of items to provide meaningful scores with low standard errors. However, testing time is limited and the item pools are finite. A very long test may produce lower standard errors, but if it is considered to be "too long" will teachers use it? Also, the longer the test, the more the items are exposed.

Prior to the launch of the first operational CDT in fall of 2010, simulations were run of various test lengths. Table 13–1 shows the average conditional standard error of measurement (CSEM) for total test and each diagnostic category (DC) for five test lengths in simulations of CDT Mathematics. Also included is the theoretical minimum standard error that is possible for each test length. This is the standard error if the ability is known and there are sufficient items to administer where the item's difficulty is equal to the known ability and the test constraints are met.

Total Total Total **Diagnostic** Diagnostic **Diagnostic Diagnostic** Diagnostic Diagnostic Diagnostic Categories Number of **Categories Categories** Min Avg Categories Categories Categories **Categories** Number of DC1 Avg DC2 Avg DC3 Avg DC4 Avg DC5 Avg **Points Error Error Min Error Points Error Error Error Error Error** 8 40 0.316 0.348 0.707 0.789 0.796 0.784 0.783 0.798 0.329 9 0.741 45 0.298 0.667 0.738 0.729 0.734 0.742 0.283 0.313 10 0.632 0.690 0.707 0.691 0.696 50 0.691 55 0.270 0.298 11 0.603 0.660 0.667 0.655 0.653 0.659

0.633

Table 13-1. Average Standard Errors for Various Test Lengths — Mathematics

As expected, increasing the number of items decreases the standard error. Differences in standard errors at the diagnostic category level for the same number of items are a reflection of differences in the diagnostic category item pools.

0.577

Figure 13–1 shows average standard errors as a function of test length.

0.286

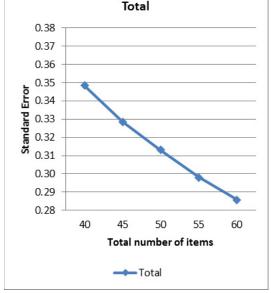
60

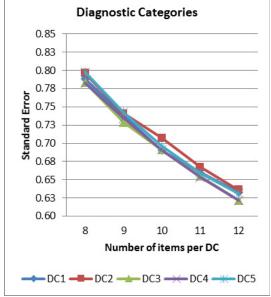
0.258



Figure 13-1. Average Standard Errors for Various Test Lengths - Mathematics

12





0.636

0.622

0.622

0.631

¹ At that time, there were five diagnostic categories in CDT Mathematics.

Considering test time factors and simulation results for various test lengths, it was determined that CDT tests with four diagnostic categories would have 12–15 items per category (48–60 items total) and CDT tests with five diagnostic categories would have 10–12 items per category (50–60 items total).

NUMBER OF EMBEDDED FIELD-TEST ITEMS

Over time, additional items will be needed to replenish the CDT item pools. Embedding field-test items within an operational CDT test is advantageous for two reasons. First, sufficient item level data can be gathered without the time and expense of a separate stand-alone administration. Second, it allows the new items to be placed on the existing operational scale. See Chapter Twelve for details.

As detailed in Chapter Six, there have been three embedded field-test events. Starting on February 14, 2013, field-test items were embedded within CDT Mathematics and Reading/Literature tests. Starting on August 26, 2013, items were embedded within CDT Mathematics, Reading/Literature, Science, and Writing/English Composition tests for students in grade 6. Starting on August 24, 2015, items were embedded within seven of the thirteen CDTs: Math Grades 6-8, Algebra I, Reading Grades 3-5, Reading/Lit Grades 6-HS, Science Grades 6-HS, Biology, and Writing/Eng Comp Grades 6-HS.

For each embedded field-test event, the factors considered when determining the number of field-test items to embed included the number of items to be field tested, the expected number of students testing, and the desired n-count per item for field-test analyses. In mathematics, science, and writing, field-test items were randomly assigned to fixed positions spread throughout the operational test. In reading, a field-test passage was randomly assigned near the middle of the test and students took all of the items associated with the passage. In all content areas, the positions of field-test items were unknown to students. Field-test items were not clustered at the end of the test in an effort to avoid any fatigue effect when placing the items on the operational scale.

CAT ALGORITHM

This section covers elements of the CAT algorithm including entry point, item selection criteria, test navigation, and termination.

ENTRY POINT

All CDT tests other than Reading Grades 3-5 and Reading/Lit Grades 6-HS begin with a small "locator" section in which one or two items per diagnostic category are administered. The order of the diagnostic categories is random. The two CDT tests in the reading content area are slightly different because they are passage-based. Those, too, have a small "locator" section, but they may not contain one or two items for each diagnostic category because not all passages have an item for each diagnostic category.

The CAT algorithm is designed to administer items targeted for the individual student based on performance. However, student performance in the current test setting is not known at the beginning of the test. With no prior information about a student, the starting point in each diagnostic category is an item of average difficulty. For CDT tests that are not course-specific (Math Grades 3-5, Math Grades 6-8, Reading Grades 3-5, Reading/Lit Grades 6-HS, Science Grades 3-5, Science Grades 6-HS, Writing Grades 3-5, and Writing/Eng Comp Grades 6-HS), the student's grade is considered in selecting an item of average difficulty. For example, a grade 7 student taking CDT Math Grades 6-8 will start with an item near the average difficulty of grade 7 items in the pool. For CDT tests that are course-specific (Algebra I, Geometry, Algebra II, Biology, and Chemistry), an average item will be selected regardless of the student's grade. For example, a grade 7 student taking CDT Algebra I will start with an item near the average difficulty of Algebra I items in the pool.

If a student has previously taken the CDT, the prior CDT scores are used to give the CAT algorithm a "head start." In this case, the first item in each diagnostic category is selected to match the characteristics of the prior information rather than an average item. For example, if a student previously took the CDT Math Grades 6-8 test and scored very high in "Measurement, Data, and Probability," then the first item selected in that diagnostic category will be more difficult than the grade level average.

The CAT algorithm includes a randomization component when selecting items to control item exposure. That is, one item is selected from among a set of items that are near the targeted item difficulty. This is especially important at the beginning of the CDT when no prior information is available. Randomization of items and diagnostic categories ensure that students will not see the same set of items in the same order even when all of the students are assigned items of average difficulty.

ITEM SELECTION CRITERIA

Once the initial set of items has been administered, the CAT algorithm is designed to administer items targeted for the individual student based on performance. In targeting items, the CAT algorithm uses Rasch ability estimates from the current test session and considers a number of factors including test blueprint, response probability, item pool refinement, and passage-related concerns. Each of these is discussed in detail on the following pages.

RASCH ABILITY ESTIMATES

As described in Chapter Eight and Chapter Nine, CDT item pools are scaled using the Rasch partial credit model (Wright & Masters, 1982) and vertically linked across grades and courses. The CAT algorithm has access to all item parameters in the item pool. After each item response, Rasch ability estimates and standard errors are calculated via maximum likelihood estimation (MLE) for the total test and each diagnostic category. In the case of zero (all items incorrect) and perfect (all items correct) scores, a correction factor is applied before computing the relevant maximum likelihood estimates. A fractional value is added to a zero score and subtracted from a perfect score before estimation.

After the locator section of the CDT, but before a student has taken many items in each diagnostic category, the total Rasch ability estimate is used in item selection. This is because total and diagnostic category ability estimates tend to be highly correlated, and the total estimate does not change as dramatically as diagnostic category estimates given one additional item. Using the total estimate at this point prevents students from experiencing extreme fluctuations in the difficulty of items.

While use of the total Rasch ability estimate makes sense early in the test, the goal of the CDT is to be diagnostic, and some students exhibit clear strengths and areas of need in different diagnostic categories. Therefore, after four or five items have been administered in a diagnostic category, the corresponding Rasch ability estimate for that diagnostic category is used in item selection. This ensures, for example, that a student struggling in "Biological Sciences" while at the same time excelling in "Earth and Space Sciences" will be administered easier "Biological Sciences" items and more challenging "Earth and Space Sciences" items.

TEST BLUEPRINT

The CAT algorithm closely resembles a modified constrained CAT (MCCAT) design (Leung, Chang, & Hau, 2003). The general idea is that the CAT algorithm is configured with upper and lower bounds that specify the minimum and maximum numbers of items that will be administered to students for both total and diagnostic categories.

RESPONSE PROBABILITY

No matter which Rasch ability estimate is used in selecting an item, total or diagnostic category estimate, the CAT algorithm targets items where the student has response probability (RP) of answering correctly, based on the Rasch ability estimate and item's difficulty. The most efficient way to run a CAT is to select items where RP is 0.5. That is, select items where the student has a 50% chance of getting the item correct. This response probability produces the smallest standard error for any given number of items.

Prior to the launch of the first operational CDT in fall of 2010, simulations were run for various response probabilities. Table 13–2 shows the average person standard errors for total test and each diagnostic category² for seven response probabilities in simulations of CDT Mathematics with 50 items. Figure 13–2 shows average standard errors as a function of response probability.

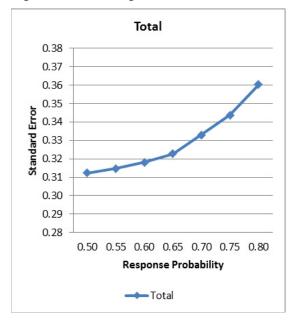
² At that time, there were five diagnostic categories in CDT Mathematics.

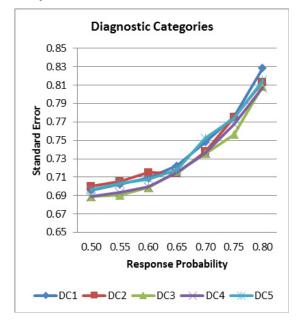
Table 13–2. Average Standard Errors for Various Response Probabilities — Mathematics

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4	DC 5
50 total (10 per DC)	0.50	0.312	0.696	0.700	0.689	0.689	0.696
50 total (10 per DC)	0.55	0.315	0.702	0.705	0.690	0.693	0.703
50 total (10 per DC)	0.60	0.318	0.709	0.715	0.699	0.699	0.708
50 total (10 per DC)	0.65	0.323	0.722	0.714	0.716	0.715	0.719
50 total (10 per DC)	0.70	0.333	0.748	0.738	0.735	0.736	0.752
50 total (10 per DC)	0.75	0.344	0.776	0.775	0.756	0.767	0.774
50 total (10 per DC)	0.80	0.360	0.829	0.813	0.809	0.807	0.815

As expected, increasing the response probability increases the standard error. Differences in standard errors at the diagnostic category level for the same response probability are a reflection of differences in the diagnostic category item pools.

Figure 13-2. Average Standard Errors for Various Response Probabilities — Mathematics





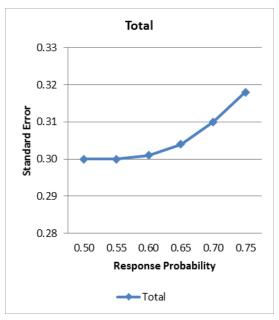
As can be seen in Figure 13–2, increasing response probability incrementally from 0.50 leads to increases in standard error. The increase in standard error is gradual at first and becomes more pronounced around 0.65.

Prior to the launch of the CDT for students in grades 3 through 5, the topic of response probability was revisited for each content area. Simulations for various response probabilities were run with fixed length tests equal to average test length. Results for each content area are presented in Tables 13–3 through 13–6 and Figures 13–3 through 13–6.

Table 13–3. Average Standard Errors for Various Response Probabilities — Mathematics

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4
52 total (13 per DC)	0.50	0.300	0.602	0.592	0.601	0.606
52 total (13 per DC)	0.55	0.300	0.602	0.594	0.602	0.607
52 total (13 per DC)	0.60	0.301	0.605	0.597	0.604	0.610
52 total (13 per DC)	0.65	0.304	0.613	0.608	0.613	0.619
52 total (13 per DC)	0.70	0.310	0.626	0.622	0.625	0.631
52 total (13 per DC)	0.75	0.318	0.646	0.644	0.645	0.651

Figure 13–3. Average Standard Errors for Various Response Probabilities — Mathematics



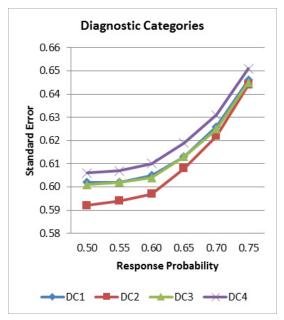
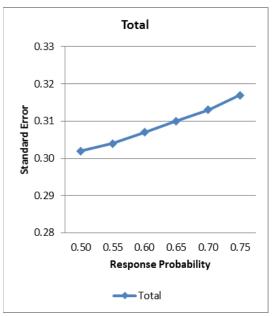


Table 13-4. Average Standard Errors for Various Response Probabilities - Reading

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4	DC 5
55 total (11 per DC)	0.50	0.302	0.738	0.739	0.723	0.743	0.743
55 total (11 per DC)	0.55	0.304	0.739	0.744	0.731	0.741	0.751
55 total (11 per DC)	0.60	0.307	0.742	0.744	0.733	0.756	0.771
55 total (11 per DC)	0.65	0.310	0.747	0.751	0.742	0.766	0.781
55 total (11 per DC)	0.70	0.313	0.755	0.756	0.751	0.772	0.800
55 total (11 per DC)	0.75	0.317	0.767	0.762	0.764	0.784	0.823

Figure 13-4. Average Standard Errors for Various Response Probabilities — Reading



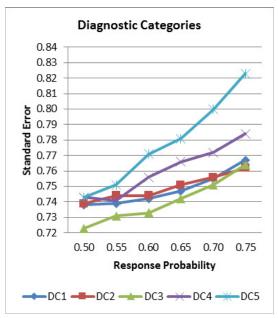
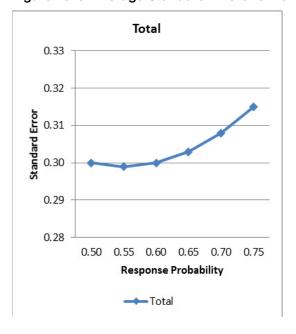


Table 13-5. Average Standard Errors for Various Response Probabilities — Science

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4
52 total (13 per DC)	0.50	0.300	0.601	0.599	0.602	0.599
52 total (13 per DC)	0.55	0.299	0.600	0.599	0.600	0.599
52 total (13 per DC)	0.60	0.300	0.602	0.601	0.603	0.604
52 total (13 per DC)	0.65	0.303	0.612	0.608	0.609	0.611
52 total (13 per DC)	0.70	0.308	0.624	0.622	0.619	0.626
52 total (13 per DC)	0.75	0.315	0.642	0.642	0.636	0.644

Figure 13-5. Average Standard Errors for Various Response Probabilities - Science



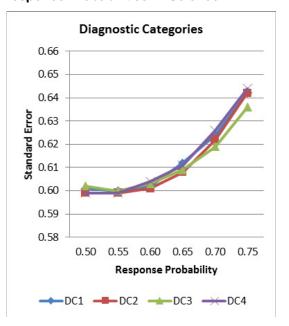
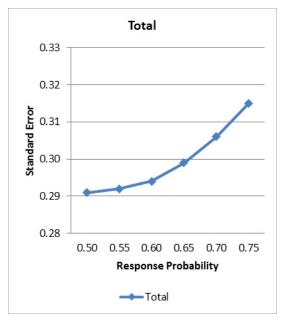
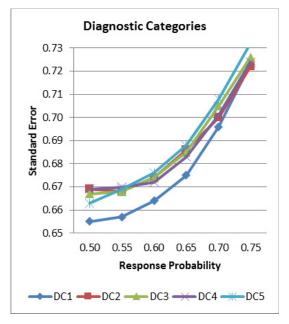


Table 13-6. Average Standard Errors for Various Response Probabilities — Writing

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4	DC 5
52 total (13 per DC)	0.50	0.291	0.655	0.669	0.667	0.669	0.663
52 total (13 per DC)	0.55	0.292	0.657	0.668	0.668	0.670	0.669
52 total (13 per DC)	0.60	0.294	0.664	0.674	0.674	0.672	0.676
52 total (13 per DC)	0.65	0.299	0.675	0.686	0.685	0.683	0.688
52 total (13 per DC)	0.70	0.306	0.696	0.700	0.705	0.701	0.708
52 total (13 per DC)	0.75	0.315	0.723	0.722	0.726	0.724	0.732

Figure 13-6. Average Standard Errors for Various Response Probabilities - Writing





Again, increasing response probability incrementally from 0.50 leads to increases in standard error. The increase in standard error is gradual at first and becomes more pronounced around 0.65.

For CDT tests designed for students in grade 6 and above, the response probability is set at 0.5. This is based on the desire for low standard errors at the diagnostic category level and the grade level of students testing. As part of the CDT training, students are told that the test is computer adaptive and designed to challenge them.

For CDT tests designed for students in grades 3 through 5, the response probability is set at 0.65. This response probability results in higher standard errors for the same number of items. However, there was concern that younger students may not have much experience with tests designed to be so challenging and could conceivably give up on a test that is perceived to be "too hard."

ITEM POOL REFINEMENT

The CAT algorithm has configurable elements that allow for refinement of the item pool used in item selection. The two configurable elements are:

- Restrict pool—The ability to restrict the available item pool by grade/course at various points in the test.
 - For example, Chemistry items are not available for the first 20 items of CDT Science Grades 6-HS test.
- Favor items—The ability to favor items that are close to the student's grade when evaluating items near
 a student's estimated score.

For example, if a student is in grade 8 and the item selection routine finds appropriate items (in terms of difficulty) in grades 4, 5, 6, 7, and 8, item selection can favor items at or close to grade 8. It is possible that no items near a student's grade are appropriate in terms of difficulty. In such a case, the CAT algorithm will select items further away from the student's grade but appropriate based on item difficulty.

The difference between restricting the pool and favoring items is that when the pool is restricted, some items may NOT be selected. With favoring, all non-restricted items are eligible for administration, but they are made more or less LIKELY to be selected based on closeness to student grade.

PASSAGE RELATED CONCERNS

As previously mentioned, the CDT tests in the reading content area are passage-based. CDT passages have between one and seven associated items. The CAT algorithm does not require that all items associated with a passage be administered. Instead, it evaluates all possible combinations of items within a passage. Item sequencing within a passage is preserved when items are presented to the student. For example, if a six-item passage is selected and items 1 and 4 are NOT administered, then the items administered in order will be 2, 3, 5, and 6.

The configurable elements of passage-based CAT include:

- Passage minimum percent—Define the minimum percentage of the items associated with a passage to be used.
 - For example, if the passage minimum percent is set at 80, then the selection routine will consider combinations such as 1 of 1 (100%), 4 of 5 (80%), 5 of 6 (83%), and 6 of 6 (100%). It will not consider combinations such as 1 of 2 (50%), 3 of 4 (75%), 3 of 5 (60%), etc. Near the end of a test, the passage minimum percent constraint may need to be loosened in order to meet content constraints such as number of items per diagnostic category.
- Passage evaluation criteria Multiple factors are considered when evaluating and ranking each
 passage combination to determine the best combination to administer to a student. They include:
 - Percent of items associated with the passage used; the higher the percent, the higher the combination is ranked
 - Number of items associated with the passage used; the higher the number, the higher the combination is ranked
 - Distance between items' difficulties and student's estimated score; the smaller the distance, the higher the combination is ranked
 - Distance between the items' grade levels and the student's grade level; the smaller the distance, the higher the combination is ranked

Different weights may be assigned to each of the factors. For example, if all of the weight is put on number of items used, then the algorithm will select the passages with the most associated items and administer all of them until the maximum number of items is reached.

TEST NAVIGATION

Many versions of computer adaptive tests do not allow students to skip items in the test or back up to previously answered items and change answers due to some complicating factors.

If students are allowed to skip items, the CAT algorithm would need to select additional items without any additional information (no change to Rasch ability estimates). Taken to the extreme, a student with no prior CDT scores who skipped every item starting with the first would receive an entire test of average items. It would not be adaptive at all.

If students are allowed to back up and change answers, Rasch ability estimates are re-calculated when answered are changed. This additional information can be used to select additional items but would not change previously selected items. For example, suppose a student is on item twenty-five and goes back to change the answer to item eleven from wrong to right. The total and corresponding diagnostic category Rasch ability estimates would go up. That additional information can be used in selection of items twenty-six and beyond. However, items twelve through twenty-five are not reselected even though different items may have been selected if item eleven was initially answered correctly. When it comes to items twelve through twenty-five, "the train has left the station."

Also, if students are allowed to back up in the test, additional considerations must be put in place to ensure that the answer to one item does not cue another.

Currently all CDT tests except Reading Grades 3-5 and Reading/Lit Grades 6-HS do not allow skipping items or backing up and changing answers. On CDT tests in the reading content area, students are allowed to skip items within a passage. For example, when presented with a passage and five associated items, the student does not have to answer questions one through five in that order without skipping. If a student tries to navigate to the next passage without answering all of the items associated with a passage, the test engine will prompt the student to answer all items and will not move on to the next passage until all are answered.

TERMINATION

The CAT algorithm allows for both a fixed- or variable-length test.

With fixed length, the test ends when a student has taken a predefined number of items total and in each diagnostic category.

With variable length, the algorithm stops administering items from a diagnostic category when one of two conditions is satisfied:

 A student has taken at least a predefined minimum number of items in that diagnostic category and the standard error is below a predefined threshold

OR

A student has taken a predefined maximum number of items in that diagnostic category

The test ends when one of the two conditions above is satisfied for each of the diagnostic categories.

Note that with both fixed- and variable-length tests, there is no requirement that the predefined number of items in diagnostic categories be equal.

CAT CONFIGURATION – MATH GRADES 6-8

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. Tests also included 5 field-test items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no Algebra I items will be administered in the first 5 items,
- no Geometry items will be administered in the first 10 items, and
- no Algebra II items will be administered in the first 20 items.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.59 to 0.62.

CAT CONFIGURATION – ALGEBRA I

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. Tests also included 5 field-test items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to Algebra I. The pool restriction is that no Algebra II items will be administered in the first 16 items.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.59 to 0.61.

CAT CONFIGURATION – GEOMETRY

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Geometry. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 53 operational items are administered—about 13 per diagnostic category.
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.59 to 0.61.

CAT CONFIGURATION – ALGEBRA II

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60. or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Algebra II. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 53 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.64.

CAT CONFIGURATION – MATH GRADES 3-5

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.62, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no grade 7 items will be administered in the first 5 items,
- no grade 8 items will be administered in the first 10 items,
- no Algebra I items will be administered in the first 20 items, and
- no Geometry or Algebra II items will be administered.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.31, and
- standard errors for the diagnostic categories are in the range of 0.61 to 0.63.

CAT CONFIGURATION - READING/LIT GRADES 6-HS

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. Tests also included 1 field-test passage with 6 associated items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.75, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to run CAT with passages and favor items close to student's grade. There are no pool restrictions.

Passage minimum percent is set at 66%. That is, whenever possible, only passage combinations that use 66% or more of the associated items are used. (Near the end of a test, the passage minimum percent constraint may need to be loosened in order to meet content constraints.) Many simulations were run to arrive at this percent. On the one hand, testing time and reading load should be minimized. Therefore, students should not have to read long passages for only one or two items. On the other hand, using all items associated with a passage may not be desirable since some items are far from a student's estimated score. Given a limited number of items, those that are either too easy or too hard should not be used.

In evaluating and ranking passages, percent of items associated with the passage is not used. Simulation results indicate that if it is factored into evaluations, students take many short passages because 1 of 1 (100%) and 2 of 2 (100%) are ranked higher than 5 of 6 (83%) and 4 of 5 (80%), for example.

Simulations were run with this configuration. On average:

- a total of 56 operational items are administered—about 11 per diagnostic category,
- a total of 15 passages are administered,
- standard error for the total score is 0.31, and
- standard errors for the diagnostic categories are in the range of 0.76 to 0.80.

CAT CONFIGURATION – READING GRADES 3-5

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. Tests also included 0 to 3 field-test items³. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.77, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to run CAT with passages and favor items close to student's grade. There are no pool restrictions.

Passage minimum percent is set at 66%. That is, whenever possible, only passage combinations that use 66% or more of the associated items are used. (Near the end of a test, the passage minimum percent constraint may need to be loosened in order to meet content constraints.) Many simulations were run to arrive at this percent. On the one hand, testing time and reading load should be minimized. Therefore, students should not have to read long passages for only one or two items. On the other hand, using all items associated with a passage may not be desirable since some items are far from a student's estimated score. Given a limited number of items, those that are either too easy or too hard should not be used.

In evaluating and ranking passages, percent of items associated with the passage is not used. Simulation results indicate that if it is factored into evaluations, students take many short passages because 1 of 1 (100%) and 2 of 2 (100%) are ranked higher than 5 of 6 (83%) and 4 of 5 (80%), for example.

Simulations were run with this configuration. On average:

- a total of 56 operational items are administered—about 11 per diagnostic category,
- a total of 14 passages are administered.
- standard error for the total score is 0.31, and
- standard errors for the diagnostic categories are in the range of 0.75 to 0.79.

Note that the standard error is higher for in reading than the other content areas. This is because Reading/Lit Grades 6-HS and Reading Grades 3-5 are passage-based. Rather than selecting one targeted item at a time, the item selection routine evaluates and selects multiple items associated with a given passage. In general, items selected in this manner are not as close to the targeted response probability as stand-alone items selected one by one.

CAT CONFIGURATION – SCIENCE GRADES 6-HS

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. Tests also included 5 field-test items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

 a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or

³ Students using CDT Reading Grades 3-5 were eligible to receive field-test EBSR items. However, operational passages that were not a good fit based on a student's performance were not administered just for the sake of field-test items. Instead, a field-test EBSR was administered only if the operational passage was selected for the student. The number of field-test EBSRs was limited to 3 per test.

a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no grade 11 items will be administered in the first 20 items UNLESS the student is in grade 11 or 12,
- no Biology or Chemistry items will be administered in the first 20 items, and

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.59 to 0.61.

CAT CONFIGURATION - BIOLOGY

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. Tests also included 5 field-test items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Biology. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 53 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.59 to 0.62.

CAT CONFIGURATION - CHEMISTRY

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Chemistry. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 53 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.64.

CAT CONFIGURATION – SCIENCE GRADES 3-5

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.62, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no grade 11 items will be administered in the first 40 items, and
- no Biology or Chemistry items will be administered.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.31, and
- standard errors for the diagnostic categories are in the range of 0.61 to 0.62.

CAT CONFIGURATION - WRITING/ENG COMP GRADES 6-HS

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. Tests also included 5 field-test items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.65, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to favor items close to the student's grade. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 56 operational items are administered—about 11 per diagnostic category,
- standard error for the total score is 0.29, and
- standard errors for the diagnostic categories are in the range of 0.65 to 0.69.

CAT CONFIGURATION – WRITING GRADES 3-5

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.67, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to favor items close to the student's grade. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 56 operational items are administered—about 11 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.67 to 0.69.

Tables 13–7 through 13–12 summarize CAT configurations by content area.

Table 13-7. CAT Configuration Summary - Mathematics

	Math Grades 3-5	Math Grades 6-8
Number of DCs	4	4
Number of OP Items per DC	12–15	12–15
Number of OP Items Total	48–60	48–60
Number of FT Items Total	0	5
Entry Point: No Prior CDT	average item by grade	average item by grade
Entry Point: Prior CDT	prior diagnostic scores	prior diagnostic scores
Item Selection: Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Item Selection: Response Probability	0.65	0.50
Item Selection: Favor Items	close to student grade	close to student grade
Item Selection: Pool Restriction	Items 1–5: no Grade 7	Items 1–5: no Algebra I
Item Selection: Pool Restriction	Items 1–10: no Grade 8	Items 1–10: no Geometry
Item Selection: Pool Restriction	Items 1–20: no Algebra I	Items 1–20: no Algebra II
Item Selection: Pool Restriction	No Geometry	
Item Selection: Pool Restriction	No Algebra II	
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.62 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

Table 13-8. CAT Configuration Summary - Algebra I, Geometry, and Algebra II

	Algebra I	Geometry	Algebra II
Number of DCs	4	4	4
Number of OP Items per DC	12–15	12–15	12–15
Number of OP Items Total	48–60	48–60	48–60
Number of FT Items Total	5	0	0
Entry Point: No Prior CDT	average item	average item	average item
Entry Point: Prior CDT	prior diagnostic scores	prior diagnostic scores	prior diagnostic scores
Item Selection: Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Item Selection: Response Probability	0.50	0.50	0.50
Item Selection: Favor Items	close to Algebra I	close to Geometry	close to Algebra II
Item Selection: Pool Restriction	Items 1–16: no Algebra II	None	None
Navigation	no skip; no backtrack	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.60 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

DC = Diagnostic Category

Table 13–9. CAT Configuration Summary – Reading

	Reading Grades 3-5	Reading/Lit Grades 6-HS
Number of DCs	5	5
Number of OP Items per DC	10–12	10–12
Number of OP Items Total	50–60	50–60
Number of FT Items Total	0-3	6 (1 passage)
Entry Point: No Prior CDT	average item by grade	average item by grade
Entry Point: Prior CDT	prior diagnostic scores	prior diagnostic scores
Item Selection: Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Item Selection: Response Probability	0.65	0.50
Item Selection: Favor Items	close to student grade	close to student grade
Item Selection: Pool Restriction	None	None
Passage Min %	66	66
Navigation	skip items within passage	skip items within passage
Termination	10 items per DC, SE < 0.77 OR 12 items per DC	10 items per DC, SE < 0.75 OR 12 items per DC

Table 13–10. CAT Configuration Summary – Science

	Science Grades 3-5	Science Grades 6-HS
Number of DCs	4	4
Number of OP Items per DC	12–15	12–15
Number of OP Items Total	48–60	48–60
Number of FT Items Total	0	5
Entry Point: No Prior CDT	average item by grade	average item by grade
Entry Point: Prior CDT	prior diagnostic scores	prior diagnostic scores
Item Selection: Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Item Selection: Response Probability	0.65	0.50
Item Selection: Favor Items	close to student grade	close to student grade
Item Selection: Pool Restriction	Items 1–40: no grade 11	Students in grades 6–10 Items 1–20: no grade 11, Biology, or Chemistry
Item Selection: Pool Restriction	No Biology	Students in grades 11–12 Items 1–20: no Biology, or Chemistry
Item Selection: Pool Restriction	No Chemistry	
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.62 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

Table 13–11. CAT Configuration Summary – Biology and Chemistry

	Biology	Chemistry
Number of DCs	4	4
Number of OP Items per DC	12–15	12–15
Number of OP Items Total	48–60	48–60
Number of FT Items Total	5	0
Entry Point: No Prior CDT	average item	average item
Entry Point: Prior CDT	prior diagnostic scores	prior diagnostic scores
Item Selection: Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Item Selection: Response Probability	0.50	0.50
Item Selection: Favor Items	close to Biology	close to Chemistry
Item Selection: Pool Restriction	None	None
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.60 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

DC = Diagnostic Category

Table 13–12. CAT Configuration Summary – Writing

	Writing Grades 3-5	Writing/Eng Comp Gr 6-HS
Number of DCs	5	5
Number of OP Items per DC	10–12	10–12
Number of OP Items Total	50–60	50–60
Number of FT Items Total	0	5
Entry Point: No Prior CDT	average item by grade	average item by grade
Entry Point: Prior CDT	prior diagnostic scores	prior diagnostic scores
Item Selection: Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Item Selection: Response Probability	0.65	0.50
Item Selection: Favor Items	close to student grade	close to student grade
Item Selection: Pool Restriction	None	None
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	10 items per DC, SE < 0.67 OR 12 items per DC	10 items per DC, SE < 0.65 OR 12 items per DC

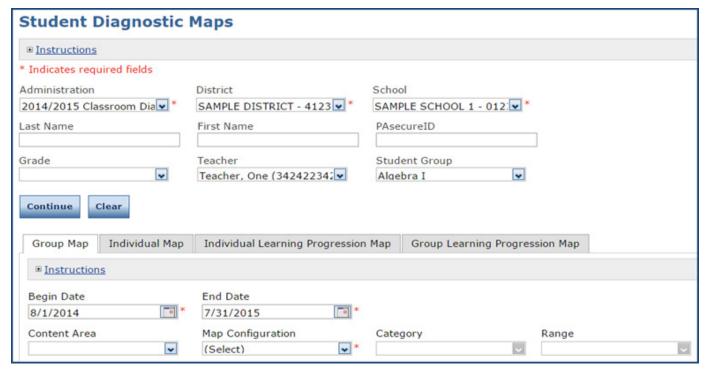
CHAPTER FOURTEEN: SCORES AND SCORE REPORTS

Teachers will receive immediate and usable data to be used for targeting instruction to meet the needs of individual students. The CDT online reports provide direct links to resources in SAS, including specific lesson plans, interventions, and other resources. The reports can also show the progress of students across test administrations. This overview summarizes the steps in accessing the interactive reports, as well as the types of information available for each type of report.

ACCESSING THE INTERACTIVE REPORTS

Any user with the role of District, School, or Teacher has the ability to view the interactive reports. Once the user is logged in, Reporting Tools is an option on the left side of the screen. Next, the user selects Interactive Reports. The appropriate administration, district, school, teacher, and student group should be selected by the user. After the Continue button is selected, the user will be prompted to select the Map Configuration.

Figure 14-1. Student Diagnostic Maps Screen



GROUP MAP

The Interactive Reports use colors to indicate relative **Strengths to Build On** and **Areas of Need.** Each descriptor correlates with a color range on the scale: Green/Blue = Strengths to Build On; Red = Areas of Need.

- Each white dot on the Group Map represents a single student score.
- Only students within the Student Group with scores will appear as white dots on the map.
- All dots represent the most recent assessment score (during the administration window selected using the Begin Date and End Date) for each student within the Student Group selected.
- The Group Map is intended to provide general assessment information based on a group of student scores within a Diagnostic Category.

Figure 14–2. Group Map



Initially, the Group Map shows the entire vertical scale (representing scores from 200 to 2000 for Lower Grades Mathematics, Lower Grades Reading, Lower Grades Science, and Lower Grades Writing; representing scores from 400 to 2000 for Mathematics, Algebra I, Algebra II, Geometry, Reading/Literature, Science, Biology, Chemistry, and Writing/English Composition). The **Optimize Zoom** button provides the ability to narrow the window to show only the portion of the scale that includes the highest and lowest scores for the Student Group selected. The area in between the slider bars indicates what portion of the total scale is currently being displayed.

Slider Bar—The upper and lower sliders on the bar to the left of the map can be used to adjust the map focus. The area between the sliders is the area of the scale displayed on the map.

Skill Labels - These identify the area on the scale above which are Student Strengths to Build On and below which are Student Areas of Need.

Diagnostic Categories—These appear below each of the columns at the bottom of the map.

Content Area

Hover Over—A pop-up of the Name, PAsecureID, Test Date, and Score shows whenever an educator hovers over a white dot representing a student score.

Group Map Grid—This appears below the map and provides a complete list of the students within the selected Student Group as well as additional information, including the date of the most recent test event for each student and his or her diagnostic category and overall scores.

INDIVIDUAL MAP

Administration

Export to CSV

The Individual Map has the ability to show the three most recent assessments that apply to the Map Configuration selected for an individual student. The Individual Map is intended to provide general Instructional Enrichment (a set of Eligible Content) based on a student's score within a Diagnostic Category.

Map Configuration KELLY ANDREWS (3() 2014/2015 Classroor v ~ * Algebra I Please click a white dot within a Diagnostic Category to view Eligible Content associated with the student's score and category selected. MODULE 1: Operations and Linear **Optimize Zoom**

Figure 14-3. Individual Map

Student

Student Filter—The Student drop-down menu can be used to select a student to show the Individual map. When a new student is selected, the map will refresh.

Overall Score Test Date 1151 5/28/2015

1099 1/12/2015

1045 9/11/2014

DATA ANALYSIS

1186

LINEAR EQUATIONS & INEQUALITIES

Export to PDF

1087

1027

Slider Bar—The upper and lower sliders on the bar to the left of the map can be used to adjust the map's focus. The area between the sliders is the area of the scale that is displayed on the map.

Skill Labels—These identify the area on the scale above which are **Student Strengths to Build On** and below which are **Student Areas of Need**.

Diagnostic Categories - These appear below each of the columns at the bottom of the map.

Hover Over—A pop-up of the Assessment Date and Score shows when an educator hovers over the dot in the middle of the white, gray, or black line.

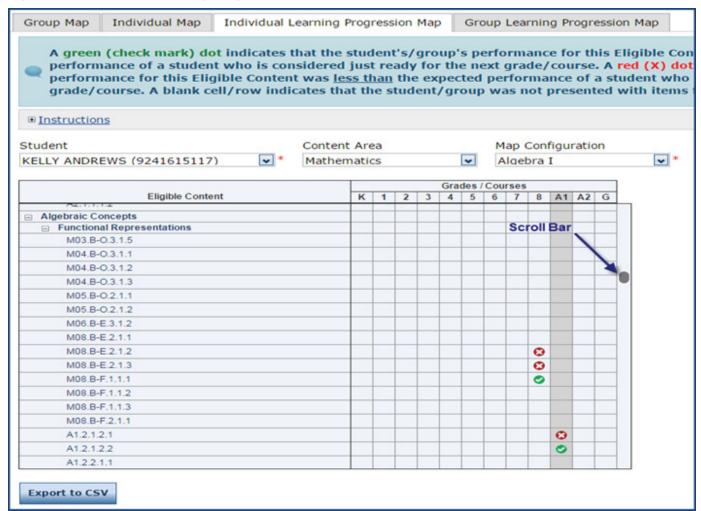
Export to PDF—The **Export to PDF** button can be used to export a PDF image of the current view of the map, search criteria, and Instructional Strategies. Instructional Strategies will only appear in the PDF if the **Show Eligible Content** button has been selected. They will appear in the bar to the right of the map.

Export to CSV—The Export to CSV button can be used to export map data to a CSV-formatted table.

INDIVIDUAL LEARNING PROGRESSION MAP

The Individual Learning Progression Map is a graphical representation about how learning may typically move toward increased understanding over time based on Eligible Content. Each row represents the Eligible Content in a subject's domain and subdomain and for a specific grade level or course. The column of the grade/course is highlighted based on the Map Configuration that has been selected.

Figure 14-4. Individual Learning Progression Map

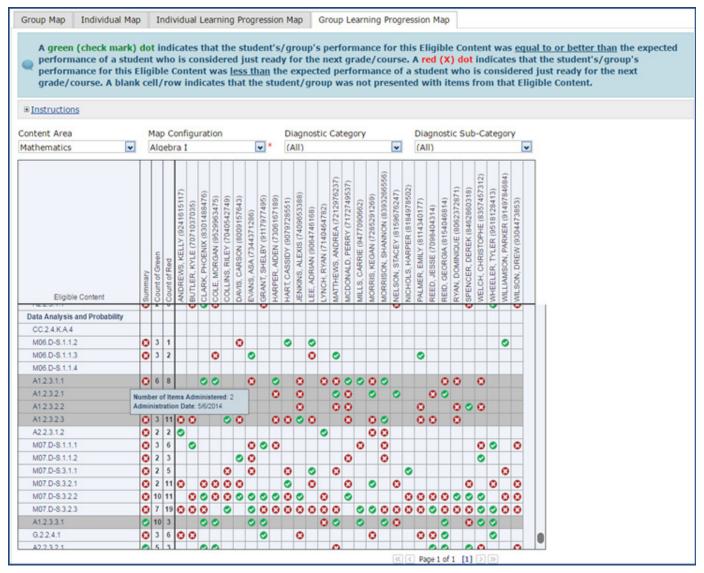


- A green (check mark) dot indicates that the student was presented with at least one test item for the
 Eligible Content and performed as well or better than the expected performance of a student who is
 considered just ready for the next grade/course.
- A red (X) dot indicates that the student was presented with at least one test item from the Eligible
 Content and the student's performance was less than the expected performance of a student who is
 considered just ready for the next grade/course.
- An empty box represents Eligible Content that is available, but the student was not presented with any test items from that Eligible Content.
- Hover Over—A pop-up showing the number of items administered and the administration date appears
 when an educator hovers over a dot (either a red (X) dot or a green (check mark) dot). When an educator
 hovers over an Eligible Content code, a pop-up showing the Eligible Content Description and links to
 available Materials and Resources and a sample item for that Eligible Content appears.

GROUP LEARNING PROGRESSION MAP

The Group Learning Progression Map shows information about the Learning Progression of Eligible Content for a given content area for all students in a student group. Each row represents the Eligible Content in a subject's domain and subdomain and for a specific grade level or course. Columns show a Summary dot, Count of Green, Count of Red, and one column for each student in the student group.

Figure 14–5. Group Learning Progression Map



- The Summary dot shows the average performance of students in the group that received one or more items for that Eligible Content. When determining the color of the summary dot, all students in the group who received at least one item for that Eligible Content count equally, even though they may have taken different numbers of items for the Eligible Content. Additionally, how close each student's performance is to the expected performance of a student just ready for the next grade/course is taken into account. Therefore, a group's summary dot may not be the same as the most frequently-occurring color for the group.
- **Count of Green** shows the number of students in the student group who were administered one or more items for a given Eligible Content and received a green dot.
- **Count of Red** shows the number of students in the student group who were administered one or more items for a given Eligible Content and received a red dot.
- **Hover Over** A pop-up showing the number of items administered and the administration date appears when an educator hovers over a dot (either a red (X) dot or a green (check mark) dot). When an educator hovers over a Summary dot, a pop-up appears showing the number of students and number of items used to determine the color of the Summary dot. When an educator hovers over an Eligible Content code, a pop-up showing the Eligible Content Description and links to available Materials and Resources and a sample item for that Eligible Content appears.

CHAPTER FIFTEEN: OPERATIONAL ADMINSTRATION 2015–2016

This chapter contains summary information about the operational administration of the Classroom Diagnostic Tools (CDT) during the 2015–2016 school year. Tests were available from August 24, 2015, through the end of the school year (July 29, 2016).

The CDT is administered completely online using a computer adaptive test (CAT) model, and participation is voluntary. CDT scores are available immediately after testing in the dynamic reporting suite. In addition to the scores, this suite includes links to instructional resources. The CDT may be administered multiple times throughout the school year.

FREQUENCIES

Tables 15–1 through 15–3 present information related to the number of students who were administered one or more CDT tests in the 2015–2016 school year. Table 15–1 shows the number of students who have taken each CDT. Some of these students have taken the same CDT test multiple times or have taken multiple CDT tests. Table 15–1 counts only the first administration of each CDT test. Data about multiple administrations of the same test and multiple CDT tests are presented in Tables 15–2 and 15–3, respectively.

Table 15-1. Number of Students Taking the First Administration of a CDT Test by Grade Level

CDT	3	4	5	6	7	8	9	10	11	12	TOTAL
Math Grades 3-5	28,344	30,466	32,316	-	-	-	-	-	-	-	91,126
Math Grades 6-8	-	-	-	34,401	34,537	28,597	27	4	6	4	97,576
Algebra I	-	-	-	132	2,708	11,667	31,415	14,061	6,321	1,413	67,717
Geometry	-	-	-	1	18	422	1,022	2,249	1,680	610	6,002
Algebra II	-	-	-	0	2	272	1,221	2,333	1,731	633	6,192
Reading Grades 3-5	24,771	26,876	27,572	-	-	-	-	-	-	-	79,219
Reading/Lit Grades 6-HS	-	-	-	33,261	34,922	34,093	30,733	48,891	10,314	1,941	194,155
Science Grades 3-5	2,082	9,440	1,823	-	-	-	-	-	-	-	13,345
Science Grades 6-HS	-	-	-	8,466	15,811	26,597	666	108	63	58	51,769
Biology	-	-	-	10	185	645	26,696	33,328	8,459	785	70,108
Chemistry	-	-	-	0	28	0	69	2,145	2,539	392	5,173
Writing Grades 3-5	3,882	4,273	4,325	-	-	-	-	-	-	-	12,480
Writing/Eng Comp Gr 6-HS	-	-	-	7,401	7,865	8,097	3,362	2,482	750	202	30,159

Table 15–2. Multiple Administrations of the Same CDT Test

CDT	Students with 1 Administration	Students with 2 Administrations	Students with 3 Administrations	Students with 4 Administrations	Students with 5 Administrations
Math Grades 3-5	91,126	67,560	29,127	896	238
Math Grades 6-8	97,576	68,012	26,020	1,881	5
Algebra I	67,717	38,609	13,365	1,321	68
Geometry	6,002	4,187	1,163	37	0
Algebra II	6,192	4,095	1,245	105	3
Reading Grades 3-5	79,219	61,372	22,297	889	244
Reading/Lit Grades 6-HS	194,155	123,954	34,878	1,592	79
Science Grades 3-5	13,345	6,514	2,327	4	0
Science Grades 6-HS	51,769	28,390	9,162	606	1
Biology	70,108	44,287	16,744	1,473	70
Chemistry	5,173	3,629	1,555	140	0
Writing Grades 3-5	12,480	6,804	2,514	1	0
Writing/Eng Comp Gr 6-HS	30,159	16,408	5,115	56	17

Table 15-3a. Number of Students in Grades 3 through 5 Taking Multiple CDT Tests

Grades 3 through 5	Math	Reading	Science	Writing
Math Grades 3-5	-	-	-	-
Reading Grades 3-5	76,021	-	-	-
Science Grades 3-5	11,006	10,531	-	-
Writing Grades 3-5	12,368	12,172	3,645	-

Table 15-3b. Number of Students in Grades 6 and above Taking Multiple CDT Tests

Grades 6 and above	Math	Algebra I	Geometry	Algebra II	Reading/ Literature	Science	Biology	Chemistry	Writing/ English Comp.
Math Grades 6-8	-	-	-	-	-	-	-	-	-
Algebra I	2,758	-	-	-	-	-	-	-	-
Geometry	98	687	-	-	-	-	-	-	-
Algebra II	67	695	456	-	-	-	-	1	-
Reading/Lit Grades 6-HS	84,077	39,813	4,068	4,112	-	-	-	-	-
Science Grades 6-HS	33,896	7,225	211	294	37,605	-	-	-	-
Biology	357	21,290	2,587	2,453	39,848	493	-	-	-
Chemistry	28	533	651	549	2,411	31	624	-	-
Writing/Eng Comp Gr 6-HS	17,983	4,944	390	543	25,664	10,922	3,192	200	-

Further demographic information about students tested with the CDT is found in the next section.

DEMOGRAPHIC CHARACTERISTICS

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

To avoid double counting of students, the following demographic tables are based on students' first administration for a given CDT test. Students who took the same test multiple times are counted only once. Students who took different tests are counted for each test. For example, if a student took CDT Algebra I twice, he or she is counted only once in the Algebra I counts; if a student took Algebra I once and Biology once, he or she is counted in both Algebra I and Biology counts.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for analyses of demographic characteristics were obtained primarily from information supplied by school district personnel through the Pennsylvania Information Management System (PIMS) and subsequently transmitted to DRC. However, teachers may assign CDT tests to students who do not have data in PIMS at the time of testing. This may result in CDT records with incomplete demographic information.

DEMOGRAPHIC CHARACTERISTICS

Frequency data for various demographic categories are presented in Tables 15–4 through 15–16. Shown at the bottom of the appropriate table is the number of students with a total test score on which the column percentages are based. Percentages in some categories may sum to a quantity below 100 percent due to missing data.

Analyses are broken out by grade level. However, in the case of course-specific CDT tests (Algebra I, Geometry, Algebra II, Biology, and Chemistry), students across multiple grades may be enrolled in the course.

Caution should be used in interpreting CDT demographic data, since participation is voluntary and complete demographic data via PIMS is not required for testing. This is especially true for rows in the lower half of the tables (e.g. IEP, Title I, Title II, Migrant, ELL, and Economically Disadvantaged) because these typically have more than ninety-five percent blank responses.

Table 15-4. Demographic Characteristics of Students Taking CDT Math Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Female (N)	13,786	14,766	15,784	44,336
Female (Pct)	48.6%	48.5%	48.8%	48.7%
Male (N)	14,558	15,700	16,532	46,790
Male (Pct)	51.4%	51.5%	51.2%	51.3%
American Indian or Alaskan Native (N)	157	138	147	442
American Indian or Alaskan Native (Pct)	0.6%	0.5%	0.5%	0.5%
Black/African American non-Hispanic (N)	2,880	2,968	3,008	8,856
Black/African American non-Hispanic (Pct)	10.2%	9.7%	9.3%	9.7%
Hispanic (N)	2,174	2,171	2,402	6,747
Hispanic (Pct)	7.7%	7.1%	7.4%	7.4%
White/Caucasian non-Hispanic (N)	21,319	23,321	24,893	69,533
White/Caucasian non-Hispanic (Pct)	75.2%	76.5%	77.0%	76.3%
Multi-Racial non-Hispanic (N)	1,069	1,055	1,043	3,167
Multi-Racial non-Hispanic (Pct)	3.8%	3.5%	3.2%	3.5%
Asian non-Hispanic (N)	724	777	786	2,287
Asian non-Hispanic (Pct)	2.6%	2.6%	2.4%	2.5%
Native Hawaiian or Pacific Islander (N)	21	36	37	94
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.1%	0.1%
IEP (N)	116	68	65	249
IEP (Pct)	0.4%	0.2%	0.2%	0.3%
Title I (N)	151	132	118	401
Title (Pct)	0.5%	0.4%	0.4%	0.4%
Title III served (N)	3	6	10	19
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	7	2	3	12
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	2	0	0	2
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	12	11	14	37
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	3	19	1	23
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.1%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0

Table 15-4 (continued). Demographic Characteristics of Students Taking CDT Math Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	158	136	141	435
Economically disadvantaged (Pct)	0.6%	0.4%	0.4%	0.5%
Number of students	28,344	30,466	32,316	91,126

Table 15–5. Demographic Characteristics of Students Taking CDT Math Grades 6-8

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Female (N)	16,843	16,896	13,684	9	2	3	3	47,440
Female (Pct)	49.0%	48.9%	47.9%	33.3%	50.0%	50.0%	75.0%	48.6%
Male (N)	17,558	17,641	14,913	18	2	3	1	50,136
Male (Pct)	51.0%	51.1%	52.1%	66.7%	50.0%	50.0%	25.0%	51.4%
American Indian or Alaskan Native (N)	58	62	118	0	0	0	0	238
American Indian or Alaskan Native (Pct)	0.2%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.2%
Black/African American non-Hispanic (N)	3,197	3,300	3,145	2	2	2	1	9,649
Black/African American non-Hispanic (Pct)	9.3%	9.6%	11.0%	7.4%	50.0%	33.3%	25.0%	9.9%
Hispanic (N)	2,579	2,726	2,457	4	0	2	1	7,769
Hispanic (Pct)	7.5%	7.9%	8.6%	14.8%	0.0%	33.3%	25.0%	8.0%
White/Caucasian non-Hispanic (N)	26,704	26,629	21,386	19	1	2	2	74,743
White/Caucasian non-Hispanic (Pct)	77.6%	77.1%	74.8%	70.4%	25.0%	33.3%	50.0%	76.6%
Multi-Racial non-Hispanic (N)	980	964	747	2	0	0	0	2,693
Multi-Racial non-Hispanic (Pct)	2.8%	2.8%	2.6%	7.4%	0.0%	0.0%	0.0%	2.8%
Asian non-Hispanic (N)	851	832	719	0	1	0	0	2,403
Asian non-Hispanic (Pct)	2.5%	2.4%	2.5%	0.0%	25.0%	0.0%	0.0%	2.5%
Native Hawaiian or Pacific Islander (N)	32	24	25	0	0	0	0	81
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
IEP (N)	94	70	59	1	0	1	0	225
IEP (Pct)	0.3%	0.2%	0.2%	3.7%	0.0%	16.7%	0.0%	0.2%
Title I (N)	78	51	60	0	0	0	0	189
Title (Pct)	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%
Title III served (N)	9	9	10	0	0	0	0	28
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	2	1	0	0	0	0	0	3
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0	0	0	0	0
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	10	12	6	0	0	0	0	28
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	5	5	9	0	0	0	0	19
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	1	0	0	0	0	0	1
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	1	0	0	0	0	0	1
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	1	0	0	0	0	1

Table 15–5 (continued). Demographic Characteristics of Students Taking CDT Math Grades 6-8

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	133	121	145	2	0	1	0	402
Economically disadvantaged (Pct)	0.4%	0.4%	0.5%	7.4%	0.0%	16.7%	0.0%	0.4%
Number of students	34,401	34,537	28,597	27	4	6	4	97,576

Table 15–6. Demographic Characteristics of Students Taking CDT Algebra I

Demographic or Educational	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Characteristic	E 4	1 004	6.071	15.010	6 225	2 007	617	22 220
Female (N)	54 40.9%	1,334 49.3%	6,071	15,010	6,335 45.1%	2,807	617	32,228
Female (Pct)			52.0%	47.8%		44.4%	43.7%	47.6%
Male (N)	78	1,374	5,596	16,405	7,726	3,514	796	35,489
Male (Pct)	59.1%	50.7%	48.0%	52.2%	54.9%	55.6%	56.3%	52.4%
American Indian or Alaskan Native (N)	0	5	30	138	71	27	4	275
American Indian or Alaskan Native (Pct)	0.0%	0.2%	0.3%	0.4%	0.5%	0.4%	0.3%	0.4%
Black/African American non-Hispanic (N)	3	142	552	3,583	2,167	998	243	7,688
Black/African American non-Hispanic (Pct)	2.3%	5.2%	4.7%	11.4%	15.4%	15.8%	17.2%	11.4%
Hispanic (N)	7	48	514	2,798	1,640	891	189	6,087
Hispanic (Pct)	5.3%	1.8%	4.4%	8.9%	11.7%	14.1%	13.4%	9.0%
White/Caucasian non-Hispanic (N)	92	2,272	10,005	23,377	9,524	4,118	915	50,303
White/Caucasian non-Hispanic (Pct)	69.7%	83.9%	85.8%	74.4%	67.7%	65.1%	64.8%	74.3%
Multi-Racial non-Hispanic (N)	2	54	269	814	383	156	29	1,707
Multi-Racial non-Hispanic (Pct)	1.5%	2.0%	2.3%	2.6%	2.7%	2.5%	2.1%	2.5%
Asian non-Hispanic (N)	28	187	280	665	266	126	28	1,580
Asian non-Hispanic (Pct)	21.2%	6.9%	2.4%	2.1%	1.9%	2.0%	2.0%	2.3%
Native Hawaiian or Pacific Islander (N)	0	0	17	40	10	5	5	77
Native Hawaiian or Pacific Islander (Pct)	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.4%	0.1%
IEP (N)	0	1	6	71	68	31	20	197
IEP (Pct)	0.0%	0.0%	0.1%	0.2%	0.5%	0.5%	1.4%	0.3%
Title I (N)	0	0	8	33	69	51	7	168
Title (Pct)	0.0%	0.0%	0.1%	0.1%	0.5%	0.8%	0.5%	0.2%
Title III served (N)	0	0	0	5	4	2	1	12
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Title III not served (N)	0	0	0	1	0	2	0	3
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0	1	0	0	1
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	0	8	4	3	0	15
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	1	1	2	2	4	1	11
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	1	0	0	0	1
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
	U	0	<u> </u>		U			
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 15–6 (continued). Demographic Characteristics of Students Taking CDT Algebra I

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	0	2	11	124	83	60	18	298
Economically disadvantaged (Pct)	0.0%	0.1%	0.1%	0.4%	0.6%	0.9%	1.3%	0.4%
Number of students	132	2,708	11,667	31,415	14,061	6,321	1,413	67,717

Table 15–7. Demographic Characteristics of Students Taking CDT Geometry

Demographic or Educational	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Characteristic								
Female (N)	0	6	202	509	1,114	796	274	2,901
Female (Pct)	0.0%	33.3%	47.9%	49.8%	49.5%	47.4%	44.9%	48.3%
Male (N)	1	12	220	513	1,135	884	336	3,101
Male (Pct)	100.0%	66.7%	52.1%	50.2%	50.5%	52.6%	55.1%	51.7%
American Indian or Alaskan Native (N)	0	0	0	0	6	2	0	8
American Indian or Alaskan Native (Pct)	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.1%
Black/African American non-Hispanic (N)	0	0	24	85	239	270	107	725
Black/African American non-Hispanic (Pct)	0.0%	0.0%	5.7%	8.3%	10.6%	16.1%	17.5%	12.1%
Hispanic (N)	0	0	3	43	160	195	69	470
Hispanic (Pct)	0.0%	0.0%	0.7%	4.2%	7.1%	11.6%	11.3%	7.8%
White/Caucasian non-Hispanic (N)	1	12	370	846	1,751	1,124	395	4,499
White/Caucasian non-Hispanic (Pct)	100.0%	66.7%	87.7%	82.8%	77.9%	66.9%	64.8%	75.0%
Multi-Racial non-Hispanic (N)	0	0	5	28	61	61	13	168
Multi-Racial non-Hispanic (Pct)	0.0%	0.0%	1.2%	2.7%	2.7%	3.6%	2.1%	2.8%
Asian non-Hispanic (N)	0	6	19	17	28	24	26	120
Asian non-Hispanic (Pct)	0.0%	33.3%	4.5%	1.7%	1.2%	1.4%	4.3%	2.0%
Native Hawaiian or Pacific Islander (N)	0	0	1	3	4	4	0	12
Native Hawaiian or Pacific Islander (Pct)	0.0%	0.0%	0.2%	0.3%	0.2%	0.2%	0.0%	0.2%
IEP (N)	0	0	0	0	14	17	4	35
IEP (Pct)	0.0%	0.0%	0.0%	0.0%	0.6%	1.0%	0.7%	0.6%
Title I (N)	0	0	0	0	0	2	0	2
Title (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Title III served (N)	0	0	0	0	0	0	0	0
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	0	0	0	0	0
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0	0	0	0	0
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	0	0	0	0	0	0
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	0	0	0	0	0	0	0
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
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Table 15–7 (continued). Demographic Characteristics of Students Taking CDT Geometry

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	0	0	0	2	2	22	4	30
Economically disadvantaged (Pct)	0.0%	0.0%	0.0%	0.2%	0.1%	1.3%	0.7%	0.5%
Number of students	1	18	422	1,022	2,249	1,680	610	6,002

Table 15–8. Demographic Characteristics of Students Taking CDT Algebra II

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Female (N)	0	0	145	620	1,141	820	268	2,994
Female (Pct)	N/A	0.0%	53.3%	50.8%	48.9%	47.4%	42.3%	48.4%
Male (N)	0	2	127	601	1,192	911	365	3,198
Male (Pct)	N/A	100.0%	46.7%	49.2%	51.1%	52.6%	57.7%	51.6%
American Indian or Alaskan Native (N)	0	0	1	2	5	7	0	15
American Indian or Alaskan Native (Pct)	N/A	0.0%	0.4%	0.2%	0.2%	0.4%	0.0%	0.2%
Black/African American non-Hispanic (N)	0	0	1	67	201	281	123	673
Black/African American non-Hispanic (Pct)	N/A	0.0%	0.4%	5.5%	8.6%	16.2%	19.4%	10.9%
Hispanic (N)	0	0	4	48	131	86	42	311
Hispanic (Pct)	N/A	0.0%	1.5%	3.9%	5.6%	5.0%	6.6%	5.0%
White/Caucasian non-Hispanic (N)	0	2	252	1,046	1,880	1,271	419	4,870
White/Caucasian non-Hispanic (Pct)	N/A	100.0%	92.6%	85.7%	80.6%	73.4%	66.2%	78.6%
Multi-Racial non-Hispanic (N)	0	0	4	31	61	54	28	178
Multi-Racial non-Hispanic (Pct)	N/A	0.0%	1.5%	2.5%	2.6%	3.1%	4.4%	2.9%
Asian non-Hispanic (N)	0	0	10	23	49	32	21	135
Asian non-Hispanic (Pct)	N/A	0.0%	3.7%	1.9%	2.1%	1.8%	3.3%	2.2%
Native Hawaiian or Pacific Islander (N)	0	0	0	4	6	0	0	10
Native Hawaiian or Pacific Islander (Pct)	N/A	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.2%
IEP (N)	0	0	0	0	1	4	0	5
IEP (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%
Title I (N)	0	0	0	0	2	2	0	4
Title (Pct)	N/A	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%
Title III served (N)	0	0	0	0	0	0	0	0
Title III served (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	0	0	0	1	1
Title III not served (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
Migrant student (N)	0	0	0	0	0	0	0	0
Migrant student (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	0	0	0	0	0	0
ELL - enrolled after 05-08-15 (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	0	0	0	0	0	0	0
ELL - enrolled before 05-08-15 (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - first year of monitoring (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - second year of monitoring (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0	0	0	0	0

Table 15–8 (continued). Demographic Characteristics of Students Taking CDT Algebra II

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	0	0	0	2	8	8	12	30
Economically disadvantaged (Pct)	N/A	0.0%	0.0%	0.2%	0.3%	0.5%	1.9%	0.5%
Number of students	0	2	272	1,221	2,333	1,731	633	6,192

Table 15–9. Demographic Characteristics of Students Taking CDT Reading Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Demographic of Educational Gharacteristic	ui. 3	GI. 4	di. 5	iviai
Female (N)	12,038	13,053	13,440	38,531
Female (Pct)	48.6%	48.6%	48.7%	48.6%
Male (N)	12,733	13,823	14,132	40,688
Male (Pct)	51.4%	51.4%	51.3%	51.4%
American Indian or Alaskan Native (N)	48	48	58	154
American Indian or Alaskan Native (Pct)	0.2%	0.2%	0.2%	0.2%
Black/African American non-Hispanic (N)	2,563	2,520	2,454	7,537
Black/African American non-Hispanic (Pct)	10.3%	9.4%	8.9%	9.5%
Hispanic (N)	2,037	2,033	2,138	6,208
Hispanic (Pct)	8.2%	7.6%	7.8%	7.8%
White/Caucasian non-Hispanic (N)	18,457	20,586	21,312	60,355
White/Caucasian non-Hispanic (Pct)	74.5%	76.6%	77.3%	76.2%
Multi-Racial non-Hispanic (N)	992	965	896	2,853
Multi-Racial non-Hispanic (Pct)	4.0%	3.6%	3.2%	3.6%
Asian non-Hispanic (N)	653	692	688	2,033
Asian non-Hispanic (Pct)	2.6%	2.6%	2.5%	2.6%
Native Hawaiian or Pacific Islander (N)	21	32	26	79
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.1%	0.1%
IEP (N)	93	48	66	207
IEP (Pct)	0.4%	0.2%	0.2%	0.3%
Title I (N)	142	120	118	380
Title (Pct)	0.6%	0.4%	0.4%	0.5%
Title III served (N)	3	5	9	17
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	7	2	3	12
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	2	0	0	2
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	7	7	11	25
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	2	18	2	22
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.1%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0

Table 15–9 (continued). Demographic Characteristics of Students Taking CDT Reading Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	136	123	126	385
Economically disadvantaged (Pct)	0.5%	0.5%	0.5%	0.5%
Number of students	24,771	26,876	27,572	79,219

Table 15–10. Demographic Characteristics of Students Taking CDT Reading/Lit Grades 6-HS

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Female (N)	16,256	17,053	16,596	14,752	23,788	4,454	809	93,708
Female (Pct)	48.9%	48.8%	48.7%	48.0%	48.7%	43.2%	41.7%	48.3%
Male (N)	17,005	17,869	17,497	15,981	25,103	5,860	1,132	100,447
Male (Pct)	51.1%	51.2%	51.3%	52.0%	51.3%	56.8%	58.3%	51.7%
American Indian or Alaskan Native (N)	48	63	115	162	233	30	12	663
American Indian or Alaskan Native (Pct)	0.1%	0.2%	0.3%	0.5%	0.5%	0.3%	0.6%	0.3%
Black/African American non-Hispanic (N)	2,775	2,917	3,074	2,762	4,216	1,513	307	17,564
Black/African American non-Hispanic (Pct)	8.3%	8.4%	9.0%	9.0%	8.6%	14.7%	15.8%	9.0%
Hispanic (N)	2,537	2,663	2,602	2,131	3,013	999	236	14,181
Hispanic (Pct)	7.6%	7.6%	7.6%	6.9%	6.2%	9.7%	12.2%	7.3%
White/Caucasian non-Hispanic (N)	26,109	27,432	26,557	23,925	38,777	7,263	1,310	151,373
White/Caucasian non-Hispanic (Pct)	78.5%	78.6%	77.9%	77.8%	79.3%	70.4%	67.5%	78.0%
Multi-Racial non-Hispanic (N)	913	958	850	854	1,112	284	40	5,011
Multi-Racial non-Hispanic (Pct)	2.7%	2.7%	2.5%	2.8%	2.3%	2.8%	2.1%	2.6%
Asian non-Hispanic (N)	846	863	862	854	1,475	209	31	5,140
Asian non-Hispanic (Pct)	2.5%	2.5%	2.5%	2.8%	3.0%	2.0%	1.6%	2.6%
Native Hawaiian or Pacific Islander (N)	33	26	33	45	65	16	5	223
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	0.1%
IEP (N)	89	66	61	66	82	35	22	421
IEP (Pct)	0.3%	0.2%	0.2%	0.2%	0.2%	0.3%	1.1%	0.2%
Title I (N)	77	44	65	28	92	34	6	346
Title (Pct)	0.2%	0.1%	0.2%	0.1%	0.2%	0.3%	0.3%	0.2%
Title III served (N)	9	8	12	2	3	3	2	39
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Title III not served (N)	4	1	0	1	1	1	1	9
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Migrant student (N)	1	0	0	0	0	0	0	1
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	10	8	7	2	4	4	0	35
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	4	5	9	2	2	3	2	27
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Exited ESL - first year of monitoring (N)	0	1	0	0	1	0	0	2
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	1	0	0	0	0	0	1
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	1	1	0	0	0	0	2

Table 15–10 (continued). Demographic Characteristics of Students Taking CDT Reading/Lit Grades 6-HS

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	106	103	122	97	114	49	24	615
Economically disadvantaged (Pct)	0.3%	0.3%	0.4%	0.3%	0.2%	0.5%	1.2%	0.3%
Number of students	33,261	34,922	34,093	30,733	48,891	10,314	1,941	194,155

Table 15–11. Demographic Characteristics of Students Taking CDT Science Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Female (N)	1,011	4,634	846	6,491
Female (Pct)	48.6%	49.1%	46.4%	48.6%
Male (N)	1,071	4,806	977	6,854
Male (Pct)	51.4%	50.9%	53.6%	51.4%
American Indian or Alaskan Native (N)	1	17	9	27
American Indian or Alaskan Native (Pct)	0.0%	0.2%	0.5%	0.2%
Black/African American non-Hispanic (N)	391	1,800	378	2,569
Black/African American non-Hispanic (Pct)	18.8%	19.1%	20.7%	19.3%
Hispanic (N)	577	1,261	88	1,926
Hispanic (Pct)	27.7%	13.4%	4.8%	14.4%
White/Caucasian non-Hispanic (N)	937	5,698	1,278	7,913
White/Caucasian non-Hispanic (Pct)	45.0%	60.4%	70.1%	59.3%
Multi-Racial non-Hispanic (N)	119	413	43	575
Multi-Racial non-Hispanic (Pct)	5.7%	4.4%	2.4%	4.3%
Asian non-Hispanic (N)	57	239	27	323
Asian non-Hispanic (Pct)	2.7%	2.5%	1.5%	2.4%
Native Hawaiian or Pacific Islander (N)	0	12	0	12
Native Hawaiian or Pacific Islander (Pct)	0.0%	0.1%	0.0%	0.1%
IEP (N)	8	22	8	38
IEP (Pct)	0.4%	0.2%	0.4%	0.3%
Title I (N)	25	68	4	97
Title (Pct)	1.2%	0.7%	0.2%	0.7%
Title III served (N)	2	5	0	7
Title III served (Pct)	0.1%	0.1%	0.0%	0.1%
Title III not served (N)	3	0	1	4
Title III not served (Pct)	0.1%	0.0%	0.1%	0.0%
Migrant student (N)	1	0	0	1
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	4	8	1	13
ELL - enrolled after 05-08-15 (Pct)	0.2%	0.1%	0.1%	0.1%
ELL - enrolled before 05-08-15 (N)	1	6	0	7
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.1%	0.0%	0.1%
Exited ESL - first year of monitoring (N)	0	0	0	0
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0

Table 15–11 (continued). Demographic Characteristics of Students Taking CDT Science Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	21	81	12	114
Economically disadvantaged (Pct)	1.0%	0.9%	0.7%	0.9%
Number of students	2,082	9,440	1,823	13,345

Table 15–12. Demographic Characteristics of Students Taking CDT Science Grades 6-HS

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Female (N)	4,155	7,723	12,934	317	37	30	25	25,221
Female (Pct)	49.1%	48.8%	48.6%	47.6%	34.3%	47.6%	43.1%	48.7%
Male (N)	4,311	8,088	13,663	349	71	33	33	26,548
Male (Pct)	50.9%	51.2%	51.4%	52.4%	65.7%	52.4%	56.9%	51.3%
American Indian or Alaskan Native (N)	21	23	39	0	0	0	0	83
American Indian or Alaskan Native (Pct)	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%
Black/African American non-Hispanic (N)	1,055	1,500	2,783	59	21	6	4	5,428
Black/African American non-Hispanic (Pct)	12.5%	9.5%	10.5%	8.9%	19.4%	9.5%	6.9%	10.5%
Hispanic (N)	613	1,492	2,205	106	2	11	10	4,439
Hispanic (Pct)	7.2%	9.4%	8.3%	15.9%	1.9%	17.5%	17.2%	8.6%
White/Caucasian non-Hispanic (N)	6,226	11,868	20,146	475	82	44	42	38,883
White/Caucasian non-Hispanic (Pct)	73.5%	75.1%	75.7%	71.3%	75.9%	69.8%	72.4%	75.1%
Multi-Racial non-Hispanic (N)	336	546	687	21	2	1	1	1,594
Multi-Racial non-Hispanic (Pct)	4.0%	3.5%	2.6%	3.2%	1.9%	1.6%	1.7%	3.1%
Asian non-Hispanic (N)	207	373	715	4	1	1	0	1,301
Asian non-Hispanic (Pct)	2.4%	2.4%	2.7%	0.6%	0.9%	1.6%	0.0%	2.5%
Native Hawaiian or Pacific Islander (N)	8	9	22	1	0	0	1	41
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.1%	0.2%	0.0%	0.0%	1.7%	0.1%
IEP (N)	29	24	34	8	4	0	1	100
IEP (Pct)	0.3%	0.2%	0.1%	1.2%	3.7%	0.0%	1.7%	0.2%
Title I (N)	2	26	47	1	0	0	0	76
Title (Pct)	0.0%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.1%
Title III served (N)	0	6	2	0	0	0	0	8
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	0	0	0	0	0
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0	0	0	0	0
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	3	6	1	0	0	0	0	10
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	5	4	0	0	0	0	9
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	1	0	0	0	0	0	1
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	1	0	0	0	0	1

Table 15–12 (continued). Demographic Characteristics of Students Taking CDT Science Grades 6-HS

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	24	45	81	10	4	0	1	165
Economically disadvantaged (Pct)	0.3%	0.3%	0.3%	1.5%	3.7%	0.0%	1.7%	0.3%
Number of students	8,466	15,811	26,597	666	108	63	58	51,769

Table 15–13. Demographic Characteristics of Students Taking CDT Biology

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Female (N)	5	100	326	13,327	16,120	3,958	335	34,171
Female (Pct)	50.0%	54.1%	50.5%	49.9%	48.4%	46.8%	42.7%	48.7%
Male (N)	5	85	319	13,369	17,208	4,501	450	35,937
Male (Pct)	50.0%	45.9%	49.5%	50.1%	51.6%	53.2%	57.3%	51.3%
American Indian or Alaskan Native (N)	0	0	0	118	132	23	1	274
American Indian or Alaskan Native (Pct)	0.0%	0.0%	0.0%	0.4%	0.4%	0.3%	0.1%	0.4%
Black/African American non-Hispanic (N)	4	5	176	2,524	3,307	1,159	139	7,314
Black/African American non-Hispanic (Pct)	40.0%	2.7%	27.3%	9.5%	9.9%	13.7%	17.7%	10.4%
Hispanic (N)	0	5	97	1,346	2,451	1,031	146	5,076
Hispanic (Pct)	0.0%	2.7%	15.0%	5.0%	7.4%	12.2%	18.6%	7.2%
White/Caucasian non-Hispanic (N)	4	168	338	21,174	25,989	5,844	446	53,963
White/Caucasian non-Hispanic (Pct)	40.0%	90.8%	52.4%	79.3%	78.0%	69.1%	56.8%	77.0%
Multi-Racial non-Hispanic (N)	2	4	18	603	661	160	9	1,457
Multi-Racial non-Hispanic (Pct)	20.0%	2.2%	2.8%	2.3%	2.0%	1.9%	1.1%	2.1%
Asian non-Hispanic (N)	0	3	15	908	763	235	43	1,967
Asian non-Hispanic (Pct)	0.0%	1.6%	2.3%	3.4%	2.3%	2.8%	5.5%	2.8%
Native Hawaiian or Pacific Islander (N)	0	0	1	23	25	7	1	57
Native Hawaiian or Pacific Islander (Pct)	0.0%	0.0%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%
IEP (N)	0	0	1	36	52	30	13	132
IEP (Pct)	0.0%	0.0%	0.2%	0.1%	0.2%	0.4%	1.7%	0.2%
Title I (N)	0	0	0	56	110	44	6	216
Title (Pct)	0.0%	0.0%	0.0%	0.2%	0.3%	0.5%	0.8%	0.3%
Title III served (N)	0	0	0	1	4	3	0	8
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	1	0	0	0	1
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0	0	0	0	0
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	0	5	2	4	0	11
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	0	0	0	2	2	1	5
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0	1	0	0	1
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0	0	1	0	1
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0	0	0	0	0

Table 15–13 (continued). Demographic Characteristics of Students Taking CDT Biology

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	0	0	1	63	82	51	20	217
Economically disadvantaged (Pct)	0.0%	0.0%	0.2%	0.2%	0.2%	0.6%	2.5%	0.3%
Number of students	10	185	645	26,696	33,328	8,459	785	70,108

Table 15–14. Demographic Characteristics of Students Taking CDT Chemistry

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Female (N)	0	10	0	26	1,143	1,308	195	2,682
Female (Pct)	N/A	35.7%	N/A	37.7%	53.3%	51.5%	49.7%	51.8%
Male (N)	0	18	0	43	1,002	1,231	197	2,491
Male (Pct)	N/A	64.3%	N/A	62.3%	46.7%	48.5%	50.3%	48.2%
American Indian or Alaskan Native (N)	0	0	0	0	7	4	0	11
American Indian or Alaskan Native (Pct)	N/A	0.0%	N/A	0.0%	0.3%	0.2%	0.0%	0.2%
Black/African American non-Hispanic (N)	0	2	0	11	166	135	52	366
Black/African American non-Hispanic (Pct)	N/A	7.1%	N/A	15.9%	7.7%	5.3%	13.3%	7.1%
Hispanic (N)	0	2	0	1	102	165	66	336
Hispanic (Pct)	N/A	7.1%	N/A	1.4%	4.8%	6.5%	16.8%	6.5%
White/Caucasian non-Hispanic (N)	0	23	0	50	1,748	2,132	259	4,212
White/Caucasian non-Hispanic (Pct)	N/A	82.1%	N/A	72.5%	81.5%	84.0%	66.1%	81.4%
Multi-Racial non-Hispanic (N)	0	1	0	5	58	78	4	146
Multi-Racial non-Hispanic (Pct)	N/A	3.6%	N/A	7.2%	2.7%	3.1%	1.0%	2.8%
Asian non-Hispanic (N)	0	0	0	2	61	22	11	96
Asian non-Hispanic (Pct)	N/A	0.0%	N/A	2.9%	2.8%	0.9%	2.8%	1.9%
Native Hawaiian or Pacific Islander (N)	0	0	0	0	3	3	0	6
Native Hawaiian or Pacific Islander (Pct)	N/A	0.0%	N/A	0.0%	0.1%	0.1%	0.0%	0.1%
IEP (N)	0	0	0	0	7	4	0	11
IEP (Pct)	N/A	0.0%	N/A	0.0%	0.3%	0.2%	0.0%	0.2%
Title I (N)	0	0	0	0	0	0	0	0
Title (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Title III served (N)	0	0	0	0	0	0	0	0
Title III served (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	0	0	0	0	0
Title III not served (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0	0	0	0	0
Migrant student (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	0	0	0	0	1	1
ELL - enrolled after 05-08-15 (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.3%	0.0%
ELL - enrolled before 05-08-15 (N)	0	0	0	0	0	0	0	0
ELL - enrolled before 05-08-15 (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - first year of monitoring (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - second year of monitoring (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0	0	0	0	0

Table 15–14 (continued). Demographic Characteristics of Students Taking CDT Chemistry

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	0	0	0	0	1	5	1	7
Economically disadvantaged (Pct)	N/A	0.0%	N/A	0.0%	0.0%	0.2%	0.3%	0.1%
Number of students	0	28	0	69	2,145	2,539	392	5,173

Table 15–15. Demographic Characteristics of Students Taking CDT Writing Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Female (N)	1,865	2,050	2,121	6,036
Female (Pct)	48.0%	48.0%	49.0%	48.4%
Male (N)	2,017	2,223	2,204	6,444
Male (Pct)	52.0%	52.0%	51.0%	51.6%
American Indian or Alaskan Native (N)	9	4	12	25
American Indian or Alaskan Native (Pct)	0.2%	0.1%	0.3%	0.2%
Black/African American non-Hispanic (N)	492	424	379	1,295
Black/African American non-Hispanic (Pct)	12.7%	9.9%	8.8%	10.4%
Hispanic (N)	156	141	219	516
Hispanic (Pct)	4.0%	3.3%	5.1%	4.1%
White/Caucasian non-Hispanic (N)	3,005	3,503	3,524	10,032
White/Caucasian non-Hispanic (Pct)	77.4%	82.0%	81.5%	80.4%
Multi-Racial non-Hispanic (N)	166	125	108	399
Multi-Racial non-Hispanic (Pct)	4.3%	2.9%	2.5%	3.2%
Asian non-Hispanic (N)	50	73	77	200
Asian non-Hispanic (Pct)	1.3%	1.7%	1.8%	1.6%
Native Hawaiian or Pacific Islander (N)	4	3	6	13
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.1%	0.1%
IEP (N)	5	3	4	12
IEP (Pct)	0.1%	0.1%	0.1%	0.1%
Title I (N)	11	8	9	28
Title (Pct)	0.3%	0.2%	0.2%	0.2%
Title III served (N)	0	0	0	0
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	0
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	0	0	0	0
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	1	1
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	2	2	4
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	0	0
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%

Table 15–15 (continued). Demographic Characteristics of Students Taking CDT Writing Grades 3-5

Demographic or Educational Characteristic	Gr. 3	Gr. 4	Gr. 5	Total
Economically disadvantaged (N)	12	16	14	42
Economically disadvantaged (Pct)	0.3%	0.4%	0.3%	0.3%
Number of students	3,882	4,273	4,325	12,480

Table 15–16. Demographic Characteristics of Students Taking CDT Writing/Eng Comp Grades 6-HS

Demographic or Educational	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Characteristic	di. U	GI. I	di. o	ui. 9	di. 10	ai. I I	ui. 12	iviai
Female (N)	3,660	3,893	3,937	1,618	1,184	322	73	14,687
Female (Pct)	49.5%	49.5%	48.6%	48.1%	47.7%	42.9%	36.1%	48.7%
Male (N)	3,741	3,972	4,160	1,744	1,298	428	129	15,472
Male (Pct)	50.5%	50.5%	51.4%	51.9%	52.3%	57.1%	63.9%	51.3%
American Indian or Alaskan Native (N)	11	18	17	5	13	1	0	65
American Indian or Alaskan Native (Pct)	0.1%	0.2%	0.2%	0.1%	0.5%	0.1%	0.0%	0.2%
Black/African American non-Hispanic (N)	680	644	653	133	75	36	20	2,241
Black/African American non-Hispanic (Pct)	9.2%	8.2%	8.1%	4.0%	3.0%	4.8%	9.9%	7.4%
Hispanic (N)	481	371	443	173	114	78	47	1,707
Hispanic (Pct)	6.5%	4.7%	5.5%	5.1%	4.6%	10.4%	23.3%	5.7%
White/Caucasian non-Hispanic (N)	5,869	6,517	6,663	2,806	2,074	615	128	24,672
White/Caucasian non-Hispanic (Pct)	79.3%	82.9%	82.3%	83.5%	83.6%	82.0%	63.4%	81.8%
Multi-Racial non-Hispanic (N)	232	223	207	102	116	13	4	897
Multi-Racial non-Hispanic (Pct)	3.1%	2.8%	2.6%	3.0%	4.7%	1.7%	2.0%	3.0%
Asian non-Hispanic (N)	119	85	110	141	90	7	2	554
Asian non-Hispanic (Pct)	1.6%	1.1%	1.4%	4.2%	3.6%	0.9%	1.0%	1.8%
Native Hawaiian or Pacific Islander (N)	9	7	4	2	0	0	1	23
Native Hawaiian or Pacific Islander (Pct)	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.5%	0.1%
IEP (N)	23	10	7	6	3	2	2	53
IEP (Pct)	0.3%	0.1%	0.1%	0.2%	0.1%	0.3%	1.0%	0.2%
Title I (N)	4	1	0	0	1	0	0	6
Title (Pct)	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III served (N)	0	0	0	0	1	0	0	1
Title III served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Title III not served (N)	0	0	0	0	0	0	0	0
Title III not served (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Migrant student (N)	1	0	0	0	0	0	0	1
Migrant student (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
ELL - enrolled after 05-08-15 (N)	0	0	0	0	0	1	0	1
ELL - enrolled after 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
ELL - enrolled before 05-08-15 (N)	0	1	0	0	0	0	0	1
ELL - enrolled before 05-08-15 (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - first year of monitoring (N)	0	0	0	0	0	0	0	0
Exited ESL - first year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exited ESL - second year of monitoring (N)	0	0	1	0	0	0	0	1
Exited ESL - second year of monitoring (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Former ELL and no longer monitored (N)	0	0	0	0	0	0	0	0

Table 15–16 (continued). Demographic Characteristics of Students Taking CDT Writing/Eng Comp Grades 6-HS

Demographic or Educational Characteristic	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
Former ELL and no longer monitored (Pct)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Economically disadvantaged (N)	19	18	24	12	4	5	3	85
Economically disadvantaged (Pct)	0.3%	0.2%	0.3%	0.4%	0.2%	0.7%	1.5%	0.3%
Number of students	7,401	7,865	8,097	3,362	2,482	750	202	30,159

SUMMARY STATISTICS - TEST LENGTH

The analyses from here until the section titled "Multiple Administrations of the Same CDT Test" include all records in the CDT operational assessments. When a student took CDT Math Grades 6-8 twice, for example, both records were used in the analyses.

As noted in Chapter Thirteen, CDT tests have either four or five diagnostic categories. On tests with five diagnostic categories (Reading Grades 3-5, Reading/Lit Grades 6-HS, Writing Grades 3-5, and Writing/Eng Comp Grades 6-HS), students take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. On tests with four diagnostic categories (Math Grades 3-5, Math Grades 6-8, Algebra I, Geometry, Algebra II, Science Grades 3-5, Science Grades 6-HS, Biology, and Chemistry), students take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items.

Table 15–17 shows the summary statistics for the test length for each assessment. Summary statistics are based on the number of items presented to the student and include minimum, maximum, quartiles 1 and 3, mean, and median.

Table 15-17. Summary Statistics for CDT Test Length (Number of Operational Items Administered)

CDT	N	Minimum	Q 1	Median	Mean	Q3	Maximum
Math Grades 3-5	188,947	48	50	51	51.62	53	60
Math Grades 6-8	193,494	48	50	51	51.63	53	60
Algebra I	121,080	48	50	51	51.77	53	60
Geometry	11,389	48	50	52	52.30	54	60
Algebra II	11,640	48	50	52	52.42	54	60
Reading Grades 3-5	164,021	50	54	55	54.94	56	60
Reading/Lit Grades 6-HS	354,658	50	54	55	55.41	57	60
Science Grades 3-5	22,190	48	50	51	51.41	53	60
Science Grades 6-HS	89,928	48	50	51	51.48	53	60
Biology	132,682	48	50	51	52.07	54	60
Chemistry	10,497	48	50	52	52.39	54	60
Writing Grades 3-5	21,799	50	53	55	54.90	56	60
Writing/Eng Comp Gr 6-HS	51,755	50	54	55	55.36	57	60

The minimum number of items was quite similar, ranging from 48 to 50. The mean and median were higher for tests in the reading and writing content areas, which have five diagnostic categories. The maximum number of items administered was fixed at 60 for all CDT tests.

SUMMARY STATISTICS – SCALE SCORES AND CONDITIONAL STANDARD ERRORS FOR TOTAL TEST

Table 15–18 shows the summary statistics for the scale scores based on total test. Tests with multiple benchmark cuts are broken down to match the grade level of the cuts. Tests that are course-specific are not broken down.

Table 15–18. Summary Statistics for Scale Score Based on Total Test

CDT	N	Minimum	Q1	Median	Mean	Q3	Maximum
Math – G3	58,253	200	656	759	750.27	851	1478
Math – G4	63,771	254	767	864	856.98	954	1386
Math – G5	66,923	266	825	916	907.28	999	1552
Math – G6	71,208	414	875	968	964.78	1060	1556
Math – G7	70,509	467	915	1014	1005.29	1104	1666
Math – G8	51,713	418	941	1044	1025.39	1124	1699
Math – HS	64	575	777	872	871.92	949	1110
Algebra I	121,080	431	987	1083	1060.78	1154	1694
Geometry	11,389	503	1010	1101	1090.81	1182	1802
Algebra II	11,640	524	1056	1138	1128.11	1215	1705
Reading – G3	51,398	283	604	716	725.59	836	1257
Reading – G4	54,918	292	692	824	816.30	941	1416
Reading – G5	57,705	364	774	909	887.53	1012	1373
Reading – G6	66,926	403	837	958	938.99	1051	1598
Reading – G7	67,146	358	859	983	961.42	1078	1519
Reading – G8	62,572	386	885	1011	987.09	1106	1627
Literature	158,014	377	924	1053	1024.43	1147	1634
Science – G3	3,305	223	619	727	704.56	815	1079
Science – G4	15,435	200	698	800	777.53	881	1217
Science – G5	3,450	309	744	854	830.99	935	1194
Science – G6	15,039	424	776	876	859.39	953	1231
Science – G7	27,567	409	809	913	891.52	990	1374
Science – G8	45,942	269	849	945	921.97	1015	1320
Science – HS	1,380	406	792	931	900.25	1019	1276
Biology	132,682	400	909	1000	987.35	1077	1673
Chemistry	10,497	530	944	1014	1003.79	1074	1441
Writing – G3	6,677	200	649	770	747.81	869	1343
Writing – G4	7,225	310	730	852	823.19	944	1401
Writing – G5	7,897	286	804	918	884.69	995	1273
Writing – G6	13,594	406	830	941	913.42	1017	1312
Writing – G7	14,079	409	850	967	937.26	1047	1484
Writing – G8	14,182	415	878	992	960.22	1067	1435
English Composition	9,900	200	947	1046	1018.18	1119	1532

Table 15–19 shows the summary statistics for the conditional standard errors of measurement (CSEMs) in the scale score metric based on total test. The final column in the table shows the theoretical minimum CSEM that is possible for a test length equal to the mean number of items. This is the standard error if the student's ability is known and there are sufficient items in the operational pool to administer where the item's difficulty is equal to the known ability and the test constraints are met.

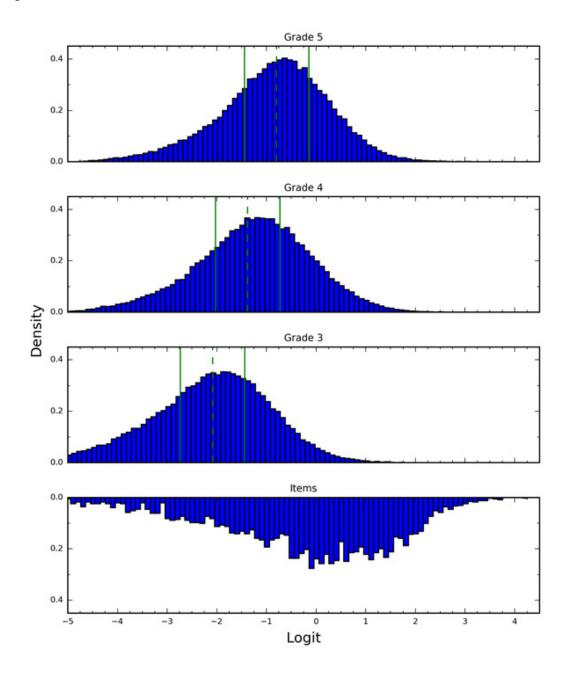
Table 15-19. Summary Statistics for Conditional Standard Errors Based on Total Test

CDT	N	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
Math – G3	58,253	35	37	38	38.15	39	91	36.31
Math – G4	63,771	35	37	38	38.13	39	59	36.31
Math – G5	66,923	35	37	38	38.08	38	65	36.67
Math – G6	71,208	35	37	37	37.18	37	59	34.64
Math – G7	70,509	34	37	37	37.12	37	75	34.64
Math – G8	51,713	34	37	37	37.21	37	75	34.64
Math – HS	64	35	37	37	37.37	38	43	34.31
Algebra I	121,080	34	37	37	37.36	38	75	34.64
Geometry	11,389	35	37	37	37.37	38	126	34.64
Algebra II	11,640	34	37	37	37.45	38	75	34.64
Reading – G3	51,398	39	42	43	44.15	45	76	40.38
Reading – G4	54,918	39	42	43	43.84	45	86	40.38
Reading – G5	57,705	39	42	43	43.80	45	76	40.38
Reading – G6	66,926	39	42	42	43.38	44	145	38.52
Reading – G7	67,146	38	42	43	43.48	44	104	38.52
Reading – G8	62,572	39	42	43	43.86	45	146	38.52
Literature	158,014	39	42	43	44.79	46	145	38.17
Science – G3	3,305	37	40	40	40.50	41	49	38.63
Science – G4	15,435	37	40	40	40.46	41	62	39.01
Science – G5	3,450	38	40	40	40.41	41	50	39.01
Science – G6	15,039	36	39	39	39.45	40	56	36.85
Science – G7	27,567	37	39	39	39.45	40	55	36.85
Science – G8	45,942	37	39	39	39.48	40	84	37.21
Science – HS	1,380	37	39	39	39.91	40	56	36.50
Biology	132,682	36	39	39	39.66	40	138	36.85
Chemistry	10,497	37	39	39	39.80	40	66	36.85
Writing – G3	6,677	36	39	39	39.43	40	60	37.60
Writing – G4	7,225	36	39	39	39.34	40	63	37.60
Writing – G5	7,897	36	39	39	39.29	40	56	37.60
Writing – G6	13,594	36	38	38	38.18	38	53	35.87
Writing – G7	14,079	36	38	38	38.18	38	63	35.87
Writing – G8	14,182	36	38	38	38.19	38	55	35.87
English Composition	9,900	36	38	38	38.28	38	135	35.87

Values in the "Minimum" column that are less than the "Theoretical Minimum" are due to students taking more than the mean number of items. Recall that calculation of "Theoretical Minimum" is based on the mean number of items.

Figures 15–1 through 15–8 show the scale score distributions for the total test for the content areas mathematics, reading, science, and writing. Tests with multiple benchmark cuts are broken down to match the grade level of the cuts while tests that are course-specific are not broken down. The benchmark cuts in place during the 2015–2016 school year are shown in green¹. The bottom plot in each figure represents the distribution of items in the content area pools.

Figure 15-1. Scale Score Distribution - Math Grades 3-5 Total Scores



¹ For details on benchmark cuts, see Chapter Ten and Chapter Nineteen.

Figure 15-2. Scale Score Distribution - Math Total Scores

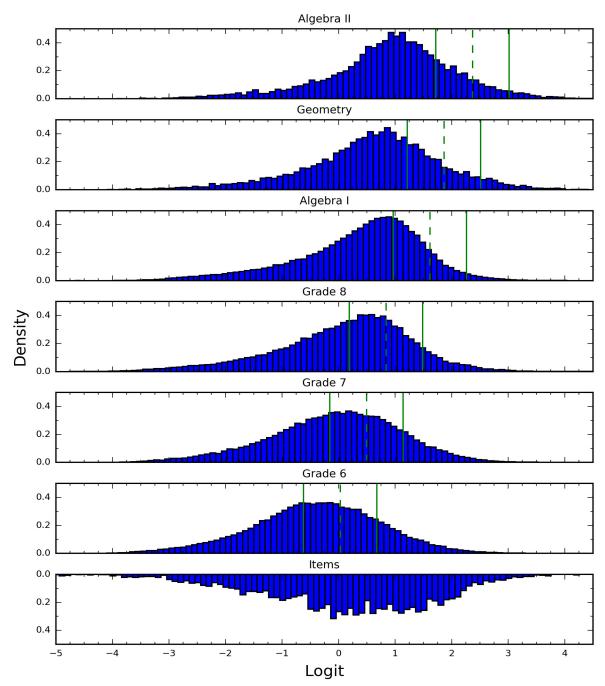


Figure 15–3. Scale Score Distribution – Reading Grades 3-5 Total Scores

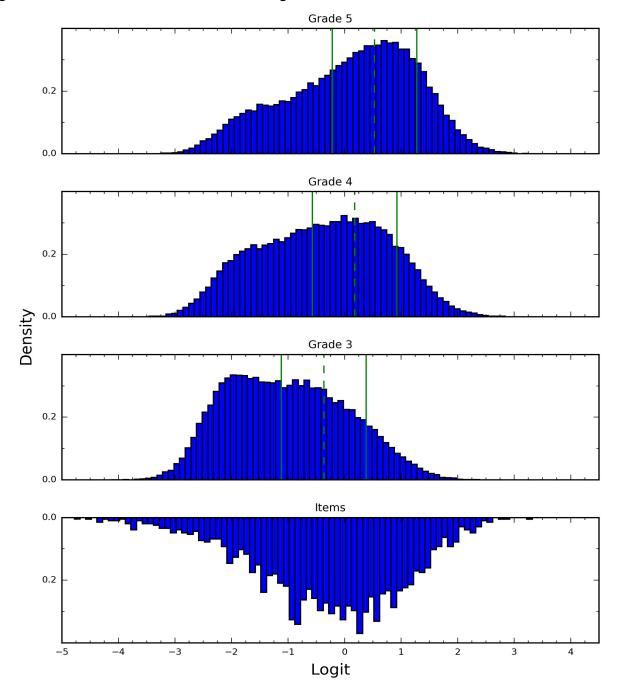


Figure 15–4. Scale Score Distribution – Reading/Literature Total Scores

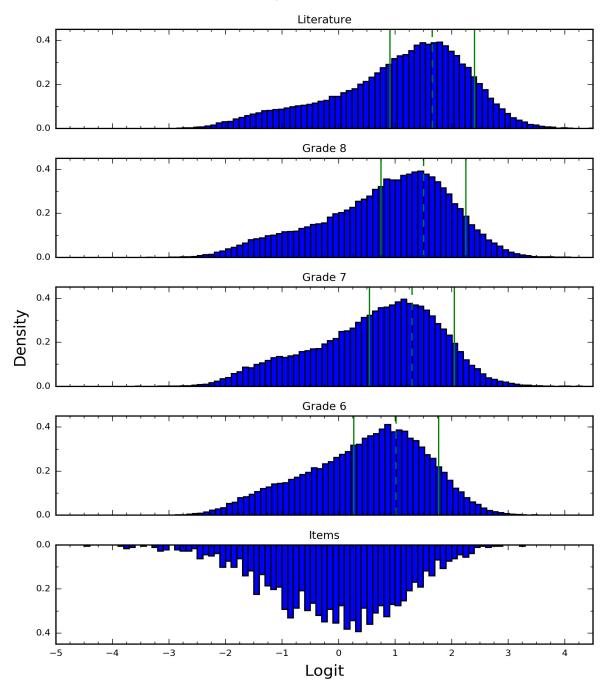


Figure 15–5. Scale Score Distribution – Science Grades 3-5 Total Scores

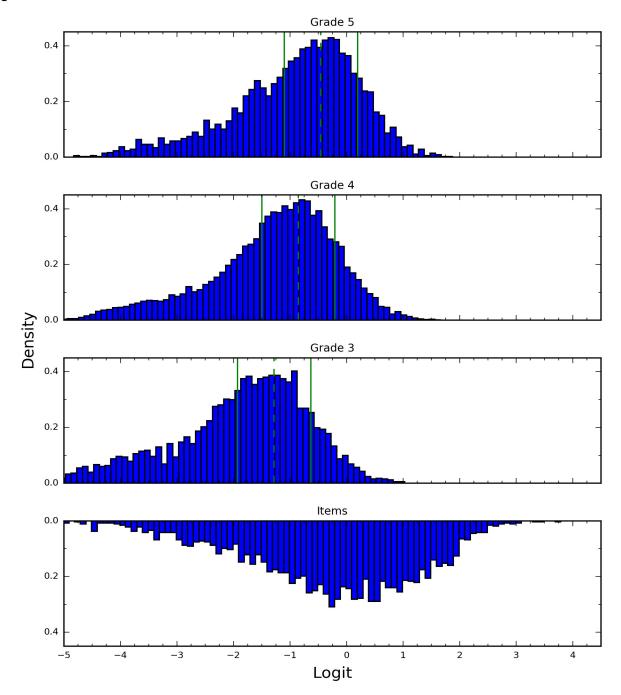


Figure 15-6. Scale Score Distribution - Science Total Scores

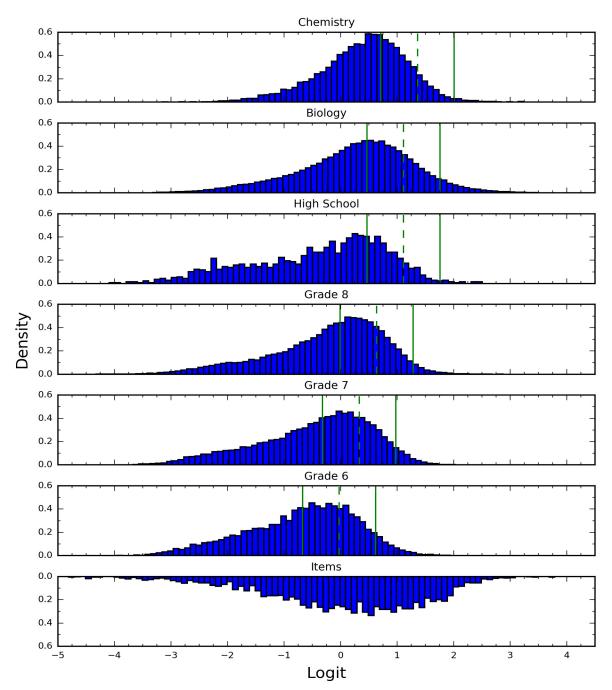


Figure 15–7. Scale Score Distribution – Writing Grades 3-5 Total Scores

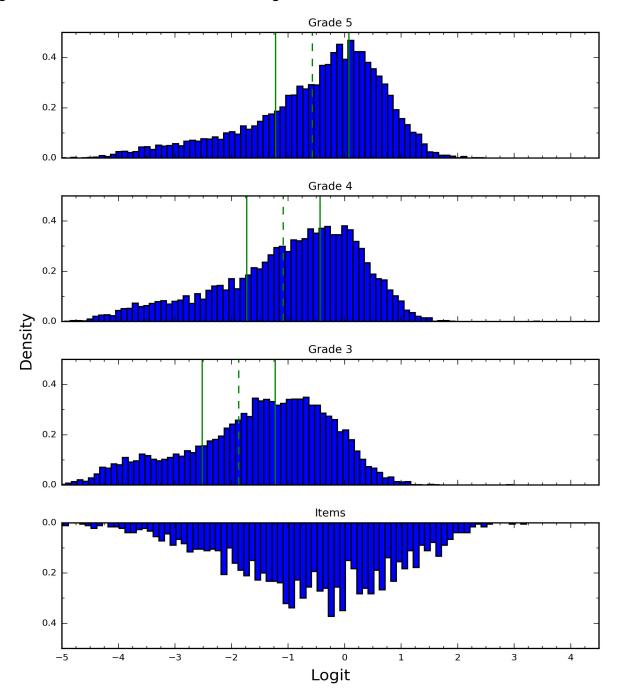
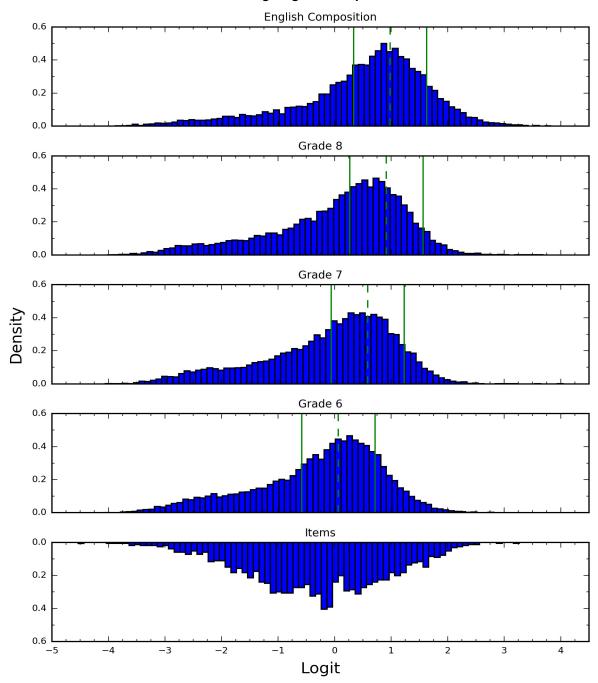


Figure 15–8. Scale Score Distribution – Writing/English Composition Total Scores



SUMMARY STATISTICS – SCALE SCORES AND CONDITIONAL STANDARD ERRORS FOR DIAGNOSTIC CATEGORIES

Table 15–20 shows the summary statistics for the scale scores based on diagnostic categories. To be consistent with Table 15–18, tests with multiple benchmark cuts are broken down to match the grade level of the cuts, while tests that are course-specific are not broken down. Full diagnostic category names can be found in Chapter Thirteen.

Table 15–20. Summary Statistics for Scale Score Based on Diagnostic Categories

CDT	Diagnostic Category	N	Minimum	Q1	Median	Mean	Q3	Maximum
Math – G3	1	58,253	200	636	742	736.28	839	1489
Math – G3	2	58,253	200	652	777	765.93	882	1700
Math – G3	3	58,253	200	638	729	725.87	808	1448
Math – G3	4	58,253	200	640	775	761.82	894	1385
Math – G4	1	63,771	200	746	848	848.71	948	1682
Math – G4	2	63,771	200	777	879	869.29	981	1477
Math – G4	3	63,771	200	720	806	829.47	951	1456
Math – G4	4	63,771	200	764	888	868.33	979	1473
Math – G5	1	66,923	200	814	925	919.13	1031	1681
Math – G5	2	66,923	200	807	911	894.49	990	1734
Math – G5	3	66,923	200	794	913	901.34	1011	1737
Math – G5	4	66,923	200	817	903	903.00	998	1576
Math – G6	1	71,208	200	871	987	978.03	1096	1712
Math – G6	2	71,208	200	861	973	964.04	1081	1772
Math – G6	3	71,208	239	877	966	962.37	1048	1722
Math – G6	4	71,208	200	845	956	957.42	1076	1778
Math – G7	1	70,509	200	920	1035	1021.61	1141	1722
Math – G7	2	70,509	200	920	1024	1010.58	1120	1802
Math – G7	3	70,509	273	904	1000	997.53	1094	1834
Math – G7	4	70,509	220	876	1004	993.97	1116	1779
Math – G8	1	51,713	200	935	1064	1033.42	1162	1770
Math – G8	2	51,713	200	952	1052	1035.31	1136	1839
Math – G8	3	51,713	283	922	1028	1020.11	1122	1839
Math – G8	4	51,713	200	905	1037	1015.67	1139	1819
Math – HS	1	64	521	777	886	867.13	970	1261
Math – HS	2	64	493	792	885	881.06	981	1253
Math – HS	3	64	481	791	883	888.41	987	1219
Math - HS	4	64	435	735	857	856.03	963	1174
Algebra I	1	121,080	400	983	1086	1056.32	1167	1858
Algebra I	2	121,080	400	989	1090	1072.46	1171	1827
Algebra I	3	121,080	400	982	1091	1070.64	1178	1841
Algebra I	4	121,080	400	951	1071	1047.34	1163	1848

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

CDT	Diagnostic Category	N	Minimum	Q1	Median	Mean	Q3	Maximum
Geometry	1	11,389	400	1001	1107	1085.00	1189	1763
Geometry	2	11,389	400	1014	1102	1100.34	1204	1793
Geometry	3	11,389	400	994	1106	1094.35	1202	1801
Geometry	4	11,389	400	987	1102	1086.00	1198	1830
Algebra II	1	11,640	566	1026	1121	1151.22	1250	1832
Algebra II	2	11,640	400	1048	1144	1120.82	1221	1866
Algebra II	3	11,640	400	1063	1159	1135.26	1236	1848
Algebra II	4	11,640	400	1029	1136	1111.28	1213	1845
Reading – G3	1	51,398	200	586	717	722.62	858	1515
Reading – G3	2	51,398	200	590	718	720.30	855	1502
Reading – G3	3	51,398	200	637	745	748.50	865	1555
Reading – G3	4	51,398	200	612	723	726.98	846	1562
Reading – G3	5	51,398	200	569	711	698.84	835	1508
Reading – G4	1	54,918	200	673	825	815.53	961	1521
Reading – G4	2	54,918	200	671	821	808.69	950	1557
Reading – G4	3	54,918	200	714	840	837.63	966	1567
Reading – G4	4	54,918	200	689	823	818.94	955	1606
Reading – G4	5	54,918	200	674	812	796.76	926	1533
Reading – G5	1	57,705	200	756	914	890.95	1031	1546
Reading – G5	2	57,705	200	760	903	883.52	1019	1584
Reading – G5	3	57,705	200	777	913	902.06	1031	1609
Reading – G5	4	57,705	200	756	906	886.68	1026	1600
Reading – G5	5	57,705	200	757	890	876.61	1006	1549
Reading – G6	1	66,926	200	829	966	950.07	1078	1561
Reading – G6	2	66,926	200	825	955	939.43	1062	1612
Reading – G6	3	66,926	219	828	958	943.53	1065	1606
Reading – G6	4	66,926	200	825	954	935.97	1061	1604
Reading – G6	5	66,926	200	812	948	932.86	1058	1586
Reading – G7	1	67,146	200	836	980	964.30	1097	1575
Reading – G7	2	67,146	200	850	990	968.95	1099	1602
Reading – G7	3	67,146	204	848	980	964.34	1089	1636
Reading – G7	4	67,146	200	846	980	958.53	1086	1669
Reading – G7	5	67,146	200	845	981	960.15	1088	1610

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

CDT	Diagnostic Category	N	Minimum	Q1	Median	Mean	Q3	Maximum
Reading – G8	1	62,572	200	851	1001	982.31	1116	1579
Reading – G8	2	62,572	200	883	1025	1003.14	1134	1609
Reading – G8	3	62,572	205	872	1005	988.67	1116	1628
Reading – G8	4	62,572	200	882	1009	990.43	1117	1653
Reading – G8	5	62,572	200	873	1007	983.07	1110	1627
Literature	1	158,014	200	885	1036	1013.30	1149	1591
Literature	2	158,014	200	926	1066	1041.75	1168	1633
Literature	3	158,014	202	908	1042	1025.45	1152	1645
Literature	4	158,014	200	924	1055	1034.96	1166	1669
Literature	5	158,014	200	919	1048	1027.42	1151	1658
Science – G3	1	3,305	200	581	712	691.77	816	1188
Science – G3	2	3,305	200	601	729	706.76	826	1198
Science – G3	3	3,305	200	611	736	711.83	835	1168
Science – G3	4	3,305	200	597	719	698.88	812	1185
Science – G4	1	15,435	200	666	788	769.83	888	1476
Science – G4	2	15,435	200	678	785	772.28	889	1321
Science – G4	3	15,435	200	703	804	783.58	897	1316
Science – G4	4	15,435	200	679	795	774.58	882	1302
Science – G5	1	3,450	200	722	839	825.19	942	1377
Science – G5	2	3,450	200	720	848	828.37	945	1383
Science – G5	3	3,450	200	756	852	836.20	941	1254
Science – G5	4	3,450	200	736	843	824.13	937	1227
Science – G6	1	15,039	200	758	878	861.69	982	1322
Science – G6	2	15,039	200	763	872	855.66	960	1361
Science – G6	3	15,039	256	773	874	865.74	961	1330
Science – G6	4	15,039	200	766	872	857.32	961	1300
Science – G7	1	27,567	200	789	914	890.62	1011	1470
Science – G7	2	27,567	200	795	911	892.37	1009	1425
Science – G7	3	27,567	200	808	912	899.34	1002	1346
Science – G7	4	27,567	200	796	903	886.71	993	1460
Science – G8	1	45,942	200	835	949	924.54	1037	1739
Science – G8	2	45,942	200	835	947	926.07	1037	1448
Science – G8	3	45,942	200	843	946	931.54	1033	1396
Science – G8	4	45,942	200	825	930	908.61	1013	1535
Science – HS	1	1,380	288	762	934	899.01	1044	1442
Science – HS	2	1,380	256	782	935	903.90	1034	1314
Science – HS	3	1,380	313	804	940	915.77	1036	1366
Science – HS	4	1,380	200	764	921	885.72	1026	1334

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

CDT	Diagnostic Category	N	Minimum	Q1	Median	Mean	Q3	Maximum
Biology	1	132,682	400	895	1007	990.67	1106	1785
Biology	2	132,682	400	905	997	999.21	1095	1724
Biology	3	132,682	400	908	1002	995.20	1087	1768
Biology	4	132,682	400	876	997	968.31	1085	1723
Chemistry	1	10,497	400	911	1019	985.05	1090	1722
Chemistry	2	10,497	493	945	1024	1021.24	1102	1732
Chemistry	3	10,497	448	944	1024	1014.87	1095	1554
Chemistry	4	10,497	445	920	1000	998.57	1088	1721
Writing – G3	1	6,677	200	628	763	745.23	890	1304
Writing – G3	2	6,677	200	643	763	739.17	866	1345
Writing – G3	3	6,677	200	634	758	743.96	869	1420
Writing – G3	4	6,677	200	624	758	749.71	880	1384
Writing – G3	5	6,677	200	637	770	751.21	881	1616
Writing – G4	1	7,225	200	697	844	813.47	950	1496
Writing – G4	2	7,225	200	705	836	812.23	945	1427
Writing – G4	3	7,225	200	704	834	818.33	952	1406
Writing – G4	4	7,225	200	720	847	834.12	965	1438
Writing – G4	5	7,225	200	725	849	826.61	950	1582
Writing – G5	1	7,897	200	771	904	876.00	1011	1509
Writing – G5	2	7,897	200	778	902	879.05	1008	1556
Writing – G5	3	7,897	200	779	902	879.50	1001	1582
Writing – G5	4	7,897	200	787	917	891.84	1018	1445
Writing – G5	5	7,897	200	795	907	884.92	1001	1428
Writing – G6	1	13,594	200	794	939	904.23	1034	1549
Writing – G6	2	13,594	223	796	933	908.47	1031	1609
Writing – G6	3	13,594	200	808	928	905.58	1026	1470
Writing – G6	4	13,594	203	838	956	928.69	1034	1625
Writing – G6	5	13,594	200	832	942	917.03	1028	1426
Writing – G7	1	14,079	200	820	968	928.95	1063	1601
Writing – G7	2	14,079	225	818	957	934.54	1064	1599
Writing – G7	3	14,079	200	832	959	929.48	1058	1508
Writing – G7	4	14,079	216	866	978	958.60	1074	1712
Writing – G7	5	14,079	200	847	959	932.37	1046	1648

Table 15-20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

CDT	Diagnostic Category	N	Minimum	Q1	Median	Mean	Q3	Maximum
Writing – G8	1	14,182	200	851	990	954.77	1085	1617
Writing – G8	2	14,182	217	848	984	956.65	1088	1607
Writing – G8	3	14,182	200	858	984	951.69	1072	1485
Writing – G8	4	14,182	200	894	1001	981.50	1100	1695
Writing – G8	5	14,182	200	870	981	954.35	1066	1649
English Composition	1	9,900	200	930	1052	1021.40	1140	1614
English Composition	2	9,900	203	925	1050	1023.12	1151	1621
English Composition	3	9,900	200	929	1035	1006.18	1112	1670
English Composition	4	9,900	201	942	1051	1032.69	1144	1719
English Composition	5	9,900	200	929	1030	1008.69	1114	1672

Table 15–21 shows the summary statistics for the conditional standard errors of measurement (CSEMs) in the scale score metric based on diagnostic categories. The final column in the table shows the theoretical minimum CSEM that is possible for a test length equal to the mean number of items. Minimum values in the table that are less than the theoretical minimum are due to students taking more than the mean number of items.

Table 15–21. Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

CDT	Diagnostic Category	N	Min	Q1	Median	Mean	Q3	Max	Theoretical Minimum
Math – G3	1	58,253	71	74	76	75.84	77	233	72.63
Math – G3	2	58,253	72	74	76	75.86	77	235	72.63
Math – G3	3	58,253	72	75	76	75.94	77	234	72.63
Math – G3	4	58,253	71	74	76	75.95	77	233	72.63
Math – G4	1	63,771	72	74	75	75.82	77	232	72.63
Math – G4	2	63,771	71	74	76	75.63	77	232	72.63
Math – G4	3	63,771	72	74	76	75.70	77	238	72.63
Math – G4	4	63,771	71	74	76	75.74	77	234	72.63
Math – G5	1	66,923	72	74	76	75.81	77	231	72.63
Math – G5	2	66,923	71	74	76	75.58	77	233	72.63
Math – G5	3	66,923	72	74	76	75.62	77	239	72.63
Math – G5	4	66,923	71	74	76	75.59	77	236	72.63
Math – G6	1	71,208	69	73	74	73.92	74	232	69.28
Math – G6	2	71,208	69	73	74	73.88	74	236	69.28
Math – G6	3	71,208	69	73	74	73.71	74	232	69.28
Math – G6	4	71,208	69	73	74	73.85	74	238	69.28
Math – G7	1	70,509	69	73	74	74.05	74	233	69.28
Math – G7	2	70,509	69	73	74	73.86	74	238	69.28
Math – G7	3	70,509	70	73	74	73.62	74	232	69.28
Math – G7	4	70,509	69	73	74	73.97	74	233	69.28
Math – G8	1	51,713	69	73	74	73.87	74	232	69.28
Math – G8	2	51,713	69	73	74	74.01	74	239	69.28
Math – G8	3	51,713	69	73	74	73.93	74	233	69.28
Math – G8	4	51,713	69	73	74	74.10	74	243	69.28
Math – HS	1	64	71	73	74	74.00	74	87	69.28
Math - HS	2	64	69	73	74	75.55	75	103	69.28
Math – HS	3	64	70	72	74	75.02	74	134	66.76
Math – HS	4	64	71	73	74	74.65	74	92	69.28
Algebra I	1	121,080	69	73	74	74.00	74	235	69.28
Algebra I	2	121,080	69	73	74	74.50	74	235	69.28
Algebra I	3	121,080	69	73	74	74.26	74	245	69.28
Algebra I	4	121,080	69	73	74	74.45	74	247	69.28
Geometry	1	11,389	69	73	74	74.03	74	233	69.28
Geometry	2	11,389	69	73	74	75.27	75	248	69.28
Geometry	3	11,389	69	73	74	74.81	74	232	69.28
Geometry	4	11,389	70	73	74	74.43	74	233	69.28

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

CDT	Diagnostic Category	N	Min	Q1	Median	Mean	Q3	Max	Theoretical Minimum
Algebra II	1	11,640	69	73	74	78.15	75	232	69.28
Algebra II	2	11,640	70	73	74	74.20	74	234	69.28
Algebra II	3	11,640	69	73	74	74.34	74	233	69.28
Algebra II	4	11,640	69	73	74	74.79	74	239	69.28
Reading – G3	1	51,398	83	94	99	102.40	103	276	90.29
Reading – G3	2	51,398	83	94	98	101.86	103	278	90.29
Reading – G3	3	51,398	84	95	100	104.09	105	282	90.29
Reading – G3	4	51,398	83	93	97	101.97	103	284	90.29
Reading – G3	5	51,398	84	96	100	103.79	105	277	90.29
Reading – G4	1	54,918	84	94	99	102.34	103	277	90.29
Reading – G4	2	54,918	83	93	97	100.52	102	278	90.29
Reading – G4	3	54,918	83	94	99	101.97	103	283	90.29
Reading – G4	4	54,918	83	92	96	100.11	102	280	90.29
Reading – G4	5	54,918	84	96	100	104.08	105	281	90.29
Reading – G5	1	57,705	83	94	99	102.99	103	276	90.29
Reading – G5	2	57,705	83	93	97	100.08	102	282	90.29
Reading – G5	3	57,705	83	93	98	101.02	102	281	90.29
Reading – G5	4	57,705	83	92	96	99.78	102	278	90.29
Reading – G5	5	57,705	84	96	101	105.57	106	277	90.29
Reading – G6	1	66,926	83	93	97	103.56	103	279	86.13
Reading – G6	2	66,926	83	92	95	99.63	101	285	86.13
Reading – G6	3	66,926	83	92	96	100.38	102	275	86.13
Reading – G6	4	66,926	83	91	95	99.38	101	279	86.13
Reading – G6	5	66,926	84	96	100	106.04	105	280	86.13
Reading – G7	1	67,146	83	93	98	105.51	104	278	86.13
Reading – G7	2	67,146	83	92	96	100.92	102	287	86.13
Reading – G7	3	67,146	83	92	96	100.16	101	276	86.13
Reading – G7	4	67,146	83	91	95	99.08	101	281	86.13
Reading – G7	5	67,146	83	96	101	106.00	105	276	86.13
Reading – G8	1	62,572	83	93	99	107.22	106	279	86.13
Reading – G8	2	62,572	83	92	97	103.09	103	282	86.13
Reading – G8	3	62,572	83	92	96	101.07	102	275	86.13
Reading – G8	4	62,572	83	90	95	99.65	101	280	86.13
Reading – G8	5	62,572	84	97	101	106.25	105	278	86.13

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

CDT	Diagnostic Category	N	Min	Q1	Median	Mean	Q3	Max	Theoretical Minimum
Literature	1	158,014	83	94	100	110.42	113	280	86.13
Literature	2	158,014	83	93	98	106.17	105	284	86.13
Literature	3	158,014	83	92	97	103.35	103	281	86.13
Literature	4	158,014	83	91	96	102.15	102	281	86.13
Literature	5	158,014	84	98	102	110.58	107	282	86.13
Science – G3	1	3,305	76	79	80	80.81	82	246	77.26
Science – G3	2	3,305	76	79	81	80.61	82	247	77.26
Science – G3	3	3,305	76	79	81	80.82	82	246	77.26
Science – G3	4	3,305	76	79	80	80.64	82	248	77.26
Science – G4	1	15,435	76	79	80	80.85	82	246	77.26
Science – G4	2	15,435	76	79	80	80.56	82	247	77.26
Science – G4	3	15,435	76	79	81	80.70	82	247	77.26
Science – G4	4	15,435	76	79	80	80.61	81	248	77.26
Science – G5	1	3,450	76	79	80	80.73	82	180	77.26
Science – G5	2	3,450	76	79	81	80.55	82	142	77.26
Science – G5	3	3,450	76	79	80	80.44	81	143	77.26
Science – G5	4	3,450	76	79	80	80.61	81	248	77.26
Science – G6	1	15,039	74	77	78	78.69	79	247	73.70
Science – G6	2	15,039	74	77	78	78.97	79	255	73.70
Science – G6	3	15,039	74	77	78	79.06	79	246	73.70
Science – G6	4	15,039	74	77	78	78.77	79	248	73.70
Science – G7	1	27,567	74	77	78	78.77	79	246	73.70
Science – G7	2	27,567	74	77	78	78.86	79	247	73.70
Science – G7	3	27,567	74	77	78	78.77	79	256	73.70
Science – G7	4	27,567	74	77	78	78.70	79	248	73.70
Science – G8	1	45,942	74	77	78	78.72	79	280	73.70
Science – G8	2	45,942	74	77	78	78.84	79	248	73.70
Science – G8	3	45,942	74	77	78	78.69	79	255	73.70
Science – G8	4	45,942	74	77	78	78.69	79	257	73.70
Science – HS	1	1,380	74	77	78	79.59	79	142	73.70
Science – HS	2	1,380	74	77	78	80.06	79	246	73.70
Science – HS	3	1,380	74	77	78	79.89	79	247	73.70
Science – HS	4	1,380	74	77	78	79.69	79	252	73.70
Biology	1	132,682	74	77	78	78.94	79	251	73.70
Biology	2	132,682	74	77	79	79.97	79	247	73.70
Biology	3	132,682	74	77	78	79.38	79	255	73.70
Biology	4	132,682	74	77	78	78.98	79	259	73.70

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

CDT	Diagnostic Category	N	Min	Q1	Median	Mean	Q3	Max	Theoretical Minimum
Chemistry	1	10,497	74	77	78	78.92	79	249	73.70
Chemistry	2	10,497	74	77	79	81.13	79	247	73.70
Chemistry	3	10,497	74	77	79	79.87	79	246	73.70
Chemistry	4	10,497	74	77	79	80.26	79	246	73.70
Writing – G3	1	6,677	82	86	87	88.67	89	248	84.09
Writing – G3	2	6,677	82	86	87	88.76	89	253	84.09
Writing – G3	3	6,677	82	86	87	88.95	89	252	84.09
Writing – G3	4	6,677	82	86	87	89.55	89	247	84.09
Writing – G3	5	6,677	82	86	87	88.76	89	248	84.09
Writing – G4	1	7,225	82	86	87	88.61	89	250	84.09
Writing – G4	2	7,225	82	86	87	88.49	89	253	84.09
Writing – G4	3	7,225	82	86	87	88.25	89	248	84.09
Writing – G4	4	7,225	82	86	87	88.33	89	247	84.09
Writing – G4	5	7,225	82	86	87	88.01	89	248	84.09
Writing – G5	1	7,897	82	86	87	88.29	89	251	84.09
Writing – G5	2	7,897	82	86	87	88.40	89	250	84.09
Writing – G5	3	7,897	82	86	87	87.89	88	248	84.09
Writing – G5	4	7,897	82	86	87	88.03	89	247	84.09
Writing – G5	5	7,897	82	86	87	87.71	88	248	84.09
Writing – G6	1	13,594	81	83	85	86.86	86	249	80.21
Writing – G6	2	13,594	81	84	85	87.22	86	248	80.21
Writing – G6	3	13,594	81	83	85	85.98	86	250	80.21
Writing – G6	4	13,594	81	83	85	86.10	86	247	80.21
Writing – G6	5	13,594	81	83	85	85.40	86	253	80.21
Writing – G7	1	14,079	81	83	85	86.87	86	250	80.21
Writing – G7	2	14,079	81	84	85	87.32	86	248	80.21
Writing – G7	3	14,079	81	83	85	85.67	86	249	80.21
Writing – G7	4	14,079	81	83	85	85.89	86	248	80.21
Writing – G7	5	14,079	81	83	85	85.47	86	251	80.21
Writing – G8	1	14,182	81	84	85	87.09	86	251	80.21
Writing – G8	2	14,182	81	84	85	87.40	86	248	80.21
Writing – G8	3	14,182	81	83	85	85.74	86	252	80.21
Writing – G8	4	14,182	81	83	85	85.82	86	248	80.21
Writing – G8	5	14,182	80	83	85	85.46	86	251	80.21

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

CDT	Diagnostic Category	N	Min	Q1	Median	Mean	Q3	Max	Theoretical Minimum
English Composition	1	9,900	81	84	85	88.38	86	250	80.21
English Composition	2	9,900	81	84	85	88.83	86	248	80.21
English Composition	3	9,900	81	83	85	85.81	86	251	80.21
English Composition	4	9,900	80	83	85	86.28	86	249	80.21
English Composition	5	9,900	81	83	85	86.15	86	250	80.21

DIAGNOSTIC CATEGORY SCORE DIFFERENCES

As described in Chapter Fourteen, the CDT reports that are available to teachers display scale scores and probable score ranges for each diagnostic category. The probable score range is the scale score ± one standard error. Probable score range differences—ranges that do not overlap—may indicate to teachers a meaningful difference between two diagnostic category scores. Tables 15–22a through 15–34a show the number of students with score range differences (non-overlapping probable score ranges) between pairs of diagnostic categories for each CDT test. For example, according to Table 15–22a, 37,385 students who took the Math Grades 3-5 assessment had score range differences between diagnostic categories 1 and 2 while 151,562 students did not. Tables 15–22b through 15–34b show the total number of score range differences. For example, 35,208 students had two pairs of diagnostic categories with score range differences, which was 18.6% of the total students who took Math Grades 3-5.

Table 15-22a. Diagnostic Category Score Range Differences - Math Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	37,385	151,562	19.8%	80.2%
DC1	DC3	47,332	141,615	25.1%	74.9%
DC1	DC4	39,193	149,754	20.7%	79.3%
DC2	DC3	49,278	139,669	26.1%	73.9%
DC2	DC4	35,647	153,300	18.9%	81.1%
DC3	DC4	49,717	139,230	26.3%	73.7%

Table 15–22b. Total Number of Diagnostic Category Score Range Differences – Math Grades 3-5

Number of Score Range Differences	Number of Students	Percent of Students
0	72,494	38.4%
1	34,302	18.2%
2	35,208	18.6%
3	35,593	18.8%
4	9,715	5.1%
5	1,615	0.9%
6	20	0.0%

Table 15–23a. Diagnostic Category Score Range Differences – Math Grades 6-8

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	42,773	150,721	22.1%	77.9%
DC1	DC3	46,979	146,515	24.3%	75.7%
DC1	DC4	45,500	147,994	23.5%	76.5%
DC2	DC3	46,241	147,253	23.9%	76.1%
DC2	DC4	47,521	145,973	24.6%	75.4%
DC3	DC4	47,213	146,281	24.4%	75.6%

Table 15–23b. Total Number of Diagnostic Category Score Range Differences – Math Grades 6-8

Number of Score Range Differences	Number of Students	Percent of Students
0	72,645	37.5%
1	34,245	17.7%
2	34,905	18.0%
3	37,177	19.2%
4	12,016	6.2%
5	2,459	1.3%
6	47	0.0%

Table 15-24a. Diagnostic Category Score Range Differences - Algebra I

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	30,314	90,766	25.0%	75.0%
DC1	DC3	30,486	90,594	25.2%	74.8%
DC1	DC4	31,633	89,447	26.1%	73.9%
DC2	DC3	26,084	94,996	21.5%	78.5%
DC2	DC4	30,461	90,619	25.2%	74.8%
DC3	DC4	29,843	91,237	24.6%	75.4%

Table 15-24b. Total Number of Diagnostic Category Score Range Differences - Algebra I

Number of Score Range Differences	Number of Students	Percent of Students
0	45,662	37.7%
1	20,175	16.7%
2	20,763	17.1%
3	23,224	19.2%
4	8,888	7.3%
5	2,312	1.9%
6	56	0.0%

Table 15–25a. Diagnostic Category Score Range Differences – Geometry

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2,893	8,496	25.4%	74.6%
DC1	DC3	2,823	8,566	24.8%	75.2%
DC1	DC4	2,834	8,555	24.9%	75.1%
DC2	DC3	2,917	8,472	25.6%	74.4%
DC2	DC4	2,950	8,439	25.9%	74.1%
DC3	DC4	2,873	8,516	25.2%	74.8%

Table 15–25b. Total Number of Diagnostic Category Score Range Differences – Geometry

Number of Score Range Differences	Number of Students	Percent of Students
0	4,096	36.0%
1	1,924	16.9%
2	2,014	17.7%
3	2,290	20.1%
4	862	7.6%
5	198	1.7%
6	5	0.0%

Table 15–26a. Diagnostic Category Score Range Differences – Algebra II

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	4,013	7,627	34.5%	65.5%
DC1	DC3	4,150	7,490	35.7%	64.3%
DC1	DC4	4,498	7,142	38.6%	61.4%
DC2	DC3	2,694	8,946	23.1%	76.9%
DC2	DC4	2,894	8,746	24.9%	75.1%
DC3	DC4	2,923	8,717	25.1%	74.9%

Table 15-26b. Total Number of Diagnostic Category Score Range Differences - Algebra II

Number of Score Range Differences	Number of Students	Percent of Students
0	3,473	29.8%
1	1,678	14.4%
2	1,949	16.7%
3	3,008	25.8%
4	1,097	9.4%
5	426	3.7%
6	9	0.1%

Table 15–27a. Diagnostic Category Score Range Differences – Reading Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	31,724	132,297	19.3%	80.7%
DC1	DC3	30,204	133,817	18.4%	81.6%
DC1	DC4	32,664	131,357	19.9%	80.1%
DC1	DC5	31,637	132,384	19.3%	80.7%
DC2	DC3	32,379	131,642	19.7%	80.3%
DC2	DC4	29,869	134,152	18.2%	81.8%
DC2	DC5	30,404	133,617	18.5%	81.5%
DC3	DC4	31,397	132,624	19.1%	80.9%
DC3	DC5	32,770	131,251	20.0%	80.0%
DC4	DC5	31,102	132,919	19.0%	81.0%

Table 15–27b. Total Number of Diagnostic Category Score Range Differences – Reading Grades 3-5

Number of Score Range Differences	Number of Students	Percent of Students
0	52,752	32.2%
1	25,505	15.5%
2	26,771	16.3%
3	21,683	13.2%
4	23,462	14.3%
5	7,722	4.7%
6	5,381	3.3%
7	652	0.4%
8	91	0.1%
9	2	0.0%
10	0	0.0%

Table 15–28a. Diagnostic Category Score Range Differences – Reading/Lit Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	66,204	288,454	18.7%	81.3%
DC1	DC3	63,306	291,352	17.8%	82.2%
DC1	DC4	68,745	285,913	19.4%	80.6%
DC1	DC5	65,776	288,882	18.5%	81.5%
DC2	DC3	65,274	289,384	18.4%	81.6%
DC2	DC4	61,196	293,462	17.3%	82.7%
DC2	DC5	64,049	290,609	18.1%	81.9%
DC3	DC4	66,942	287,716	18.9%	81.1%
DC3	DC5	65,288	289,370	18.4%	81.6%
DC4	DC5	64,554	290,104	18.2%	81.8%

Table 15-28b. Total Number of Diagnostic Category Score Range Differences - Reading/Lit Grades 6-HS

Number of Score Range Differences	Number of Students	Percent of Students
0	121,665	34.3%
1	55,359	15.6%
2	57,003	16.1%
3	44,521	12.6%
4	47,265	13.3%
5	15,805	4.5%
6	11,234	3.2%
7	1,536	0.4%
8	265	0.1%
9	5	0.0%
10	0	0.0%

Table 15–29a. Diagnostic Category Score Range Differences – Science Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	4,017	18,173	18.1%	81.9%
DC1	DC3	4,143	18,047	18.7%	81.3%
DC1	DC4	4,163	18,027	18.8%	81.2%
DC2	DC3	4,016	18,174	18.1%	81.9%
DC2	DC4	3,986	18,204	18.0%	82.0%
DC3	DC4	4,024	18,166	18.1%	81.9%

Table 15-29b. Total Number of Diagnostic Category Score Range Differences - Science Grades 3-5

Number of Score Range Differences	Number of Students	Percent of Students
0	10,410	46.9%
1	4,100	18.5%
2	3,768	17.0%
3	3,055	13.8%
4	737	3.3%
5	120	0.5%
6	0	0.0%

Table 15–30a. Diagnostic Category Score Range Differences – Science Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	18,815	71,113	20.9%	79.1%
DC1	DC3	19,335	70,593	21.5%	78.5%
DC1	DC4	20,190	69,738	22.5%	77.5%
DC2	DC3	18,832	71,096	20.9%	79.1%
DC2	DC4	19,292	70,636	21.5%	78.5%
DC3	DC4	19,605	70,323	21.8%	78.2%

Table 15–30b. Total Number of Diagnostic Category Score Range Differences – Science Grades 6-HS

Number of Score Range Differences	Number of Students	Percent of Students
0	37,520	41.7%
1	16,009	17.8%
2	15,531	17.3%
3	15,356	17.1%
4	4,638	5.2%
5	866	1.0%
6	8	0.0%

Table 15–31a. Diagnostic Category Score Range Differences – Biology

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	29,945	102,737	22.6%	77.4%
DC1	DC3	31,476	101,206	23.7%	76.3%
DC1	DC4	31,796	100,886	24.0%	76.0%
DC2	DC3	28,006	104,676	21.1%	78.9%
DC2	DC4	35,813	96,869	27.0%	73.0%
DC3	DC4	32,372	100,310	24.4%	75.6%

Table 15–31b. Total Number of Diagnostic Category Score Range Differences – Biology

Number of Score Range Differences	Number of Students	Percent of Students
0	50,403	38.0%
1	23,137	17.4%
2	23,679	17.8%
3	24,739	18.6%
4	8,946	6.7%
5	1,756	1.3%
6	22	0.0%

Table 15–32a. Diagnostic Category Score Range Differences – Chemistry

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2,743	7,754	26.1%	73.9%
DC1	DC3	2,351	8,146	22.4%	77.6%
DC1	DC4	2,503	7,994	23.8%	76.2%
DC2	DC3	1,980	8,517	18.9%	81.1%
DC2	DC4	2,146	8,351	20.4%	79.6%
DC3	DC4	1,939	8,558	18.5%	81.5%

Table 15–32b. Total Number of Diagnostic Category Score Range Differences – Chemistry

Number of Score Range Differences	Number of Students	Percent of Students
0	4,371	41.6%
1	1,843	17.6%
2	1,755	16.7%
3	1,904	18.1%
4	524	5.0%
5	99	0.9%
6	1	0.0%

Table 15–33a. Diagnostic Category Score Range Differences – Writing Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	3,754	18,045	17.2%	82.8%
DC1	DC3	3,969	17,830	18.2%	81.8%
DC1	DC4	4,662	17,137	21.4%	78.6%
DC1	DC5	4,522	17,277	20.7%	79.3%
DC2	DC3	3,916	17,883	18.0%	82.0%
DC2	DC4	4,661	17,138	21.4%	78.6%
DC2	DC5	4,351	17,448	20.0%	80.0%
DC3	DC4	3,967	17,832	18.2%	81.8%
DC3	DC5	3,823	17,976	17.5%	82.5%
DC4	DC5	4,163	17,636	19.1%	80.9%

Table 15–33b. Total Number of Diagnostic Category Score Range Differences – Writing Grades 3-5

Number of Score Range Differences	Number of Students	Percent of Students
0	7,114	32.6%
1	3,380	15.5%
2	3,471	15.9%
3	2,830	13.0%
4	3,083	14.1%
5	1,047	4.8%
6	730	3.3%
7	123	0.6%
8	21	0.1%
9	0	0.0%
10	0	0.0%

Table 15–34a. Diagnostic Category Score Range Differences – Writing/Eng Comp Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	10,896	40,859	21.1%	78.9%
DC1	DC3	10,858	40,897	21.0%	79.0%
DC1	DC4	12,139	39,616	23.5%	76.5%
DC1	DC5	11,386	40,369	22.0%	78.0%
DC2	DC3	10,998	40,757	21.3%	78.7%
DC2	DC4	11,948	39,807	23.1%	76.9%
DC2	DC5	11,441	40,314	22.1%	77.9%
DC3	DC4	11,028	40,727	21.3%	78.7%
DC3	DC5	10,132	41,623	19.6%	80.4%
DC4	DC5	10,797	40,958	20.9%	79.1%

Table 15–34b. Total Number of Diagnostic Category Score Range Differences – Writing/Eng Comp Grades 6-HS

Number of Score Range Differences	Number of Students	Percent of Students
0	15,178	29.3%
1	7,538	14.6%
2	7,989	15.4%
3	6,574	12.7%
4	8,131	15.7%
5	3,045	5.9%
6	2,611	5.0%
7	544	1.1%
8	143	0.3%
9	2	0.0%
10	0	0.0%

Significant differences among diagnostic categories were tested based on t-test. Using the diagnostic category scale scores and the conditional standard errors for each student, the differences between pairs of diagnostic category scores were examined based on t-test for each student. A Bonferroni correction for multiple comparisons was performed to keep the familywise Type I error rate at 0.32. This results in the number of significant differences being smaller than the number of score range differences (non-overlapping probable score ranges) presented above. Tables 15–35a through 15–47a show the number of students who had significant differences between pairs of diagnostic categories for each assessment. Tables 15–35b through 15–47b show the total number of significant differences.

Table 15–35a. Diagnostic Category Significant Differences – Math Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2,743	186,204	1.5%	98.5%
DC1	DC3	5,061	183,886	2.7%	97.3%
DC1	DC4	3,240	185,707	1.7%	98.3%
DC2	DC3	5,769	183,178	3.1%	96.9%
DC2	DC4	2,929	186,018	1.6%	98.4%
DC3	DC4	5,634	183,313	3.0%	97.0%

Table 15–35b. Total Number of Diagnostic Category Significant Differences – Math Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	170,662	90.3%
1	12,650	6.7%
2	4,235	2.2%
3	1,344	0.7%
4	56	0.0%
5	0	0.0%
6	0	0.0%

Table 15–36a. Diagnostic Category Significant Differences – Math Grades 6-8

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	4,908	188,586	2.5%	97.5%
DC1	DC3	5,290	188,204	2.7%	97.3%
DC1	DC4	5,695	187,799	2.9%	97.1%
DC2	DC3	5,328	188,166	2.8%	97.2%
DC2	DC4	6,185	187,309	3.2%	96.8%
DC3	DC4	5,705	187,789	2.9%	97.1%

Note: Z value is 1.94

Table 15–36b. Total Number of Diagnostic Category Significant Differences – Math Grades 6-8

Number of Significant Differences	Number of Students	Percent of Students
0	171,166	88.5%
1	14,112	7.3%
2	5,873	3.0%
3	2,123	1.1%
4	216	0.1%
5	4	0.0%
6	0	0.0%

Table 15–37a. Diagnostic Category Significant Differences – Algebra I

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	4,708	116,372	3.9%	96.1%
DC1	DC3	4,691	116,389	3.9%	96.1%
DC1	DC4	5,461	115,619	4.5%	95.5%
DC2	DC3	2,801	118,279	2.3%	97.7%
DC2	DC4	4,459	116,621	3.7%	96.3%
DC3	DC4	4,198	116,882	3.5%	96.5%

Table 15-37b. Total Number of Diagnostic Category Significant Differences - Algebra I

Number of Significant Differences	Number of Students	Percent of Students
0	104,196	86.1%
1	9,902	8.2%
2	4,793	4.0%
3	1,934	1.6%
4	247	0.2%
5	8	0.0%
6	0	0.0%

Table 15–38a. Diagnostic Category Significant Differences – Geometry

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	351	11,038	3.1%	96.9%
DC1	DC3	359	11,030	3.2%	96.8%
DC1	DC4	436	10,953	3.8%	96.2%
DC2	DC3	389	11,000	3.4%	96.6%
DC2	DC4	447	10,942	3.9%	96.1%
DC3	DC4	408	10,981	3.6%	96.4%

Note: Z value is 1.94

Table 15–38b. Total Number of Diagnostic Category Significant Differences – Geometry

Number of Significant Differences	Number of Students	Percent of Students
0	9,898	86.9%
1	832	7.3%
2	450	4.0%
3	179	1.6%
4	29	0.3%
5	1	0.0%
6	0	0.0%

Table 15–39a. Diagnostic Category Significant Differences - Algebra II

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	835	10,805	7.2%	92.8%
DC1	DC3	711	10,929	6.1%	93.9%
DC1	DC4	1,123	10,517	9.6%	90.4%
DC2	DC3	396	11,244	3.4%	96.6%
DC2	DC4	447	11,193	3.8%	96.2%
DC3	DC4	462	11,178	4.0%	96.0%

Table 15-39b. Total Number of Diagnostic Category Significant Differences - Algebra II

Number of Significant Differences	Number of Students	Percent of Students
0	9,192	79.0%
1	1,357	11.7%
2	703	6.0%
3	343	2.9%
4	43	0.4%
5	2	0.0%
6	0	0.0%

Table 15-40a. Diagnostic Category Significant Differences - Reading Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	473	163,548	0.3%	99.7%
DC1	DC3	444	163,577	0.3%	99.7%
DC1	DC4	555	163,466	0.3%	99.7%
DC1	DC5	424	163,597	0.3%	99.7%
DC2	DC3	590	163,431	0.4%	99.6%
DC2	DC4	446	163,575	0.3%	99.7%
DC2	DC5	452	163,569	0.3%	99.7%
DC3	DC4	405	163,616	0.2%	99.8%
DC3	DC5	927	163,094	0.6%	99.4%
DC4	DC5	601	163,420	0.4%	99.6%

Table 15-40b. Total Number of Diagnostic Category Significant Differences - Reading Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	159,763	97.4%
1	3,406	2.1%
2	685	0.4%
3	127	0.1%
4	40	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table 15-41a. Diagnostic Category Significant Differences - Reading/Lit Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	964	353,694	0.3%	99.7%
DC1	DC3	819	353,839	0.2%	99.8%
DC1	DC4	1,380	353,278	0.4%	99.6%
DC1	DC5	1,152	353,506	0.3%	99.7%
DC2	DC3	807	353,851	0.2%	99.8%
DC2	DC4	755	353,903	0.2%	99.8%
DC2	DC5	1,214	353,444	0.3%	99.7%
DC3	DC4	880	353,778	0.2%	99.8%
DC3	DC5	1,342	353,316	0.4%	99.6%
DC4	DC5	1,439	353,219	0.4%	99.6%

Note: Z value is 2.15

Table 15–41b. Total Number of Diagnostic Category Significant Differences – Reading/Lit Grades 6-HS

Number of Significant Differences	Number of Students	Percent of Students
0	346,432	97.7%
1	6,215	1.8%
2	1,597	0.5%
3	327	0.1%
4	77	0.0%
5	6	0.0%
6	4	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table 15-42a. Diagnostic Category Significant Differences - Science Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	275	21,915	1.2%	98.8%
DC1	DC3	311	21,879	1.4%	98.6%
DC1	DC4	326	21,864	1.5%	98.5%
DC2	DC3	281	21,909	1.3%	98.7%
DC2	DC4	255	21,935	1.1%	98.9%
DC3	DC4	312	21,878	1.4%	98.6%

Table 15-42b. Total Number of Diagnostic Category Significant Differences - Science Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	20,909	94.2%
1	910	4.1%
2	267	1.2%
3	100	0.5%
4	4	0.0%
5	0	0.0%
6	0	0.0%

Table 15-43a. Diagnostic Category Significant Differences - Science Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,930	87,998	2.1%	97.9%
DC1	DC3	2,039	87,889	2.3%	97.7%
DC1	DC4	2,115	87,813	2.4%	97.6%
DC2	DC3	1,954	87,974	2.2%	97.8%
DC2	DC4	2,056	87,872	2.3%	97.7%
DC3	DC4	2,017	87,911	2.2%	97.8%

Note: Z value is 1.94

Table 15-43b. Total Number of Diagnostic Category Significant Differences - Science Grades 6-HS

Number of Significant Differences	Number of Students	Percent of Students
0	81,623	90.8%
1	5,380	6.0%
2	2,114	2.4%
3	743	0.8%
4	66	0.1%
5	2	0.0%
6	0	0.0%

Table 15-44a. Diagnostic Category Significant Differences - Biology

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	3,705	128,977	2.8%	97.2%
DC1	DC3	3,644	129,038	2.7%	97.3%
DC1	DC4	3,976	128,706	3.0%	97.0%
DC2	DC3	2,194	130,488	1.7%	98.3%
DC2	DC4	4,791	127,891	3.6%	96.4%
DC3	DC4	4,002	128,680	3.0%	97.0%

Table 15–44b. Total Number of Diagnostic Category Significant Differences – Biology

Number of Significant Differences	Number of Students	Percent of Students
0	117,395	88.5%
1	9,745	7.3%
2	4,214	3.2%
3	1,174	0.9%
4	153	0.1%
5	1	0.0%
6	0	0.0%

Table 15–45a. Diagnostic Category Significant Differences – Chemistry

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	512	9,985	4.9%	95.1%
DC1	DC3	392	10,105	3.7%	96.3%
DC1	DC4	368	10,129	3.5%	96.5%
DC2	DC3	70	10,427	0.7%	99.3%
DC2	DC4	127	10,370	1.2%	98.8%
DC3	DC4	90	10,407	0.9%	99.1%

Table 15–45b. Total Number of Diagnostic Category Significant Differences – Chemistry

Number of Significant Differences	Number of Students	Percent of Students
0	9,460	90.1%
1	649	6.2%
2	256	2.4%
3	130	1.2%
4	2	0.0%
5	0	0.0%
6	0	0.0%

Table 15–46a. Diagnostic Category Significant Differences – Writing Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	119	21,680	0.5%	99.5%
DC1	DC3	115	21,684	0.5%	99.5%
DC1	DC4	185	21,614	0.8%	99.2%
DC1	DC5	209	21,590	1.0%	99.0%
DC2	DC3	121	21,678	0.6%	99.4%
DC2	DC4	182	21,617	0.8%	99.2%
DC2	DC5	176	21,623	0.8%	99.2%
DC3	DC4	118	21,681	0.5%	99.5%
DC3	DC5	123	21,676	0.6%	99.4%
DC4	DC5	161	21,638	0.7%	99.3%

Table 15–46b. Total Number of Diagnostic Category Significant Differences – Writing Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	20,793	95.4%
1	672	3.1%
2	211	1.0%
3	82	0.4%
4	38	0.2%
5	1	0.0%
6	2	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table 15-47a. Diagnostic Category Significant Differences - Writing/Eng Comp Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	414	51,341	0.8%	99.2%
DC1	DC3	546	51,209	1.1%	98.9%
DC1	DC4	708	51,047	1.4%	98.6%
DC1	DC5	563	51,192	1.1%	98.9%
DC2	DC3	446	51,309	0.9%	99.1%
DC2	DC4	584	51,171	1.1%	98.9%
DC2	DC5	471	51,284	0.9%	99.1%
DC3	DC4	519	51,236	1.0%	99.0%
DC3	DC5	491	51,264	0.9%	99.1%
DC4	DC5	479	51,276	0.9%	99.1%

Note: Z value is 2.15

Table 15-47b. Total Number of Diagnostic Category Significant Differences - Writing/Eng Comp Grades 6-HS

Number of Significant Differences	Number of Students	Percent of Students
0	48,322	93.4%
1	2,198	4.2%
2	814	1.6%
3	299	0.6%
4	114	0.2%
5	6	0.0%
6	2	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Low numbers of significant differences across diagnostic categories, along with the high disattenuated correlations between categories and exploratory factor analyses discussed in Chapter Seventeen, suggest that some diagnostic categories might be measuring essentially the same construct. While this may be the case in general, when looking at group summary information, diagnostic category scores for individual students can provide useful information to teachers. For example, while 86.1% of students showed no significant differences between Algebra I diagnostic categories, 13.9% of students did. CDT diagnostic category scores for these students along with links to instructional resources are a valuable tool for teachers.

The tables in Appendix D show the significant differences with the familywise Type I error rate at 0.10.

DISTRIBUTION OF BENCHMARK RANGES

As described in Chapter Ten, committees of Pennsylvania educators established preliminary CDT cut scores for grade 5 and above prior to the first operational use. Following the 2010-2011 school year, the preliminary cut scores were revised for the mathematics content-area tests. See Chapter Nineteen of the 2010–2011 technical report for details. Following the 2011–2012 school year, the preliminary cut scores were revised for the reading, science, and writing content-area tests. See Chapter Nineteen of the 2011-2012 technical report for details. Cut points for grades 2 through 4 were interpolated from existing cuts in grade 5 and above prior to the first operational use of CDT tests for grades 3 through 5. See Chapter Nineteen of the 2013–2014 technical report for details. Following the 2014–2015 school year, the cut scores were revised for the mathematics, reading, and writing content-area tests based on the revised PSSA tests. See Chapter Nineteen for details.

The benchmark cuts in place during the 2015–2016 school year determine the color ranges (red/green/blue) in the CDT dynamic reporting suite. The cut scores and standard errors (SE)² were used to define ranges as follows: The green range is defined as the scale score cut ± one SE. The red range is defined as the scale minimum (200 for all CDTs except Algebra I, Geometry, Algebra II, Biology, and Chemistry which are 400) to the lower bound of the green range. The blue range is defined as the upper bound of the green range to the scale maximum (2000).

Table 15-48 shows the number and percentage of students in each benchmark range for each CDT test. Tests with multiple benchmark cuts are broken down to match the grade level of the cuts. Tests that are course-specific are not broken down. All results are based on the cut points in place for the 2015–2016 school year.

Table 15-48. Number and Percent of Students in Each CDT Score Range

CDT	Red N	Red Percent	Green N	Green Percent	Blue N	Blue Percent
Math - G3	39,180	67.3%	16,464	28.3%	2,609	4.5%
Math – G4	40,419	63.4%	19,561	30.7%	3,791	5.9%
Math – G5	42,220	63.1%	21,547	32.2%	3,156	4.7%
Math – G6	46,510	65.3%	20,810	29.2%	3,888	5.5%
Math – G7	48,709	69.1%	19,174	27.2%	2,626	3.7%
Math – G8	38,295	74.1%	12,150	23.5%	1,268	2.5%
Math - HS	64	100.0%	0	0.0%	0	0.0%
Algebra I	82,292	68.0%	36,381	30.0%	2,407	2.0%
Geometry	8,019	70.4%	2,826	24.8%	544	4.8%
Algebra II	9,083	78.0%	2,239	19.2%	318	2.7%
Reading – G3	28,270	55.0%	19,271	37.5%	3,857	7.5%
Reading – G4	27,644	50.3%	23,001	41.9%	4,273	7.8%
Reading – G5	26,406	45.8%	27,239	47.2%	4,060	7.0%
Reading – G6	31,278	46.7%	32,145	48.0%	3,503	5.2%
Reading – G7	32,840	48.9%	31,338	46.7%	2,968	4.4%
Reading – G8	31,225	49.9%	28,613	45.7%	2,734	4.4%
Literature	71,170	45.0%	77,328	48.9%	9,516	6.0%
Science – G3	1,337	40.5%	1,543	46.7%	425	12.9%
Science – G4	5,543	35.9%	7,694	49.8%	2,198	14.2%
Science – G5	1,258	36.5%	1,707	49.5%	485	14.1%

The standard error was estimated based on simulations using the operational configuration of the CAT in terms of the content constraints and stopping rules.

Table 15-48 (continued). Number and Percent of Students in Each CDT Score Range

CDT	Red N	Red Percent	Green N	Green Percent	Blue N	Blue Percent
Science – G6	6,801	45.2%	7,316	48.6%	922	6.1%
Science – G7	13,274	48.2%	13,102	47.5%	1,191	4.3%
Science – G8	23,496	51.1%	21,303	46.4%	1,143	2.5%
Science – HS	748	54.2%	577	41.8%	55	4.0%
Biology	71,400	53.8%	54,118	40.8%	7,164	5.4%
Chemistry	6,668	63.5%	3,712	35.4%	117	1.1%
Writing – G3	3,497	52.4%	2,647	39.6%	533	8.0%
Writing – G4	3,609	50.0%	3,068	42.5%	548	7.6%
Writing – G5	3,541	44.8%	3,812	48.3%	544	6.9%
Writing – G6	6,624	48.7%	6,264	46.1%	706	5.2%
Writing – G7	7,288	51.8%	6,225	44.2%	566	4.0%
Writing – G8	6,776	47.8%	6,674	47.1%	732	5.2%
English Composition	3,442	34.8%	5,178	52.3%	1,280	12.9%

MULTIPLE ADMINISTRATIONS OF THE SAME CDT TEST

As previously indicated, there are a number of students who took the same CDT test multiple times. This section focuses on the number of days between administrations and both changes in scale score and benchmark range across a student's first and last administrations.

Table 15–49 shows the summary statistics for the number of days from the first to last administration.

Table 15-49. Summary Statistics for Number of Days Between Administrations

CDT	N	Minimum	Q1	Median	Mean	Q3	Maximum
Math Grades 3-5	67,560	0	113	148	162.47	229	314
Math Grades 6-8	68,012	0	117	145	159.32	211	322
Algebra I	38,609	0	105	140	146.22	190	311
Geometry	4,187	40	123	166	166.77	210	264
Algebra II	4,095	6	119	140	159.86	210	281
Reading Grades 3-5	61,372	0	113	135	156.33	212	313
Reading/Lit Grades 6-HS	123,954	0	110	135	143.77	175	315
Science Grades 3-5	6,514	27	110	133	149.43	183	268
Science Grades 6-HS	28,390	0	119	141	157.33	212	273
Biology	44,287	0	105	149	149.93	200	312
Chemistry	3,629	36	132	170	172.38	217	273
Writing Grades 3-5	6,804	1	100	132	144.60	186	261
Writing/Eng Comp Gr 6-HS	16,408	1	101	126	135.33	158	269

Table 15–50 shows the summary statistics for the change in total scale score from the first to last administration.

Table 15-50. Summary Statistics for Change in Total Scale Score Between Administrations

CDT	N	Minimum	Q1	Median	Mean	Q3	Maximum
Math Grades 3-5	67,560	-504	26	79	81.55	134	666
Math Grades 6-8	68,012	-586	-7	44	42.34	95	569
Algebra I	38,609	-552	-18	37	31.87	88	680
Geometry	4,187	-564	7	65	61.01	121	669
Algebra II	4,095	-490	17	73	70.26	131	683
Reading Grades 3-5	61,372	-623	-11	48	49.42	109	549
Reading/Lit Grades 6-HS	123,954	-715	-48	11	8.22	68	798
Science Grades 3-5	6,514	-400	0	52	55.50	108	597
Science Grades 6-HS	28,390	-526	-28	24	20.33	73	510
Biology	44,287	-563	6	63	59.98	119	843
Chemistry	3,629	-309	11	68	61.68	119	399
Writing Grades 3-5	6,804	-492	-9	48	49.61	106	566
Writing/Eng Comp Gr 6-HS	16,408	-522	-31	18	16.57	67	909

Tables 15–51a through 15–51m show the changes in benchmark range from the first to last administration. For example, 16,490 students who scored in the red range on the first administration of the Math Grades 3-5 test scored in the green range on the last administration.

Table 15-51a. Change in Benchmark Range Between First and Last Administrations - Math Grades 3-5

	Red-last test	Green – last test	Blue – last test
Red-first test	34,823	16,490	1,026
Green-first test	996	9,260	3,925
Blue-first test	0	128	912

Table 15-51b. Change in Benchmark Range Between First and Last Administrations - Math Grades 6-8

	Red – last test	Green – last test	Blue – last test
Red-first test	40,622	11,141	305
Green-first test	1,861	10,037	2,717
Blue-first test	2	176	1,151

Table 15–51c. Change in Benchmark Range Between First and Last Administrations – Algebra I

	Red – last test	Green – last test	Blue – last test
Red-first test	21,419	7,452	92
Green-first test	1,553	6,873	946
Blue-first test	2	54	218

Table 15-51d. Change in Benchmark Range Between First and Last Administrations - Geometry

	Red – last test	Green – last test	Blue – last test
Red-first test	2,311	928	51
Green-first test	76	480	244
Blue-first test	0	19	78

Table 15-51e. Change in Benchmark Range Between First and Last Administrations - Algebra II

	Red – last test	Green – last test	Blue – last test
Red-first test	2,739	964	67
Green-first test	22	190	100
Blue-first test	0	0	13

Table 15-51f. Change in Benchmark Range Between First and Last Administrations - Reading Grades 3-5

	Red – last test	Green – last test	Blue – last test
Red-first test	24,831	9,956	164
Green-first test	1,954	17,664	4,012
Blue-first test	6	759	2,026

Table 15–51g. Change in Benchmark Range Between First and Last Administrations – Reading/Lit Grades 6-HS

	Red – last test	Green – last test	Blue – last test
Red-first test	47,145	11,971	34
Green-first test	8,386	46,008	4,834
Blue-first test	18	2,752	2,806

Table 15-51h. Change in Benchmark Range Between First and Last Administrations - Science Grades 3-5

	Red – last test	Green – last test	Blue – last test
Red-first test	1,569	1,088	42
Green-first test	179	2,200	798
Blue-first test	0	122	516

Table 15-51i. Change in Benchmark Range Between First and Last Administrations - Science Grades 6-HS

	Red – last test	Green – last test	Blue – last test
Red-first test	10,925	4,209	15
Green-first test	1,784	9,835	944
Blue-first test	3	274	401

Table 15-51j. Change in Benchmark Range Between First and Last Administrations - Biology

	Red – last test	Green – last test	Blue – last test
Red-first test	17,048	11,246	460
Green-first test	1,320	10,335	3,305
Blue-first test	0	66	507

Table 15-51k. Change in Benchmark Range Between First and Last Administrations - Chemistry

	Red – last test	Green – last test	Blue – last test
Red-first test	1,626	1,315	21
Green-first test	95	515	50
Blue-first test	0	1	6

Table 15-51I. Change in Benchmark Range Between First and Last Administrations - Writing Grades 3-5

	Red – last test	Green – last test	Blue – last test
Red-first test	2,720	1,158	28
Green-first test	267	1,917	434
Blue-first test	2	70	208

Table 15–51m. Change in Benchmark Range Between First and Last Administrations – Writing/Eng Comp Grades 6-HS

	Red – last test	Green – last test	Blue – last test
Red-first test	6,214	1,851	5
Green-first test	947	5,824	737
Blue-first test	1	226	603

CHAPTER SIXTEEN: RELIABILITY

This chapter addresses the reliability of Classroom Diagnostic Tools (CDT) test scores. According to the *Standards* for *Educational and Psychological Testing* (AERA, APA, & NCME, 2014), the general notion of reliability/precision refers to

the consistency of scores across replications of a testing procedure, regardless of how this consistency is estimated or reported (p.33).

Frisbie (2005) highlighted several elements of reliability. First, reliability is a property of test scores, not of a test itself. Many may appreciate this distinction, but in casual usage, individuals frequently make reference to a "reliable test." While reliability concerns test scores (and not the test specifically), it's important to appreciate the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items/points tend to be more reliable than tests with fewer items/points. Second, reliability coefficients are group specific. Reliabilities tend to be higher in populations that are more heterogeneous and lower in populations that are more homogeneous. Consequently, both test length and population heterogeneity should be considered when evaluating reliability.

There are other reliability considerations that may be less evident from the *Standards*' definition yet are still important for test users to understand. While freedom from measurement error is very important, reliability is specifically concerned with random sources of error. Indeed, the degree of inconsistency due to random error sources is what determines reliability: less consistency is associated with lower reliability and more consistency is associated with higher reliability. Of course, systematic error sources also exist. These can artificially increase reliability and decrease validity. Validity is further discussed in Chapter Seventeen.

Another noteworthy issue is that multiple sources of error exist (e.g., the day of testing, the items used). However, most widely used reliability indices only reflect a single type of error. Consequently, it is important for test users to understand what specific type of error is being considered in a reliability study, and equally, if not more importantly, what types are not.

Understanding the distinction between relative error and absolute error is also important, as many reliability indices only reflect relative error. Relative error is of interest whenever the relative ordering of individuals with respect to their test performance is of interest. Understanding examinee rank-order stability is important; however, such stability might be well achieved even when the specific score values are considerably different. When specific score values are considered important (e.g., if cut cores are used), then absolute error is of interest, too. Generally, there is more error variance when considering the absolute scores of examinees, which, in turn, suggests lower reliability.

As the above discussion suggests, reliability is a complex, nonunitary notion that cannot be adequately represented by a single number. There are several reliability indices available, and these may not provide the same results (Frisbie, 2005). The remainder of this chapter covers the following:

- Reliability coefficients and their interpretation
- Unconditional and conditional standard errors of measurement (SEMs and CSEMs)
- Decision consistency

RELIABILITY INDICES

As shown below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance. The total variance contains two components: 1) variance in true scores and 2) variance due to the imperfections in the measurement process. Put differently, total variance equals true score variance plus error variance.¹

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

¹ A covariance term is not required, as true scores and error are assumed to be uncorrelated in classical test theory.

Reliability coefficients indicate the degree to which differences in test scores reflect true differences in the attribute being tested rather than random fluctuations. Total test score variance (i.e., individual differences) is partly due to real differences in the attribute (true variance) and partly due to random error in the measurement process (error variance).

Reliability coefficients range from 0.0 to 1.0. If all test score variance were true, the index would equal 1.0. The index would be 0.0 if none of the test score variance were true. Such scores would be pure random noise (i.e., all measurement error). If the index had a value of 1.0, scores would be perfectly consistent (i.e., contain no measurement error). Although values of 1.0 are never achieved in practice, it is clear that larger coefficients are more desirable, as they indicate that test scores are less influenced by random error. "How big is big enough?" and "how small is too small?" are issues considered in a later section.

As noted in the introduction, there are several different indices that can be used to estimate this ratio. One approach is referred to as internal consistency, which is derived from analyzing the performance consistency of individuals over the items within a test. As discussed below, these internal consistency indices do not take into account other sources of error, such as day-to-day variations (student health, testing environment, etc.).

COEFFICIENT ALPHA

Although a number of reliability indices exist, one of the most frequently reported for achievement tests is coefficient alpha. For example, both PSSA and Keystone programs report alpha.

FORMULA FOR ALPHA

Consider the following data matrix representing the scores of persons (rows) on items (columns):

Table 16-1. Person × Item Score (Xpi) Infinite (Population-Universe) Matrix

Person	Item 1	Item 2	 Item <i>i</i>	 Item <i>k</i>
Person 1	<i>Y</i> 11	Y12	 Y1 <i>i</i>	 <i>X</i> 1 <i>k</i>
Person 2	Y21	Y22	 Y2i	 X2k
Person p	Yp1	Yp2	 Ypi	 Xpk
Person N	YN1	YN2	 YNi	 XNk

Note. Adapted from Cronbach and Shavelson (2004).

Then, a general computational formula for alpha is as follows:

$$\alpha = \frac{N}{N-1} \left(1 - \frac{\sum_{i=1}^{N} \sigma_{Yi}^2}{\sigma_X^2} \right),$$

where *N* is the number of parts (items or testlets), σ_X^2 is the variance of the observed total test scores, and σ_X^2 is the variance of part *i*.

Examination of the formula for alpha indicates why the coefficient is not appropriate for CDT. In the case of CDT, tests are adaptive. Each student takes a unique set of test items rather than the same fixed form. A person item score matrix for CDT analogous to Table 16–1 would include all items in the available item pool (over 2,500 in some cases). Each student takes only a small subset of items (48–60) from the available pool. Summing the variance of more than 2,500 item scores and dividing by the variance of test scores based on 48–60 items is not appropriate. Therefore, a measure of reliability other than alpha must be used for CDT.

SPLIT-HALF RELIABILITY

Like alpha, split-half is an internal consistency index. It can be conceptualized as the extent to which an exchangeable set of items from the same domain would result in a similar rank ordering of students. Note that relative error is reflected in this index. Variation in student performance from one sample of items to the next should be of particular concern for any test user. Consider two hypothetical vocabulary tests intended for the same group of students. Each test contains different sets of unique words that are believed to be randomly equivalent, perhaps like the ones shown below:

Table 16-2. Two Hypothetical Vocabulary Tests

Test One	Test Two	
Abase	Abate	
Boon	Bilk	
Capricious	Circuitous	
Deface	Debase	
Zealous	Zenith	

If a representative group of students could take both of these tests, the correlation between the scores obtained would represent the parallel forms reliability of the test scores. However, such data-collection designs are impractical in large-scale settings and experimental confounds like fatigue and practice effects are likely to affect the results. Internal-consistency reliability indices arose in part to provide reliability measures using the data from just a single test administration. So, if students only took Test One and the split-half reliability index for those test scores was high, this would suggest that Test Two would provide a very similar rank ordering of the students if they had taken it instead. If split-half reliability was low, dissimilar rank orderings would likely be observed—again, relative-error variance is reflected.

CALCULATION OF SPLIT-HALF RELIABILITY

To determine split-half reliability for a given CDT test, such as Biology, each administration of the test was split into two halves. Each item's difficulty was considered in the split so the halves represent approximately equivalent alternative forms. Rasch ability estimates were then calculated for each of the two halves. Then, Pearson correlation was computed between the Rasch ability estimates from the two halves. Finally, the Pearson correlation was adjusted for test length using the Spearman-Brown prediction formula as described below.

Split-Half reliability =
$$\frac{2r}{1+r}$$
 where r = Pearson correlation

Split-half reliability is related to coefficient alpha in that alpha is often interpreted as the mean of all possible split-half coefficients.

FURTHER INTERPRETATIONS

What reliability value is considered high enough? What values are considered too low? Although frequently asked for, any rules of thumb for interpreting the magnitude of reliability indices are mostly arbitrary. One approach is to research the reliabilities from similar testing instruments to see what values are commonly observed. For 2016 PSSA tests in Mathematics, English Language Arts (ELA), and Science, reliability coefficients ranged from 0.91 to 0.94. For spring 2016 Keystone exams in Algebra I, Literature, and Biology, reliability coefficients were 0.92, 0.94, and 0.91, respectively. For many other state assessment programs, reliabilities in the low 0.90s are usually the highest observed, and reliabilities in the high 0.80s are very common.

The lower a given reliability coefficient, the greater the potential for over-interpretation of the associated results. As suggested earlier, there is no firm guideline regarding how low is too low. However, as an informative point of reference, a reliability coefficient of 0.50 would mean that there is as much error variance as true-score variance in the scores.

DIAGNOSTIC CATEGORY SCORE RELIABILITY

As noted in the introduction, reliabilities tend to be higher with an increase in test length and lower with a decrease in test length. Figure 16–1 illustrates this relationship for a hypothetical 45-item test with three total score reliabilities: 0.95, 0.90, and 0.85. As an example, the curve for reliability equal to 0.90 suggests that a 10-item diagnostic category score would be expected to have a score reliability of just over 0.65. The use of the Spearman-Brown prediction formula assumes all items are exchangeable, which, in practice, they may not be. While such a chart may not perfectly model actual diagnostic category reliability, the intent is to illustrate the substantial impact that limited numbers of items can have on diagnostic category score reliability.

Figure 16-1. Example of the Relationship between Test Length and Reliability

Reliability Curves



STANDARD ERROR OF MEASUREMENT

The reliability coefficient is a unit-free indicator that reflects the degree to which scores are free of measurement error. It always ranges between 0.0 and 1.0 regardless of the test's scale. Reliability coefficients best reflect the extent to which measurement inconsistencies may be present or absent in a group. However, they are not that useful for helping users interpret test scores. The standard error of measurement (SEM) is another indicator of test score precision that is better suited for determining the effect of measurement inconsistencies on the scores obtained by individual examinees. This is particularly so for conditional SEMs (CSEM) discussed further below.

TRADITIONAL STANDARD ERROR OF MEASUREMENT

A precise, theoretical interpretation of the SEM is somewhat unwieldy. A beginning point for understanding the concept is as follows. If everyone being tested had the same true score, there would still be some variation in observed scores due to imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing, the sampling of test items, etc. The standard error is defined as the standard deviation of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents very important information for test score users.

The SEM formula is provided below:

$$SEM = SD\sqrt{1-reliability}$$

It indicates that the value of the SEM depends on both the reliability coefficient and the standard deviation of test scores. If the reliability were equal to 0.00 (the lowest possible value), the SEM would be equal to the standard deviation of the test scores. If test reliability were equal to 1.00 (the highest possible value), the SEM would be 0.0. In other words, a perfectly reliable test has no measurement error (Harvill, 1991). Additionally, the value of the SEM takes the group variation (i.e., score standard deviation) into account.

² True score is the score the person would receive if the measurement process were perfect.

³ The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution, about 16 percent of the observations are more than one standard deviation above the mean.

TRADITIONAL SEM CONFIDENCE INTERVALS

The SEM is an index of the random variability in test scores in actual score units, which is why it has such great utility for test score users. SEMs allow statements regarding the precision of individual tests scores. SEMs help place reasonable limits (Gulliksen, 1950) around observed scores through construction of an approximate score band. Often referred to as confidence intervals, these bands are constructed by taking the observed scores, X, and adding and subtracting a multiplicative factor of the SEM. As an example, students with a given true score will have observed scores that fall between ± 1 SEM about two-thirds of the time. For ±2 SEM confidence intervals, the percentage increases to about 95 percent.

FURTHER INTERPRETATIONS

ONE SEM FOR ALL TEST SCORES

The SEM approach described above only provides a single numerical estimate for constructing the confidence intervals for examinees regardless of their score levels. In reality, however, such confidence intervals vary according to one's score. Consequently, care should be taken when using the SEM for students with extreme scores. An alternate approach is described in the next section that conditions the SEM on a student's score estimate.

GROUP SPECIFIC

As noted in the introduction, reliabilities are group specific. The same is true for SEMs because both score reliabilities and score standard deviations vary across groups.

SCALE SCORE METRIC

The SEM approach is calculated using scale scores, and as such, the resulting confidence interval bands are in the scale score metric.

TYPE OF ERROR REFLECTED

The interpretation of the SEM should be driven by the type of score reliability that underpins it. So, the CDT SEMs involve the same source of error relevant to internal consistency indices. As noted earlier, a precise technical explanation of the SEM (and resulting confidence intervals) can be unwieldy. Because of this, score users are often provided less complex interpretations.

One simpler description sometimes used is that a confidence interval represents the possible score range that one would observe if a student could be tested twice with the same instrument. Taking the same test on a different day implies the only source of random error being considered is related to the occasion of testing—such as a student might be sleepier one day than another, might be sick, or might not have eaten a good breakfast. There is a reliability index that captures this source of random error and it is referred to as the test-retest reliability coefficient. This is not the type of reliability computed for the CDT. When internal consistency reliability estimates are used, such an explanation blurs the fact that random error based on the occasion of testing is not considered.

When SEMs are derived from internal consistency reliability estimates, a better approach is to describe the confidence interval as providing reasonable bounds for the range of scores that a student might receive if he or she took an equivalent version of the test. That is, the student took a test that covered exactly the same content, but included a different set of items. As an example, if the Algebra I score was 1078 and the SEM band was 1038 to 1118, then a student would be likely to receive a score somewhere between 1038 and 1118 if he or she took a different version of the test without additional instruction.

⁴ Some prefer the following interpretation: if a student were tested an infinite number of times, the ± 1 SEM confidence intervals constructed for each score would capture the student's true score 68 percent of the time.

RESULTS AND OBSERVATIONS

Split-half reliability coefficients and associated (traditional) SEMs for CDT tests are presented in Table 16–3. Values were derived using the operational data from the 2015–2016 school year. The results are presented for total scores and each diagnostic category score. The statistics reported include number of students tested (*N*), mean scale score, standard deviation of scale score, split-half reliability, and traditional standard error of measurement (SEM) in the scale score metric.

Table 16-3. CDT Reliabilities

CDT	Score	Average Number of Items	N	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Math Grades 3-5	Total	51.6	188,947	841.895	156.497	0.936	39.5
Math Grades 3-5	Numbers and Operations	12.9	188,947	838.989	180.173	0.797	81.3
Math Grades 3-5	Algebraic Concepts	12.9	188,947	846.351	168.322	0.771	80.5
Math Grades 3-5	Geometry	13.0	188,947	822.984	169.780	0.776	80.3
Math Grades 3-5	Measurement, Data, and Probability	12.9	188,947	847.776	177.071	0.793	80.6
Math Grades 6-8	Total	51.6	193,494	995.711	145.491	0.931	38.2
Math Grades 6-8	Numbers and Operations	12.9	193,494	1008.673	171.730	0.802	76.4
Math Grades 6-8	Algebraic Concepts	12.9	193,494	1000.018	163.916	0.780	76.8
Math Grades 6-8	Geometry	12.9	193,494	990.588	148.622	0.732	77.0
Math Grades 6-8	Measurement, Data, and Probability	13.0	193,494	986.274	175.027	0.804	77.5
Algebra I	Total	51.8	121,080	1060.784	137.765	0.921	38.6
Algebra I	Operations with Real Numbers and Expressions	13.0	121,080	1056.325	168.118	0.790	77.0
Algebra I	Linear Equations & Inequalities	12.9	121,080	1072.463	145.202	0.712	77.9
Algebra I	Functions & Coordinate Geometry	12.9	121,080	1070.644	155.772	0.749	78.0
Algebra I	Data Analysis	13.0	121,080	1047.342	169.858	0.788	78.2

Table 16-3 (continued). CDT Reliabilities

CDT	Score	Average Number of Items	N	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Geometry	Total	52.3	11,389	1090.814	147.571	0.930	38.9
Geometry	Geometric Properties	12.9	11,389	1085.002	158.416	0.755	78.4
Geometry	Congruence, Similarity, & Proofs	13.1	11,389	1100.337	167.737	0.777	79.3
Geometry	Coordinate Geometry and Right Triangles	13.1	11,389	1094.346	175.680	0.797	79.2
Geometry	Measurement	13.1	11,389	1085.996	177.343	0.810	77.3
Algebra II	Total	52.4	11,640	1128.113	143.215	0.926	39.0
Algebra II	Operations with Complex Numbers	13.5	11,640	1151.219	187.868	0.822	79.3
Algebra II	Non-linear Expressions & Equations	12.9	11,640	1120.820	164.970	0.784	76.7
Algebra II	Functions	12.9	11,640	1135.256	158.455	0.766	76.7
Algebra II	Data Analysis	13.1	11,640	1111.284	176.718	0.802	78.7
Reading Grades 3-5	Total	54.9	164,021	812.935	171.837	0.928	46.1
Reading Grades 3-5	Key Ideas and Details- Literature Text	11.0	164,021	812.951	211.696	0.742	107.5
Reading Grades 3-5	Key Ideas and Details- Informational Text	11.0	164,021	807.320	205.138	0.730	106.5
Reading Grades 3-5	Craft and Structure-Literature Text	11.0	164,021	832.368	190.872	0.673	109.2
Reading Grades 3-5	Craft and Structure- Informational Text	11.2	164,021	813.956	199.639	0.715	106.5
Reading Grades 3-5	Vocabulary Acquisition and Use	10.7	164,021	794.168	209.532	0.736	107.8

Table 16-3 (continued). CDT Reliabilities

CDT	Score	Average Number of Items	N	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Reading/Lit Grades 6-HS	Total	55.4	354,658	989.792	166.788	0.924	45.9
Reading/Lit Grades 6-HS	Key Ideas and Details- Literature Text	11.1	354,658	986.625	211.446	0.734	109.0
Reading/Lit Grades 6-HS	Key Ideas and Details- Informational Text	11.2	354,658	1001.843	203.332	0.723	107.0
Reading/Lit Grades 6-HS	Craft and Structure-Literature Text	11.1	354,658	991.932	191.912	0.691	106.7
Reading/Lit Grades 6-HS	Craft and Structure- Informational Text	11.2	354,658	993.950	199.264	0.720	105.5
Reading/Lit Grades 6-HS	Vocabulary Acquisition and Use	10.8	354,658	989.017	207.590	0.724	109.2
Science Grades 3-5	Total	51.4	22,190	774.970	153.409	0.928	41.1
Science Grades 3-5	The Nature of Science	12.8	22,190	766.814	177.990	0.767	86.0
Science Grades 3-5	Biological Sciences	12.8	22,190	771.245	168.562	0.744	85.3
Science Grades 3-5	Physical Sciences	12.9	22,190	781.076	165.971	0.738	84.9
Science Grades 3-5	Earth and Space Sciences	12.8	22,190	771.007	168.031	0.738	86.1
Science Grades 6-HS	Total	51.5	89,928	901.837	132.995	0.907	40.5
Science Grades 6-HS	The Nature of Science	12.9	89,928	903.238	164.077	0.752	81.7
Science Grades 6-HS	Biological Sciences	12.9	89,928	903.625	159.123	0.733	82.2
Science Grades 6-HS	Physical Sciences	12.9	89,928	910.421	145.225	0.683	81.8
Science Grades 6-HS	Earth and Space Sciences	12.9	89,928	892.968	152.181	0.706	82.6
Biology	Total	52.1	132,682	987.348	134.695	0.907	41.1
Biology	Basic Biological Principles/ Chemical Basis for Life	13.0	132,682	990.669	172.334	0.768	82.9
Biology	Bioenergetics/Homeostasis and Transport	13.1	132,682	999.210	143.320	0.652	84.6
Biology	Cell Growth and Reproduction/ Genetics	13.0	132,682	995.197	145.093	0.667	83.7
Biology	Theory of Evolution/Ecology	12.9	132,682	968.308	169.238	0.764	82.1

Table 16-3 (continued). CDT Reliabilities

CDT	Score	Average Number of Items	N	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Chemistry	Total	52.4	10,497	1003.789	102.549	0.837	41.4
Chemistry	Properties and Classification of Matter	13.0	10,497	985.047	159.576	0.739	81.6
Chemistry	Atomic Structure and the Periodic Table	13.3	10,497	1021.245	119.527	0.501	84.5
Chemistry	The Mole and Chemical Bonding	13.0	10,497	1014.866	117.419	0.486	84.2
Chemistry	Chemical Relationships and Reactions	13.2	10,497	998.566	125.981	0.539	85.5
Writing Grades 3-5	Total	54.9	21,799	822.379	169.926	0.943	40.5
Writing Grades 3-5	Quality of Writing: Focus and Organization	11.0	21,799	815.221	200.665	0.790	91.9
Writing Grades 3-5	Quality of Writing: Content and Style	11.0	21,799	814.059	195.909	0.779	92.1
Writing Grades 3-5	Quality of Writing: Editing	11.0	21,799	817.712	187.488	0.749	93.9
Writing Grades 3-5	Conventions: Punctuation, Capitalization, and Spelling	10.9	21,799	829.174	185.165	0.753	91.9
Writing Grades 3-5	Conventions: Grammar and Sentence Formation	11.0	21,799	824.637	185.962	0.756	91.8
Writing/Eng Comp Gr 6-HS	Total	55.4	51,755	952.768	155.101	0.936	39.2
Writing/Eng Comp Gr 6-HS	Quality of Writing: Focus and Organization	11.1	51,755	947.219	192.641	0.770	92.4
Writing/Eng Comp Gr 6-HS	Quality of Writing: Content and Style	11.1	51,755	950.695	190.717	0.767	92.1
Writing/Eng Comp Gr 6-HS	Quality of Writing: Editing	11.0	51,755	943.960	178.231	0.749	89.4
Writing/Eng Comp Gr 6-HS	Conventions: Punctuation, Capitalization, and Spelling	11.0	51,755	971.190	175.754	0.743	89.1
Writing/Eng Comp Gr 6-HS	Conventions: Grammar and Sentence Formation	11.0	51,755	948.960	170.415	0.721	90.0

The overall test score reliability values are high and similar to those reported for PSSA and Keystone Exams. The reliabilities at the diagnostic category level are lower due to the fact that each diagnostic category contains fewer items.

RASCH CONDITIONAL STANDARD ERRORS OF MEASUREMENT

The CSEM also indicates the degree of measurement error in scale score units, but varies as a function of a student's actual scale score. Therefore, the CSEM may be especially useful in characterizing measurement precision in the neighborhood of a score level used for decision-making—such as cut scores for identifying students who meet a performance standard.

Technically, when a Rasch model is applied, the CSEM at any given point on the ability continuum is defined as the reciprocal of the square root of the test information function derived from the Rasch scaling model:

$$CSEM(\hat{\beta}_n) = \frac{1}{\sqrt{I(\hat{\beta}_n)}}$$

where $CSEM(\hat{\beta}_n)$ is the conditional standard error of measurement and $I(\hat{\beta}_n)$ is the test information function. Test information depends on the sum of the corresponding information functions for the test items. Item information depends on each item's difficulty and conditional item score variance. The formula above utilizes the Rasch ability $(\hat{\beta}_n)$ metric. The conditional standard error on the scale score (SS) metric is determined simply by multiplying the $CSEM(\hat{\beta}_n)$ by the slope (multiplicative constant, m) of the linear transformation equation used to convert the Rasch ability estimates to scale scores:

$$CSEM(SS) = CSEM(\hat{\beta}_n)^*m$$

Chapter Eleven provides the linear transformation formulas for each of the CDT content areas.

RASCH CSEM CONFIDENCE INTERVALS

CSEMs also allow statements regarding the precision of individual tests scores. And like SEMs, they help place reasonable limits around observed scale scores through construction of an approximate score band. The confidence intervals are constructed by adding and subtracting a multiplicative factor of the CSEM and may be interpreted as described in the earlier section.

FURTHER INTERPRETATIONS

DIFFERENT CSEMS FOR DIFFERENT TEST SCORES

The CSEM approach provides different numerical estimates for constructing the confidence intervals for examinees depending on their specific score. On fixed form tests, the magnitude of the CSEM values is often "U" shaped, with larger CSEM values associated with lower and higher scores. With a fixed set of items, there is less information for students scoring at the extremes, and CSEM is inversely related to the information function (the more information, the lower the CSEM). Given that CDT tests are adaptive, this "U" shape tends to be less pronounced as students are presented with items targeted at their level. While there is some "U" shape at the extreme ends of the vertical scale, there is a much larger area on the scale where CSEMs are relatively flat compared to fixed form tests. The adaptive tests allow for greater information and, therefore, lower CSEMs across a wide range of the vertical scale.

GROUP SPECIFIC

Assuming reasonable model-data fit—as explored in Chapter Eight—the Rasch based CSEMs (conditioned on score level) should not vary across groups.

SCALE SCORE METRIC

The CSEM and associated confidence interval bands are in the scale score metric.

TYPE OF ERROR REFLECTED

The CSEMs reported in the dynamic reporting suite are the Rasch-based conditional standard errors of measurement described above. Score report content is considered in greater detail in Chapter Fourteen.

RESULTS AND OBSERVATIONS

Figures 16–2 through 16–14 show the average Rasch CSEMs associated with various scale score ranges based on operational data from the 2015–2016 school year. The values are fairly consistent across a large range of scores on the vertical scale. The values increase at the low and high ends of the scale score range.

Figure 16-2. Average Conditional Standard Errors for Math Grades 3-5

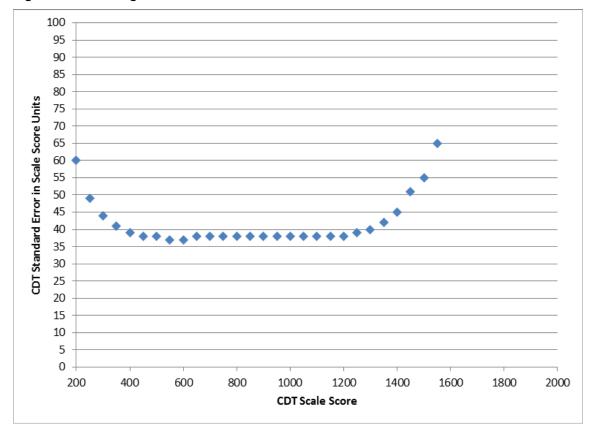


Figure 16-3. Average Conditional Standard Errors for Math Grades 6-8

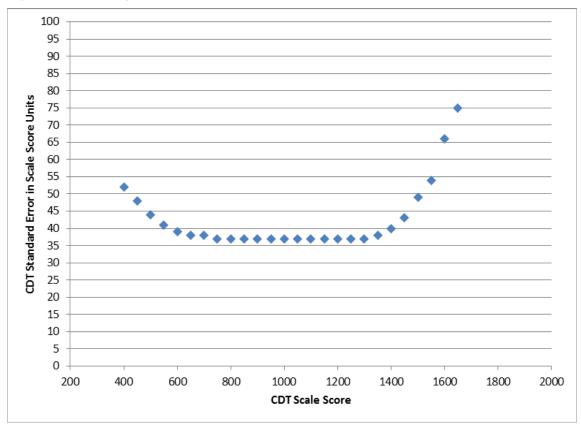


Figure 16–4. Average Conditional Standard Errors for Algebra I

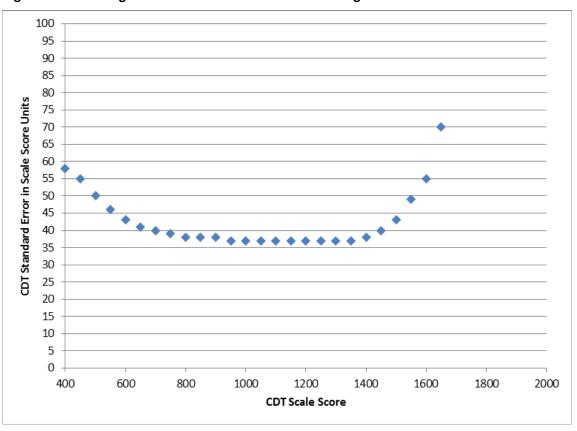


Figure 16-5. Average Conditional Standard Errors for Geometry

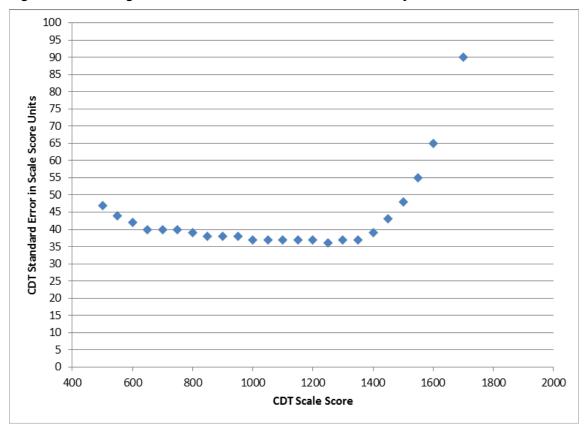


Figure 16-6. Average Conditional Standard Errors for Algebra II

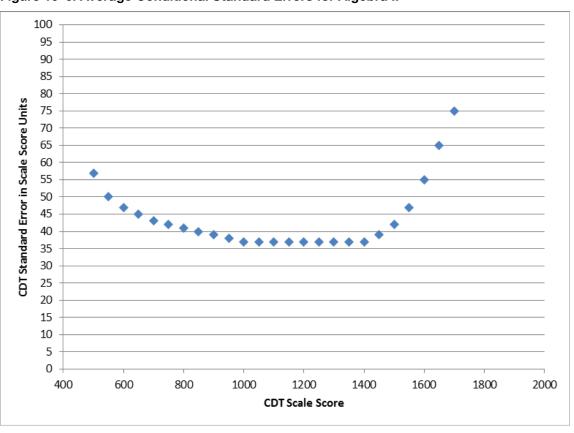


Figure 16–7. Average Conditional Standard Errors for Reading Grades 3-5

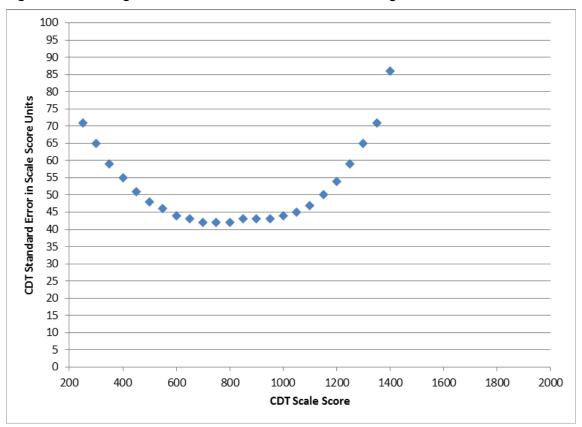
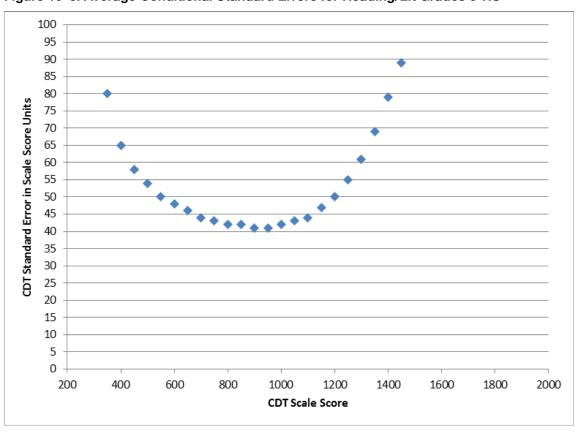


Figure 16-8. Average Conditional Standard Errors for Reading/Lit Grades 6-HS



CSEMs tend to be higher in the reading content area. This is due to the fact that CDT Reading Grades 3-5 and CDT Reading/Lit Grades 6-HS are passage-based. The items from a selected passage may not be as closely targeted to the student's level as when individual items are selected one at a time. For more information on adaptive selection of passages, see Chapter Thirteen.

Figure 16–9. Average Conditional Standard Errors for Science Grades 3-5

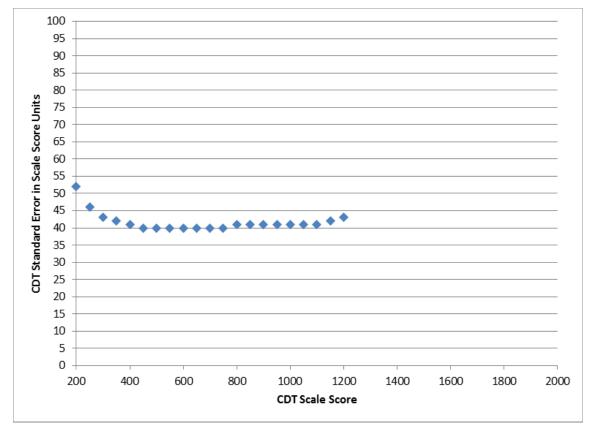


Figure 16-10. Average Conditional Standard Errors for Science Grades 6-HS

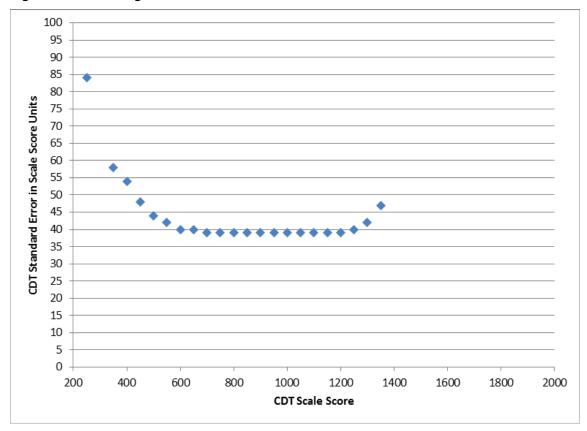


Figure 16-11. Average Conditional Standard Errors for Biology

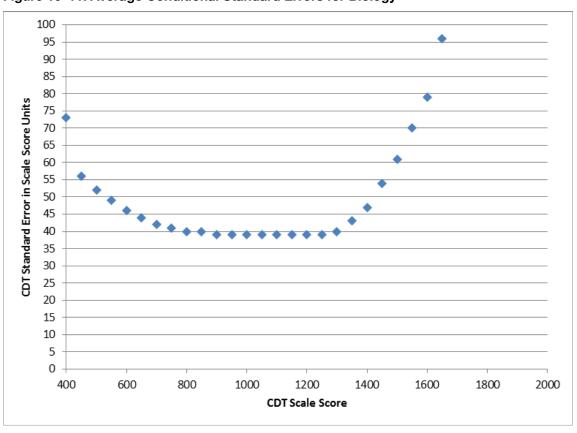


Figure 16–12. Average Conditional Standard Errors for Chemistry

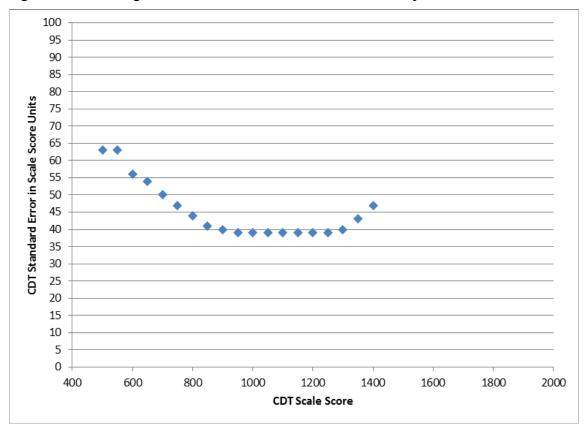
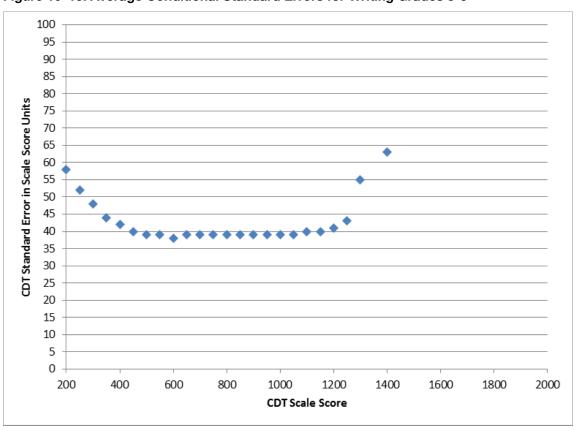


Figure 16–13. Average Conditional Standard Errors for Writing Grades 3-5



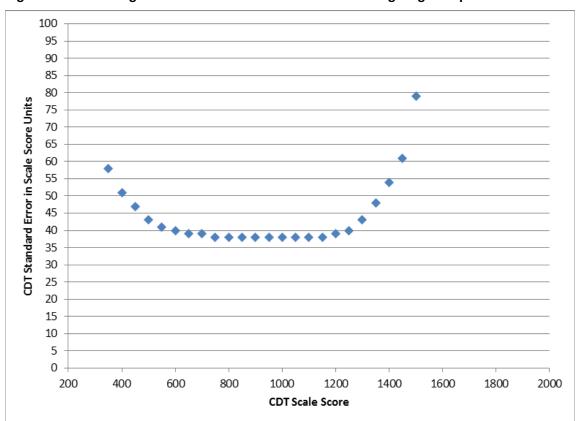


Figure 16-14. Average Conditional Standard Errors for Writing/Eng Comp Grades 6-HS

DECISION CONSISTENCY

Classification decision consistency refers to the degree to which the achievement level for each student can be replicated upon retesting using an equivalent form (Huynh, 1976). While CDT is designed to be administered multiple times in the school year to gauge progress following instruction, retesting in the context of decision consistency refers to retesting shortly after testing without additional instruction.

In a standards-based testing program, there should be great interest in knowing how accurately students are classified into performance categories. In contrast to reliability, which is concerned with the relative rank-ordering of students, it is the absolute values of student scores that are important in decision consistency.

Decision consistency answers the question "What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test?" If two parallel forms of the test were given to the same students (without additional instruction), the consistency of the measure would be reflected by the extent to which the classification decisions made based on the first set of test scores matched the decisions based on the second set of test scores. Consider Table 16–4:

Table 16-4. Pseudo-Decision Table for Three Hypothetical Categories

Test Level	Test One – Level I	Test One – Level II	Test One – Level III	Test One – Marginal
Test Two – Level I	φ ₁₁	φ ₁₂	ϕ_{13}	φ _{1•}
Test Two – Level II	ϕ_{21}	φ ₂₂	ϕ_{23}	$\phi_{2\bullet}$
Test Two – Level III	φ ₃₁	φ ₃₂	φ ₃₃	φ _{3•}
Test Two – Marginal	φ•1	φ•2	φ•3	1

If a student is classified as in one category based on Test One's score, how probable would it be that the student would be reclassified in the same category if he or she took Test Two (a non-overlapping, equally difficult form of the test)?

The proportions of correct decisions, φ , for three categories is computed as:

$$\phi = \phi 11 + \phi 22 + \phi 33$$

It is the sum of the diagonal entries—that is, the proportion of students classified by the two forms into exactly the same level—that would signify the overall consistency.

Since it is not feasible to repeat CDT tests one right after the other with no additional instruction in order to estimate the proportion of students who would be reclassified in the same performance levels, a statistical model needs to be imposed on the data in order to project the consistency of classifications solely using data from the available administration (Hambleton and Novick, 1973). Two well-known methods were developed by Hanson and Brennan (1990) and Livingston and Lewis (1995) utilizing specific true score models. While both measures are reported for PSSA and Keystone Exams, the statistical models imposed on the data depend upon a beta binomial distribution of raw scores. Given that the CDT is adaptive (i.e., raw scores using a response probability of 0.5 are generally equal to one-half of test length), these measures are not reported for CDT. Instead, decision consistency measures in this section are a Rasch-based index that relies on conditional standard errors (CSEMs). Also reported are results based on simulations and kappa.

The decision consistency measures reported in the section are based on the Rasch model and conditional standard errors (Stearns and Smith, 2007). Each person's scale score has an associated conditional standard error. Each of the performance levels on the test has an established benchmark cut in the scale score metric. Given these three pieces of information, the assumption of a normal distribution of measurement error allows one to calculate the probability that a student would receive the same classification on retesting. Using the statistic:

$$z = \frac{SS_n - SSBC}{SE_{SS_n}}$$

where SSn is the scale score estimate for person n, SSBC is the scale score benchmark cut, and SE_{ss} , is the asymptotic standard error of the person scale score estimate. Using cumulative normal probabilities, the probability that a retest would produce the same performance level classification and the probability of a different performance level classification were calculated. The process was repeated for each cut score which results in a probability of classification in each of the performance levels. The total classification rate for the entire sample is the average of the probabilities of the same classification on retesting.

Table 16–5 provides an example based on CDT Algebra I operational data from the 2015–2016 school year. Recall that in the dynamic reporting suite, scores are classified into one of three color ranges—red, green, or blue. The benchmark cut points used for the analyses are the cut points in place during the 2015–2016 school year.

Table 16-5. Retest Classification Probability - Algebra I

	Red – retest	Green – retest	Blue – retest
Red – test	0.921	0.079	0.000
Green – test	0.154	0.815	0.030
Blue – test	0.000	0.197	0.803

Consider students with scores in the green range: The probability of scoring in the red range if retested is 0.154. The probability of scoring in the green range again is 0.815. The probability of scoring in the blue range is 0.030.

The total classification rate is determined by taking the weighted average of the diagonal probabilities where the weights are the number of students in the corresponding range. There are 121,080 students in the sample: 82,292 with total scores in the red range, 36,381 in the green range, and 2,407 in the blue range. The total classification rate is

[(0.921)*(82,292)+(0.815)*(36,381)+(0.803)*(2,407)]/121,080 = 0.887

In addition to the exact agreement rate, Cohen's kappa⁵ was also calculated as 0.750.

In cases with multiple categories, an alternative to kappa, which treats every misclassification as equally important, is a weighted kappa that considers differences that are non-adjacent as more "off." While relevant, given there are three categories, weighted kappa is the same as kappa in this case because both the red/blue and blue/red cells in Table 16–5 are zero.

3 X 3 retest classification probability tables for all CDT tests and benchmark cuts comparable to Table 16–5 are presented in Appendix E.

Stearns and Smith (2007) point out that one advantage of this method is that each student can understand how likely it is that he or she would be classified in the same range if the student took the test over without additional instruction. In addition, each student can learn the probability with which he or she would be reclassified in any of the ranges. A student scoring right at the cut score will have a lower rate of consistent classification than a student scoring in the middle of a performance level band. This can be seen in Table 16–6, which is based on the same Algebra I data set and cut points and shows for various scale scores the percent chance of scoring in each color range if retested.

⁵ Kappa, κ, takes into account the agreement occurring by chance.

Table 16-6. Retest Classification Percent for Various Scale Score Ranges - Algebra I

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 400	0	N/A	N/A	N/A	N/A
400 to 449	1	>99.9%	0.0%	0.0%	>99.9%
450 to 499	11	>99.9%	0.0%	0.0%	>99.9%
500 to 549	38	>99.9%	0.0%	0.0%	>99.9%
550 to 599	183	>99.9%	0.0%	0.0%	>99.9%
600 to 649	574	>99.9%	0.0%	0.0%	>99.9%
650 to 699	1,234	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,890	>99.9%	0.0%	0.0%	>99.9%
750 to 799	2,708	>99.9%	0.0%	0.0%	>99.9%
800 to 849	3,676	>99.9%	0.0%	0.0%	>99.9%
850 to 899	5,147	>99.9%	0.0%	0.0%	>99.9%
900 to 949	7,312	>99.9%	0.0%	0.0%	>99.9%
950 to 999	10,305	>99.9%	0.0%	0.0%	>99.9%
1000 to 1049	14,770	99.7%	0.3%	0.0%	99.7%
1050 to 1099	19,443	92.6%	7.4%	0.0%	92.6%
1100 to 1149 (Red/ Green cut = 1134)	21,769	58.7%	41.3%	0.0%	64.3%
1150 to 1199	17,061	15.9%	84.0%	0.1%	84.0%
1200 to 1249	9,065	1.3%	96.1%	2.7%	96.1%
1250 to 1299 (Green/ Blue cut = 1297)	3,630	0.0%	74.5%	25.5%	74.6%
1300 to 1349	1,430	0.0%	27.1%	72.9%	72.9%
1350 to 1399	565	0.0%	3.0%	97.0%	97.0%
1400 to 1449	167	0.0%	0.1%	99.9%	99.9%
1450 to 1499	61	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	27	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	7	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	4	0.0%	0.0%	>99.9%	>99.9%
1650 to 1699	2	0.0%	0.0%	>99.9%	>99.9%
1700 to 1749	0	N/A	N/A	N/A	N/A
1750 to 1799	0	N/A	N/A	N/A	N/A
1800 to 1849	0	N/A	N/A	N/A	N/A
1850 to 1899	0	N/A	N/A	N/A	N/A
1900 to 1949	0	N/A	N/A	N/A	N/A
1950 to 1999	0	N/A	N/A	N/A	N/A
>= 2000	0	N/A	N/A	N/A	N/A
TOTAL	121,080	N/A	N/A	N/A	N/A

^{*} Retest assuming no additional instruction

Tables for all CDT tests and benchmark cuts comparable to Table 16-6 are presented in Appendix E.

As previously mentioned, it is not feasible to repeat CDT tests one right after the other with no additional instruction in order to estimate decision consistency. However, simulations were run as a validation of the results based on the Stearns and Smith method. The reported Algebra I scores from 2015–2016 were used as true scores in order to simulate retest results. Table 16–7 repeats the Algebra I results from Table 16–5, shows the simulation results, and displays the differences.

Table 16-7. Compare Stearns and Smith Results to Simulation Retest Classification Probability - Algebra I

	Red – retest	Green – retest	Blue – retest
Red – Stearns & Smith	0.921	0.079	0.000
Green – Stearns & Smith	0.154	0.815	0.030
Blue – Stearns & Smith	0.000	0.197	0.803

Exact Agreement Rate = 0.887

Kappa = 0.750

	Red – retest	Green – retest	Blue – retest
Red – Simulated test	0.920	0.080	0.000
Green – Simulated test	0.156	0.812	0.032
Blue – Simulated test	0.000	0.203	0.797

Exact Agreement Rate = 0.885

Kappa = 0.745

	Red – retest	Green – retest	Blue – retest
Red – Difference	0.001	-0.001	0.000
Green – Difference	-0.002	0.003	-0.002
Blue – Difference	0.000	-0.006	0.006

Exact Agreement Rate = 0.002

Kappa = 0.005

Based on results of the simulation validation, Stearns and Smith methodology was applied to all CDT tests and benchmark cut points using data from the 2015–2016 school year. Results are presented in Table 16–8.

Table 16-8. Decision Consistency for All CDT Tests

CDT	Benchmark Cut	N-count	Exact Agreement Rate	Карра
Math Grades 3-5	Grade 3	58,253	0.897	0.781
Math Grades 3-5	Grade 4	63,771	0.889	0.779
Math Grades 3-5	Grade 5	66,923	0.883	0.766
Math Grades 6-8	Grade 6	71,208	0.897	0.790
Math Grades 6-8	Grade 7	70,509	0.903	0.785
Math Grades 6-8	Grade 8	51,713	0.904	0.760
Math Grades 6-8	High School*	64	0.984	0.000
Algebra I	Algebra I	121,080	0.887	0.750
Geometry	Geometry	11,389	0.899	0.774
Algebra II	Algebra II	11,640	0.919	0.776
Reading Grades 3-5	Grade 3	51,398	0.892	0.805
Reading Grades 3-5	Grade 4	54,918	0.887	0.802
Reading Grades 3-5	Grade 5	57,705	0.882	0.792
Reading/Lit Grades 6-HS	Grade 6	66,926	0.881	0.785
Reading/Lit Grades 6-HS	Grade 7	67,146	0.885	0.789
Reading/Lit Grades 6-HS	Grade 8	62,572	0.884	0.787
Reading/Lit Grades 6-HS	Literature	158,014	0.877	0.781
Science Grades 3-5	Grade 3	3,305	0.860	0.770
Science Grades 3-5	Grade 4	15,435	0.853	0.759
Science Grades 3-5	Grade 5	3,450	0.856	0.763
Science Grades 6-HS	Grade 6	15,039	0.863	0.756
Science Grades 6-HS	Grade 7	27,567	0.870	0.762
Science Grades 6-HS	Grade 8	45,942	0.870	0.754
Science Grades 6-HS	High School	1,380	0.888	0.790
Biology	Biology	132,682	0.870	0.762
Chemistry	Chemistry	10,497	0.866	0.718
Writing Grades 3-5	Grade 3	6,677	0.876	0.781
Writing Grades 3-5	Grade 4	7,225	0.877	0.783
Writing Grades 3-5	Grade 5	7,897	0.870	0.770
Writing/Eng Comp Gr 6-HS	Grade 6	13,594	0.877	0.778
Writing/Eng Comp Gr 6-HS	Grade 7	14,079	0.880	0.778
Writing/Eng Comp Gr 6-HS	Grade 8	14,182	0.876	0.775
Writing/Eng Comp Gr 6-HS	English Composition	9,900	0.864	0.772

^{*} Students in high school are encouraged to take CDT Algebra I rather than CDT Math Grades 6-8. Given the very low n-count, agreement rate and Kappa are not reported

See Appendix E for the 3 X 3 retest classification probability tables.

CHAPTER SEVENTEEN: VALIDITY

As defined in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014), validity refers to "the degree to which evidence and theory support the interpretations of test scores for proposed uses of tests" (p. 11). The *Standards* provides a framework for describing the sources of evidence that should be considered when evaluating validity. These sources include evidence based on 1) test content, 2) response processes, 3) the internal structure of the test, 4) the relationships between test scores and other variables, and 5) the consequences of testing. In addition, when Item Response Theory (IRT) models are used to analyze assessment data, validity considerations related to those processes should also be explored.

The validity process involves the collection of a variety of evidence to support the proposed test score interpretations and uses. The entire technical report describes the technical aspects of the Classroom Diagnostic Tools (CDT) in support of its score interpretations and uses. Each of the previous chapters contributes important evidence components that pertain to score validation: test development, test administration, test scoring, item analysis, Rasch calibration, scaling, equating, score reporting, and reliability. This chapter is used to summarize and synthesize the evidence based on the framework of the *Standards*. The purposes and intended use of the CDT is reviewed first, and then each type of validity evidence is addressed in turn.

PURPOSES AND INTENDED USES OF THE CDT

The Standards emphasize that validity pertains to how test scores are used. To help contextualize the evidence that will be presented below, the purposes of the CDT will be reviewed first. The CDT was developed to support teachers and students in grades 3 through 12. These tools, available at no cost to districts, are fully integrated and aligned in the Standards Aligned System (SAS) and enable educators to identify students' academic strengths and areas of need, as well as provide links to classroom resources. The assessment is administered completely online using a computer adaptive test (CAT) model, and participation is voluntary. CDT scores are available immediately after testing in the dynamic reporting suite. In addition to the scores, this suite includes links to instructional resources. The CDT may be used multiple times throughout the school year.

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the CDT rests greatly on establishing a link between each piece of the assessment (i.e., the items) and what students should know and be able to do as prescribed by the Assessment Anchors and Eligible Content. The CDT is intended to measure the knowledge and skills described in the Assessment Anchors and Eligible Content for grades 3 through 8 and high school in mathematics, reading, science, and writing, and courses Algebra I, Geometry, Algebra II, Literature, Biology, Chemistry, and English Composition.

Lane (1999) suggests taking the following steps to support the content validity of an assessment. In the case of the operational CDT, one should:

- evaluate the degree to which the test specifications represent and align with the knowledge and skills described in the corresponding Assessment Anchors and Eligible Content.
- evaluate the alignment between the CDT items and test specifications to ensure representativeness.
- evaluate the extent to which the curriculum aligns with the Assessment Anchors and Eligible Content.
- conduct content reviews of the CDT items using a panel of content experts to see whether items measure the intended construct or are the sources of construct-irrelevant variance.
- conduct fairness reviews of the items to avoid issues related to a specific subpopulation.
- evaluate procedures for administration and scoring such as the appropriateness of instructions to examinees, practice/training with online tools and tests, and time limits for the assessments.
- submit operational tests to third-party independent reviews.

Chapters Two through Five of this report present a considerable amount of evidence related to test content. As described in these chapters, all the items were developed and aligned with the Assessment Anchors and Eligible Content. After development and prior to field testing, items were reviewed for content and bias issues. After being field tested, items were reviewed with respect to their statistical properties and alignment with the learning

progressions. Items selected for inclusion in the operational pools had to pass content, psychometric, and PDE reviews. Tests were administrated according to standardized procedures with allowable accommodations.

Some of the efforts made to ensure content validity are summarized below.

- DRC used Webb's (1999) Depth of Knowledge (DOK) model to ensure the CDT items aligned with the Assessment Anchors and Eligible Content and the Academic Content Standards in terms of both content and cognitive levels.
- DRC established detailed test and item/passage development specifications and ensured the items were sufficient in number and adequately distributed across content, levels of cognitive complexity, and levels of difficulty.
- DRC selected qualified item writers and provided training to help ensure they wrote high-quality items.
- All newly developed items were first reviewed by content specialists and editors at DRC to make sure
 they measured the intended Assessment Anchors and Eligible Content. Appropriateness for the intended
 students was also considered, as well as depth of knowledge, graphics, grammar/punctuation, language
 demand, and distractor reasonableness.
- Prior to field testing, the test items were submitted to content committees (composed of Pennsylvania educators) for review using, but not limited to, the following categories:
 - Overall quality and clarity
 - Anchor, Eligible Content, and/or standard alignment
 - Grade-level appropriateness
 - o Difficulty level
 - Depth of knowledge
 - Appropriate sources of challenge (e.g., unintended content and skills)
 - Correct answer
 - Quality of distractors
 - Graphics
 - Appropriate language demand
 - Freedom from bias
- The items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This committee
 reviewed items for issues related to diversity, gender, and other pertinent factors.
- Items passing all prior hurdles were tried out in a stand-alone or embedded field-test event. Several statistical analyses were conducted on the field-test data including classical item analyses, distractor analyses, and differential item functioning (DIF) analyses. Items were again carefully reviewed by DRC staff and a committee of Pennsylvania teachers with respect to their statistical characteristics. DIF was used to detect test items that might bias test scores for particular groups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for students in particular groups by eliminating potential sources of construct-irrelevant variance.
- Following field testing, the items were submitted to content committees (composed of Pennsylvania educators) for review and alignment with the learning progressions.
- The CDT was administered according to standardized procedures with allowable accommodations. Students were given ample time to complete the tests (i.e., there were no speediness issues).

EVIDENCE BASED ON RESPONSE PROCESS

Response-process evidence is used to examine the extent to which the cognitive skills and processes employed by students match those identified in the test developer's defined construct domains for all students and for each subgroup. Think-aloud procedures or "cognitive labs" can be used to collect this type of evidence.

For the operational 2015–2016 CDT, no cognitive lab studies were conducted to collect the response process evidence.

EVIDENCE BASED ON INTERNAL STRUCTURE

As described in the *Standards* (2014), internal-structure evidence refers to the degree to which the relationships among test items and test components conform to the construct on which the proposed test interpretations are based. For each CDT, one total test score as well as diagnostic category scores were reported (see Chapter Fourteen for more information about CDT scores). Several dimensionality studies were conducted in order to provide internal-structure evidence relating to the use of both types of scores.

ITEM-TEST CORRELATIONS

Item-test correlations are discussed in Chapter Seven and provided in Appendix B. All items in the final operational pools had values that were positive and of acceptable magnitude.

DIMENSIONALITY

Dimensionality analyses were conducted for the CDT using WINSTEPS's principal components analyses on response residuals for each content area. Results are shown in Chapter Eight. The principal component analysis results provided evidence that each CDT test was essentially unidimensional, supporting the validity of using the total scores to estimate a student's overall ability.

DIAGNOSTIC CATEGORY CORRELATIONS

Correlations and disattenuated correlations among diagnostic category scores for the CDT are presented below. Values were derived from the CDT operational data from the 2015–2016 school year. This data can also provide information on score dimensionality that is part of internal-structure evidence. Each CDT has either four or five diagnostic categories. Full diagnostic category names can be found in Chapter Thirteen.

Table 17–1. Correlations among Diagnostic Categories — Math Grades 3-5

Diagnostic Category	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-	1	-	-
Alg. Con.	0.765	-	-	-
Geo.	0.711	0.683	-	-
Meas.	0.765	0.766	0.699	-

Table 17–2. Correlations among Diagnostic Categories — Math Grades 6-8

Diagnostic Category	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-	1	-	-
Alg. Con.	0.719	-	-	-
Geo.	0.684	0.662	-	-
Meas.	0.726	0.698	0.681	-

Table 17-3. Correlations among Diagnostic Categories - Algebra I

Diagnostic Category	Operations.	Linear.	Functions.	Data.
Operations.	-	-	-	-
Linear.	0.628	-	-	-
Functions.	0.643	0.651	-	-
Data.	0.647	0.638	0.665	-

Table 17-4. Correlations among Diagnostic Categories — Geometry

Diagnostic Category	Properties.	Congruence.	Coordinate.	Measure.
Properties.	-	-	-	-
Congruence.	0.659	-	-	-
Coordinate.	0.677	0.673	-	-
Measure.	0.673	0.665	0.693	-

Table 17–5. Correlations among Diagnostic Categories — Algebra II

Diagnostic Category	Complex.	Non-Linear.	Functions.	Data.
Complex.	-	-	-	-
Non-Linear.	0.535	-	-	-
Functions.	0.522	0.666	-	-
Data.	0.489	0.668	0.659	-

Table 17-6. Correlations among Diagnostic Categories — Reading Grades 3-5

Diagnostic Category	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-	-	-	-	-
Key – Info.	0.696	-	-	-	-
Craft – Lit.	0.688	0.667	-	-	-
Craft – Info.	0.681	0.696	0.661	-	-
Vocab.	0.698	0.700	0.668	0.689	-

Table 17–7. Correlations among Diagnostic Categories — Reading/Lit Grades 6-HS

Diagnostic Category	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-	-	-	-	-
Key – Info.	0.677	-	-	-	-
Craft – Lit.	0.675	0.664	-	-	-
Craft – Info.	0.665	0.692	0.657	-	-
Vocab.	0.669	0.677	0.658	0.675	-

Table 17-8. Correlations among Diagnostic Categories — Science Grades 3-5

Diagnostic Category	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-	-	-	-
Bio.	0.747	-	-	-
Phys.	0.739	0.729	-	-
Earth/Space.	0.736	0.735	0.725	-

Table 17-9. Correlations among Diagnostic Categories — Science Grades 6-HS

Diagnostic Category	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-	-	-	-
Bio.	0.672	-	-	-
Phys.	0.641	0.633	-	-
Earth/Space.	0.647	0.643	0.611	-

Table 17–10. Correlations among Diagnostic Categories — Biology

Diagnostic Category	Basic.	Bioenerg.	Cell Growth.	Evol./Ecol.
Basic.	-	-	-	-
Bioenerg.	0.628	-	-	-
Cell Growth.	0.627	0.582	-	-
Evol./Ecol.	0.671	0.573	0.617	-

Table 17-11. Correlations among Diagnostic Categories - Chemistry

Diagnostic Category	Matter.	Atomic.	Mole.	Chem.
Matter.	-	-	-	-
Atomic.	0.428	-	-	-
Mole.	0.520	0.427	-	-
Chem.	0.505	0.439	0.478	-

Table 17–12. Correlations among Diagnostic Categories — Writing Grades 3-5

Diagnostic Category	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-	-	1	-	-
Content.	0.772	-	-	-	-
Edit.	0.753	0.748	-	-	-
Punct.	0.714	0.707	0.732	-	-
Gram.	0.722	0.723	0.741	0.715	-

Table 17-13. Correlations among Diagnostic Categories — Writing/Eng Comp Grades 6-HS

Diagnostic Category	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-	-	1	-	-
Content.	0.710	-	-	-	-
Edit.	0.694	0.693	-	-	-
Punct.	0.665	0.670	0.678	-	-
Gram.	0.673	0.671	0.681	0.672	-

The correlations in Tables 17–1 through 17–13 are based on the observed diagnostic category scores. These observed-score correlations are weakened by existing measurement error contained within each diagnostic category. As a result, disattenuated correlations could provide an estimate of the relationships among diagnostic categories if there were no measurement error. (An important caveat is explained further below.) The disattenuated correlation coefficients (R₁₂) can be computed by using the formula (Spearman 1904, 1910) below:

$$R_{12} = \frac{r_{12}}{\sqrt{r_{11}r_{22}}},$$

where r_{12} is the observed correlation, and r_{11} and r_{22} are the reliabilities for diagnostic categories 1 and 2. Disattenuated correlations very near 1.00 suggest that the same or very similar constructs are being measured. Values somewhat less than 1.00 suggest that different diagnostic categories are measuring slightly different aspects of the same construct. Values markedly less than 1.00 suggest the diagnostic categories reflect different constructs.

Tables 17–14 through 17–26 show the corresponding disattenuated correlations. Given that none of these diagnostic categories had perfect reliabilities (see Chapter Sixteen), the disattenuated module correlations are higher than their observed score counterparts.

Table 17–14. Disattenuated Correlations among Diagnostic Categories — Math Grades 3-5

Diagnostic Category	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-	-	-	-
Alg. Con.	0.977	-	-	-
Geo.	0.905	0.883	-	-
Meas.	0.962	0.980	0.892	-

Table 17-15. Disattenuated Correlations among Diagnostic Categories — Math Grades 6-8

Diagnostic Category	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-	-	-	-
Alg. Con.	0.909	-	-	-
Geo.	0.893	0.876	-	-
Meas.	0.904	0.881	0.888	-

Table 17-16. Disattenuated Correlations among Diagnostic Categories - Algebra I

Diagnostic Category	Operations.	Linear.	Functions.	Data.
Operations.	-	-	-	-
Linear.	0.837	-	-	-
Functions.	0.836	0.892	-	-
Data.	0.820	0.852	0.865	-

Table 17–17. Disattenuated Correlations among Diagnostic Categories — Geometry

Diagnostic Category	Properties.	Congruence.	Coordinate.	Measure.
Properties.	-	-	-	-
Congruence.	0.860	-	-	-
Coordinate.	0.873	0.855	-	-
Measure.	0.860	0.839	0.862	-

Table 17–18. Disattenuated Correlations among Diagnostic Categories — Algebra II

Diagnostic Category	Complex.	Non-Linear.	Functions.	Data.
Complex.	-	-	-	-
Non-Linear.	0.667	-	-	-
Functions.	0.658	0.859	-	-
Data.	0.602	0.842	0.841	-

Table 17-19. Disattenuated Correlations among Diagnostic Categories — Reading Grades 3-5

Diagnostic Category	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-	-	-	-	-
Key – Info.	0.945	-	-	-	-
Craft – Lit.	0.974	0.952	-	-	-
Craft – Info.	0.935	0.963	0.953	-	-
Vocab.	0.945	0.955	0.950	0.950	-

Table 17-20. Disattenuated Correlations among Diagnostic Categories - Reading/Lit Grades 6-HS

Diagnostic Category	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-	-	-	-	-
Key – Info.	0.929	-	-	-	-
Craft – Lit.	0.947	0.940	-	-	-
Craft – Info.	0.915	0.959	0.932	-	-
Vocab.	0.918	0.936	0.931	0.935	-

Table 17-21. Disattenuated Correlations among Diagnostic Categories — Science Grades 3-5

Diagnostic Category	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-	-	-	-
Bio.	0.988	-	-	-
Phys.	0.983	0.983	-	-
Earth/Space.	0.978	0.992	0.982	-

Table 17-22. Disattenuated Correlations among Diagnostic Categories — Science Grades 6-HS

Diagnostic Category	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-	-	-	-
Bio.	0.905	-	-	-
Phys.	0.895	0.895	-	-
Earth/Space.	0.888	0.894	0.880	-

Table 17–23. Disattenuated Correlations among Diagnostic Categories — Biology

Diagnostic Category	Basic.	Bioenerg.	Cell Growth.	Evol./Ecol.
Basic.	-	-	-	-
Bioenerg.	0.887	-	-	-
Cell Growth.	0.875	0.882	-	-
Evol./Ecol.	0.875	0.812	0.863	-

Table 17–24. Disattenuated Correlations among Diagnostic Categories — Chemistry

Diagnostic Category	Matter.	Atomic.	Mole.	Chem.
Matter.	-	-	-	-
Atomic.	0.703	-	-	-
Mole.	0.867	0.865	-	-
Chem.	0.801	0.845	0.934	-

Table 17-25. Disattenuated Correlations among Diagnostic Categories - Writing Grades 3-5

Diagnostic Category	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-	-	-	-	-
Content.	0.983	-	-	-	-
Edit.	0.979	0.979	-	-	-
Punct.	0.926	0.923	0.974	-	-
Gram.	0.935	0.942	0.985	0.947	-

Table 17-26. Disattenuated Correlations among Diagnostic Categories — Writing/Eng Comp Grades 6-HS

Diagnostic Category	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-	-	-	-	-
Content.	0.925	-	-	-	-
Edit.	0.915	0.915	-	-	-
Punct.	0.880	0.887	0.909	-	-
Gram.	0.903	0.903	0.927	0.917	-

In reviewing the differences between the simple correlations and the disattenuated ones, it is clear that the impact of the "less than perfect" reliabilities on the disattenuated correlations is large for most of the tests. For example, Science Grades 3-5 found virtually no differences between any pair of disattenuated correlations. This indicates that, for the majority of students, the diagnostic category scores are merely shorter versions of what the total scores are measuring. Note that, while the theoretical maximum for observed correlations is 1.00, disattenuated correlations can exceed this value when high observed correlations are combined with low reliabilities. The other tests' disattenuated correlations are somewhat lower, generally in the range of .84 to .95. The test with the lowest disattenuated correlations is Algebra II, with Complex Numbers showing the most uniqueness.

As a practical consideration, and despite these results, diagnostic category scores for individual students may still provide useful information to the teacher. For example, a student may still have statistically significant differences between pairs of diagnostic scores ("areas of needs" versus "strengths to build on") with large observed scale score differences. The diagnostic reporting suite shows these differences in a graphic that includes the level of precision for each scale score in the form of an "error band." The error band is the scale score ± one conditional standard error. Any two pairs of scores can be interpreted as statistically different if their respective error bands do not overlap. More details about the use and interpretation of error bands may be found in Chapter Fourteen. Additionally, Chapter Fifteen provides summary information about conditional standard errors for each diagnostic category and tables that indicate the incidence of non-overlapping error bands in the 2015–2016 operational testing population.

EXPLORATORY FACTOR ANALYSIS

In order to further explore the internal structure of each CDT, an exploratory factor analysis (EFA) of the diagnostic category scores was conducted. Operational data from the 2015–2016 school year was used to create the observed correlation matrices shown in Tables 17–1 through 17–13. These, in turn, were used in the EFA. In the *Statistical Package for the Social Sciences (SPSS)*, Principal Axis Factor extraction was utilized with an oblique rotation (Promax) of the initial factor solution to improve interpretability. Oblique rotations allow for correlated factors.

Tables 17–27 through 17–39 present the eigenvalues and the explained variance for the extracted factors. | Figures 17–1 through 17–13 are scree plot graphs of the eigenvalues against the factor number. In general, the first factor accounts for approximately 75% of the total variance for all CDT tests except Chemistry, while the second factor accounts for approximately 9% of the total variance. For Chemistry, the first factor accounts for 60% of the total variance, while the second factor accounts for 15%. For each CDT, only the first factor had an eigenvalue greater than 1.0, typically suggesting a one-factor solution using the Kaiser criterion.

Table 17-27. Eigenvalues and Explained Variance for Math Grades 3-5 Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.20	79.89
2	0.34	8.45
3	0.23	5.86
4	0.23	5.79

Figure 17-1. Scree Plot for Math Grades 3-5 Diagnostic Categories

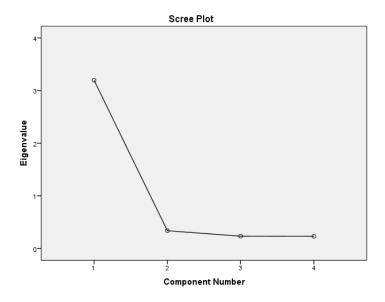


Table 17–28. Eigenvalues and Explained Variance for Math Grades 6-8 Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.09	77.14
2	0.35	8.65
3	0.30	7.50
4	0.27	6.72

Figure 17–2. Scree Plot for Math Grades 6-8 Diagnostic Categories

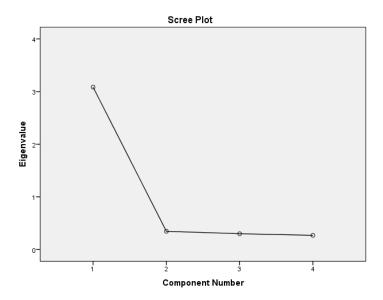


Table 17–29. Eigenvalues and Explained Variance for Algebra I Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.94	73.40
2	0.37	9.35
3	0.36	8.93
4	0.33	8.32

Figure 17–3. Scree Plot for Algebra I Diagnostic Categories

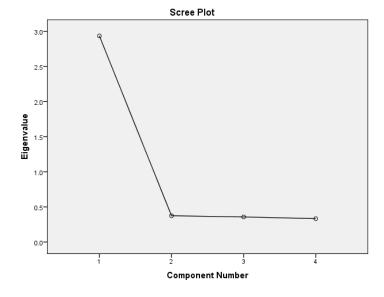


Table 17–30. Eigenvalues and Explained Variance for Geometry Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.02	75.50
2	0.34	8.57
3	0.33	8.27
4	0.31	7.66

Figure 17-4. Scree Plot for Geometry Diagnostic Categories

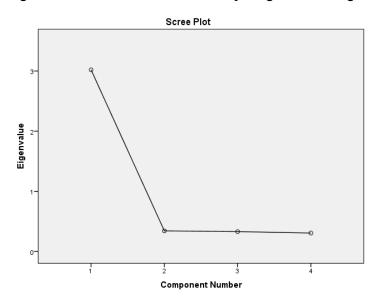


Table 17–31. Eigenvalues and Explained Variance for Algebra II Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.78	69.43
2	0.56	13.89
3	0.34	8.49
4	0.33	8.19

Figure 17–5. Scree Plot for Algebra II Diagnostic Categories

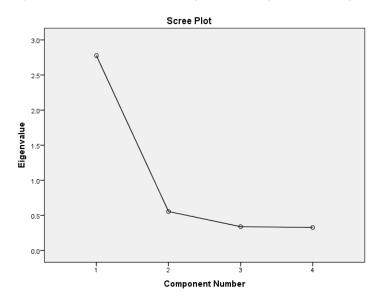


Table 17–32. Eigenvalues and Explained Variance for Reading Grades 3-5 Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.74	74.76
2	0.35	7.03
3	0.32	6.32
4	0.30	5.98
5	0.30	5.92

Figure 17–6. Scree Plot for Reading Grades 3-5 Diagnostic Categories

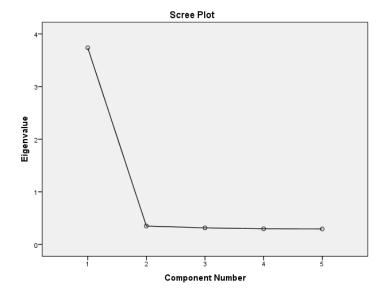


Table 17–33. Eigenvalues and Explained Variance for Reading/Lit Grades 6-HS Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.68	73.67
2	0.36	7.14
3	0.33	6.59
4	0.32	6.47
5	0.31	6.12

Figure 17–7. Scree Plot for Reading/Lit Grades 6-HS Diagnostic Categories

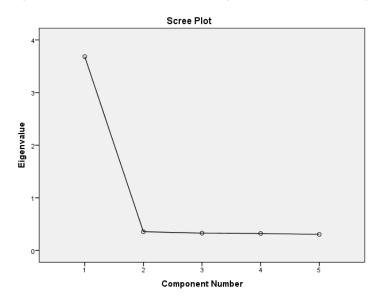


Table 17–34. Eigenvalues and Explained Variance for Science Grades 3-5 Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.21	80.14
2	0.28	6.91
3	0.27	6.67
4	0.25	6.28

Figure 17-8. Scree Plot for Science Grades 3-5 Diagnostic Categories

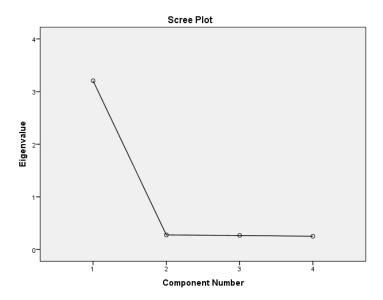


Table 17–35. Eigenvalues and Explained Variance for Science Grades 6-HS Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.92	73.10
2	0.39	9.75
3	0.36	8.97
4	0.33	8.18

Figure 17-9. Scree Plot for Science Grades 6-HS Diagnostic Categories

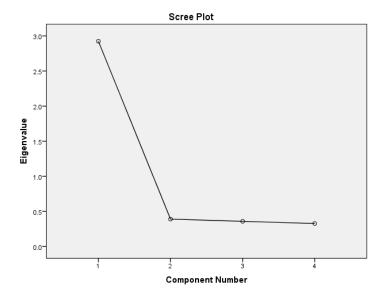


Table 17–36. Eigenvalues and Explained Variance for Biology Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.85	71.25
2	0.44	10.91
3	0.39	9.86
4	0.32	7.97

Figure 17-10. Scree Plot for Biology Diagnostic Categories

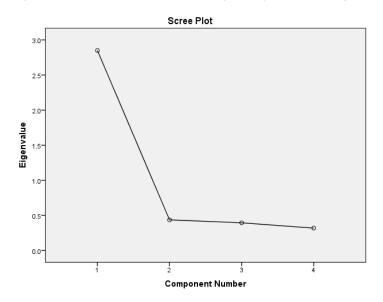


Table 17–37. Eigenvalues and Explained Variance for Chemistry Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.40	60.02
2	0.60	15.10
3	0.52	13.04
4	0.47	11.84

Figure 17–11. Scree Plot for Chemistry Diagnostic Categories

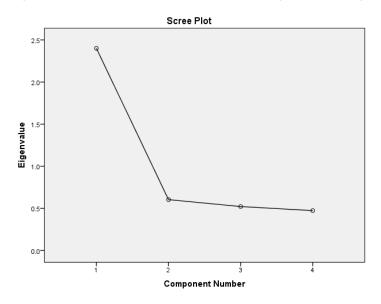


Table 17–38. Eigenvalues and Explained Variance for Writing Grades 3-5 Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.93	78.62
2	0.31	6.26
3	0.28	5.65
4	0.25	4.92
5	0.23	4.55

Figure 17–12. Scree Plot for Writing Grades 3-5 Diagnostic Categories

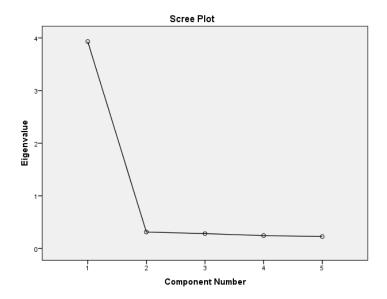
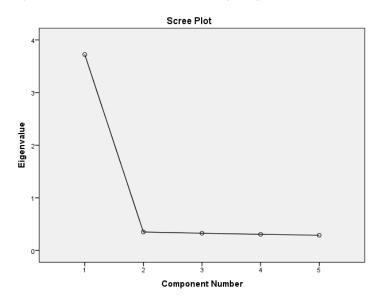


Table 17-39. Eigenvalues and Explained Variance for Writing/Eng Comp Grades 6-HS Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.72	74.46
2	0.35	7.04
3	0.33	6.56
4	0.31	6.15
5	0.29	5.79

Figure 17-13. Scree Plot for Writing/Eng Comp Grades 6-HS Diagnostic Categories



Taken as a whole, the internal structure evidence presented generally indicates that related elements of each of the CDT tests are correlated in the intended manner. This further supports using a total score to report students' performances in the different content areas.

The diagnostic category scores present more of a mixed message. Since the diagnostic categories in each of the CDT tests were designed to measure distinct components, it is reasonable to expect that the diagnostic category correlations should be positive and strong but, ideally, not extremely high. However, the disattenuated correlations imply that some diagnostic categories are essentially measuring the same constructs. While there is content rationale underlying the creation of the diagnostic category scores, the empirical correlations illustrate that caution is required when using these scores when identifying an individual student's areas of need and strengths to build on.

EVIDENCE BASED ON RELATIONSHIPS WITH OTHER VARIABLES

As described in the *Standards* (AERA, APA, & NCME, 2014), "... Evidence based on relationships with other variables provides evidence about the degree to which these relationships are consistent with the construct underlying the proposed test score interpretations" (p. 16). This category of evidence refers to "external structure evidence" and has been classified as three types of evidence: *convergent*, *discriminant*, and *criterion-related*. *Convergent evidence* is provided by relationships among students' performances on different assessments intended to measure a similar construct. *Discriminant evidence* is provided by relationships among students' performances on different tests intended to measure different constructs. *Criterion-related evidence*, either predictive or concurrent, is provided by relationships between students' test scores and their performances on a criterion measure (Cronbach, 1971; Messick, 1989).

Correlations and disattenuated correlations among students' test scores across different CDT content areas provide some discriminant validity evidence. These are provided in Tables 17–40 and 17–41.

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Table 17-40a. Correlations among CDT Grades 3-5 Tests

CDT	Math Grades 3-5	Reading Grades 3-5	Science Grades 3-5	Writing Grades 3-5
Math Grades 3-5	-	-	-	-
Reading Grades 3-5	0.776	-	-	-
Science Grades 3-5	0.761	0.781	-	-
Writing Grades 3-5	0.772	0.831	0.797	-

Table 17–40b. Correlations among CDT Tests

CDT	Math Gr 6-8	Algebra I	Geometry	Algebra II	Read/Lit Gr 6-HS	Science Gr 6-HS	Biology	Chemistry	Writing/ Eng Comp Gr 6-HS
Math Gr 6-8	-	-	-	1	-	1	1	-	-
Algebra I	0.741	-	-	-	-	•	-	-	-
Geometry	0.503	0.799	1	1	1	-	-	-	-
Algebra II	0.617	0.812	0.833	-	-	-	-	-	-
Read/Lit Gr 6-HS	0.740	0.668	0.667	0.655	-	-	-	-	-
Science Gr 6-HS	0.710	0.633	0.551	0.501	0.747	-	-	-	-
Biology	0.575	0.601	0.644	0.639	0.723	0.650	-	-	-
Chemistry	0.360	0.665	0.576	0.697	0.652	0.487	0.658	-	-
Writing Gr 6-HS	0.711	0.642	0.603	0.713	0.810	0.706	0.731	0.706	-

Table 17–41a. Disattenuated Correlations among CDT Grades 3-5 Tests

CDT	Math Grades 3-5	Reading Grades 3-5	Science Grades 3-5	Writing Grades 3-5
Math Grades 3-5	-	-	-	-
Reading Grades 3-5	0.833	-	-	-
Science Grades 3-5	0.816	0.842	-	-
Writing Grades 3-5	0.821	0.888	0.852	-

Table 17–41b. Disattenuated Correlations among CDT Tests

CDT	Math Gr 6-8	Algebra I	Geometry	Algebra II	Read/Lit Gr 6-HS	Science Gr 6-HS	Biology	Chemistry	Writing/ Eng Comp Gr 6-HS
Math Gr 6-8	-	-	-	1	-	1	-	-	-
Algebra I	0.800	-	-	-	-	-	-	-	-
Geometry	0.540	0.863	-	-	1	1	-	-	-
Algebra II	0.665	0.879	0.897	1	1	1	1	-	-
Read/Lit Gr 6-HS	0.798	0.724	0.720	0.708	-	1	-	-	-
Science Gr 6-HS	0.773	0.692	0.599	0.547	0.816	-	-	-	-
Biology	0.626	0.657	0.701	0.697	0.790	0.716	-	-	-
Chemistry	0.407	0.757	0.653	0.792	0.741	0.559	0.755	-	-
Writing Gr 6-HS	0.762	0.692	0.646	0.766	0.871	0.766	0.794	0.798	-

Each CDT test measures a different construct, so the correlations among them were not expected to be extremely high. The values in the tables are consistent with this expectation. Correlations among the CDT tests ranged from 0.360 to 0.833. Correlations across tests within a content area are more highly correlated than across content areas. For example, the correlation between Math Grades 6-8 and Algebra I is 0.741, whereas the correlation between Math Grades 6-8 and Biology is 0.575.

External evidence for the CDT is examined by using students' scores on the 2016 Pennsylvania System of School Assessment (PSSA) and/or 2016 Keystone Exams as external criteria. For each content area, CDT results from the 2015–2016 school year were matched to spring 2016 PSSA in the corresponding content area using the PA secure ID. Similarly, CDT tests in Algebra I, Biology, and Reading/Literature were matched to corresponding spring 2016 Keystone Exams. The correlations between students' total scale scores on the CDT and PSSA or Keystone are calculated as one piece of external evidence. Table 17–42 summarizes the sample sizes.

Table 17-42. Correlation between CDT and PSSA or Keystone Exams Scores

Student Grade	CDT	PSSA or Keystone Test	N	Correlation of Total Scale Scores
3	Math Grades 3-5	PSSA Math Grade 3	26,490	0.801
4	Math Grades 3-5	PSSA Math Grade 4	28,700	0.819
5	Math Grades 3-5	PSSA Math Grade 5	30,542	0.821
6	Math Grades 6-8	PSSA Math Grade 6	32,675	0.840
7	Math Grades 6-8	PSSA Math Grade 7	32,557	0.832
8	Math Grades 6-8	PSSA Math Grade 8	26,795	0.807
3	Reading Grades 3-5	PSSA ELA Grade 3	23,381	0.804
4	Reading Grades 3-5	PSSA ELA Grade 4	25,180	0.808
5	Reading Grades 3-5	PSSA ELA Grade 5	26,057	0.830
6	Reading/Lit Grades 6-HS	PSSA ELA Grade 6	31,607	0.808
7	Reading/Lit Grades 6-HS	PSSA ELA Grade 7	33,000	0.796
8	Reading/Lit Grades 6-HS	PSSA ELA Grade 8	32,151	0.782
4	Science Grades 3-5	PSSA Science Grade 4	8,969	0.799
8	Science Grades 6-HS	PSSA Science Grade 8	25,068	0.782
3	Writing Grades 3-5	PSSA ELA Grade 3	3,727	0.795
4	Writing Grades 3-5	PSSA ELA Grade 4	4,031	0.788
5	Writing Grades 3-5	PSSA ELA Grade 5	4,100	0.793
6	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 6	7,061	0.792
7	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 7	7,535	0.780
8	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 8	7,713	0.749
6–12	Algebra I	Keystone Algebra I	37,985	0.767
6–12	Biology	Keystone Biology	46,956	0.801
6–12	Reading/Literature	Keystone Literature	43,172	0.753

These results provide external evidence in support of CDT as a valid measure of students' achievement.

The collection of external evidence related to the CDT is an ongoing process. As more CDT data become available, other criterion-related evidence will be evaluated. In addition to examining the relationship between CDT and PSSA or Keystone Exams, other criterion variables such as Scholastic Aptitude Test (SAT) scores, American College Test (ACT) scores, or student grade point average (GPA) may be considered.

EVIDENCE BASED ON CONSEQUENCES OF TESTS

According to the *Standards* (AERA, APA, & NCME, 2014), evidence of the consequences of implementing an assessment program is an additional source of validity information. Both positive and negative (intended and unintended) consequences of score-based inferences must be investigated to fully evaluate the pool of validity evidence.

Lane and Stone (2002) summarized the general *intended* consequences for state assessments and accountability programs:

- Student, teacher, and administrator motivation and effort
- Curriculum and instruction practices (including content and strategies)

- Improved learning for all students
- Content and format of classroom assessments
- Professional development support
- Use and nature of test preparation activities
- Student, teacher, administrator, and public awareness and beliefs about the assessment, criteria for judging performance, and the use of assessment results

Evidence for the improvement of student learning can be seen by looking at the changes in scale scores for students who took the same CDT test multiple times. Table 17–43 below summarizes scale score changes between the first and last administrations of the CDT.

Table 17–43. Summary of Scale Score Changes between CDT Administrations

CDT	N	Minimum	Q1	Median	Mean	Q3	Maximum
Math Grades 3-5	67,560	-504	26	79	81.55	134	666
Math Grades 6-8	68,012	-586	-7	44	42.34	95	569
Algebra I	38,609	-552	-18	37	31.87	88	680
Geometry	4,187	-564	7	65	61.01	121	669
Algebra II	4,095	-490	17	73	70.26	131	683
Reading Grades 3-5	61,372	-623	-11	48	49.42	109	549
Reading/Lit Grades 6-HS	123,954	-715	-48	11	8.22	68	798
Science Grades 3-5	6,514	-400	0	52	55.50	108	597
Science Grades 6-HS	28,390	-526	-28	24	20.33	73	510
Biology	44,287	-563	6	63	59.98	119	843
Chemistry	3,629	-309	11	68	61.68	119	399
Writing Grades 3-5	6,804	-492	-9	48	49.61	106	566
Writing/Eng Comp Gr 6-HS	16,408	-522	-31	18	16.57	67	909

Lane and Stone (2002) also summarized the possible unintended outcomes:

- Narrowing of curriculum and instruction to focus only on the specific standards assessed and ignoring the broader construct reflected in the specified standards
- Use of test preparation materials that are closely linked to the assessment without making changes to instruction
- Use of unethical test preparation materials or administration procedures
- Differential performance gains for subgroups of students
- Inappropriate or unfair uses of test scores, such as questionable practices in reassignment of teachers or principals
- For some students, decreased confidence and motivation to learn and to perform well on the assessment because of past experiences with assessments

As noted above, one important piece of consequential evidence pertains to the use of assessment results. As shown in Chapter Fourteen, CDT offers a dynamic suite of reports. The extent to which various groups of users (e.g., students and teachers) interpret these reports appropriately affects the validity of subsequent uses of these results. As noted in Chapter Fourteen, there are report training scenarios for each content area. The intent is that the scenarios will help users avoid unintended uses and interpretations of the CDT results.

EVIDENCE RELATED TO USE OF THE RASCH MODEL

Since the Rasch model is the basis of all calibration, scaling, and equating analyses associated with the CDT, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met, as well as the fit between the model and the test data. As discussed in Chapter Eight, the underlying assumptions of Rasch models were essentially met for all the CDT data, indicating the appropriateness of using Rasch models to analyze the CDT data.

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. On the whole, the early chapters of this technical report show that a strong link can be established between each CDT item and its associated Eligible Content. Detailed information regarding educator reviews are presented in Chapter Six.

Diagnostic category score intercorrelations were also presented in this chapter. They provide some favorable evidence regarding the internal relationships between the tests' components.

Validity of score inferences is bolstered when test scores are consistent. Here, the reliabilities of the total test scores (presented in Chapter Sixteen) were very good, with many in the low 0.90s.

Reported in Chapter Six, differential item functioning (DIF) with respect to gender and ethnicity helps address construct-irrelevant variance, which represents an important threat to the validity of inferences made from achievement test scores. As noted in that chapter, field-test items are screened and reviewed for DIF. Only items approved by teacher committees are eligible for operational use.

CHAPTER EIGHTEEN: PARAMETER STABILITY

The Classroom Diagnostic Tools (CDT) features a number of tests. Tests in Mathematics, Algebra I, Geometry, and Algebra II have been available since October 2010 for students in grades 6 and above. Tests in Reading/Literature, Science, Biology, and Chemistry have been available since April 2011 for students in grades 6 and above. Tests in Writing /English Composition have been available since October 2011 for students in grades 6 and above. Tests in Mathematics, Reading, Science, and Writing have been available since April 2014 for students in grades 3 through 5. During the 2015–2016 school year, CAT item selection and Rasch ability estimates were based on initial item parameters estimated from the stand-alone and embedded field-test events and vertical linking (see Chapter Eight and Chapter Nine for details). The only exceptions were 113 items in the mathematics content area that had parameters re-estimated following the 2010–2011 school year and 74 items in the science content area that had parameters re-estimated following the 2011–2012 school year.

Following the 2015–2016 school year, item parameter stability was checked for all items in the banks. In order to complete this work prior to the start of the 2016–2017 school year, DCR chose July 29, 2016 as the cut-off date for the analyses described in this chapter.

METHODOLOGY

In the first two years of CDT, four separate methods were investigated to evaluate the stability of the item parameters in the CDT operational administration

- 1. Calibrate the entire bank within a content area in a single concurrent calibration. Do not anchor item parameters on banked values. Compare new parameter estimates to the banked values.
- 2. Calibrate the entire bank within a content area in a single concurrent calibration. Anchor item parameters on banked values. Examine displacements.
- 3. Calibrate each grade/course level item with students in that grade/course. Do not anchor item parameters on banked values. Compare new parameter estimates to the banked values.
- 4. Calibrate each grade/course level item with students in that grade/course. Anchor item parameters on banked values. Examine displacements.

As noted in Chapter Twelve, CDT tests are pre-equated. Immediate score reports are based on banked item parameters. Therefore, this chapter focuses on anchored calibrations and examination of displacement values to evaluate item parameter stability¹.

ANCHORED CONCURRENT CALIBRATION WITHIN CONTENT AREA ACROSS GRADES/ COURSES

One method used to evaluate the stability of the item parameters in the operational administration was to calibrate the entire bank within a content area anchoring on the banked item parameters and examine the displacements. For each item, the displacement value is the size of the change in the parameter estimate that would be estimated if the parameter for the item was unanchored and all other parameters were anchored at their current value. Given that the banked values were developed into a single, vertical scale, all items within a content area were calibrated in a single concurrent calibration using WINSTEPS software version 3.69 (Linacre, 2009).

MATHEMATICS

Figure 18–1 shows the displacements from a concurrent anchored calibration of all mathematics items using the operational data set. Items are color-coded by grade/course.

¹ For results of all four methods for the 2011–2012 school year, see Chapter Eighteen of the 2011–2012 technical report.

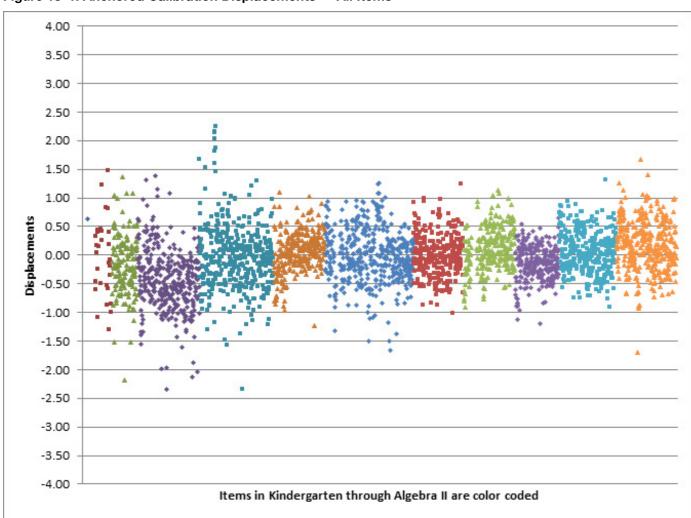


Figure 18-1. Anchored Calibration Displacements — All Items

Table 18–1 summarizes the data in Figure 18–1. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-three percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–1).

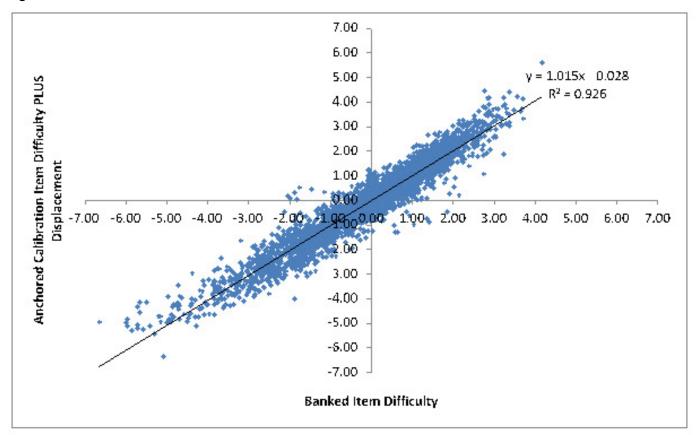
*K • G01 • G02 • G03 • G04 • G05 • G06 • G07 • G08 • All • Geo • All

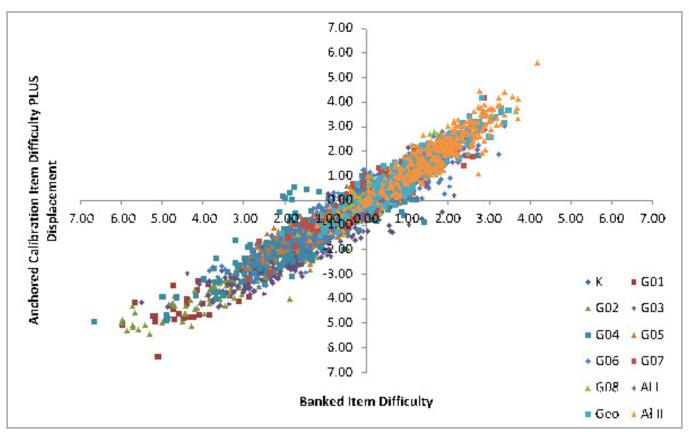
Table 18-1. Number of Mathematics Items by Grade/Course and Displacement Interval

Interval	K	G01	G02	G03	G04	G05	G06	G07	G08	ALI	GEO	ALII	Total
Disp. ≤ -1.0	0	3	4	43	12	1	10	1	0	2	0	1	77
-1.0 < Disp. ≤ -0.9	0	0	3	12	8	1	1	0	1	1	1	1	29
$-0.9 < \text{Disp.} \le -0.8$	0	2	7	17	5	3	6	3	1	7	0	2	53
-0.8 < Disp. ≤ -0.7	0	0	4	23	10	4	8	0	3	2	5	1	60
-0.7 < Disp. ≤ -0.6	0	0	9	30	15	1	10	9	2	5	5	9	95
-0.6 < Disp. ≤ -0.5	0	3	9	36	27	6	23	13	7	11	9	3	147
-0.5 < Disp. ≤ -0.4	0	2	10	25	22	8	23	13	7	17	20	14	161
-0.4 < Disp. ≤ -0.3	0	1	13	21	31	8	27	15	8	25	15	13	177
-0.3 < Disp. ≤ -0.2	0	1	12	35	24	20	38	14	20	36	28	21	249
-0.2 < Disp. ≤ -0.1	0	2	10	25	35	25	55	26	18	33	35	22	286
-0.1 < Disp. ≤ 0.0	0	1	9	18	37	38	35	35	32	34	30	33	302
0.0 < Disp. ≤ 0.1	0	1	8	12	35	30	43	27	29	30	39	35	289
0.1 < Disp. ≤ 0.2	0	3	16	10	29	37	41	33	19	19	20	32	259
$0.2 < \text{Disp.} \le 0.3$	0	1	5	7	27	36	34	28	26	14	39	28	245
0.3 < Disp. ≤ 0.4	0	1	7	11	19	22	17	17	22	11	19	32	178
$0.4 < \text{Disp.} \leq 0.5$	0	5	2	9	15	17	21	12	13	4	21	19	138
$0.5 < \text{Disp.} \le 0.6$	0	0	7	2	15	11	20	11	19	1	16	15	117
$0.6 < \text{Disp.} \leq 0.7$	1	0	0	3	11	2	17	6	12	1	11	23	87
$0.7 < \text{Disp.} \le 0.8$	0	0	1	0	12	4	8	6	1	1	7	19	59
$0.8 < \text{Disp.} \le 0.9$	0	2	0	1	2	4	10	1	4	0	4	6	34
0.9 < Disp. ≤ 1.0	0	0	1	1	4	1	8	4	2	0	1	6	28
1.0 < Disp.	0	2	4	5	16	2	5	1	3	0	1	8	47
TOTAL	1	30	141	346	411	281	460	275	249	254	326	343	3117

Figure 18–2 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the mathematics item bank. A line of best fit is included in the upper plot. If item difficulties from the operational calibration are close to the banked values, the line will approach an intercept of zero and a slope of one. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18-2. Mathematics Banked Item Parameters vs. Anchored Calibration — All Items





Based on Figure 18–2, one can see that there are a number of items with operational estimates that differ from their banked values. Some of these are in kindergarten through grade 2. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in kindergarten through grade 2 to provide better diagnostic information for lower-performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–3 and Table 18–2 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Seventy-four percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–2). Figure 18–4 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18-3. Mathematics Anchored Calibration Displacements - All Items in Grade 3 and Above

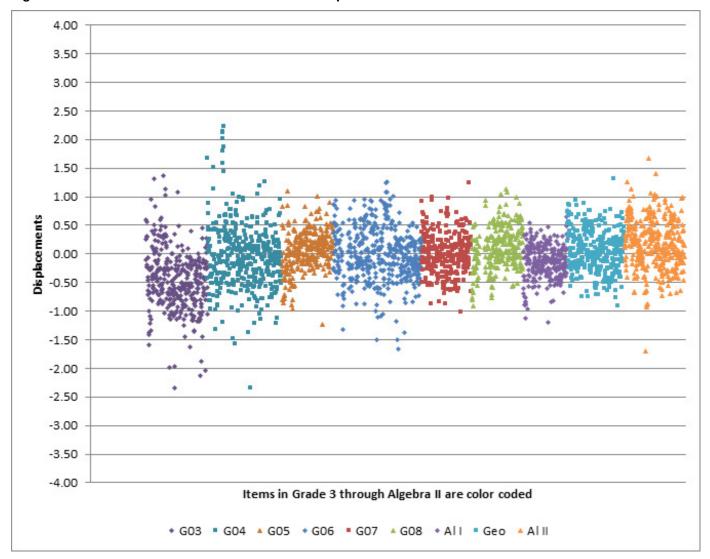
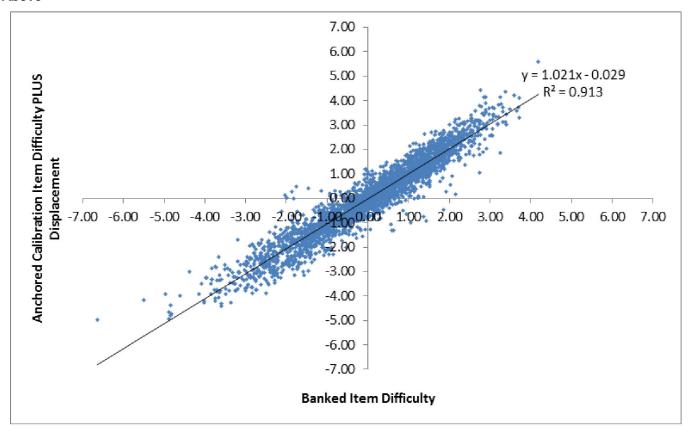
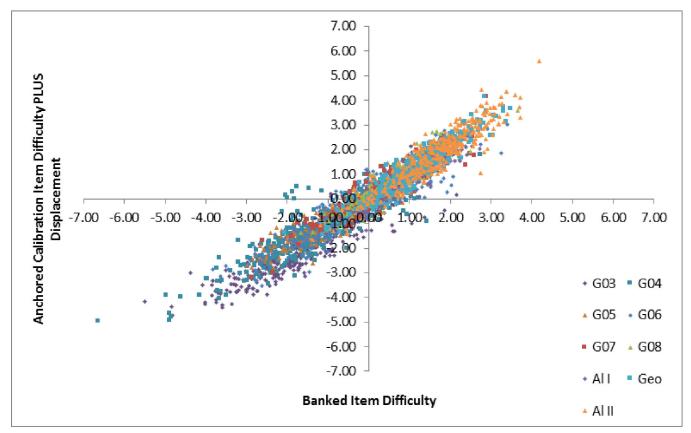


Table 18–2. Number of Mathematics Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	ALI	GE0	ALII	Total
Disp. ≤ -1.0	46	12	1	10	1	0	2	0	1	73
-1.0 < Disp. ≤ -0.9	12	8	1	1	0	1	1	1	1	26
-0.9 < Disp. ≤ -0.8	23	7	3	6	3	1	7	0	2	52
-0.8 < Disp. ≤ -0.7	21	10	4	8	0	3	2	5	1	54
-0.7 < Disp. ≤ -0.6	33	15	1	10	9	2	5	5	9	89
-0.6 < Disp. ≤ -0.5	33	29	6	23	13	7	11	9	3	134
-0.5 < Disp. ≤ -0.4	21	22	8	23	13	7	17	20	14	145
-0.4 < Disp. ≤ -0.3	23	33	8	27	15	8	25	15	13	167
-0.3 < Disp. ≤ -0.2	33	21	20	38	14	20	36	28	21	231
-0.2 < Disp. ≤ -0.1	28	35	25	55	26	18	33	35	22	277
-0.1 < Disp. ≤ 0.0	14	40	38	35	35	32	34	30	33	291
$0.0 < \text{Disp.} \leq 0.1$	13	33	30	43	27	29	30	39	35	279
$0.1 < \text{Disp.} \leq 0.2$	9	27	37	41	33	19	19	20	32	237
$0.2 < \text{Disp.} \le 0.3$	8	28	36	34	28	26	14	39	28	241
$0.3 < \text{Disp.} \le 0.4$	10	17	22	17	17	22	11	19	32	167
$0.4 < \text{Disp.} \le 0.5$	7	18	17	21	12	13	4	21	19	132
$0.5 < \text{Disp.} \le 0.6$	2	11	11	20	11	19	1	16	15	106
0.6 < Disp. ≤ 0.7	3	14	2	17	6	12	1	11	23	89
0.7 < Disp. ≤ 0.8	0	9	4	8	6	1	1	7	19	55
0.8 < Disp. ≤ 0.9	1	3	4	10	1	4	0	4	6	33
0.9 < Disp. ≤ 1.0	1	4	1	8	4	2	0	1	6	27
1.0 < Disp.	5	15	2	5	1	3	0	1	8	40
TOTAL	346	411	281	460	275	249	254	326	343	2945

Figure 18–4. Mathematics Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For both of the anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–3 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the calibrations.

Table 18-3. Summary of Robust Z across Anchored Calibrations in Mathematics

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645			
Kindergarten	1	0	0%	0	0	N/A			
Grade 1	30	9	30%	0	0	N/A			
Grade 2	141	23	16%	0	0	N/A			
Grade 3	346	98	28%	346	104	30%			
Grade 4	411	77	19%	411	74	18%			
Grade 5	281	19	7%	281	19	7%			
Grade 6	460	60	13%	460	61	13%			
Grade 7	275	18	7%	275	19	7%			
Grade 8	249	19	8%	249	20	8%			
Algebra I	254	13	5%	254	13	5%			
Geometry	326	22	7%	326	23	7%			
Algebra II	343	50	15%	343	52	15%			
Total	3117	408	13%	2945	385	13%			
	Correlation = 0.96	2		Correlation = 0.955					
	Add. Const. $= 0.03$	30		Add. Const. = 0.027					

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.725 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.660 to 0.725, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.660 have absolute value of robust Z greater than 1.645.

READING/LITERATURE

Figure 18–5 shows the displacements from a concurrent anchored calibration of all reading items using the operational data set. Items are color-coded by grade/course.

Figure 18-5.Reading Anchored Calibration Displacements - All Items

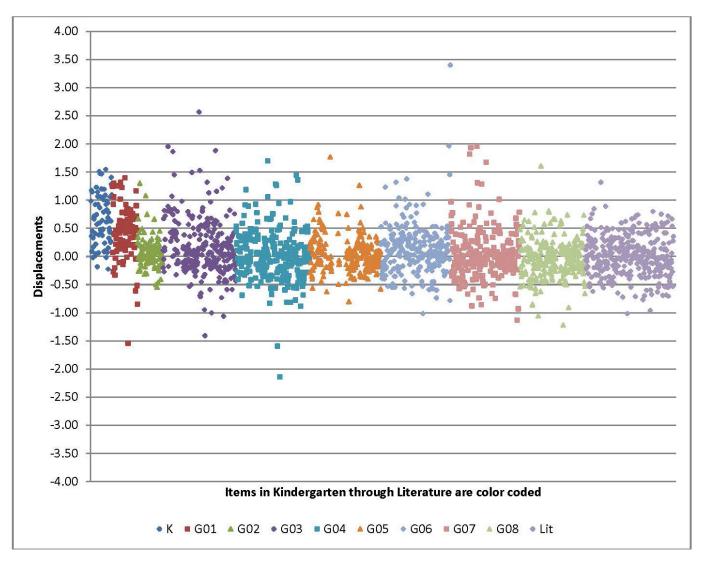


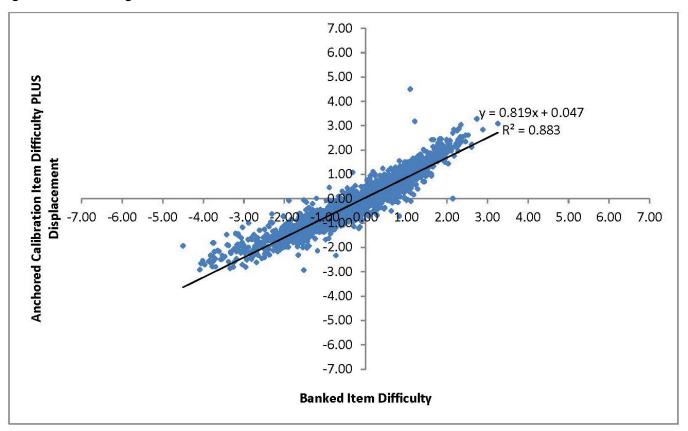
Table 18–4 summarizes the data in Figure 18–5. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–4).

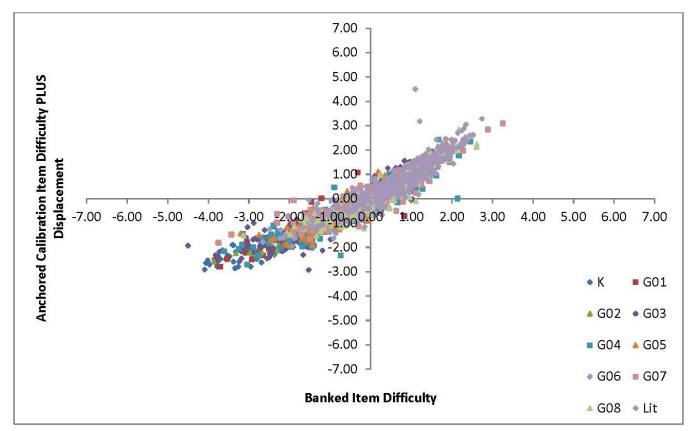
Table 18-4. Number of Reading Items by Grade/Course and Displacement Interval

Interval	K	G01	G02	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	0	1	0	3	2	0	1	1	2	1	11
-1.0 < Disp. ≤ -0.9	0	0	0	1	0	0	0	1	1	1	4
-0.9 < Disp. ≤ -0.8	0	1	0	0	4	1	0	2	2	0	10
-0.8 < Disp. ≤ -0.7	0	0	0	2	1	0	2	2	0	4	11
-0.7 < Disp. ≤ -0.6	0	1	0	2	3	1	1	3	3	8	22
$-0.6 < \text{Disp.} \le -0.5$	0	1	1	5	9	2	11	7	8	10	54
-0.5 < Disp. ≤ -0.4	0	0	3	6	13	5	5	9	14	10	65
-0.4 < Disp. ≤ -0.3	0	1	2	9	21	12	12	15	15	26	113
-0.3 < Disp. ≤ -0.2	1	2	6	17	26	19	15	15	26	24	151
-0.2 < Disp. ≤ -0.1	1	2	12	30	22	38	21	39	27	36	228
-0.1 < Disp. ≤ 0.0	2	4	16	20	38	30	27	23	31	50	241
$0.0 < \text{Disp.} \leq 0.1$	8	3	19	31	28	28	29	32	28	47	253
0.1 < Disp. ≤ 0.2	3	6	19	28	23	21	28	20	28	34	210
$0.2 < \text{Disp.} \leq 0.3$	4	10	6	13	16	20	30	13	19	23	154
$0.3 < \text{Disp.} \leq 0.4$	5	7	4	16	17	8	22	8	5	16	108
$0.4 < \text{Disp.} \leq 0.5$	9	12	5	12	14	8	14	10	7	18	109
$0.5 < \text{Disp.} \le 0.6$	4	9	0	11	6	6	15	10	6	16	83
$0.6 < \text{Disp.} \leq 0.7$	7	9	2	10	6	4	2	4	5	7	56
0.7 < Disp. ≤ 0.8	4	5	1	11	3	3	3	5	4	6	45
$0.8 < \text{Disp.} \le 0.9$	3	3	0	8	1	2	1	1	1	2	22
$0.9 < \text{Disp.} \le 1.0$	6	3	0	2	4	1	4	2	0	0	22
1.0 < Disp.	21	9	2	13	7	2	9	7	1	1	72
TOTAL	78	89	98	250	264	211	252	229	233	340	2044

Figure 18–6 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the reading item bank. A line of best fit is included in the upper plot. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18–6. Reading Banked Item Parameters vs. Anchored Calibration — All Items





Based on Figure 18–6, one can see that there are a number of items with operational estimates that differ from their banked values. Some of these are in kindergarten through grade 2. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in kindergarten through grade 2 to provide better diagnostic information for lower performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–7 and Table 18–5 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty-two percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–5). Figure 18–8 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18-7. Reading Anchored Calibration Displacements — All Items in Grade 3 and Above

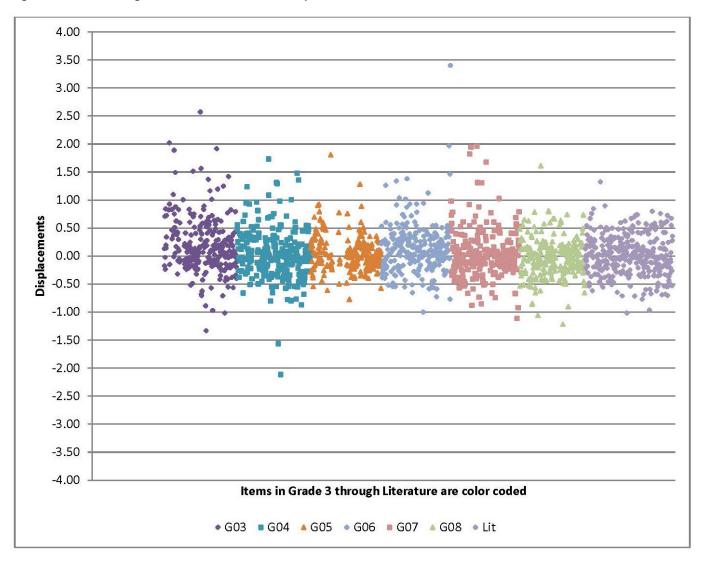
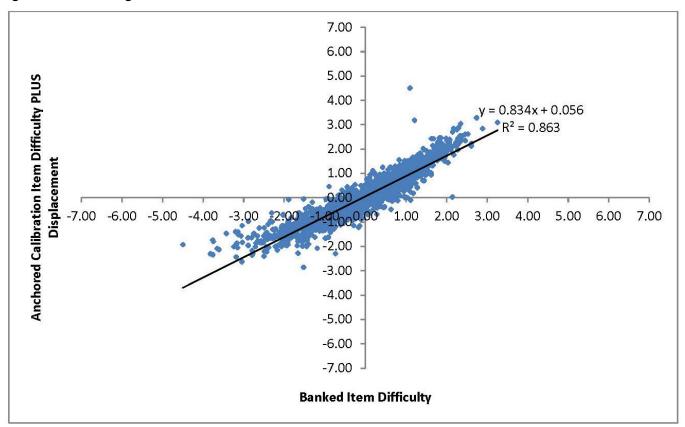
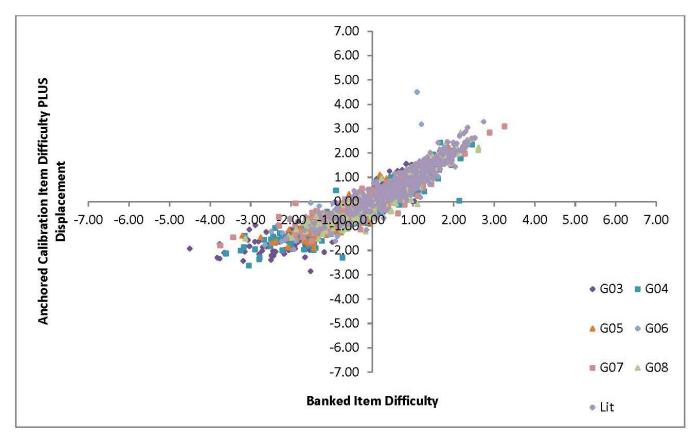


Table 18–5. Number of Reading Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	2	2	0	1	1	2	1	9
-1.0 < Disp. ≤ -0.9	1	0	0	0	1	1	1	4
-0.9 < Disp. ≤ -0.8	1	3	0	0	2	2	0	8
-0.8 < Disp. ≤ -0.7	2	2	1	2	2	0	4	13
-0.7 < Disp. ≤ -0.6	2	3	1	1	3	3	8	21
-0.6 < Disp. ≤ -0.5	4	8	2	10	6	8	10	48
-0.5 < Disp. ≤ -0.4	6	12	3	6	10	14	10	61
-0.4 < Disp. ≤ -0.3	8	21	13	12	15	15	25	109
-0.3 < Disp. ≤ -0.2	14	25	19	14	14	26	25	137
-0.2 < Disp. ≤ -0.1	27	20	37	21	39	27	36	207
-0.1 < Disp. ≤ 0.0	26	39	26	28	24	31	50	224
$0.0 < \text{Disp.} \leq 0.1$	30	30	34	28	32	28	46	228
0.1 < Disp. ≤ 0.2	26	23	20	28	20	28	34	179
$0.2 < \text{Disp.} \le 0.3$	18	17	19	30	13	19	24	140
$0.3 < \text{Disp.} \le 0.4$	9	16	9	23	8	5	16	86
$0.4 < \text{Disp.} \leq 0.5$	18	12	9	13	10	7	18	87
$0.5 < \text{Disp.} \le 0.6$	9	9	6	15	9	5	16	69
$0.6 < \text{Disp.} \leq 0.7$	10	4	4	2	5	6	7	38
$0.7 < \text{Disp.} \le 0.8$	10	5	3	4	5	4	6	37
0.8 < Disp. ≤ 0.9	11	1	1	1	1	1	2	18
0.9 < Disp. ≤ 1.0	1	4	2	4	2	0	0	13
1.0 < Disp.	15	8	2	9	7	1	1	43
TOTAL	250	264	211	252	229	233	340	1779

Figure 18-8. Reading Banked Item Parameters vs. Anchored Calibration - All Items in Grade 3 and Above





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For both of the anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. Table 18–6 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the calibrations.

Table 18-6. Summary of Robust Z across Anchored Calibrations in Reading

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645		
Kindergarten	78	39	50%	0	0	N/A		
Grade 1	89	30	34%	0	0	N/A		
Grade 2	98	6	6%	0	0	N/A		
Grade 3	250	51	20%	250	62	25%		
Grade 4	264	35	13%	264	38	14%		
Grade 5	211	14	7%	211	17	8%		
Grade 6	252	29	12%	252	35	14%		
Grade 7	229	27	12%	229	34	15%		
Grade 8	233	20	9%	233	27	12%		
Literature	340	33	10%	340	45	13%		
Total	2044	284	14%	1779	258	15%		
	Correlation= 0.940			Correlation = 0.929				
	Add. Const. $= 0.09$	94		Add. Const. = 0.063				

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.630 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.543 to 0.630, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.543 have absolute value of robust Z greater than 1.645.

SCIENCE

Figure 18–9 shows the displacements from a concurrent anchored calibration of all science items using the operational data set. Items are color-coded by grade/course.

Figure 18–9. Science Anchored Calibration Displacements — All Items

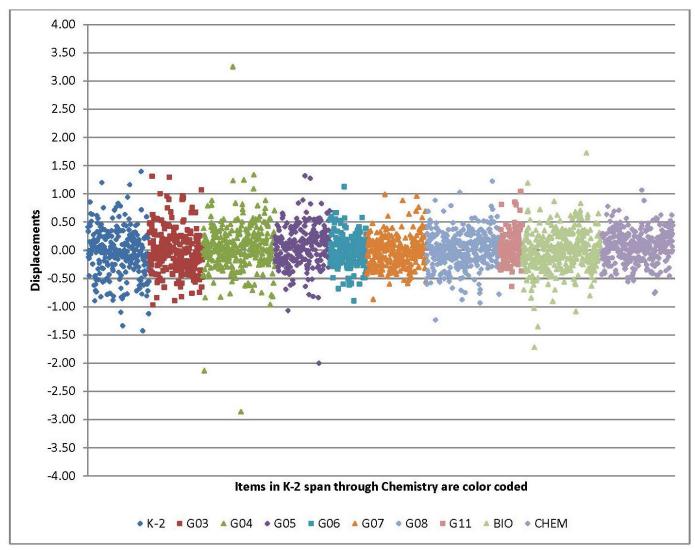


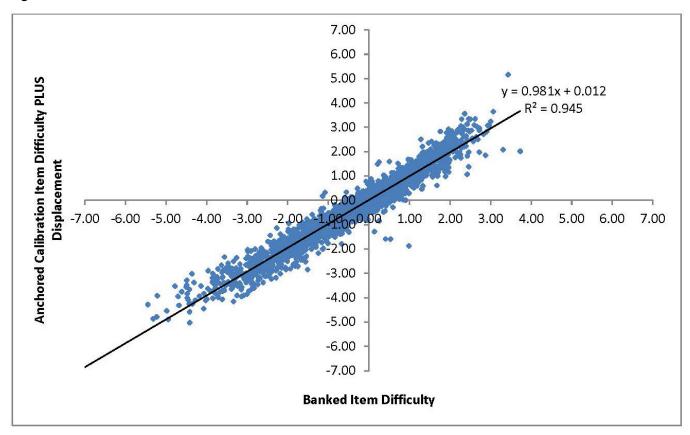
Table 18–7 summarizes the data in Figure 18–9. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-seven percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–7).

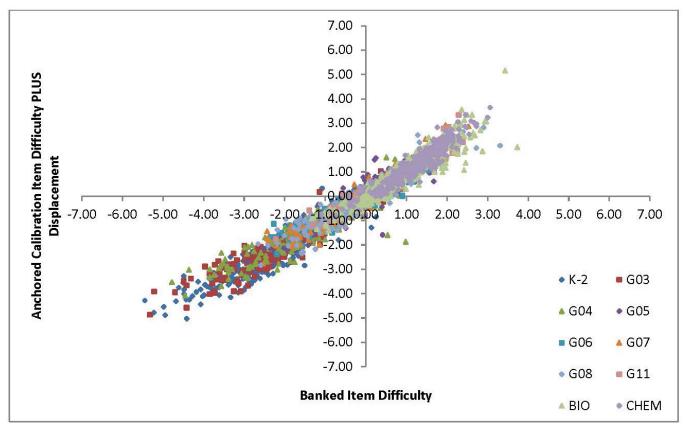
Table 18-7. Number of Science Items by Grade/Course and Displacement Interval

Interval	K-2	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	4	0	2	2	0	0	1	0	4	0	13
-1.0 < Disp. ≤ -0.9	0	1	1	0	0	0	1	0	1	0	4
-0.9 < Disp. ≤ -0.8	7	3	3	2	1	1	1	0	2	0	20
-0.8 < Disp. ≤ -0.7	9	2	4	1	0	0	4	0	3	2	25
-0.7 < Disp. ≤ -0.6	8	3	3	3	4	0	3	1	4	0	29
-0.6 < Disp. ≤ -0.5	13	11	4	4	3	5	9	0	7	2	58
-0.5 < Disp. ≤ -0.4	8	14	11	3	6	11	14	0	13	13	93
-0.4 < Disp. ≤ -0.3	13	20	13	15	5	27	17	5	26	14	155
-0.3 < Disp. ≤ -0.2	21	24	20	18	22	31	24	8	34	19	221
-0.2 < Disp. ≤ -0.1	25	24	33	26	26	31	37	12	51	33	298
-0.1 < Disp. ≤ 0.0	37	29	45	21	18	45	46	16	41	37	335
$0.0 < \text{Disp.} \leq 0.1$	29	28	39	26	24	45	51	16	51	51	360
$0.1 < \text{Disp.} \leq 0.2$	28	20	38	37	26	27	42	12	37	52	319
$0.2 < \text{Disp.} \leq 0.3$	19	20	29	28	12	20	29	13	30	40	240
$0.3 < \text{Disp.} \leq 0.4$	16	10	21	15	7	12	29	6	22	27	165
$0.4 < \text{Disp.} \leq 0.5$	13	8	16	14	5	6	9	8	10	19	108
$0.5 < \text{Disp.} \le 0.6$	6	7	15	14	6	1	10	0	9	6	74
$0.6 < \text{Disp.} \leq 0.7$	4	4	3	5	2	4	2	0	9	5	38
$0.7 < \text{Disp.} \leq 0.8$	5	2	5	0	0	1	3	1	3	2	22
$0.8 < \text{Disp.} \le 0.9$	2	1	5	4	0	1	1	3	2	1	20
0.9 < Disp. ≤ 1.0	1	4	0	0	0	2	0	0	0	0	7
1.0 < Disp.	3	4	5	2	1	0	2	1	2	1	21
TOTAL	271	239	315	240	168	270	335	102	361	324	2625

Figure 18–10 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the science item bank. A line of best fit is included in the upper plot. If item difficulties from the operational calibration are close to the banked values, the line will approach an intercept of zero and a slope of one. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18-10. Science Banked Item Parameters vs. Anchored Calibration - All Items





Based on Figure 18–10, one can see that there are a number of items with operational estimates that differ from their banked values. Some of these are in the K–2 span. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in the K–2 span to provide better diagnostic information for lower performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–11 and Table 18–8 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty-nine percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–8). Figure 18–12 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18-11. Science Anchored Calibration Displacements - All Items in Grade 3 and Above

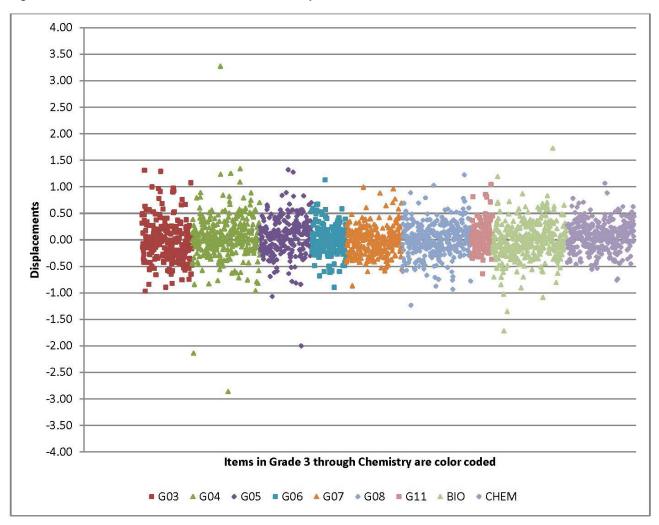
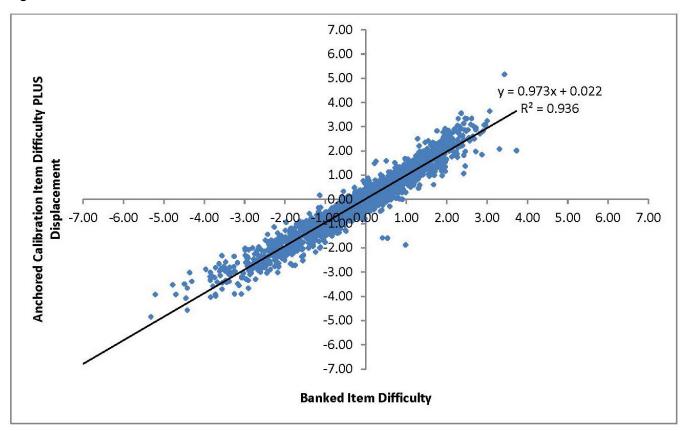
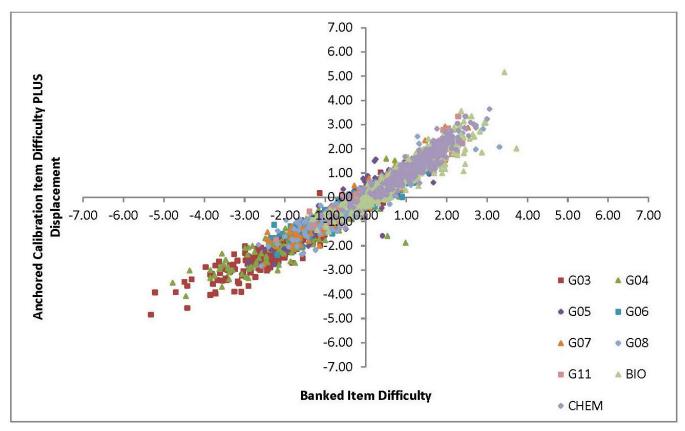


Table 18–8. Number of Science Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	0	2	2	0	0	1	0	4	0	9
$-1.0 < \text{Disp.} \le -0.9$	1	1	0	0	0	1	0	1	0	4
-0.9 < Disp. ≤ -0.8	3	3	2	1	1	1	0	2	0	13
-0.8 < Disp. ≤ -0.7	2	4	1	0	0	4	0	3	2	16
-0.7 < Disp. ≤ -0.6	3	3	3	4	0	3	1	4	0	21
-0.6 < Disp. ≤ -0.5	11	4	4	3	5	9	0	7	2	45
-0.5 < Disp. ≤ -0.4	15	11	3	6	11	14	0	13	13	86
-0.4 < Disp. ≤ -0.3	19	13	15	5	27	17	5	26	14	141
-0.3 < Disp. ≤ -0.2	26	22	18	22	31	24	8	34	19	204
-0.2 < Disp. ≤ -0.1	24	31	26	26	31	37	12	51	33	271
-0.1 < Disp. ≤ 0.0	28	47	21	18	45	46	16	41	37	299
0.0 < Disp. ≤ 0.1	27	39	26	24	45	51	16	51	51	330
0.1 < Disp. ≤ 0.2	18	36	37	26	27	42	12	37	52	287
$0.2 < \text{Disp.} \leq 0.3$	22	30	28	12	20	29	13	30	40	224
0.3 < Disp. ≤ 0.4	10	21	15	7	12	29	6	22	27	149
$0.4 < \text{Disp.} \leq 0.5$	8	16	14	5	6	9	8	10	19	95
$0.5 < \text{Disp.} \le 0.6$	7	14	14	6	1	10	0	9	6	67
$0.6 < \text{Disp.} \le 0.7$	4	3	4	2	4	2	0	9	5	33
$0.7 < \text{Disp.} \le 0.8$	2	5	1	0	1	3	1	3	2	18
$0.8 < \text{Disp.} \le 0.9$	0	5	4	0	1	1	3	2	1	17
0.9 < Disp. ≤ 1.0	6	0	0	0	2	0	0	0	0	8
1.0 < Disp.	3	5	2	1	0	2	1	2	1	17
TOTAL	239	315	240	168	270	335	102	361	324	2354

Figure 18-12. Science Banked Item Parameters vs. Anchored Calibration - All Items in Grade 3 and Above





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For both of the anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–9 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the calibrations.

Table 18-9. Summary of Robust Z across Anchored Calibrations in Science

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645
K-2 span	271	63	23%	0	0	N/A
Grade 3	239	42	18%	239	45	19%
Grade 4	315	46	15%	315	47	15%
Grade 5	240	36	15%	240	36	15%
Grade 6	168	21	13%	168	21	13%
Grade 7	270	16	6%	270	17	6%
Grade 8	335	37	11%	335	37	11%
Grade 11	102	6	6%	102	6	6%
Biology	361	49	14%	361	50	14%
Chemistry	324	21	6%	324	21	6%
Total	2625	337	13%	2354	280	12%
	Correlation = 0.97	2	Correlation = 0.967			
	Add. Const. $= 0.0^{\circ}$	17	Add. Const. = 0.023			

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.510 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.477 to 0.510, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.477 have absolute value of robust Z greater than 1.645.

WRITING/ENGLISH COMPOSITION

Figure 18–13 shows the displacements from a concurrent anchored calibration of all writing items using the operational data set. Items are color-coded by grade/course.

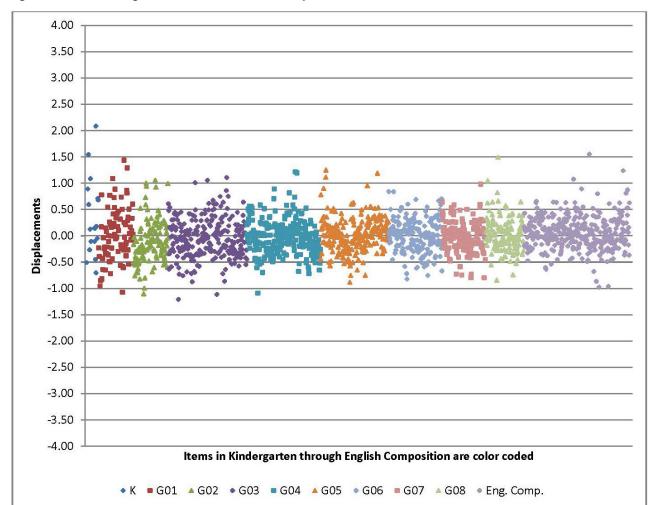


Figure 18–13. Writing Anchored Calibration Displacements — All Items

Note: Many kindergarten items were not estimated by WINSTEPS software due to insufficient counts.

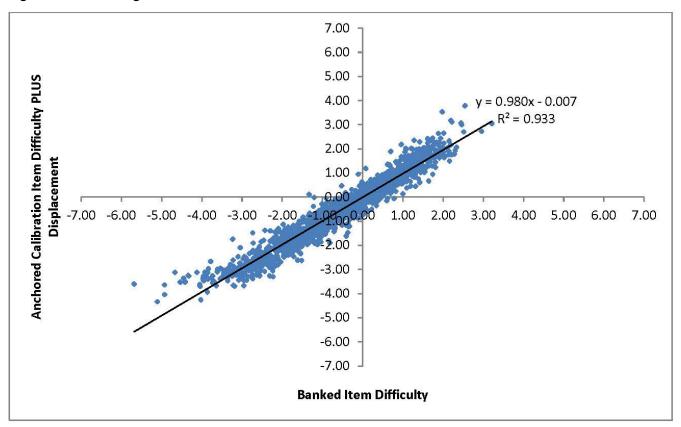
Table 18–10 summarizes the data in Figure 18–13. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–10).

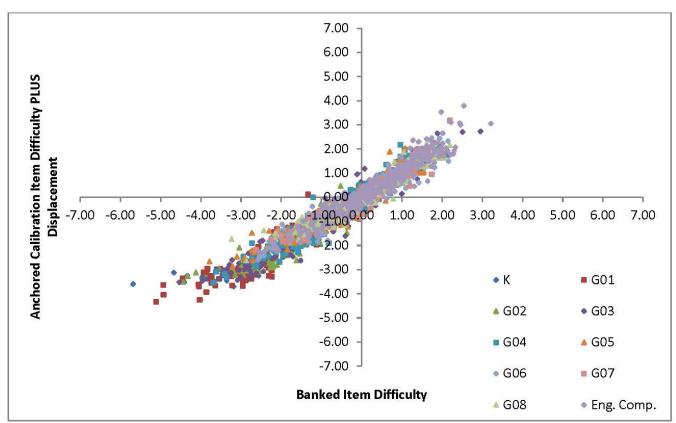
Table 18-10. Number of Writing Items by Grade/Course and Displacement Interval

Interval	K	G01	G02	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	0	1	1	2	1	0	0	0	0	0	5
-1.0 < Disp. ≤ -0.9	0	1	1	0	0	0	0	0	0	2	4
-0.9 < Disp. ≤ -0.8	0	2	2	2	0	1	1	0	1	1	10
-0.8 < Disp. ≤ -0.7	1	1	1	4	1	2	2	5	1	0	18
-0.7 < Disp. ≤ -0.6	0	3	5	6	5	1	3	0	0	3	26
$-0.6 < \text{Disp.} \le -0.5$	1	3	7	9	8	7	6	1	2	1	45
$-0.5 < \text{Disp.} \le -0.4$	1	4	9	13	18	9	6	6	4	11	81
-0.4 < Disp. ≤ -0.3	0	5	10	26	20	13	14	12	10	18	128
-0.3 < Disp. ≤ -0.2	1	9	19	32	22	18	14	15	12	28	170
-0.2 < Disp. ≤ -0.1	2	5	12	27	32	27	19	20	14	41	199
-0.1 < Disp. ≤ 0.0	1	8	10	29	26	23	19	21	17	48	202
$0.0 < \text{Disp.} \leq 0.1$	0	6	7	27	29	33	32	23	20	45	222
$0.1 < \text{Disp.} \leq 0.2$	4	7	7	24	24	30	19	12	11	50	188
$0.2 < \text{Disp.} \leq 0.3$	0	6	8	14	22	17	15	14	13	32	141
$0.3 < \text{Disp.} \leq 0.4$	0	4	3	15	9	19	14	4	9	31	108
$0.4 < \text{Disp.} \leq 0.5$	0	3	3	15	10	5	6	7	4	19	72
$0.5 < \text{Disp.} \le 0.6$	1	4	2	4	10	7	4	5	2	9	48
$0.6 < \text{Disp.} \leq 0.7$	1	1	0	8	0	2	3	1	4	9	29
0.7 < Disp. ≤ 0.8	1	4	1	2	2	1	1	0	0	0	12
$0.8 < \text{Disp.} \le 0.9$	1	3	0	1	2	1	2	0	1	4	15
0.9 < Disp. ≤ 1.0	0	0	4	0	0	1	0	1	0	0	6
1.0 < Disp.	3	3	1	3	2	3	0	0	2	3	20
TOTAL	18	83	113	263	243	220	180	147	127	355	1749

Figure 18–14 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the writing item bank. A line of best fit is included in the upper plot. If item difficulties from the operational calibration are close to the banked values, the line will approach an intercept of zero and a slope of one. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18-14. Writing Banked Item Parameters vs. Anchored Calibration - All Items





Based on Figure 18–14, one can see that there are a number of items with operational estimates that differ from their banked values. Some of these are in kindergarten through grade 2. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in kindergarten through grade 2 to provide better diagnostic information for lower performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–15 and Table 18–11 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty-eight percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–11). Figure 18–16 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18-15. Writing Anchored Calibration Displacements - All Items in Grade 3 and Above

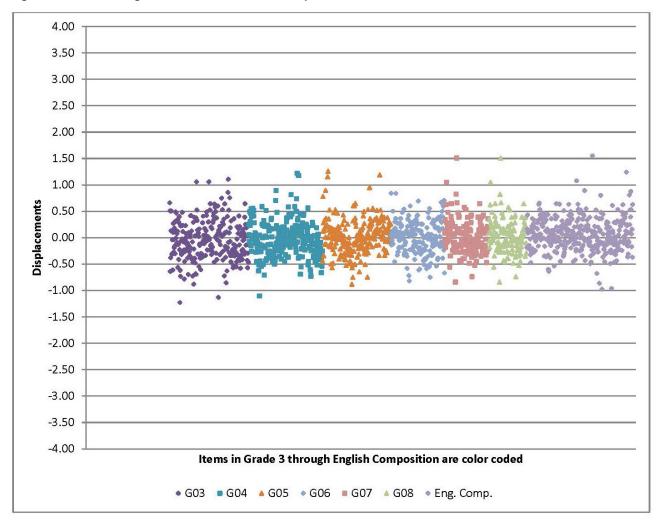
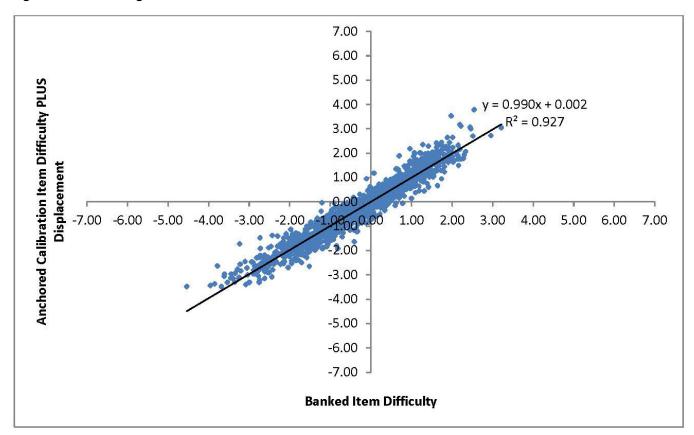
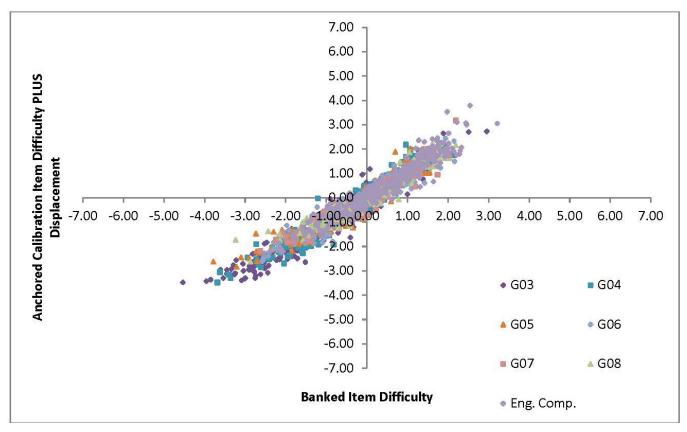


Table 18–11. Number of Writing Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	2	1	0	0	0	0	0	3
-1.0 < Disp. ≤ -0.9	0	0	0	0	0	0	2	2
-0.9 < Disp. ≤ -0.8	2	0	1	1	0	1	1	6
-0.8 < Disp. ≤ -0.7	4	2	2	2	5	1	0	16
-0.7 < Disp. ≤ -0.6	8	5	1	2	0	0	3	19
-0.6 < Disp. ≤ -0.5	7	8	7	7	1	2	1	33
-0.5 < Disp. ≤ -0.4	15	16	9	6	6	4	11	67
-0.4 < Disp. ≤ -0.3	30	22	13	14	12	10	18	119
-0.3 < Disp. ≤ -0.2	29	24	18	14	15	12	28	140
-0.2 < Disp. ≤ -0.1	26	29	26	19	20	14	41	175
-0.1 < Disp. ≤ 0.0	28	28	24	19	21	17	48	185
0.0 < Disp. ≤ 0.1	30	29	32	31	23	20	45	210
0.1 < Disp. ≤ 0.2	20	22	31	20	12	11	50	166
$0.2 < \text{Disp.} \le 0.3$	17	22	17	15	14	13	32	130
0.3 < Disp. ≤ 0.4	12	9	18	14	4	9	31	97
$0.4 < \text{Disp.} \leq 0.5$	13	12	6	6	7	4	19	67
$0.5 < \text{Disp.} \le 0.6$	8	8	7	4	5	2	9	43
$0.6 < \text{Disp.} \leq 0.7$	6	0	2	3	1	4	9	25
$0.7 < \text{Disp.} \leq 0.8$	2	2	1	1	0	0	0	6
$0.8 < \text{Disp.} \le 0.9$	1	2	1	2	0	1	4	11
0.9 < Disp. ≤ 1.0	0	0	1	0	1	0	0	2
1.0 < Disp.	3	2	3	0	0	2	3	13
TOTAL	263	243	220	180	147	127	355	1535

Figure 18-16. Writing Banked Item Parameters vs. Anchored Calibration - All Items in Grade 3 and Above





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For both of the anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–12 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the calibrations.

Table 18–12. Summary of Robust Z across Anchored Calibrations in Writing

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645
Kindergarten	18	8	44%	0	0	N/A
Grade 1	83	23	28%	0	0	N/A
Grade 2	113	20	18%	0	0	N/A
Grade 3	263	35	13%	263	41	16%
Grade 4	243	19	8%	243	23	9%
Grade 5	220	18	8%	220	20	9%
Grade 6	180	18	10%	180	20	11%
Grade 7	147	12	8%	147	12	8%
Grade 8	127	11	9%	127	13	10%
English Comp	355	24	7%	355	30	8%
Total	1749	188	11%	1535	159	10%
	Correlation = 0.96	6	Correlation = 0.963			
	Add. Const. $= 0.00$	04	Add. Const. = 0.005			

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.542 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.535 to 0.542, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.535 have absolute value of robust Z greater than 1.645.

ANCHORED GRADE LEVEL CALIBRATIONS

While the CDT content area item banks are vertically scaled with items from Kindergarten through high school courses, the assessments themselves are first made available in grade 3. Also, while the items are selected adaptively, most students take a large number of items at grade level. Given these conditions, item parameters were also evaluated by running anchored grade level item calibrations—grade 3 items calibrated with grade 3 students, and so on. This is similar to how field-test items were calibrated. Table 18–13 shows the number of students in each grade level calibration.

Table 18-13. Number of Students in Grade Level Calibrations

Content Area	Grade/Course	Number of Students
Mathematics	Grade 3	58,253
Mathematics	Grade 4	63,771
Mathematics	Grade 5	66,923
Mathematics	Grade 6	71,208
Mathematics	Grade 7	70,509
Mathematics	Grade 8	51,713
Mathematics	Algebra I	121,080
Mathematics	Geometry	11,389
Mathematics	Algebra II	11,640
Reading	Grade 3	51,398
Reading	Grade 4	54,918
Reading	Grade 5	57,705
Reading	Grade 6	66,926
Reading	Grade 7	67,146
Reading	Grade 8	62,572
Reading	Reading/Literature	158,014
Science	Grade 3	3,305
Science	Grade 4	15,435
Science	Grade 5	3,450
Science	Grade 6	15,039
Science	Grade 7	27,567
Science	Grade 8	45,942
Science	High School	1,380
Science	Biology	132,682
Science	Chemistry	10,497
Writing	Grade 3	6,677
Writing	Grade 4	7,225
Writing	Grade 5	7,897
Writing	Grade 6	13,594
Writing	Grade 7	14,079
Writing	Grade 8	14,182
Writing	Writing/English Composition	9,900

MATHEMATICS

Figure 18–17 shows the displacements from the anchored grade level calibrations of operational data for the mathematics item bank. Items are color-coded by grade/course.

Figure 18–17. Mathematics Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

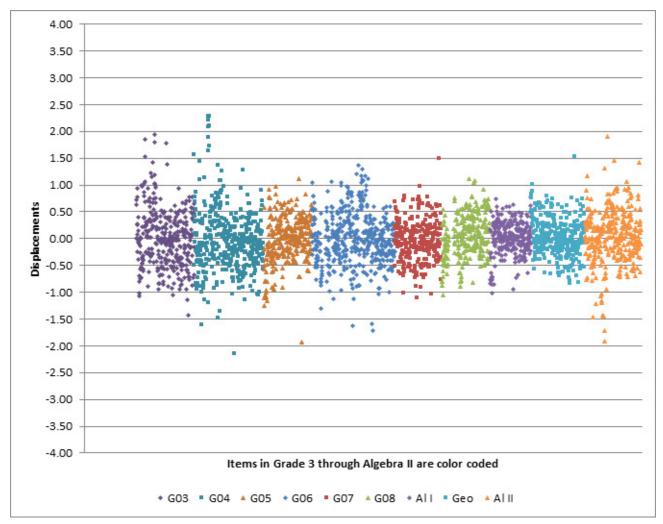


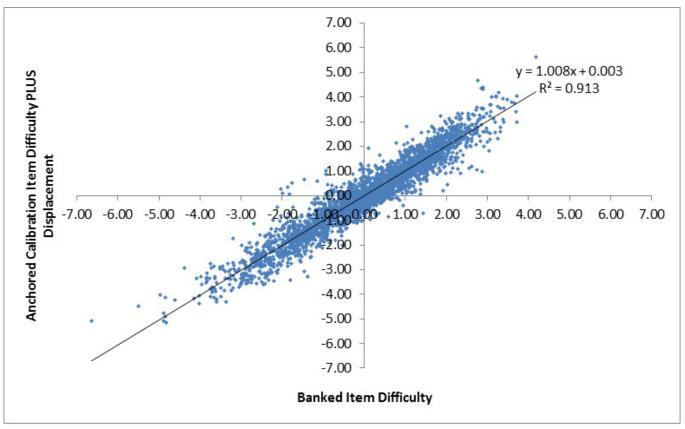
Table 18–14 summarizes the data in Figure 18–17. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-five percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–14).

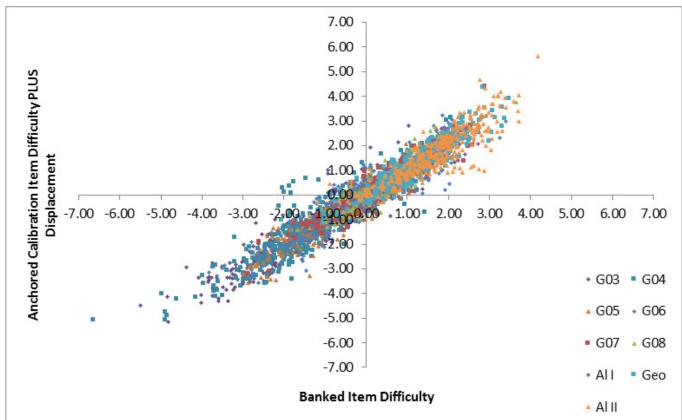
Table 18–14. Number of Mathematics Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	ALI	GE0	ALII	Total
Disp. ≤ -1.0	5	11	7	7	3	1	1	0	10	45
-1.0 < Disp. ≤ -0.9	4	8	6	6	1	0	1	0	1	27
-0.9 < Disp. ≤ -0.8	9	13	3	7	1	3	3	2	0	41
-0.8 < Disp. ≤ -0.7	14	9	4	8	3	6	7	3	9	63
-0.7 < Disp. ≤ -0.6	9	17	3	18	10	4	3	8	7	79
-0.6 < Disp. ≤ -0.5	19	20	7	23	17	3	1	15	14	119
-0.5 < Disp. ≤ -0.4	20	23	13	21	15	13	7	5	8	125
-0.4 < Disp. ≤ -0.3	24	33	14	23	12	19	12	18	22	177
-0.3 < Disp. ≤ -0.2	22	33	32	48	23	22	19	30	24	253
-0.2 < Disp. ≤ -0.1	19	33	21	36	30	22	31	34	29	255
-0.1 < Disp. ≤ 0.0	28	35	28	45	35	23	33	50	29	306
0.0 < Disp. ≤ 0.1	33	36	31	46	24	25	39	29	32	295
0.1 < Disp. ≤ 0.2	24	17	27	38	30	22	28	25	35	246
$0.2 < \text{Disp.} \leq 0.3$	20	28	21	23	25	20	29	41	34	241
$0.3 < \text{Disp.} \leq 0.4$	22	24	20	26	9	15	14	14	21	165
$0.4 < \text{Disp.} \leq 0.5$	19	15	15	11	10	11	15	21	18	135
$0.5 < \text{Disp.} \le 0.6$	10	9	12	25	8	17	5	8	17	111
$0.6 < \text{Disp.} \leq 0.7$	10	11	8	10	8	12	3	12	7	81
$0.7 < \text{Disp.} \le 0.8$	12	8	4	10	9	6	2	7	7	65
$0.8 < \text{Disp.} \le 0.9$	2	7	2	13	0	1	1	2	6	34
0.9 < Disp. ≤ 1.0	7	4	2	4	1	1	0	0	7	26
1.0 < Disp.	14	17	1	12	1	3	0	2	6	56
TOTAL	346	411	281	460	275	249	254	326	343	2945

Figure 18–18 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–18. Mathematics Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





For the anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–15 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18-15. Summary of Robust Z across Anchored Grade Level Calibrations in Mathematics

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645			
Kindergarten	0	0	N/A			
Grade 1	0	0	N/A			
Grade 2	0	0	N/A			
Grade 3	346	77	22%			
Grade 4	411	82	20%			
Grade 5	281	32	11%			
Grade 6	460	73	16%			
Grade 7	275	26	9%			
Grade 8	249	22	9%			
Algebra I	254	15	6%			
Geometry	326	20	6%			
Algebra II	343	51	15%			
Total	2945	398	14%			
	Correlation = 0.955					
	Add. Const. = 0.0	003				

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, all items with absolute displacement greater than 0.672 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.666 to 0.672, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.666 have absolute value of robust Z greater than 1.645.

READING/LITERATURE

Figure 18–19 shows the displacements from the anchored grade level calibrations of operational data for the reading item bank. Items are color-coded by grade/course.

Figure 18–19. Reading Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

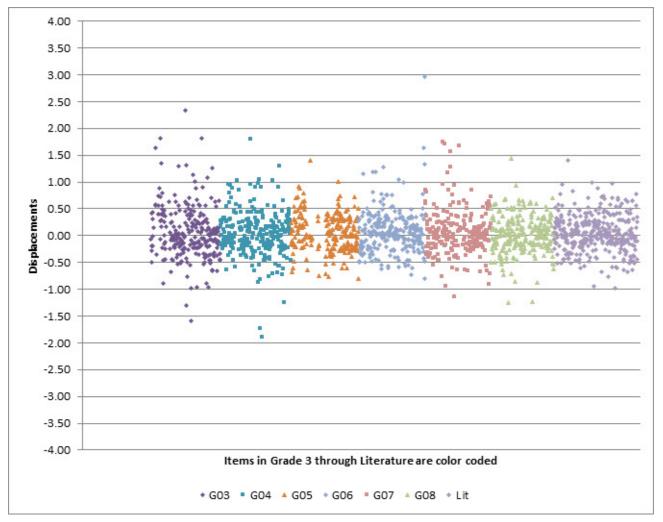


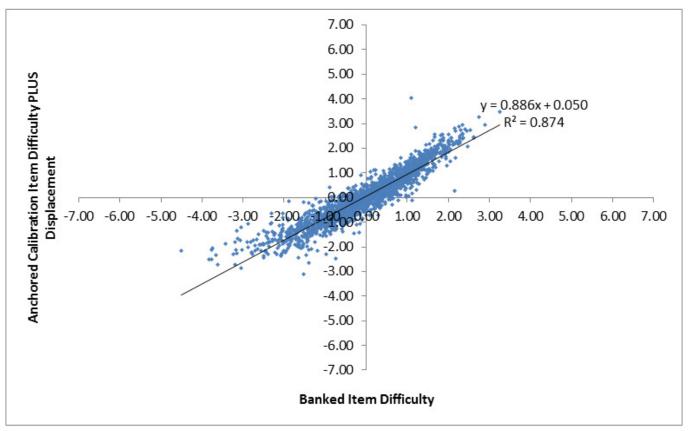
Table 18–16 summarizes the data in Figure 18–19. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-three percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–16).

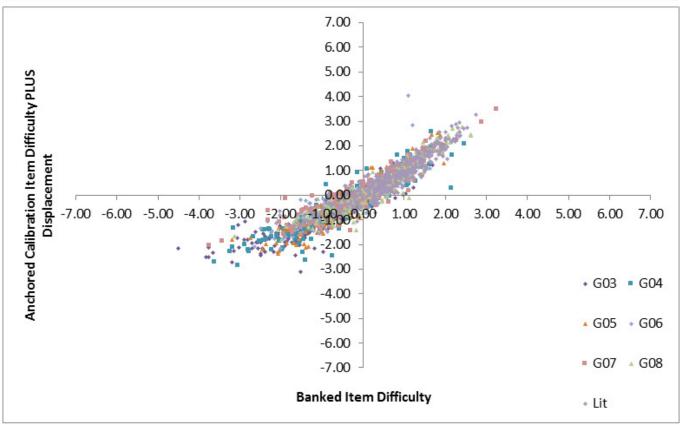
Table 18–16. Number of Reading Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	2	3	0	0	1	2	0	8
-1.0 < Disp. ≤ -0.9	3	0	0	0	2	0	2	7
-0.9 < Disp. ≤ -0.8	2	2	1	0	0	2	0	7
-0.8 < Disp. ≤ -0.7	1	3	3	2	2	2	1	14
-0.7 < Disp. ≤ -0.6	4	4	4	3	5	2	5	27
-0.6 < Disp. ≤ -0.5	5	6	4	7	3	3	9	37
-0.5 < Disp. ≤ -0.4	14	11	2	13	8	10	19	77
-0.4 < Disp. ≤ -0.3	17	13	10	13	12	10	14	89
-0.3 < Disp. ≤ -0.2	18	24	27	20	17	18	18	142
-0.2 < Disp. ≤ -0.1	30	34	20	21	28	34	46	213
-0.1 < Disp. ≤ 0.0	31	25	27	28	27	24	43	205
$0.0 < \text{Disp.} \leq 0.1$	22	27	19	34	34	29	48	213
$0.1 < \text{Disp.} \leq 0.2$	21	32	21	31	24	32	28	189
$0.2 < \text{Disp.} \leq 0.3$	14	25	19	19	16	19	41	153
$0.3 < \text{Disp.} \leq 0.4$	13	14	21	28	13	16	13	118
$0.4 < \text{Disp.} \leq 0.5$	14	14	13	9	6	9	21	86
$0.5 < \text{Disp.} \le 0.6$	12	7	8	6	10	11	12	66
$0.6 < \text{Disp.} \leq 0.7$	7	4	3	3	7	7	7	38
$0.7 < \text{Disp.} \le 0.8$	6	2	5	5	2	1	7	28
$0.8 < \text{Disp.} \le 0.9$	2	4	1	1	4	0	2	14
0.9 < Disp. ≤ 1.0	1	5	1	1	2	1	3	14
1.0 < Disp.	11	5	2	8	6	1	1	34
TOTAL	250	264	211	252	229	233	340	1779

Figure 18–20 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–20. Reading Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–21 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–21. Reading Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with N>100

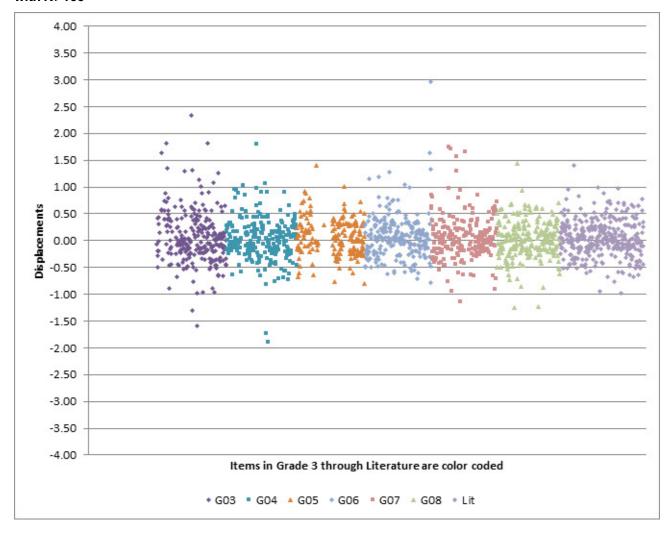


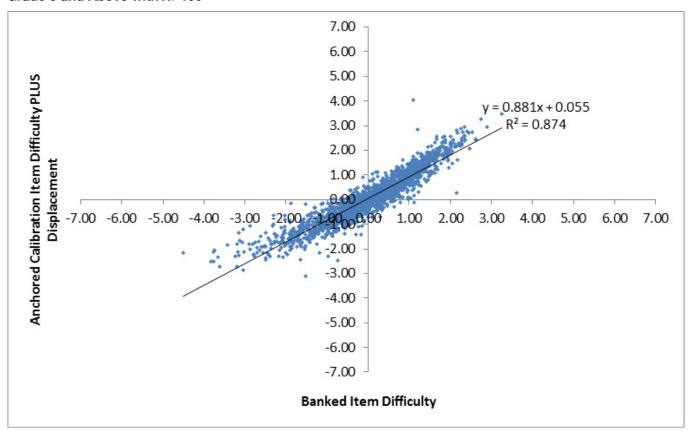
Table 18–17 summarizes the data in Figure 18–21. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-four percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–17).

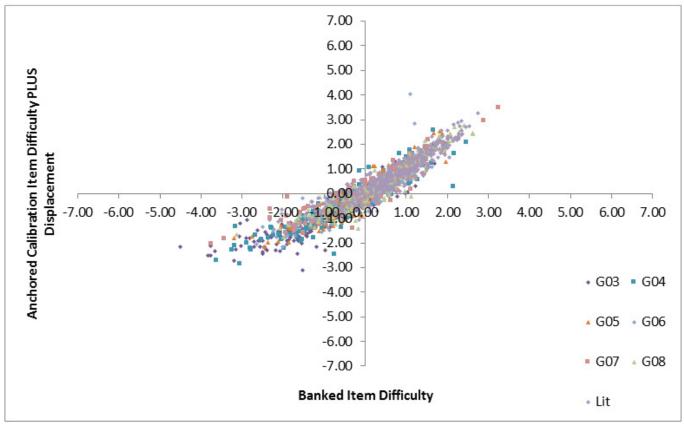
Table 18–17. Number of Reading Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	2	2	0	0	1	2	0	7
-1.0 < Disp. ≤ -0.9	3	0	0	0	2	0	2	7
-0.9 < Disp. ≤ -0.8	2	1	1	0	0	2	0	6
-0.8 < Disp. ≤ -0.7	1	3	1	2	2	2	1	12
-0.7 < Disp. ≤ -0.6	4	4	3	3	4	2	5	25
-0.6 < Disp. ≤ -0.5	5	6	3	6	2	3	9	34
-0.5 < Disp. ≤ -0.4	14	10	2	13	7	10	19	75
-0.4 < Disp. ≤ -0.3	17	11	9	13	11	9	14	84
-0.3 < Disp. ≤ -0.2	18	22	20	18	17	18	18	131
-0.2 < Disp. ≤ -0.1	30	31	20	21	26	33	46	207
-0.1 < Disp. ≤ 0.0	31	24	24	27	26	24	43	199
0.0 < Disp. ≤ 0.1	22	25	18	33	32	29	48	207
0.1 < Disp. ≤ 0.2	21	26	19	29	24	32	28	179
$0.2 < \text{Disp.} \leq 0.3$	14	21	17	18	15	18	41	144
$0.3 < \text{Disp.} \leq 0.4$	13	12	16	25	13	16	13	108
$0.4 < \text{Disp.} \leq 0.5$	13	14	12	9	6	8	21	83
$0.5 < \text{Disp.} \le 0.6$	12	6	6	5	9	11	12	61
$0.6 < \text{Disp.} \leq 0.7$	7	3	2	3	6	7	7	35
$0.7 < \text{Disp.} \leq 0.8$	6	1	4	4	2	1	7	25
$0.8 < \text{Disp.} \le 0.9$	2	3	1	1	3	0	2	12
0.9 < Disp. ≤ 1.0	1	5	1	1	2	1	3	14
1.0 < Disp.	11	3	2	7	5	1	1	30
TOTAL	249	233	181	238	215	229	340	1685

Figure 18–22 mirrors Figure 18–20, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–22. Reading Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with *N*>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–18 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18-18. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Reading

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645		
Kindergarten	0	0	N/A	0	0	N/A		
Grade 1	0	0	N/A	0	0	N/A		
Grade 2	0	0	N/A	0	0	N/A		
Grade 3	250	46	18%	249	53	21%		
Grade 4	264	39	15%	233	33	14%		
Grade 5	211	24	11%	181	20	11%		
Grade 6	252	30	12%	238	27	11%		
Grade 7	229	37	16%	215	34	16%		
Grade 8	233	25	11%	229	26	11%		
Literature	340	37	11%	340	43	13%		
Total	1779	238	13%	1685	236	14%		
	Correlation = 0.935	5		Correlation = 0.935	5			
	Add. Const. = 0.05	5		Add. Const. = 0.053				

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.573 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.519 to 0.573, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.519 have absolute value of robust Z greater than 1.645.

SCIENCE

Figure 18–23 shows the displacements from the anchored grade level calibrations of operational data for the science item bank. Items are color-coded by grade/course.

Figure 18–23. Science Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

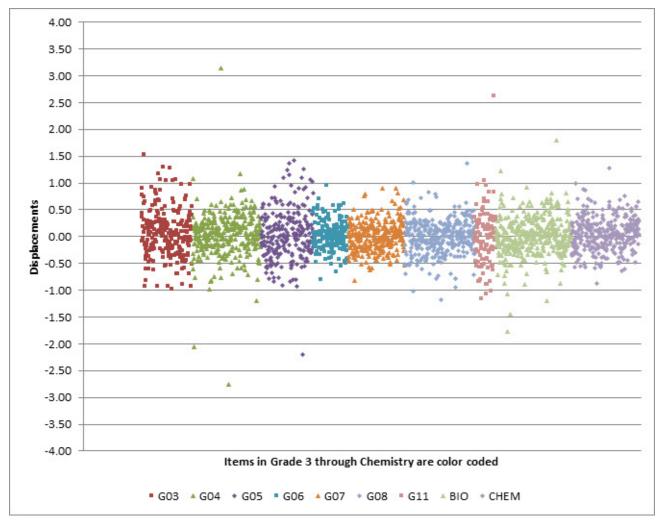


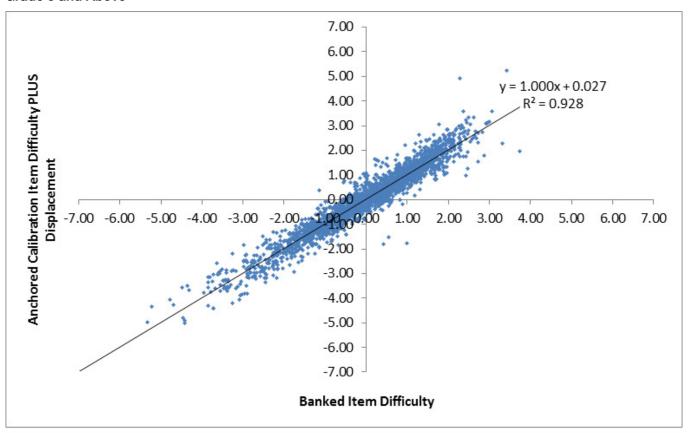
Table 18–19 summarizes the data in Figure 18–23. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–19).

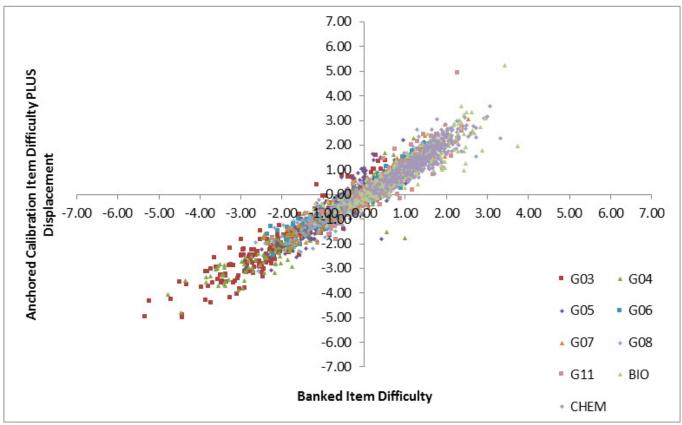
Table 18–19. Number of Science Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	0	3	1	0	0	2	3	4	0	13
-1.0 < Disp. ≤ -0.9	5	1	2	0	0	1	0	0	0	9
-0.9 < Disp. ≤ -0.8	2	3	3	1	1	0	5	3	1	19
-0.8 < Disp. ≤ -0.7	0	4	4	0	0	7	1	3	0	19
-0.7 < Disp. ≤ -0.6	5	2	2	1	1	2	2	3	1	19
-0.6 < Disp. ≤ -0.5	7	5	13	2	5	6	8	6	10	62
-0.5 < Disp. ≤ -0.4	12	13	12	9	7	13	6	10	12	94
-0.4 < Disp. ≤ -0.3	16	14	16	5	22	27	1	25	17	143
-0.3 < Disp. ≤ -0.2	18	19	18	16	26	22	12	29	26	186
-0.2 < Disp. ≤ -0.1	19	37	24	20	33	44	6	47	33	263
-0.1 < Disp. ≤ 0.0	24	39	22	24	39	42	8	42	36	276
$0.0 < \text{Disp.} \leq 0.1$	24	33	22	32	40	49	9	54	51	314
$0.1 < \text{Disp.} \leq 0.2$	24	48	21	17	38	37	10	38	42	275
$0.2 < \text{Disp.} \leq 0.3$	27	32	18	13	23	37	7	28	36	221
$0.3 < \text{Disp.} \leq 0.4$	8	23	17	10	14	13	9	25	23	142
$0.4 < \text{Disp.} \leq 0.5$	13	16	11	6	9	20	3	12	12	102
$0.5 < \text{Disp.} \le 0.6$	6	12	8	9	4	3	2	12	12	68
$0.6 < \text{Disp.} \leq 0.7$	9	4	7	1	3	4	3	11	5	47
$0.7 < \text{Disp.} \leq 0.8$	4	2	3	1	2	3	1	4	3	23
$0.8 < \text{Disp.} \le 0.9$	4	2	3	0	3	1	2	2	2	19
0.9 < Disp. ≤ 1.0	4	0	4	1	0	0	2	1	1	13
1.0 < Disp.	8	3	9	0	0	2	2	2	1	27
TOTAL	239	315	240	168	270	335	102	361	324	2354

Figure 18–24 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–24. Science Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–25 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–25. Science Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with N>100

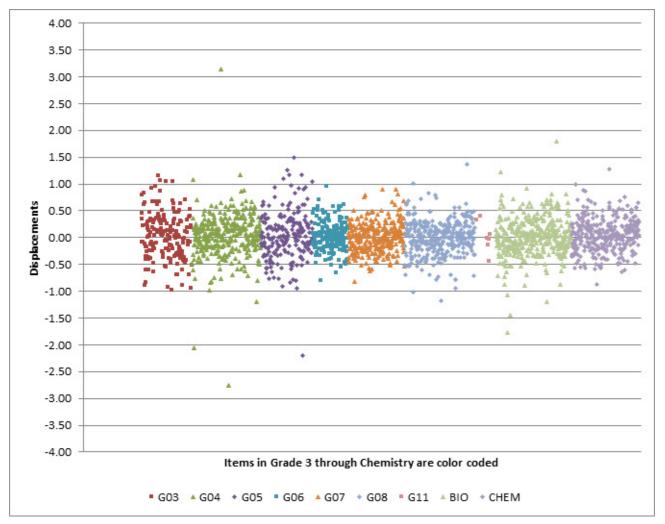


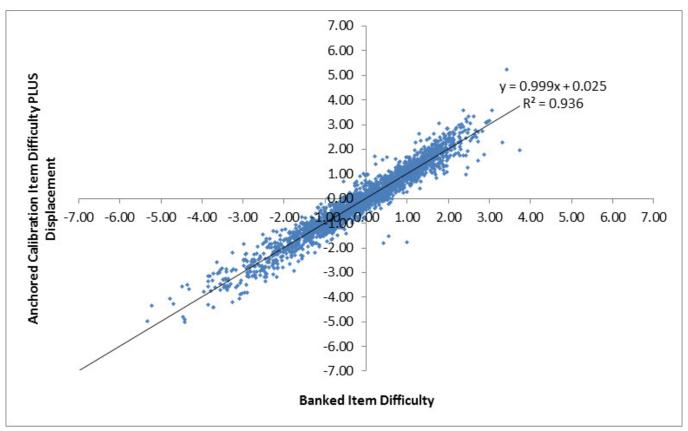
Table 18–20 summarizes the data in Figure 18–25. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-seven percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–20).

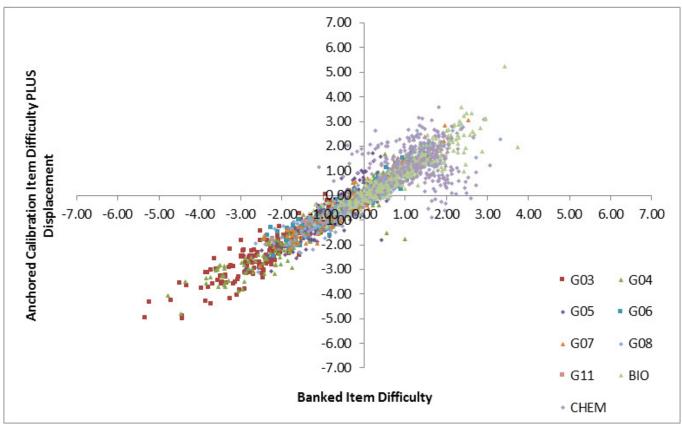
Table 18–20. Number of Science Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	0	3	1	0	0	2	0	4	0	10
-1.0 < Disp. ≤ -0.9	3	1	2	0	0	1	0	0	0	7
-0.9 < Disp. ≤ -0.8	3	3	2	1	1	0	0	3	1	14
-0.8 < Disp. ≤ -0.7	0	4	4	0	0	7	0	3	0	18
-0.7 < Disp. ≤ -0.6	7	2	2	1	1	2	0	3	1	19
-0.6 < Disp. ≤ -0.5	3	5	9	2	5	6	0	6	10	46
-0.5 < Disp. ≤ -0.4	10	13	10	9	7	13	1	10	12	85
-0.4 < Disp. ≤ -0.3	15	13	13	5	22	27	0	25	17	137
-0.3 < Disp. ≤ -0.2	15	19	16	16	26	22	0	29	26	169
-0.2 < Disp. ≤ -0.1	13	37	20	20	33	44	1	47	33	248
-0.1 < Disp. ≤ 0.0	14	39	21	24	39	42	2	42	36	259
0.0 < Disp. ≤ 0.1	15	33	23	32	40	49	1	54	51	298
0.1 < Disp. ≤ 0.2	20	48	20	17	38	37	0	38	42	260
$0.2 < \text{Disp.} \le 0.3$	14	32	18	13	23	37	0	28	36	201
$0.3 < \text{Disp.} \leq 0.4$	16	23	12	10	14	13	1	25	23	137
$0.4 < \text{Disp.} \leq 0.5$	9	16	8	6	9	20	1	12	12	93
$0.5 < \text{Disp.} \le 0.6$	4	12	4	9	4	3	0	12	12	60
$0.6 < \text{Disp.} \leq 0.7$	10	4	8	1	3	4	0	11	5	46
$0.7 < \text{Disp.} \le 0.8$	2	2	2	1	2	3	0	4	3	19
$0.8 < \text{Disp.} \le 0.9$	2	2	1	0	3	1	0	2	2	13
0.9 < Disp. ≤ 1.0	2	0	5	1	0	0	0	1	1	10
1.0 < Disp.	4	3	6	0	0	2	0	2	1	18
TOTAL	181	314	207	168	270	335	7	361	324	2167

Figure 18–26 mirrors Figure 18–24, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–26. Science Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with N>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–21 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18-21. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Science

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645
K–2 span	0	0	N/A	0	0	N/A
Grade 3	239	53	22%	181	42	23%
Grade 4	315	39	12%	314	45	14%
Grade 5	240	62	26%	207	50	24%
Grade 6	168	13	8%	168	15	9%
Grade 7	270	18	7%	270	19	7%
Grade 8	335	32	10%	335	33	10%
Grade 11	102	31	30%	7	0	0%
Biology	361	56	16%	361	56	16%
Chemistry	324	37	11%	324	41	13%
Total	2354	341	14%	2167	301	14%
	Correlation = 0.963	}		Correlation= 0.967		
	Add. Const. = 0.02	7		Add. Const. = 0.02	5	

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.531 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.477 to 0.531, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.477 have absolute value of robust Z greater than 1.645.

WRITING/ENGLISH COMPOSITION

Figure 18–27 shows the displacements from the anchored grade level calibrations of operational data for the writing item bank. Items are color-coded by grade/course.

Figure 18–27. Writing Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

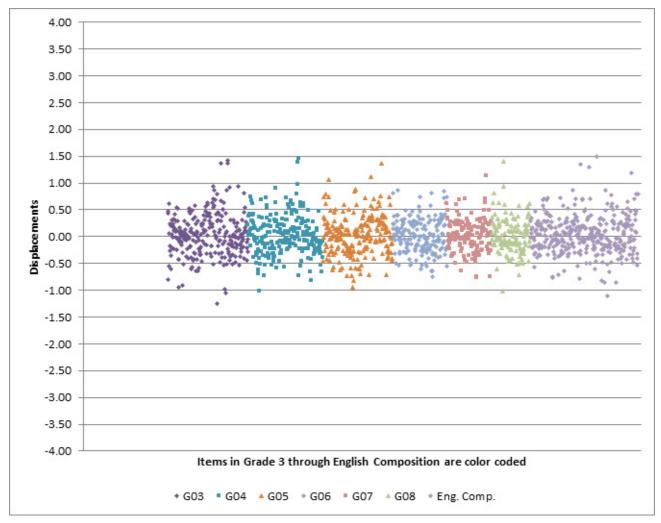


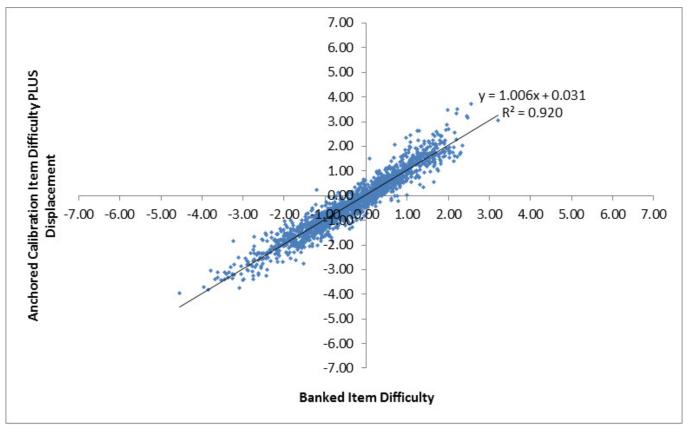
Table 18–22 summarizes the data in Figure 18–27. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–22).

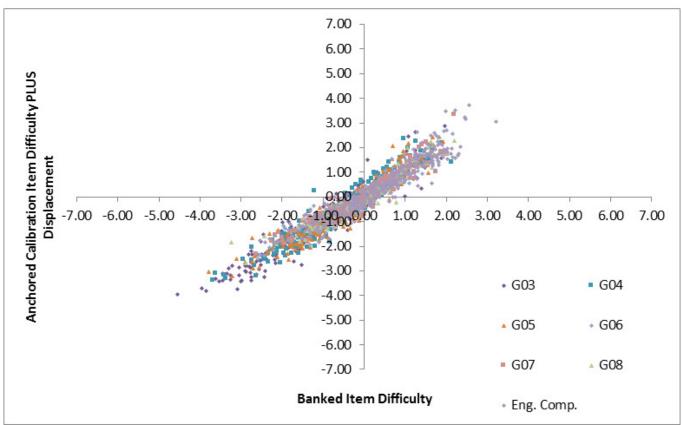
Table 18-22. Number of Writing Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	2	1	0	0	0	1	1	5
-1.0 < Disp. ≤ -0.9	3	0	1	0	0	0	0	4
-0.9 < Disp. ≤ -0.8	0	1	1	0	0	0	3	5
-0.8 < Disp. ≤ -0.7	1	2	5	1	3	1	4	17
-0.7 < Disp. ≤ -0.6	3	4	4	3	1	1	3	19
-0.6 < Disp. ≤ -0.5	10	8	6	6	0	1	5	36
-0.5 < Disp. ≤ -0.4	10	7	10	6	6	7	11	57
-0.4 < Disp. ≤ -0.3	21	20	11	12	13	6	23	106
-0.3 < Disp. ≤ -0.2	17	23	23	19	9	14	33	138
-0.2 < Disp. ≤ -0.1	21	25	17	18	17	20	45	163
-0.1 < Disp. ≤ 0.0	34	33	22	22	18	14	47	190
0.0 < Disp. ≤ 0.1	34	26	30	20	23	14	36	183
0.1 < Disp. ≤ 0.2	23	26	24	16	17	14	40	160
0.2 < Disp. ≤ 0.3	25	20	18	22	19	11	39	154
$0.3 < \text{Disp.} \le 0.4$	12	12	18	17	9	9	19	96
$0.4 < \text{Disp.} \le 0.5$	17	12	7	8	5	5	14	68
$0.5 < \text{Disp.} \le 0.6$	11	6	7	2	0	3	9	38
$0.6 < \text{Disp.} \le 0.7$	6	9	4	1	4	3	7	34
$0.7 < \text{Disp.} \le 0.8$	2	4	7	3	2	0	10	28
0.8 < Disp. ≤ 0.9	3	0	2	4	0	1	2	12
0.9 < Disp. ≤ 1.0	3	2	0	0	0	1	0	6
1.0 < Disp.	3	2	3	0	1	1	4	14
TOTAL	261	243	220	180	147	127	355	1533

Figure 18–28 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–28. Writing Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–29 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–29. Writing Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with N>100

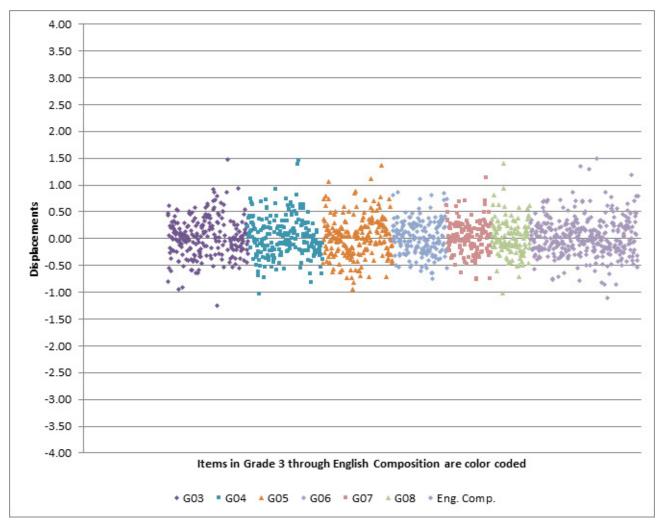


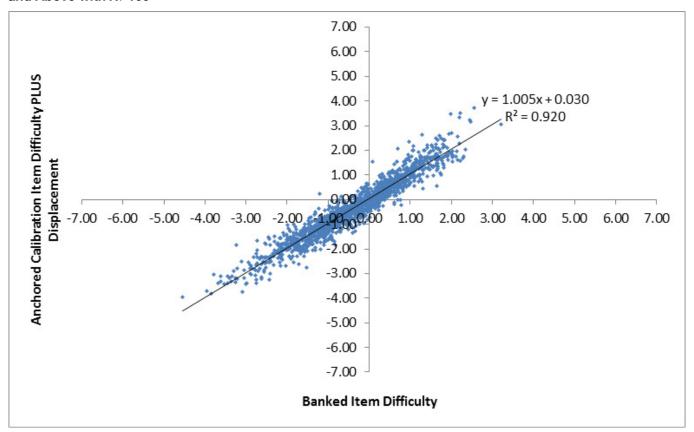
Table 18–23 summarizes the data in Figure 18–29. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–23).

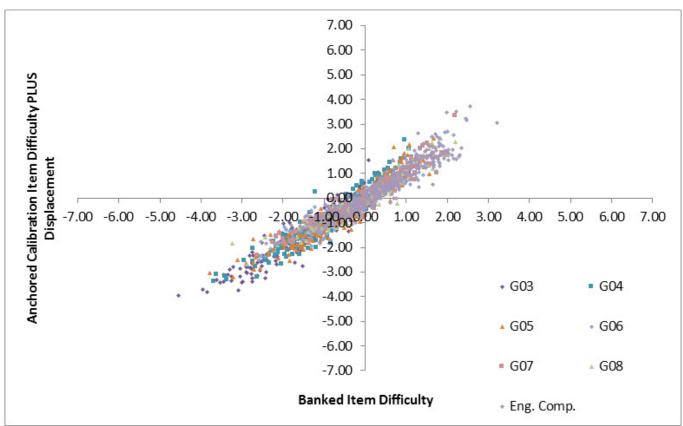
Table 18–23. Number of Writing Items by Grade/Course and Displacement Interval

Interval	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	1	1	0	0	0	1	1	4
-1.0 < Disp. ≤ -0.9	2	0	1	0	0	0	0	3
-0.9 < Disp. ≤ -0.8	0	1	1	0	0	0	3	5
-0.8 < Disp. ≤ -0.7	1	1	5	1	3	1	4	16
-0.7 < Disp. ≤ -0.6	3	4	4	3	1	1	3	19
-0.6 < Disp. ≤ -0.5	9	8	6	6	0	1	5	35
-0.5 < Disp. ≤ -0.4	9	7	10	6	6	7	11	56
-0.4 < Disp. ≤ -0.3	19	20	11	12	13	6	23	104
-0.3 < Disp. ≤ -0.2	16	24	23	19	9	14	33	138
-0.2 < Disp. ≤ -0.1	19	22	17	18	17	20	45	158
-0.1 < Disp. ≤ 0.0	30	31	22	22	18	14	47	184
0.0 < Disp. ≤ 0.1	33	26	30	20	23	14	36	182
0.1 < Disp. ≤ 0.2	21	24	24	16	17	14	40	156
0.2 < Disp. ≤ 0.3	25	17	18	22	19	11	39	151
0.3 < Disp. ≤ 0.4	12	13	16	17	9	9	19	95
$0.4 < \text{Disp.} \leq 0.5$	15	10	8	8	5	5	14	65
$0.5 < \text{Disp.} \le 0.6$	10	7	7	2	0	3	9	38
$0.6 < \text{Disp.} \leq 0.7$	5	9	4	1	4	3	7	33
$0.7 < \text{Disp.} \leq 0.8$	3	3	7	3	2	0	10	28
$0.8 < \text{Disp.} \le 0.9$	2	1	2	4	0	1	2	12
0.9 < Disp. ≤ 1.0	2	1	0	0	0	1	0	4
1.0 < Disp.	1	2	3	0	1	1	4	12
TOTAL	238	232	219	180	147	127	355	1498

Figure 18–30 mirrors Figure 18–28, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–30. Writing Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with N>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–24 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18-24. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Writing

Grade/ Course	Cal 1: Number of Items	Cal 1: Number of Items with ABS(Z) > 1.645	Cal 1: Percent of Items with ABS(Z) > 1.645	Cal 2: Number of Items	Cal 2: Number of Items with ABS(Z) > 1.645	Cal 2: Percent of Items with ABS(Z) > 1.645
Kindergarten	0	0	N/A	0	0	N/A
Grade 1	0	0	N/A	0	0	N/A
Grade 2	0	0	N/A	0	0	N/A
Grade 3	261	38	15%	238	32	13%
Grade 4	243	35	14%	232	34	15%
Grade 5	220	36	16%	219	36	16%
Grade 6	180	19	11%	180	19	11%
Grade 7	147	11	7%	147	11	7%
Grade 8	127	12	9%	127	12	9%
English Comp	355	41	12%	355	41	12%
Total	1533	192	13%	1498	185	12%
	Correlation = 0.959)		Correlation = 0.959)	
	Add. Const. = 0.029	9		Add. Const. = 0.028	8	

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.550 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.519 to 0.550, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.519 have absolute value of robust Z greater than 1.645.

For each of the content areas, it is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

CHAPTER NINETEEN: REVISION OF BENCHMARK CUTS

As described in Chapter Fourteen, CDT scores are placed along a continuum from "Areas of Need" to "Strengths to Build On." These are represented in the dynamic reporting suite with colors red, green, and blue. "Areas of Need" are depicted in the red range, while "Strengths to Build On" are depicted in the green and blue ranges. The center of the green range for grades 5 and above was established by panels of Pennsylvania educators during preliminary benchmarking activities (see Chapter Ten for details). The center of the green range for grades 2 through 4 was extrapolated from grades 5 and above prior to the launch of the CDT tests for students in grades 3 through 5 in spring of 2014.

The preliminary benchmarking activities took place prior to the first operational administration in each content area so that, once operational, immediate score reports would be available to students and teachers. Given that the preliminary benchmark cuts were set prior to the operational administration and based on field-test data, it was planned at that time to revisit the location of the cut scores after enough operational data had been collected. The preliminary benchmark cut points in the mathematics content area were analyzed and revised based on operational data following the 2010–2011 school year¹. The preliminary benchmark cut points in the reading, science, and writing content areas were analyzed and revised based on operational data following the 2011–2012 school year². The introduction of CDT tests for students in grades 3 through 5 in spring 2014 required benchmark cuts for grades 2 through 4. For each content area, the benchmark cuts in place for the 2013–2014 school year in grades 5 and above were used to extrapolate cuts in grades 2 through 4³.

Revisions to the CDT benchmark cuts were based on analyses of matched data sets – CDT with Pennsylvania System of School Assessments (PSSA) and Keystone Exams (Keystone). Benchmark cuts were not revised to exactly match PSSA and Keystone cuts or be predictive. However, CDT, PSSA, and Keystone are based on the same eligible content. As such, it is reasonable to expect that students who do well on CDT will do well on PSSA/ Keystone and vice versa. CDT benchmark cuts were revised to make CDT red/green/blue classifications more consistent with PSSA and Keystone results. Given that new PSSA cut points were approved in July 2015 in Mathematics and English Language Arts (ELA), CDT benchmark cuts in mathematics, reading, and writing were reviewed and revised prior to the start of the 2015-2016 school year. This chapter summarizes the analyses and revised cut points.

MATCHED DATA SETS - CDT, PSSA, AND KEYSTONE

CDT results from the 2014-2015 school year in the mathematics, reading, and writing content areas were matched to results from spring 2015 PSSA, winter 2014-2015 Keystone, and spring 2015 Keystone using the PA secure ID. Specifically,

- CDT Math Grades 3-5 were matched to PSSA Mathematics grades 3-5
- CDT Math Grades 6-8 were matched to PSSA Mathematics grades 6-8
- CDT Algebra I was matched to Keystone Algebra I
- CDT Reading Grades 3-5 were matched to PSSA ELA grades 3-5
- CDT Reading/Lit Grades 6-HS were matched to PSSA ELA grades 6-8 and Keystone Literature
- CDT Writing Grades 3-5 were matched to PSSA ELA grades 3-5
- CDT Writing/Eng Comp Grades 6-HS were matched to PSSA ELA grades 6-8

It is worth noting that 2015 is the first opportunity to evaluate CDT benchmark cuts in grades 3, 4, 6, and 7 with matched PSSA data. Previously, writing was tested only in grades 5 and 8.

¹ See Chapter Nineteen of the 2010–2011 technical report for details.

² See Chapter Nineteen of the 2011–2012 technical report for details.

³ See Chapter Nineteen of the 2013–2014 technical report for details.

Students take the CDT throughout the school year and there is one CDT record for each test event. For example, if a student took the CDT Math Grades 3-5, there are three CDT records. Each of these was matched to the student's PSSA results. Correlations between CDT and PSSA/Keystone are highest when the student data file is filtered to include students' most recent CDT score after January 1, 2015. Therefore, the analyses that follow were performed with the matched file filtered in this way.

COMPARING CDT TO PSSA AND KEYSTONE BASED ON CURRENT CDT BENCHMARKS

As previously mentioned, The CDT cut points in place during the 2014-2015 school year were not set to exactly match PSSA and Keystone cuts or be predictive. However, CDT, PSSA, and Keystone are based on the same eligible content. While the test blueprints differ (weighting of eligible content), the eligible content commonality makes it likely that students who do well on CDT will do well on PSSA/Keystone and vice versa. Tables 19-1a through 19-1c show this relationship in the form of the correlation between CDT and PSSA/Keystone total scale scores. Correlations between CDT total scale score and PSSA ELA sub-scores in Reading and Writing are also provided.

Table 19–1a. Correlation of 2014-2015 CDT and 2015 PSSA/Keystone - Mathematics

Student Grade	Number of Students	CDT	PSSA/Keystone Test	Correlation (Total Score)
3	18,718	Math Grades 3-5	PSSA Mathematics Grade 3	0.799
4	19,695	Math Grades 3-5	PSSA Mathematics Grade 4	0.812
5	20,667	Math Grades 3-5	PSSA Mathematics Grade 5	0.828
6	26,258	Math Grades 6-8	PSSA Mathematics Grade 6	0.844
7	23,340	Math Grades 6-8	PSSA Mathematics Grade 7	0.822
8	17,699	Math Grades 6-8	PSSA Mathematics Grade 8	0.773
All	46,023	Algebra I	Keystone Algebra I	0.750

Table 19-1b. Correlation of 2014-2015 CDT and 2015 PSSA/Keystone - Reading

Student Grade	Number of Students	CDT	PSSA/Keystone Test	Correlation (Total Score)	Correlation (Total CDT with PSSA reading)
3	19,509	Reading Grades 3-5	PSSA ELA Grade 3	0.798	0.780
4	20,486	Reading Grades 3-5	PSSA ELA Grade 4	0.817	0.800
5	21,237	Reading Grades 3-5	PSSA ELA Grade 5	0.826	0.804
6	23,661	Reading/Lit Grades 6-HS	PSSA ELA Grade 6	0.813	0.792
7	24,593	Reading/Lit Grades 6-HS	PSSA ELA Grade 7	0.801	0.777
8	23,873	Reading/Lit Grades 6-HS	PSSA ELA Grade 8	0.778	0.750
All	41,375	Reading/Lit Grades 6-HS	Keystone Literature	0.758	N/A

Table 19-1c. Correlation of 2014-2015 CDT and 2015 PSSA/Keystone - Writing

Student Grade	Number of Students	CDT	PSSA/Keystone Test	Correlation (Total Score)	Correlation (Total CDT with PSSA reading)
3	2,236	Writing Grades 3-5	PSSA ELA Grade 3	0.780	0.691
4	2,317	Writing Grades 3-5	PSSA ELA Grade 4	0.807	0.710
5	3,164	Writing Grades 3-5	PSSA ELA Grade 5	0.812	0.730
6	3,740	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 6	0.805	0.719
7	4,781	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 7	0.789	0.722
8	4,878	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 8	0.762	0.702

For each CDT in the reading and writing content areas, the correlation between CDT total score and PSSA ELA total score is higher than the correlation between CDT total score and PSSA reading or writing sub-score. Therefore, PSSA ELA total score was used in the analyses that follow.

Summary tables based on the matched data set allow for comparisons of CDT classification vs. PSSA or Keystone classification. CDT classification is based on the benchmark cuts used during the 2014-2015 school year. PSSA classification is based on the PSSA Mathematics and ELA cut points approved by the State Board in July 2015. Keystone classification is based on the "best score to date" and the existing Keystone cut points.

Summary tables contain the following information

- N-counts: The number of students broken down by CDT category (red, green, or blue) and PSSA/ Keystone performance level (Below Basic, Basic, Proficient, or Advanced)
- CDT marginals: For each CDT category, the percentage of students who scored in each PSSA/Keystone performance level (Below Basic, Basic, Proficient, or Advanced)
- PSSA/Keystone marginals: For each PSSA/Keystone performance level, the percentage of students who scored in each CDT range (red, green, or blue)
- Avg Scale Score: Average CDT scale score for students broken down by CDT category and PSSA/ Keystone performance level

MATHEMATICS

Table 19-2. CDT Math Grades 3-5 and PSSA Mathematics - Grade 3

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,371*	536	75	6	2,988
CDT Green	2,026	3,169	2,177	244	7,616
CDT Blue	128	906	3,454	3,626	8,114
Total	4,525	4,611	5,706	3,876	18,718*

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red**	79.4%	17.9%	2.5%	0.2%	100.0%
CDT Green	26.6%	41.6%	28.6%	3.2%	100.0%
CDT Blue	1.6%	11.2%	42.6%	44.7%	100.0%
Total	24.2%	24.6%	30.5%	20.7%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv***	Total
CDT Red	52.4%	11.6%	1.3%	0.2%	16.0%
CDT Green	44.8%	68.7%	38.2%	6.3%	40.7%
CDT Blue	2.8%	19.6%	60.5%	93.6%	43.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	573	618	615	604
CDT Green	732	760	785	801
CDT Blue	904	877	901	963

^{*} There are 18,718 grade3 students in the data set who have taken CDT Math Grades 3-5 and PSSA grade 3 Mathematics. Of these, 2,371 scored in the red range on CDT and the Below Basic range on PSSA.

^{**} Looking across the row: Of the students who scored in the red range on CDT, 79.4% scored Below Basic on PSSA, 17.9% scored Basic, 2.5% scored Proficient, and 0.2% scored Advanced.

^{***} Looking down the column: Of the students who scored in the Advanced range on PSSA, 0.2% scored in the red range on CDT, 6.3% in green, and 93.6% in blue.

Table 19-3. CDT Math Grades 3-5 and PSSA Mathematics – Grade 4

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,445	665	50	2	3,162
CDT Green	1,772	4,402	1,699	141	8,014
CDT Blue	87	1,320	3,878	3,234	8,519
Total	4,304	6,387	5,627	3,377	19,695

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	77.3%	21.0%	1.6%	0.1%	100.0%
CDT Green	22.1%	54.9%	21.2%	1.8%	100.0%
CDT Blue	1.0%	15.5%	45.5%	38.0%	100.0%
Total	21.9%	32.4%	28.6%	17.1%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	56.8%	10.4%	0.9%	0.1%	16.1%
CDT Green	41.2%	68.9%	30.2%	4.2%	40.7%
CDT Blue	2.0%	20.7%	68.9%	95.8%	43.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	660	705	704	757
CDT Green	820	850	877	895
CDT Blue	980	962	990	1064

Table 19-4. CDT Math Grades 3-5 and PSSA Mathematics – Grade 5

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	3,193	1,001	53	0	4,247
CDT Green	1,558	5,152	2,544	227	9,481
CDT Blue	50	683	3,329	2,877	6,939
Total	4,801	6,836	5,926	3,104	20,667

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	75.2%	23.6%	1.2%	0.0%	100.0%
CDT Green	16.4%	54.3%	26.8%	2.4%	100.0%
CDT Blue	0.7%	9.8%	48.0%	41.5%	100.0%
Total	23.2%	33.1%	28.7%	15.0%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	66.5%	14.6%	0.9%	0.0%	20.5%
CDT Green	32.5%	75.4%	42.9%	7.3%	45.9%
CDT Blue	1.0%	10.0%	56.2%	92.7%	33.6%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	727	785	788	
CDT Green	882	914	948	965
CDT Blue	1042	1028	1049	1117

Table 19-5. CDT Math Grades 6-8 and PSSA Mathematics – Grade 6

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	4,648	3,169	207	4	8,028
CDT Green	753	6,093	4,604	331	11,781
CDT Blue	18	356	3,221	2,854	6,449
Total	5,419	9,618	8,032	3,189	26,258

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	57.9%	39.5%	2.6%	0.0%	100.0%
CDT Green	6.4%	51.7%	39.1%	2.8%	100.0%
CDT Blue	0.3%	5.5%	49.9%	44.3%	100.0%
Total	20.6%	36.6%	30.6%	12.1%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	85.8%	32.9%	2.6%	0.1%	30.6%
CDT Green	13.9%	63.3%	57.3%	10.4%	44.9%
CDT Blue	0.3%	3.7%	40.1%	89.5%	24.6%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	810	879	900	768
CDT Green	976	1003	1039	1064
CDT Blue	1150	1129	1151	1216

Table 19-6. CDT Math Grades 6-8 and PSSA Mathematics – Grade 7

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	6,146	2,293	93	1	8,533
CDT Green	1,299	5,884	3,404	249	10,836
CDT Blue	19	300	2,068	1,584	3,971
Total	7,464	8,477	5,565	1,834	23,340

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	72.0%	26.9%	1.1%	0.0%	100.0%
CDT Green	12.0%	54.3%	31.4%	2.3%	100.0%
CDT Blue	0.5%	7.6%	52.1%	39.9%	100.0%
Total	32.0%	36.3%	23.8%	7.9%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	82.3%	27.0%	1.7%	0.1%	36.6%
CDT Green	17.4%	69.4%	61.2%	13.6%	46.4%
CDT Blue	0.3%	3.5%	37.2%	86.4%	17.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	867	938	955	870
CDT Green	1034	1061	1100	1127
CDT Blue	1218	1185	1201	1250

Table 19-7. CDT Math Grades 6-8 and PSSA Mathematics – Grade 8

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	6,099	1,472	44	0	7,615
CDT Green	1,718	4,749	1,921	110	8,498
CDT Blue	12	140	743	691	1,586
Total	7,829	6,361	2,708	801	17,699

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	80.1%	19.3%	0.6%	0.0%	100.0%
CDT Green	20.2%	55.9%	22.6%	1.3%	100.0%
CDT Blue	0.8%	8.8%	46.8%	43.6%	100.0%
Total	44.2%	35.9%	15.3%	4.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	77.9%	23.1%	1.6%	0.0%	43.0%
CDT Green	21.9%	74.7%	70.9%	13.7%	48.0%
CDT Blue	0.2%	2.2%	27.4%	86.3%	9.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	899	980	995	
CDT Green	1078	1106	1144	1173
CDT Blue	1229	1218	1233	1303

Table 19-8. CDT Algebra I and Keystone Algebra I

N-Counts	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	4,994	16,004	5,046	411	26,455
CDT Green	70	3,257	9,131	5,704	18,162
CDT Blue	2	18	114	1,272	1,406
Total	5,066	19,279	14,291	7,387	46,023

CDT marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	18.9%	60.5%	19.1%	1.6%	100.0%
CDT Green	0.4%	17.9%	50.3%	31.4%	100.0%
CDT Blue	0.1%	1.3%	8.1%	90.5%	100.0%
Total	11.0%	41.9%	31.1%	16.1%	

Keystone marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	98.6%	83.0%	35.3%	5.6%	57.5%
CDT Green	1.4%	16.9%	63.9%	77.2%	39.5%
CDT Blue	0.0%	0.1%	0.8%	17.2%	3.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	Key Bel Bas	Key Basic	Key Prof	Key Adv
CDT Red	903	1023	1079	1096
CDT Green	1164	1166	1185	1220
CDT Blue	1316	1358	1326	1345

Tables 19–2 through 19–8 indicate that the CDT 2014-2015 benchmark cuts in the mathematics content area were lower than the PSSA cuts adopted in July 2015. For example, according to Table 19–7, of the 6,361 grade 8 students who scored Basic on the PSSA, 4,749 (74.7%) scored in the CDT green range and 140 (2.2%) scored in the CDT blue range.

In evaluating benchmark cuts, Pennsylvania Department of Education (PDE) considered the following goals:

- Students scoring Below Basic or Basic on PSSA/Keystone are likely to be in the CDT red range, indicating areas of need.
- Students scoring Proficient or Advanced on PSSA/Keystone are likely to be in the CDT green or blue ranges, indicating strengths to build upon.
- In balancing over- versus under- identification, it is more desirable that students scoring Proficient or Advanced on PSSA/Keystone are in the CDT red range than students scoring Below Basic or Basic on PSSA/Keystone are in the CDT green or blue ranges.

Based on these goals and tables 19-2 through 19-8, PDE determined that CDT benchmark cuts in mathematics should be revised prior to the beginning of the 2015–2016 school year.

READING

Table 19-9. CDT Reading Grades 3-5 and PSSA ELA - Grade 3

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	1,960*	3,403	1,894	20	7,277
CDT Green	56	1,316	6,615	877	8,864
CDT Blue	14	27	1,517	1,810	3,368
Total	2,030	4,746	10,026	2,707	19,509*

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red**	26.9%	46.8%	26.0%	0.3%	100.0%
CDT Green	0.6%	14.8%	74.6%	9.9%	100.0%
CDT Blue	0.4%	0.8%	45.0%	53.7%	100.0%
Total	10.4%	24.3%	51.4%	13.9%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv***	Total
CDT Red	96.6%	71.7%	18.9%	0.7%	37.3%
CDT Green	2.8%	27.7%	66.0%	32.4%	45.4%
CDT Blue	0.7%	0.6%	15.1%	66.9%	17.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	547	608	647	658
CDT Green	772	770	819	866
CDT Blue	1053	1014	979	1011

^{*} There are 19,509 grade3 students in the data set who have taken CDT Reading Grades 3-5 and PSSA grade 3 ELA. Of these, 1,960 scored in the red range on CDT and the Below Basic range on PSSA.

^{**} Looking across the row: Of the students who scored in the red range on CDT, 26.9% scored Below Basic on PSSA, 46.8% scored Basic, 26.0% scored Proficient, and 0.3% scored Advanced.

^{***} Looking down the column: Of the students who scored in the Advanced range on PSSA, 0.7% scored in the red range on CDT, 32.4% in green, and 66.9% in blue.

Table 19-10. CDT Reading Grades 3-5 and PSSA ELA – Grade 4

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,004	3,717	1,153	37	6,911
CDT Green	56	1,795	5,953	2,085	9,889
CDT Blue	6	37	984	2,659	3,686
Total	2,066	5,549	8,090	4,781	20,486

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	29.0%	53.8%	16.7%	0.5%	100.0%
CDT Green	0.6%	18.2%	60.2%	21.1%	100.0%
CDT Blue	0.2%	1.0%	26.7%	72.1%	100.0%
Total	10.1%	27.1%	39.5%	23.3%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.0%	67.0%	14.3%	0.8%	33.7%
CDT Green	2.7%	32.3%	73.6%	43.6%	48.3%
CDT Blue	0.3%	0.7%	12.2%	55.6%	18.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	599	685	728	747
CDT Green	850	854	899	939
CDT Blue	1110	1079	1048	1077

Table 19-11. CDT Reading Grades 3-5 and PSSA ELA – Grade 5

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,147	3,121	1,002	13	6,283
CDT Green	91	2,041	7,439	1,326	10,897
CDT Blue	5	30	1,508	2,514	4,057
Total	2,243	5,192	9,949	3,853	21,237

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	34.2%	49.7%	15.9%	0.2%	100.0%
CDT Green	0.8%	18.7%	68.3%	12.2%	100.0%
CDT Blue	0.1%	0.7%	37.2%	62.0%	100.0%
Total	10.6%	24.4%	46.8%	18.1%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	95.7%	60.1%	10.1%	0.3%	29.6%
CDT Green	4.1%	39.3%	74.8%	34.4%	51.3%
CDT Blue	0.2%	0.6%	15.2%	65.2%	19.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	646	740	779	800
CDT Green	886	906	958	1002
CDT Blue	1093	1094	1099	1127

Table 19-12. CDT Reading/Lit Grades 6-HS and PSSA ELA – Grade 6

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	1,693	4,606	1,492	41	7,832
CDT Green	43	2,181	7,780	2,832	12,836
CDT Blue	3	18	631	2,341	2,993
Total	1,739	6,805	9,903	5,214	23,661

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	21.6%	58.8%	19.1%	0.5%	100.0%
CDT Green	0.3%	17.0%	60.6%	22.1%	100.0%
CDT Blue	0.1%	0.6%	21.1%	78.2%	100.0%
Total	7.3%	28.8%	41.9%	22.0%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.4%	67.7%	15.1%	0.8%	33.1%
CDT Green	2.5%	32.0%	78.6%	54.3%	54.2%
CDT Blue	0.2%	0.3%	6.4%	44.9%	12.6%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	701	801	848	850
CDT Green	949	965	1015	1062
CDT Blue	1238	1163	1161	1184

Table 19-13. CDT Reading/Lit Grades 6-HS and PSSA ELA – Grade 7

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	1,137	5,974	1,677	45	8,833
CDT Green	21	2,479	8,459	2,310	13,269
CDT Blue	0	10	767	1,714	2,491
Total	1,158	8,463	10,903	4,069	24,593

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	12.9%	67.6%	19.0%	0.5%	100.0%
CDT Green	0.2%	18.7%	63.8%	17.4%	100.0%
CDT Blue	0.0%	0.4%	30.8%	68.8%	100.0%
Total	4.7%	34.4%	44.3%	16.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.2%	70.6%	15.4%	1.1%	35.9%
CDT Green	1.8%	29.3%	77.6%	56.8%	54.0%
CDT Blue	0.0%	0.1%	7.0%	42.1%	10.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	693	820	884	878
CDT Green	1005	1005	1053	1098
CDT Blue		1217	1202	1223

Table 19-14. CDT Reading/Lit Grades 6-HS and PSSA ELA – Grade 8

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,054	5,136	1,769	29	8,988
CDT Green	64	2,445	8,379	1,901	12,789
CDT Blue	2	12	716	1,366	2,096
Total	2,120	7,593	10,864	3,296	23,873

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	22.9%	57.1%	19.7%	0.3%	100.0%
CDT Green	0.5%	19.1%	65.5%	14.9%	100.0%
CDT Blue	0.1%	0.6%	34.2%	65.2%	100.0%
Total	8.9%	31.8%	45.5%	13.8%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	96.9%	67.6%	16.3%	0.9%	37.6%
CDT Green	3.0%	32.2%	77.1%	57.7%	53.6%
CDT Blue	0.1%	0.2%	6.6%	41.4%	8.8%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	748	852	905	916
CDT Green	1024	1037	1083	1129
CDT Blue	1309	1219	1231	1252

Table 19-15. CDT Reading/Lit Grades 6-HS and Keystone Literature

N-Counts	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	2,927	7,312	3,906	35	14,180
CDT Green	90	3,005	17,377	1,558	22,030
CDT Blue	0	22	3,089	2,054	5,165
Total	3,017	10,339	24,372	3,647	41,375

CDT marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	20.6%	51.6%	27.5%	0.2%	100.0%
CDT Green	0.4%	13.6%	78.9%	7.1%	100.0%
CDT Blue	0.0%	0.4%	59.8%	39.8%	100.0%
Total	7.3%	25.0%	58.9%	8.8%	

Keystone marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	97.0%	70.7%	16.0%	1.0%	34.3%
CDT Green	3.0%	29.1%	71.3%	42.7%	53.2%
CDT Blue	0.0%	0.2%	12.7%	56.3%	12.5%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	Key Bel Bas	Key Basic	Key Prof	Key Adv
CDT Red	762	860	903	916
CDT Green	1040	1059	1113	1160
CDT Blue		1259	1262	1284

Tables 19–9 through 19–15 indicate that the CDT 2014-2015 benchmark cuts in the reading content area were slightly lower than the PSSA cuts adopted in July 2015. For example, according to Table 19–14, of the 7,593 grade 8 students who scored Basic on the PSSA, 2,445 (32.2%) scored in the CDT green range and 12 (0.2%) scored in the CDT blue range.

In evaluating benchmark cuts, Pennsylvania Department of Education (PDE) considered the following goals:

- Students scoring Below Basic or Basic on PSSA/Keystone are likely to be in the CDT red range, indicating areas of need.
- Students scoring Proficient or Advanced on PSSA/Keystone are likely to be in the CDT green or blue ranges, indicating strengths to build upon.
- In balancing over- versus under- identification, it is more desirable that students scoring Proficient or Advanced on PSSA/Keystone are in the CDT red range than students scoring Below Basic or Basic on PSSA/Keystone are in the CDT green or blue ranges.

Based on these goals and tables 19-9 through 19-15, PDE determined that CDT benchmark cuts in reading should be revised prior to the beginning of the 2015–2016 school year.

WRITING

Table 19-16. CDT Writing Grades 3-5 and PSSA ELA - Grade 3

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	197*	130	29	0	356
CDT Green	71	338	218	2	629
CDT Blue	4	147	868	232	1,251
Total	272	615	1,115	234	2,236*

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red**	55.3%	36.5%	8.1%	0.0%	100.0%
CDT Green	11.3%	53.7%	34.7%	0.3%	100.0%
CDT Blue	0.3%	11.8%	69.4%	18.5%	100.0%
Total	12.2%	27.5%	49.9%	10.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv***	Total
CDT Red	72.4%	21.1%	2.6%	0.0%	15.9%
CDT Green	26.1%	55.0%	19.6%	0.9%	28.1%
CDT Blue	1.5%	23.9%	77.8%	99.1%	55.9%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	481	525	515	
CDT Green	688	714	731	697
CDT Blue	830	839	884	972

^{*} There are 2,236 grade3 students in the data set who have taken CDT Writing Grades 3-5 and PSSA grade 3 ELA. Of these, 197 scored in the red range on CDT and the Below Basic range on PSSA.

^{**} Looking across the row: Of the students who scored in the red range on CDT, 55.3% scored Below Basic on PSSA, 36.5% scored Basic, 8.1% scored Proficient, and 0.0% scored Advanced.

^{***} Looking down the column: Of the students who scored in the Advanced range on PSSA, 0.0% scored in the red range on CDT, 0.9% in green, and 99.1% in blue.

Table 19-17. CDT Writing Grades 3-5 and PSSA ELA – Grade 4

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	188	190	25	2	405
CDT Green	42	411	342	27	822
CDT Blue	3	74	558	455	1,090
Total	233	675	925	484	2,317

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	46.4%	46.9%	6.2%	0.5%	100.0%
CDT Green	5.1%	50.0%	41.6%	3.3%	100.0%
CDT Blue	0.3%	6.8%	51.2%	41.7%	100.0%
Total	10.1%	29.1%	39.9%	20.9%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	80.7%	28.1%	2.7%	0.4%	17.5%
CDT Green	18.0%	60.9%	37.0%	5.6%	35.5%
CDT Blue	1.3%	11.0%	60.3%	94.0%	47.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	563	637	669	668
CDT Green	766	803	839	856
CDT Blue	926	928	955	1008

Table 19-18. CDT Writing Grades 3-5 and PSSA ELA – Grade 5

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	269	254	43	0	566
CDT Green	60	516	710	36	1,322
CDT Blue	1	47	766	462	1,276
Total	330	817	1,519	498	3,164

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	47.5%	44.9%	7.6%	0.0%	100.0%
CDT Green	4.5%	39.0%	53.7%	2.7%	100.0%
CDT Blue	0.1%	3.7%	60.0%	36.2%	100.0%
Total	10.4%	25.8%	48.0%	15.7%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	81.5%	31.1%	2.8%	0.0%	17.9%
CDT Green	18.2%	63.2%	46.7%	7.2%	41.8%
CDT Blue	0.3%	5.8%	50.4%	92.8%	40.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	625	702	722	
CDT Green	830	869	904	917
CDT Blue	965	987	1012	1062

Table 19-19. CDT Writing/Eng Comp Grades 6-HS and PSSA ELA – Grade 6

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	299	581	108	3	991
CDT Green	22	626	1,121	199	1,968
CDT Blue	0	5	294	482	781
Total	321	1,212	1,523	684	3,740

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	30.2%	58.6%	10.9%	0.3%	100.0%
CDT Green	1.1%	31.8%	57.0%	10.1%	100.0%
CDT Blue	0.0%	0.6%	37.6%	61.7%	100.0%
Total	8.6%	32.4%	40.7%	18.3%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	93.1%	47.9%	7.1%	0.4%	26.5%
CDT Green	6.9%	51.7%	73.6%	29.1%	52.6%
CDT Blue	0.0%	0.4%	19.3%	70.5%	20.9%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	699	778	802	803
CDT Green	910	935	975	1007
CDT Blue		1056	1085	1117

Table 19-20. CDT Writing/Eng Comp Grades 6-HS and PSSA ELA – Grade 7

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	232	1,282	318	10	1,842
CDT Green	4	489	1,587	341	2,421
CDT Blue	0	4	171	343	518
Total	236	1,775	2,076	694	4,781

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	12.6%	69.6%	17.3%	0.5%	100.0%
CDT Green	0.2%	20.2%	65.6%	14.1%	100.0%
CDT Blue	0.0%	0.8%	33.0%	66.2%	100.0%
Total	4.9%	37.1%	43.4%	14.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.3%	72.2%	15.3%	1.4%	38.5%
CDT Green	1.7%	27.5%	76.4%	49.1%	50.6%
CDT Blue	0.0%	0.2%	8.2%	49.4%	10.8%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	691	818	881	898
CDT Green	964	990	1025	1066
CDT Blue		1128	1140	1165

Table 19-21. CDT Writing/Eng Comp Grades 6-HS and PSSA ELA - Grade 8

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	399	1,203	451	13	2,066
CDT Green	9	377	1,686	397	2,469
CDT Blue	0	0	107	236	343
Total	408	1,580	2,244	646	4,878

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	19.3%	58.2%	21.8%	0.6%	100.0%
CDT Green	0.4%	15.3%	68.3%	16.1%	100.0%
CDT Blue	0.0%	0.0%	31.2%	68.8%	100.0%
Total	8.4%	32.4%	46.0%	13.2%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.8%	76.1%	20.1%	2.0%	42.4%
CDT Green	2.2%	23.9%	75.1%	61.5%	50.6%
CDT Blue	0.0%	0.0%	4.8%	36.5%	7.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	744	857	911	925
CDT Green	1014	1025	1060	1102
CDT Blue			1189	1206

Tables 19–16 through 19–21 indicate that the CDT 2014-2015 benchmark cuts in the writing content area were lower than the PSSA cuts adopted in July 2015. For example, according to Table 19–19, of the 1,212 grade 6 students who scored Basic on the PSSA, 626 (51.7%) scored in the CDT green range and 5 (0.4%) scored in the CDT blue range.

In evaluating benchmark cuts, Pennsylvania Department of Education (PDE) considered the following goals:

- Students scoring Below Basic or Basic on PSSA/Keystone are likely to be in the CDT red range, indicating areas of need.
- Students scoring Proficient or Advanced on PSSA/Keystone are likely to be in the CDT green or blue ranges, indicating strengths to build upon.
- In balancing over- versus under- identification, it is more desirable that students scoring Proficient or Advanced on PSSA/Keystone are in the CDT red range than students scoring Below Basic or Basic on PSSA/Keystone are in the CDT green or blue ranges.

Based on these goals and tables 19-16 through 19-21, PDE determined that CDT benchmark cuts in writing should be revised prior to the beginning of the 2015–2016 school year.

COMPARING CDT TO PSSA AT POINT OF HIGHEST DISCRIMINATION

For the mathematics, reading, and writing content areas, logistic regression was used to determine the best discrimination line. In this analysis, the CDT scale score was used as the independent variable which was used to predict 1 (at or above PSSA/Keystone proficient cut) or 0 (below PSSA/Keystone proficient cut). Table 19-22 shows the CDT scale scores which best separate PSSA/Keystone Proficient and above from PSSA/Keystone Basic and below.

Table 19-22. CDT Scale Scores for Best Discrimination

Student Grade	Number of Students	CDT	PSSA/Keystone Test	CDT Scale Score - point of best discrimination
3	18,718	Math Grades 3-5	PSSA Mathematics Grade 3	805
4	19,695	Math Grades 3-5	PSSA Mathematics Grade 4	915
5	20,667	Math Grades 3-5	PSSA Mathematics Grade 5	964
6	26,258	Math Grades 6-8	PSSA Mathematics Grade 6	1034
7	23,340	Math Grades 6-8	PSSA Mathematics Grade 7	1105
8	17,699	Math Grades 6-8	PSSA Mathematics Grade 8	1162
All	46,023	Algebra I	Keystone Algebra I	1118
3	19,509	Reading Grades 3-5	PSSA ELA Grade 3	687
4	20,486	Reading Grades 3-5	PSSA ELA Grade 4	793
5	21,237	Reading Grades 3-5	PSSA ELA Grade 5	852
6	23,661	Reading/Lit Grades 6-HS	PSSA ELA Grade 6	907
7	24,593	Reading/Lit Grades 6-HS	PSSA ELA Grade 7	945
8	23,873	Reading/Lit Grades 6-HS	PSSA ELA Grade 8	972
All	41,375	Reading/Lit Grades 6-HS	Keystone Literature	954
3	2,236	Writing Grades 3-5	PSSA ELA Grade 3	746
4	2,317	Writing Grades 3-5	PSSA ELA Grade 4	825
5	3,164	Writing Grades 3-5	PSSA ELA Grade 5	865
6	3,740	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 6	916
7	4,781	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 7	940
8	4,878	Writing/Eng Comp Gr 6-HS	PSSA ELA Grade 8	958

Table 19-23 below compares the benchmark cuts in place during the 2014-2015 school year with the points of best discrimination as the bottom of the green range.

Table 19-23. CDT Benchmark Cuts - 2014-2015 vs. Points of Best Discrimination

CDT Cut	2014-2015 Green Range	2014-2015 Logit cut	Point of Best Discrimination Green Range	Point of Best Discrimination Logit cut	Difference in Logit Cut
Math Grade 3	672 - 834	-2.083	805 - 967	-1.023	1.060
Math Grade 4	760 - 922	-1.380	915 - 1077	-0.142	1.238
Math Grade 5	833 - 995	-0.792	964 - 1126	0.250	1.042
Math Grade 6	936 - 1098	0.026	1034 - 1196	0.811	0.785
Math Grade 7	994 - 1156	0.495	1105 - 1267	1.379	0.884
Math Grade 8	1037 - 1199	0.838	1162 - 1324	1.836	0.998
Algebra I	1134 - 1296	1.613	1118 - 1280	1.483	-0.130
Reading Grade 3	712 - 926	-0.367	687 - 901	-0.547	-0.180
Reading Grade 4	790 - 1004	0.179	793 - 1007	0.196	0.017
Reading Grade 5	840 - 1054	0.529	852 - 1066	0.609	0.080
Reading Grade 6	910 - 1124	1.015	907 - 1121	0.994	-0.021
Reading Grade 7	950 - 1164	1.299	945 - 1159	1.260	-0.039
Reading Grade 8	979 - 1193	1.500	972 - 1186	1.449	-0.051
Literature	1001 - 1215	1.657	954 - 1168	1.323	-0.334
Writing Grade 3	614 - 786	-1.874	746 - 918	-0.884	0.990
Writing Grade 4	719 - 891	-1.084	825 - 997	-0.290	0.794
Writing Grade 5	787 - 959	-0.569	865 - 1037	0.011	0.580
Writing Grade 6	872 - 1044	0.063	916 - 1088	0.394	0.331
Writing Grade 7	941 - 1113	0.586	940 - 1112	0.575	-0.011
Writing Grade 8	985 - 1157	0.919	958 - 1130	0.710	-0.209

As can be seen in table 19-23, using the points of best discrimination as cut points would have resulted in a compression of the content area vertical scales with some cuts up and some down. Additionally, there would have been cases within a content area where a lower grade would have a higher cut. For example, the Algebra I cut would have been lower than the grade 8 math cut.

Rather than using the points of best discrimination, the benchmark cuts were examined for each grade and adjusted based on PDE's previously stated goals:

- Students scoring Below Basic or Basic on PSSA are likely to be in the CDT red range, indicating areas of need.
- Students scoring Proficient or Advanced on PSSA are likely to be in the CDT green or blue ranges, indicating strengths to build upon.
- In balancing over- versus under- identification, it is more desirable that students scoring Proficient or Advanced on PSSA are in the CDT red range than students scoring Below Basic or Basic on PSSA are in the CDT green or blue ranges.

Additional considerations were

- Maintain reasonable spacing across grades on the vertical scale⁴.
- Match the PSSA Mathematics direction of change⁵.
- Match the PSSA ELA direction of change⁶.

Tables 19-24 through 19-43 are analogous to tables 19-2 through 19-21 except CDT classification is based on the revised 2015-2016 cut points instead of the cut points in place during the 2014-2015 school year.

MATHEMATICS

Table 19-24. CDT Math Grades 3-5 and PSSA Mathematics - Grade 3

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	4,359	3,439	1,898	175	9,871
CDT Green	148	1,154	3,606	2,432	7,340
CDT Blue	18	18	202	1,269	1,507
Total	4,525	4,611	5,706	3,876	18,718

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	44.2%	34.8%	19.2%	1.8%	100.0%
CDT Green	2.0%	15.7%	49.1%	33.1%	100.0%
CDT Blue	1.2%	1.2%	13.4%	84.2%	100.0%
Total	24.2%	24.6%	30.5%	20.7%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	96.3%	74.6%	33.3%	4.5%	52.7%
CDT Green	3.3%	25.0%	63.2%	62.7%	39.2%
CDT Blue	0.4%	0.4%	3.5%	32.7%	8.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	645	733	770	783
CDT Green	865	863	887	915
CDT Blue	1059	1051	1012	1046

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⁴ CDT Benchmark cuts without matched PSSA or Keystone data were adjusted to match the adjacent grade or course. For example, the grade 2 adjustment matches grade 3 and the Geometry and Algebra II adjustments match Algebra I.

⁵ In 2015 PSSA Mathematics is more rigorous than 2014 with fewer students Proficient or Advanced in 2015.

⁶ In 2015 PSSA ELA is more rigorous than 2014 with fewer students Proficient or Advanced in 2015.

Table 19-25. CDT Math Grades 3-5 and PSSA Mathematics – Grade 4

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	4,184	4,722	1,404	91	10,401
CDT Green	110	1,650	3,977	1,929	7,666
CDT Blue	10	15	246	1,357	1,628
Total	4,304	6,387	5,627	3,377	19,695

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	40.2%	45.4%	13.5%	0.9%	100.0%
CDT Green	1.4%	21.5%	51.9%	25.2%	100.0%
CDT Blue	0.6%	0.9%	15.1%	83.4%	100.0%
Total	21.9%	32.4%	28.6%	17.1%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.2%	73.9%	25.0%	2.7%	52.8%
CDT Green	2.6%	25.8%	70.7%	57.1%	38.9%
CDT Blue	0.2%	0.2%	4.4%	40.2%	8.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	726	825	861	879
CDT Green	944	951	977	1010
CDT Blue	1162	1127	1100	1136

Table 19-26. CDT Math Grades 3-5 and PSSA Mathematics – Grade 5

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	4,672	5,205	1,393	68	11,338
CDT Green	125	1,621	4,336	1,813	7,895
CDT Blue	4	10	197	1,223	1,434
Total	4,801	6,836	5,926	3,104	20,667

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	41.2%	45.9%	12.3%	0.6%	100.0%
CDT Green	1.6%	20.5%	54.9%	23.0%	100.0%
CDT Blue	0.3%	0.7%	13.7%	85.3%	100.0%
Total	23.2%	33.1%	28.7%	15.0%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.3%	76.1%	23.5%	2.2%	54.9%
CDT Green	2.6%	23.7%	73.2%	58.4%	38.2%
CDT Blue	0.1%	0.1%	3.3%	39.4%	6.9%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	775	878	916	932
CDT Green	993	996	1025	1060
CDT Blue	1194	1171	1147	1183

Table 19-27. CDT Math Grades 6-8 and PSSA Mathematics – Grade 6

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	5,311	7,274	1,717	39	14,341
CDT Green	104	2,326	5,716	1,393	9,539
CDT Blue	4	18	599	1,757	2,378
Total	5,419	9,618	8,032	3,189	26,258

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	37.0%	50.7%	12.0%	0.3%	100.0%
CDT Green	1.1%	24.4%	59.9%	14.6%	100.0%
CDT Blue	0.2%	0.8%	25.2%	73.9%	100.0%
Total	20.6%	36.6%	30.6%	12.1%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.0%	75.6%	21.4%	1.2%	54.6%
CDT Green	1.9%	24.2%	71.2%	43.7%	36.3%
CDT Blue	0.1%	0.2%	7.5%	55.1%	9.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	830	935	980	973
CDT Green	1060	1063	1096	1131
CDT Blue	1235	1220	1219	1260

Table 19-28. CDT Math Grades 6-8 and PSSA Mathematics – Grade 7

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	7,319	6,322	1,120	20	14,781
CDT Green	140	2,141	4,197	1,059	7,537
CDT Blue	5	14	248	755	1,022
Total	7,464	8,477	5,565	1,834	23,340

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	49.5%	42.8%	7.6%	0.1%	100.0%
CDT Green	1.9%	28.4%	55.7%	14.1%	100.0%
CDT Blue	0.5%	1.4%	24.3%	73.9%	100.0%
Total	32.0%	36.3%	23.8%	7.9%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.1%	74.6%	20.1%	1.1%	63.3%
CDT Green	1.9%	25.3%	75.4%	57.7%	32.3%
CDT Blue	0.1%	0.2%	4.5%	41.2%	4.4%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	893	1002	1044	1052
CDT Green	1116	1120	1151	1188
CDT Blue	1277	1303	1273	1301

Table 19-29. CDT Math Grades 6-8 and PSSA Mathematics – Grade 8

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	7,622	4,493	531	1	12,647
CDT Green	206	1,864	2,127	429	4,626
CDT Blue	1	4	50	371	426
Total	7,829	6,361	2,708	801	17,699

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	60.3%	35.5%	4.2%	0.0%	100.0%
CDT Green	4.5%	40.3%	46.0%	9.3%	100.0%
CDT Blue	0.2%	0.9%	11.7%	87.1%	100.0%
Total	44.2%	35.9%	15.3%	4.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.4%	70.6%	19.6%	0.1%	71.5%
CDT Green	2.6%	29.3%	78.5%	53.6%	26.1%
CDT Blue	0.0%	0.1%	1.8%	46.3%	2.4%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	933	1048	1086	1108
CDT Green	1149	1154	1183	1227
CDT Blue	1365	1322	1309	1352

Table 19-30. CDT Algebra I and Keystone Algebra I

N-Counts	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	4,994	16,004	5,046	411	26,455
CDT Green	70	3,257	9,131	5,704	18,162
CDT Blue	2	18	114	1,272	1,406
Total	5,066	19,279	14,291	7,387	46,023

CDT marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	18.9%	60.5%	19.1%	1.6%	100.0%
CDT Green	0.4%	17.9%	50.3%	31.4%	100.0%
CDT Blue	0.1%	1.3%	8.1%	90.5%	100.0%
Total	11.0%	41.9%	31.1%	16.1%	

Keystone marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	98.6%	83.0%	35.3%	5.6%	57.5%
CDT Green	1.4%	16.9%	63.9%	77.2%	39.5%
CDT Blue	0.0%	0.1%	0.8%	17.2%	3.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	Key Bel Bas	Key Basic	Key Prof	Key Adv
CDT Red	903	1023	1079	1096
CDT Green	1164	1166	1185	1220
CDT Blue	1316	1358	1326	1345

READING

Table 19-31. CDT Reading Grades 3-5 and PSSA ELA – Grade 3

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	1,983	3,835	2,638	34	8,490
CDT Green	34	889	6,446	1,207	8,576
CDT Blue	13	22	942	1,466	2,443
Total	2,030	4,746	10,026	2,707	19,509

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	23.4%	45.2%	31.1%	0.4%	100.0%
CDT Green	0.4%	10.4%	75.2%	14.1%	100.0%
CDT Blue	0.5%	0.9%	38.6%	60.0%	100.0%
Total	10.4%	24.3%	51.4%	13.9%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.7%	80.8%	26.3%	1.3%	43.5%
CDT Green	1.7%	18.7%	64.3%	44.6%	44.0%
CDT Blue	0.6%	0.5%	9.4%	54.2%	12.5%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	549	621	670	686
CDT Green	810	794	840	889
CDT Blue	1062	1031	1003	1027

Table 19-32. CDT Reading Grades 3-5 and PSSA ELA – Grade 4

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,027	4,341	1,903	111	8,382
CDT Green	34	1,185	5,745	2,831	9,795
CDT Blue	5	23	442	1,839	2,309
Total	2,066	5,549	8,090	4,781	20,486

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	24.2%	51.8%	22.7%	1.3%	100.0%
CDT Green	0.3%	12.1%	58.7%	28.9%	100.0%
CDT Blue	0.2%	1.0%	19.1%	79.6%	100.0%
Total	10.1%	27.1%	39.5%	23.3%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.1%	78.2%	23.5%	2.3%	40.9%
CDT Green	1.6%	21.4%	71.0%	59.2%	47.8%
CDT Blue	0.2%	0.4%	5.5%	38.5%	11.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	601	703	760	788
CDT Green	887	881	922	966
CDT Blue	1124	1116	1081	1101

Table 19-33. CDT Reading Grades 3-5 and PSSA ELA – Grade 5

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,206	4,003	2,049	35	8,293
CDT Green	35	1,181	7,386	2,334	10,936
CDT Blue	2	8	514	1,484	2,008
Total	2,243	5,192	9,949	3,853	21,237

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	26.6%	48.3%	24.7%	0.4%	100.0%
CDT Green	0.3%	10.8%	67.5%	21.3%	100.0%
CDT Blue	0.1%	0.4%	25.6%	73.9%	100.0%
Total	10.6%	24.4%	46.8%	18.1%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.4%	77.1%	20.6%	0.9%	39.0%
CDT Green	1.6%	22.7%	74.2%	60.6%	51.5%
CDT Blue	0.1%	0.2%	5.2%	38.5%	9.5%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	652	767	824	847
CDT Green	944	940	987	1038
CDT Blue	1117	1144	1144	1160

Table 19-34. CDT Reading/Lit Grades 6-HS and PSSA ELA – Grade 6

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	1,716	5,440	2,439	105	9,700
CDT Green	21	1,358	7,208	3,653	12,240
CDT Blue	2	7	256	1,456	1,721
Total	1,739	6,805	9,903	5,214	23,661

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	17.7%	56.1%	25.1%	1.1%	100.0%
CDT Green	0.2%	11.1%	58.9%	29.8%	100.0%
CDT Blue	0.1%	0.4%	14.9%	84.6%	100.0%
Total	7.3%	28.8%	41.9%	22.0%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.7%	79.9%	24.6%	2.0%	41.0%
CDT Green	1.2%	20.0%	72.8%	70.1%	51.7%
CDT Blue	0.1%	0.1%	2.6%	27.9%	7.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	704	820	879	898
CDT Green	984	991	1032	1083
CDT Blue	1294	1192	1191	1210

Table 19-35. CDT Reading/Lit Grades 6-HS and PSSA ELA – Grade 7

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	1,146	6,830	2,571	84	10,631
CDT Green	12	1,628	7,947	2,820	12,407
CDT Blue	0	5	385	1,165	1,555
Total	1,158	8,463	10,903	4,069	24,593

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	10.8%	64.2%	24.2%	0.8%	100.0%
CDT Green	0.1%	13.1%	64.1%	22.7%	100.0%
CDT Blue	0.0%	0.3%	24.8%	74.9%	100.0%
Total	4.7%	34.4%	44.3%	16.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	99.0%	80.7%	23.6%	2.1%	43.2%
CDT Green	1.0%	19.2%	72.9%	69.3%	50.4%
CDT Blue	0.0%	0.1%	3.5%	28.6%	6.3%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	695	838	912	918
CDT Green	1040	1028	1069	1116
CDT Blue		1255	1226	1244

Table 19-36. CDT Reading/Lit Grades 6-HS and PSSA ELA – Grade 8

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	2,087	5,978	2,646	61	10,772
CDT Green	31	1,611	7,901	2,371	11,914
CDT Blue	2	4	317	864	1,187
Total	2,120	7,593	10,864	3,296	23,873

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	19.4%	55.5%	24.6%	0.6%	100.0%
CDT Green	0.3%	13.5%	66.3%	19.9%	100.0%
CDT Blue	0.2%	0.3%	26.7%	72.8%	100.0%
Total	8.9%	31.8%	45.5%	13.8%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.4%	78.7%	24.4%	1.9%	45.1%
CDT Green	1.5%	21.2%	72.7%	71.9%	49.9%
CDT Blue	0.1%	0.1%	2.9%	26.2%	5.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	752	872	935	958
CDT Green	1054	1061	1099	1148
CDT Blue	1309	1240	1259	1276

Table 19-37. CDT Reading/Lit Grades 6-HS and Keystone Literature

N-Counts	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	2,983	8,351	5,581	49	16,964
CDT Green	34	1,975	17,123	2,157	21,289
CDT Blue	0	13	1,668	1,441	3,122
Total	3,017	10,339	24,372	3,647	41,375

CDT marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	17.6%	49.2%	32.9%	0.3%	100.0%
CDT Green	0.2%	9.3%	80.4%	10.1%	100.0%
CDT Blue	0.0%	0.4%	53.4%	46.2%	100.0%
Total	7.3%	25.0%	58.9%	8.8%	

Keystone marginals	Key Bel Bas	Key Basic	Key Prof	Key Adv	Total
CDT Red	98.9%	80.8%	22.9%	1.3%	41.0%
CDT Green	1.1%	19.1%	70.3%	59.1%	51.5%
CDT Blue	0.0%	0.1%	6.8%	39.5%	7.5%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	Key Bel Bas	Key Basic	Key Prof	Key Adv
CDT Red	767	880	938	944
CDT Green	1079	1082	1132	1181
CDT Blue		1280	1289	1306

WRITING

Table 19-38. CDT Writing Grades 3-5 and PSSA ELA – Grade 3

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	267	453	225	2	947
CDT Green	5	159	771	92	1,027
CDT Blue	0	3	119	140	262
Total	272	615	1,115	234	2,236

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	28.2%	47.8%	23.8%	0.2%	100.0%
CDT Green	0.5%	15.5%	75.1%	9.0%	100.0%
CDT Blue	0.0%	1.1%	45.4%	53.4%	100.0%
Total	12.2%	27.5%	49.9%	10.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.2%	73.7%	20.2%	0.9%	42.4%
CDT Green	1.8%	25.9%	69.1%	39.3%	45.9%
CDT Blue	0.0%	0.5%	10.7%	59.8%	11.7%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	535	657	698	697
CDT Green	820	829	865	907
CDT Blue		1105	985	1014

Table 19-39. CDT Writing Grades 3-5 and PSSA ELA – Grade 4

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	230	517	210	12	969
CDT Green	3	155	677	300	1,135
CDT Blue	0	3	38	172	213
Total	233	675	925	484	2,317

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	23.7%	53.4%	21.7%	1.2%	100.0%
CDT Green	0.3%	13.7%	59.6%	26.4%	100.0%
CDT Blue	0.0%	1.4%	17.8%	80.8%	100.0%
Total	10.1%	29.1%	39.9%	20.9%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	98.7%	76.6%	22.7%	2.5%	41.8%
CDT Green	1.3%	23.0%	73.2%	62.0%	49.0%
CDT Blue	0.0%	0.4%	4.1%	35.5%	9.2%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	600	731	793	799
CDT Green	926	895	930	966
CDT Blue		1042	1058	1069

Table 19-40. CDT Writing Grades 3-5 and PSSA ELA – Grade 5

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	327	616	324	11	1,278
CDT Green	3	201	1,132	312	1,648
CDT Blue	0	0	63	175	238
Total	330	817	1,519	498	3,164

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	25.6%	48.2%	25.4%	0.9%	100.0%
CDT Green	0.2%	12.2%	68.7%	18.9%	100.0%
CDT Blue	0.0%	0.0%	26.5%	73.5%	100.0%
Total	10.4%	25.8%	48.0%	15.7%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	99.1%	75.4%	21.3%	2.2%	40.4%
CDT Green	0.9%	24.6%	74.5%	62.7%	52.1%
CDT Blue	0.0%	0.0%	4.1%	35.1%	7.5%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	661	786	843	861
CDT Green	930	940	977	1021
CDT Blue			1098	1117

Table 19-41. CDT Writing/Eng Comp Grades 6-HS and PSSA ELA – Grade 6

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	318	940	351	13	1,622
CDT Green	3	272	1,108	439	1,822
CDT Blue	0	0	64	232	296
Total	321	1,212	1,523	684	3,740

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	19.6%	58.0%	21.6%	0.8%	100.0%
CDT Green	0.2%	14.9%	60.8%	24.1%	100.0%
CDT Blue	0.0%	0.0%	21.6%	78.4%	100.0%
Total	8.6%	32.4%	40.7%	18.3%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	99.1%	77.6%	23.0%	1.9%	43.4%
CDT Green	0.9%	22.4%	72.8%	64.2%	48.7%
CDT Blue	0.0%	0.0%	4.2%	33.9%	7.9%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	711	826	877	889
CDT Green	977	977	1009	1050
CDT Blue			1138	1158

Table 19-42. CDT Writing/Eng Comp Grades 6-HS and PSSA ELA – Grade 7

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	235	1,481	554	15	2,285
CDT Green	1	294	1,473	483	2,251
CDT Blue	0	0	49	196	245
Total	236	1,775	2,076	694	4,781

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	10.3%	64.8%	24.2%	0.7%	100.0%
CDT Green	0.0%	13.1%	65.4%	21.5%	100.0%
CDT Blue	0.0%	0.0%	20.0%	80.0%	100.0%
Total	4.9%	37.1%	43.4%	14.5%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	99.6%	83.4%	26.7%	2.2%	47.8%
CDT Green	0.4%	16.6%	71.0%	69.6%	47.1%
CDT Blue	0.0%	0.0%	2.4%	28.2%	5.1%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	694	837	914	920
CDT Green	1011	1016	1044	1086
CDT Blue			1171	1192

Table 19-43. CDT Writing/Eng Comp Grades 6-HS and PSSA ELA – Grade 8

N-Counts	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	399	1,203	451	13	2,066
CDT Green	9	377	1,686	397	2,469
CDT Blue	0	0	107	236	343
Total	408	1,580	2,244	646	4,878

CDT marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	19.3%	58.2%	21.8%	0.6%	100.0%
CDT Green	0.4%	15.3%	68.3%	16.1%	100.0%
CDT Blue	0.0%	0.0%	31.2%	68.8%	100.0%
Total	8.4%	32.4%	46.0%	13.2%	

PSSA marginals	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv	Total
CDT Red	97.8%	76.1%	20.1%	2.0%	42.4%
CDT Green	2.2%	23.9%	75.1%	61.5%	50.6%
CDT Blue	0.0%	0.0%	4.8%	36.5%	7.0%
Total	100.0%	100.0%	100.0%	100.0%	

Avg Scale Score	PSSA Bel Bas	PSSA Basic	PSSA Prof	PSSA Adv
CDT Red	744	857	911	925
CDT Green	1014	1025	1060	1102
CDT Blue			1189	1206

BENCHMARK CUTS FOR ALL GRADES ANDCOURSES FOR THE 2015-2016 SCHOOL YEAR

Table 19–44 shows the benchmark cuts used for student reporting during the 2015–2016 school year in the logit metric for each content area. Also presented are the scale score ranges for each color on the CDT reports.

Table 19-44. Benchmark Cuts and Scale Score Ranges for the 2015-2016 School Year

CDT	Course /Grade	Logit Cut Point (Center of Green)	Red Scale Score Range	Green Scale Score Range	Blue Scale Score Range
Math Grades 3-5	Grade 2	-1.628	200 - 728	729 - 891	892 - 2000
Math Grades 3-5	Grade 3	-0.883	200 - 821	822 - 984	985 - 2000
Math Grades 3-5	Grade 4	-0.180	200 - 909	910 - 1072	1073 - 2000
Math Grades 3-5	Grade 5	0.208	200 - 957	958 - 1120	1121 - 2000
Math Gr 6-8	Grade 6	0.726	200 - 1022	1023 - 1185	1186 - 2000
Math Gr 6-8	Grade 7	1.195	200 - 1081	1082 - 1244	1245 - 2000
Math Gr 6-8	Grade 8	1.513	200 - 1120	1121 - 1283	1284 - 2000
Algebra I	Algebra I	1.613	400 - 1133	1134 - 1296	1297 - 2000
Geometry	Geometry	1.864	400 - 1164	1165 - 1327	1328 - 2000
Algebra II	Algebra II	2.367	400 - 1227	1228 - 1390	1391 - 2000
Reading Grades 3-5	Grade 2	-0.936	200 - 630	631 - 845	846 - 2000
Reading Grades 3-5	Grade 3	-0.167	200 - 740	741 - 955	956 - 2000
Reading Grades 3-5	Grade 4	0.429	200 - 825	826 - 1040	1041 - 2000
Reading Grades 3-5	Grade 5	0.879	200 - 889	890 - 1104	1105 - 2000
Read/Lit Grades 6-HS	Grade 6	1.265	200 - 944	945 - 1159	1160 - 2000
Read/Lit Grades 6-HS	Grade 7	1.499	200 - 978	979 - 1193	1194 - 2000
Read/Lit Grades 6-HS	Grade 8	1.725	200 - 1010	1011 - 1225	1226 - 2000
Read/Lit Grades 6-HS	Literature	1.882	200 - 1032	1033 - 1247	1248 - 2000
Science Grades 3-5	Grade 2	-1.723	200 - 634	635 - 807	808 - 2000
Science Grades 3-5	Grade 3	-1.282	200 - 693	694 - 866	867 - 2000
Science Grades 3-5	Grade 4	-0.855	200 - 750	751 - 923	924 - 2000
Science Grades 3-5	Grade 5	-0.451	200 - 803	804 - 976	977 - 2000
Science Gr 6-HS	Grade 6	-0.028	200 - 860	861 - 1033	1034 - 2000
Science Gr 6-HS	Grade 7	0.329	200 - 907	908 - 1080	1081 - 2000
Science Gr 6-HS	Grade 8	0.639	200 - 948	949 - 1121	1122 - 2000
Biology	Biology	1.112	400 - 1011	1012 - 1184	1185 - 2000
Chemistry	Chemistry	1.356	400 - 1044	1045 - 1217	1218 - 2000
Writing Grades 3-5	Grade 2	-1.739	200 - 631	632 - 804	805 - 2000
Writing Grades 3-5	Grade 3	-0.624	200 - 779	780 - 952	953 - 2000
Writing Grades 3-5	Grade 4	-0.084	200 - 851	852 - 1024	1025 - 2000
Writing Grades 3-5	Grade 5	0.281	200 - 899	900 - 1072	1073 - 2000
Writing/Eng Comp Gr 6-HS	Grade 6	0.563	200 - 937	938 - 1110	1111 - 2000
Writing/Eng Comp Gr 6-HS	Grade 7	0.836	200 - 973	974 - 1146	1147 - 2000
Writing/Eng Comp Gr 6-HS	Grade 8	0.919	200 - 984	985 - 1157	1158 - 2000
Writing/Eng Comp Gr 6-HS	English Composition	0.981	200 - 993	994 - 1166	1167 - 2000

Table 19-45 summarizes the changes in benchmark cuts between the 2014-2015 school year and the 2015-2016 school years.

Table 19-45. Changes in Benchmark Cuts between 2014-2015 and 2015-2016

CDT	Course /Grade	2014-2015 Logit Cut Point	2015-2016 Logit Cut Point	Difference in Logit Cut	Difference in Scale Score
Math Grades 3-5	Grade 2	-2.828	-1.628	1.200	150
Math Grades 3-5	Grade 3	-2.083	-0.883	1.200	150
Math Grades 3-5	Grade 4	-1.380	-0.180	1.200	150
Math Grades 3-5	Grade 5	-0.792	0.208	1.000	125
Math Gr 6-8	Grade 6	0.026	0.726	0.700	87
Math Gr 6-8	Grade 7	0.495	1.195	0.700	88
Math Gr 6-8	Grade 8	0.838	1.513	0.675	84
Algebra I	Algebra I	1.613	1.613	0.000	0
Geometry	Geometry	1.864	1.864	0.000	0
Algebra II	Algebra II	2.367	2.367	0.000	0
Reading Grades 3-5	Grade 2	-1.136	-0.936	0.200	29
Reading Grades 3-5	Grade 3	-0.367	-0.167	0.200	29
Reading Grades 3-5	Grade 4	0.179	0.429	0.250	36
Reading Grades 3-5	Grade 5	0.529	0.879	0.350	50
Read/Lit Grades 6-HS	Grade 6	1.015	1.265	0.250	35
Read/Lit Grades 6-HS	Grade 7	1.299	1.499	0.200	29
Read/Lit Grades 6-HS	Grade 8	1.500	1.725	0.225	32
Read/Lit Grades 6-HS	Literature	1.657	1.882	0.225	32
Science Grades 3-5	Grade 2	-1.723	-1.723	0.000	0
Science Grades 3-5	Grade 3	-1.282	-1.282	0.000	0
Science Grades 3-5	Grade 4	-0.855	-0.855	0.000	0
Science Grades 3-5	Grade 5	-0.451	-0.451	0.000	0
Science Gr 6-HS	Grade 6	-0.028	-0.028	0.000	0
Science Gr 6-HS	Grade 7	0.329	0.329	0.000	0
Science Gr 6-HS	Grade 8	0.639	0.639	0.000	0
Biology	Biology	1.112	1.112	0.000	0
Chemistry	Chemistry	1.356	1.356	0.000	0
Writing Grades 3-5	Grade 2	-2.989	-1.739	1.250	166
Writing Grades 3-5	Grade 3	-1.874	-0.624	1.250	166
Writing Grades 3-5	Grade 4	-1.084	-0.084	1.000	133
Writing Grades 3-5	Grade 5	-0.569	0.281	0.850	113
Writing/Eng Comp Gr 6-HS	Grade 6	0.063	0.563	0.500	66
Writing/Eng Comp Gr 6-HS	Grade 7	0.586	0.836	0.250	33
Writing/Eng Comp Gr 6-HS	Grade 8	0.919	0.919	0.000	0
Writing/Eng Comp Gr 6-HS	English Composition	0.981	0.981	0.000	0

APPENDIX A: GENERAL DEVELOPMENT AND FIELD TEST CYCLE FOR THE CLASSROOM DIAGNOSTIC TOOLS

Table A-1. General Development and Field Test Cycle for the Classroom Diagnostic Tools

	Mathematics	Reading/Literature	Science	Writing/English Composition
Summer/Fall 2009	Item Development and Internal Reviews			
Winter 2009/2010	Item Review by Pennsylvania Educators	Item Development and Internal Reviews	Item Development and Internal Reviews	
Spring 2010	Standalone Field Test	Item Development and Internal Reviews	Item Development and Internal Reviews	
Summer 2010	Data Review, Items Aligned to the Learning Progression Map, and Benchmarking	Item Review by Pennsylvania Educators	Item Review by Pennsylvania Educators	Item Development and Internal Reviews
Fall 2010	Operational Assessments Available	Standalone Field Test	Standalone Field Test	Item Development and Internal Reviews
Winter 2010/2011	Operational Assessments Available	Data Review, Items Aligned to the Learning Progression Map, and Benchmarking	Data Review, Items Aligned to the Learning Progression Map, and Benchmarking	Item Review by Pennsylvania Educators
Spring 2011	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Standalone Field Test
Summer 2011				Data Review, Items Aligned to the Learning Progression Map, and Benchmarking
Fall 2011	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available
Winter 2011/2012	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available
Spring 2012	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available
Summer 2012	Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards Begins	Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards Begins		
Fall 2012	Operational Assessments Available and Completion of Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards	Operational Assessments Available and Completion of Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards	Operational Assessments Available	Operational Assessments Available

Table A-1 (continued). General Development and Field Test Cycle for the Classroom Diagnostic Tools

	Mathematics	Reading/Literature	Science	Writing/English Composition
Winter 2012/2013	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available
	and	and		
	Item Review by Pennsylvania Educators for Items Aligned to Pennsylvania Core Standards	Item Review by Pennsylvania Educators for Items Aligned to Pennsylvania Core Standards		
Spring 2013	Operational Assessments with Embedded Field Test Items Aligned to the Pennsylvania Core Standards Available and Item Development and Internal Reviews of Items for Lower Grades CDT	Operational Assessments with Embedded Field Test Items Aligned to the Pennsylvania Core Standards Available and Item Development and Internal Reviews of Items Lower Grades CDT	Operational Assessments Available and Item Development and Internal Reviews of Items for Lower Grades CDT	Operational Assessments Available and Item Development and Internal Reviews of Items for Lower Grades CDT
Summer 2013	Data Review and Items Aligned to the Learning Progression Map for Items Aligned to the Pennsylvania Core Standards and Item Review by Pennsylvania Educators for Items for Lower Grades	Data Review and Items Aligned to the Learning Progression Map for Items Aligned to the Pennsylvania Core Standards and Item Review by Pennsylvania Educators for Items for Lower Grades	Item Review by Pennsylvania Educators for Items for Lower Grades	Item Review by Pennsylvania Educators for Items for Lower Grades
Fall 2013	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades
Winter 2013/2014	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT
Spring 2014	Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available
Winter 2014/2015	Item Development and Internal Reviews of Replenishment Items for Grades	Item Development and Internal Reviews of Replenishment Items for Grades 6–HS and EBSR items for all grade levels	Item Development and Internal Reviews of Replenishment Items for Grades	Item Development and Internal Reviews of Replenishment Items for Grades
Spring 2015	6-HS CDT Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available	6-HS CDT Operational Assessments, including Lower Grades, Available	6-HS CDT Operational Assessments, including Lower Grades, Available

APPENDIX B: FIELD TEST ITEM STATISTICS

Table B-1. Multiple-Choice Item Statistics

Table B-1. Multiple-Choice Item Statistics

Column Heading	Definition
Ref	Reference line number
ID	Item ID
FT Grade	Item grade or course alignment when field tested
PCS Grade ¹	Item grade or course when aligned to PA Core Standards
N	Number of students
PVal	Item mean score (P-Value)
P()	Proportion selecting given response (- = blank)
PtBis	Point biserial (item-total correlation)
PT()	Point biserial of given response
Meas	Rasch item difficulty measure estimate
MSE	Standard error of Rasch item difficulty measure estimate
Z-in	Z-standardized infit statistic
MS-in	Mean square infit statistic
Z-out	Z-standardized outfit statistic
MS-out	Mean square outfit statistic
M/F	Male/female DIF statistic
W/B	White/black DIF statistic

¹ Items in the content areas of mathematics, reading, and writing, were realigned to the Pennsylvania core standards prior to the start of the 2013-2014 school year.

Table B-1. Multiple-Choice Item Statistics

Table B-2. Mathematics Multiple-Choice Item Statistics

Ref	ID	FT Grade	PCS Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1	600437	3	1	1282	.921	.921	.045	.013	.019	.003	.400	.400	276	193	166	-3.932	0.117	-1.2	0.9	-1.6	0.8	A+	B-
2	601973	3	1	1282	.818	.060	.818	.082	.036	.005	.439	233	.439	228	223	-2.648	0.086	0.9	1.0	0.6	1.1	A+	A-
3	601588	3	3	1925	.872	.872	.057	.042	.027	.003	.459	.459	269	280	184	-3.199	0.078	-1.6	0.9	-2.0	0.8	A+	B-
4	603742	3	1	1285	.850	.850	.090	.036	.016	.008	.338	.338	133	215	198	-2.989	0.090	2.2	1.1	4.5	1.6	A-	A+
5	600920	3	3	1285	.662	.183	.069	.074	.662	.013	.547	353	205	181	.547	-1.530	0.071	-1.7	0.9	-0.4	1.0	A+	A-
6	601977	3	3	1285	.788	.040	.083	.788	.078	.012	.483	227	256	.483	228	-2.439	0.080	-0.2	1.0	-0.3	1.0	A-	A+
7	601978	3	3	1282	.857	.040	.056	.857	.044	.003	.415	178	232	.415	260	-3.009	0.092	-0.1	1.0	-0.2	1.0	A+	A+
8	600863	3	2	1286	.686	.071	.065	.686	.177	.002	.504	250	223	.504	291	-1.765	0.072	0.3	1.0	0.4	1.0	A+	A-
9	601558	3	3	1286	.453	.080	.453	.134	.331	.003	.506	106	.506	162	346	-0.286	0.071	1.9	1.1	6.2	1.5	A+	B+
10	602676	3	3	1286	.641	.083	.214	.641	.060	.002	.489	236	268	.489	234	-1.474	0.070	1.2	1.0	1.0	1.1	A+	A-
11	600424	3	3	1286	.785	.084	.061	.785	.065	.004	.482	302	244	.482	192	-2.497	0.079	-1.9	0.9	-2.2	0.8	B+	A-
12	601559	3	3	1287	.649	.079	.066	.649	.202	.004	.517	112	177	.517	417	-1.605	0.070	0.9	1.0	0.8	1.0	A-	A+
13	601898	3	3	1287	.781	.781	.069	.136	.009	.005	.438	.438	182	355	040	-2.538	0.078	1.5	1.1	1.2	1.1	A+	A-
14	600864	3	2	1287	.772	.113	.057	.054	.772	.005	.536	318	237	267	.536	-2.462	0.077	-3.9	0.9	-3.9	0.7	A+	A-
15	600413	3	1	644	.792	.109	.028	.071	.792	.000	.441	278	226	214	.441	-2.535	0.110	0.2	1.0	0.6	1.1	A+	A-
16	600867	3	3	1283	.658	.658	.150	.066	.123	.003	.560	.560	280	196	346	-1.559	0.069	-1.6	1.0	-1.6	0.9	A+	A-
17	602677	3	3	1286	.547	.547	.180	.085	.182	.007	.539	.539	216	230	284	-0.901	0.067	0.4	1.0	1.1	1.1	A-	B-
18	600425	3	3	1286	.663	.081	.663	.149	.102	.005	.498	188	.498	292	244	-1.582	0.069	0.5	1.0	1.8	1.1	A+	A-
19	600423	3	1	1281	.881	.881	.045	.063	.006	.005	.412	.412	242	253	152	-3.262	0.096	-0.4	1.0	-0.8	0.9	A-	B+
20	601438	3	3	1280	.883	.049	.054	.883	.013	.002	.427	277	254	.427	153	-3.250	0.097	-0.9	0.9	-0.9	0.9	A+	A+
21	601976	3	3	639	.664	.105	.052	.180	.664	.000	.532	234	312	288	.532	-1.508	0.099	0.2	1.0	0.1	1.0	A-	A-
22	600868	3	3	639	.833	.022	.089	.833	.056	.000	.386	199	219	.386	229	-2.750	0.119	1.4	1.1	0.9	1.1	A+	A+
23	601900	3	1	1280	.896	.038	.896	.021	.045	.001	.399	224	.399	186	243	-3.411	0.101	-0.5	1.0	-1.1	0.9	B+	A+
24	600439	3	3	1281	.786	.003	.786	.050	.159	.002	.481	049	.481	237	374	-2.345	0.078	-0.4	1.0	-1.6	0.9	A-	A-
25	601216	3	3	641	.939	.037	.019	.939	.005	.000	.387	268	262	.387	090	-4.083	0.180	-1.2	0.9	-0.5	0.9	A+	A-
26	602675	3	1	1283	.894	.048	.894	.030	.020	.008	.407	220	.407	209	199	-3.429	0.103	-0.2	1.0	-1.3	0.8	B+	A-
27	600866	3	3	641	.903	.017	.044	.034	.903	.002	.432	206	224	278	.432	-3.488	0.149	-0.8	0.9	-1.9	0.7	A-	A-
28	601439	3	3	1283	.933	.018	.021	.933	.025	.003	.373	209	217	.373	176	-4.009	0.124	-1.1	0.9	-0.6	0.9	A+	A-
29	600431	3	1	1285	.834	.024	.083	.834	.051	.009	.469	241	301	.469	166	-2.828	0.087	-1.1	1.0	-1.3	0.9	A-	A-
30	601975	3	3	1283	.723	.098	.723	.067	.110	.002	.460	224	.460	315	188	-1.977	0.072	1.9	1.1	1.8	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\		(-)	/->	(-)	(-)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
31	600865	3	3	1280	.913	.027	.913	.046	.014	.001	.362	208	.362	227	162	-3.637	0.108	-0.2	1.0	-0.7	0.9	A-	B+
32	601897	3	3	1286	.799	.098	.089	.799	.011	.003	.438	233	293	.438	152	-2.613	0.081	8.0	1.0	0.2	1.0	A+	A-
33	601437	3	3	1280	.891	.066	.018	.020	.891	.005	.436	257	228	239	.436	-3.380	0.101	-2.1	0.9	0.0	1.0	A+	A+
34	600438	3	3	1283	.782	.782	.183	.007	.023	.005	.492	.492	441	097	115	-2.418	0.078	-0.9	1.0	-1.4	0.9	A-	A-
35	601587	3	3	1285	.544	.143	.135	.171	.544	.007	.475	246	283	103	.475	-0.770	0.068	2.5	1.1	3.5	1.2	A-	A+
36	600921	3	3	1282	.708	.022	.030	.708	.232	.009	.511	183	235	.511	359	-1.770	0.075	-0.3	1.0	-0.1	1.0	B+	B-
37	600872	3	1	1282	.906	.906	.027	.058	.008	.002	.328	.328	240	168	166	-3.615	0.107	0.1	1.0	2.7	1.4	B+	B-
38	601441	3	N/A	1282	.701	.120	.083	.701	.093	.003	.492	259	249	.492	240	-1.700	0.074	1.3	1.0	1.8	1.1	A+	A+
39	603743	3	2	1286	.924	.015	.924	.016	.044	.002	.382	161	.382	219	241	-4.042	0.116	-1.2	0.9	-0.7	0.9	B+	B-
40	604350	3	1	1283	.929	.019	.929	.023	.023	.006	.378	174	.378	221	207	-4.075	0.120	-1.5	0.9	-0.9	0.8	B+	A+
41	600870	3	3	639	.836	.077	.044	.836	.042	.002	.431	247	289	.431	168	-2.790	0.120	0.1	1.0	-0.1	1.0	A-	A+
42	604351	3	1	639	.917	.030	.917	.022	.028	.003	.344	190	.344	234	151	-3.777	0.157	-0.5	0.9	1.1	1.2	B+	A-
43	600922	3	3	641	.435	.086	.435	.236	.237	.006	.606	104	.606	246	369	0.052	0.103	-0.4	1.0	2.7	1.3	C-	A+
44	600441	3	3	1283	.917	.009	.029	.917	.041	.006	.345	089	176	.345	225	-3.743	0.114	0.7	1.1	0.6	1.1	A-	B-
45	600426	3	3	1283	.470	.108	.470	.246	.165	.010	.545	226	.545	236	216	-0.305	0.068	1.2	1.0	4.2	1.3	B-	A+
46	600869	3	3	1283	.794	.023	.794	.114	.067	.002	.424	184	.424	291	204	-2.505	0.079	1.1	1.1	1.5	1.1	A-	A+
47	600871	3	1	1285	.938	.035	.938	.013	.007	.008	.383	252	.383	202	148	-4.307	0.133	-1.1	0.9	-2.6	0.5	A+	A-
48	601980	3	2	1286	.831	.063	.831	.047	.054	.005	.407	225	.407	214	196	-2.809	0.084	0.6	1.0	0.7	1.1	A-	B-
49	600440	3	3	641	.861	.034	.861	.023	.078	.003	.354	156	.354	080	277	-2.978	0.130	1.8	1.2	2.2	1.4	A+	C-
50	601440	3	N/A	1285	.628	.205	.628	.079	.078	.010	.443	258	.443	227	116	-1.305	0.069	4.2	1.1	4.3	1.2	A+	A+
51	601905	3	K	1924	.952	.024	.008	.015	.952	.002	.293	138	175	186	.293	-4.502	0.116	0.3	1.0	0.7	1.1	A+	B-
52	601906	3	K	1282	.939	.009	.939	.016	.035	.002	.295	121	.295	152	216	-4.189	0.128	0.1	1.0	0.9	1.2	A+	A-
53	600923	3	K	1930	.749	.204	.749	.041	.004	.003	.405	325	.405	162	131	-2.214	0.061	4.2	1.1	2.5	1.1	A-	A-
54	600443	3	4	1286	.904	.002	.904	.002	.086	.006	.276	087	.276	100	221	-3.648	0.106	2.1	1.2	2.7	1.5	A-	A-
55	601442	3	K	1283	.973	.973	.016	.006	.002	.004	.247	.247	167	142	049	-5.264	0.189	-0.3	0.9	-0.7	0.8	A+	A-
56	600873	3	4	1283	.669	.669	.072	.017	.239	.004	.510	.510	191	090	405	-1.628	0.070	1.1	1.0	1.4	1.1	A+	A-
57	601443	3	K	1280	.850	.096	.021	.029	.850	.004	.332	167	174	227	.332	-2.910	0.089	3.1	1.2	4.5	1.5	A+	A-
58	600874	3	4	1280	.927	.009	.927	.046	.012	.006	.341	135	.341	257	123	-3.971	0.121	0.2	1.0	-0.6	0.9	B+	A-
59	601982	3	K	1283	.958	.013	.017	.007	.958	.006	.310	160	163	144	.310	-4.688	0.158	-0.2	1.0	-0.5	0.9	A+	A+
60	601981	3	K	641	.892	.006	.084	.013	.892	.005	.355	184	276	097	.355	-3.377	0.145	0.9	1.1	1.3	1.3	A+	A+
61	600442	3	4	1287	.987	.004	.987	.002	.002	.005	.205	111	.205	046	097	-6.641	0.323	-0.1	0.9	-2.1	0.4	A+	A-
62	600427	3	K	1286	.766	.766	.105	.090	.036	.003	.379	.379	264	177	153	-2.266	0.075	3.5	1.1	2.4	1.2	A+	A+
63	600875	3	4	1282	.909	.909	.037	.027	.024	.002	.496	.496	295	245	267	-3.714	0.110	-3.3	0.8	-4.0	0.5	A+	B-
64	600428	3	3	1282	.846	.846	.073	.021	.055	.005	.357	.357	213	154	182	-2.937	0.091	2.5	1.1	3.1	1.3	A+	A-
65	600876	3	4	1282	.889	.022	.036	.889	.050	.004	.409	219	232	.409	235	-3.392	0.101	-0.9	0.9	-1.3	0.8	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

D-f	ID.	FT	PCS	N.	D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT/A)	DT/D)	DT(C)	DT/D)	D4	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
66	600924	3	3	1282	.830	.830	.047	.037	.083	.003	.397	.397	224	201	220	-2.730	0.086	1.3	1.1	0.6	1.1	A+	A+
67	601983	3	3	1283	.877	.877	.083	.023	.016	.001	.434	.434	354	167	162	-3.273	0.094	-1.7	0.9	-2.6	0.7	A+	A-
68	604353	3	3	644	.863	.056	.863	.036	.045	.000	.457	271	.457	234	246	-3.177	0.127	-1.4	0.9	-1.8	0.7	A+	A+
69	600444	3	4	1283	.964	.011	.016	.964	.004	.005	.349	200	217	.349	091	-4.881	0.170	-0.8	0.9	-3.0	0.4	A-	A-
70	601444	3	3	641	.881	.047	.881	.030	.036	.006	.373	172	.373	218	176	-3.236	0.140	0.9	1.1	1.8	1.3	A-	A-
71	601445	3	3	1283	.914	.015	.041	.022	.914	.009	.425	205	249	192	.425	-3.744	0.114	-1.2	0.9	-1.4	0.8	A-	A-
72	604352	3	3	1287	.682	.079	.159	.076	.682	.005	.509	287	249	229	.509	-1.826	0.071	0.1	1.0	0.7	1.0	A+	B-
73	601589	3	4	641	.964	.964	.006	.019	.008	.003	.270	.270	105	132	186	-4.842	0.235	0.2	1.0	0.2	1.0	A+	A-
74	601984	3	3	1280	.895	.035	.023	.045	.895	.002	.390	148	194	295	.390	-3.408	0.101	-1.1	0.9	1.4	1.2	A+	A-
75	601447	3	3	1282	.954	.008	.022	.954	.008	.009	.302	113	213	.302	099	-4.824	0.158	-0.3	1.0	-1.0	0.8	C+	A+
76	601570	3	3	1925	.757	.074	.757	.117	.049	.003	.522	194	.522	323	296	-2.203	0.063	-2.7	0.9	-1.3	0.9	A+	A-
77	601986	3	2	644	.938	.011	.938	.040	.008	.003	.261	076	.261	212	122	-4.257	0.177	0.3	1.0	0.2	1.0	A+	A+
78	600878	3	1	644	.880	.053	.880	.033	.034	.000	.348	257	.348	111	198	-3.365	0.133	0.5	1.0	1.0	1.2	B+	A-
79	600445	3	3	1281	.980	.980	.006	.000	.013	.002	.293	.293	141	.000	246	-5.492	0.216	-1.0	0.8	-3.5	0.2	A+	A+
80	601909	3	2	1280	.950	.007	.950	.026	.013	.004	.282	141	.282	167	146	-4.438	0.141	0.2	1.0	0.4	1.1	A+	A-
81	600446	3	3	1280	.921	.041	.921	.018	.016	.004	.393	257	.393	199	164	-3.824	0.115	-1.4	0.9	0.2	1.0	B+	A-
82	601908	3	2	1281	.913	.063	.016	.913	.006	.002	.371	290	178	.371	114	-3.678	0.109	-0.8	0.9	-0.3	1.0	A+	A-
83	600429	3	3	641	.793	.016	.119	.793	.072	.002	.507	192	363	.507	233	-2.316	0.113	-1.2	0.9	0.3	1.0	A+	C-
84	601446	3	3	1283	.711	.090	.083	.711	.108	.007	.545	254	179	.545	361	-1.773	0.072	-2.6	0.9	-0.6	1.0	A+	A+
85	601985	3	2	1287	.929	.009	.929	.012	.047	.002	.380	115	.380	187	292	-4.173	0.119	-1.9	0.9	-2.5	0.6	B+	A-
86	600877	3	1	1287	.938	.024	.938	.013	.022	.003	.351	227	.351	179	161	-4.369	0.127	-1.1	0.9	-1.2	0.8	A+	B-
87	604186	4	4	965	.442	.442	.167	.354	.037	.000	.449	.449	293	150	221	0.131	0.076	2.9	1.1	2.8	1.2	A-	A+
88	601958	4	3	962	.859	.013	.036	.859	.092	.001	.397	131	186	.397	301	-2.572	0.101	-0.7	1.0	-1.6	0.8	A+	A-
89	604488	4	3	962	.844	.844	.077	.054	.021	.004	.424	.424	257	252	146	-2.486	0.099	-0.9	0.9	-0.3	1.0	A+	A+
90	604492	4	3	964	.766	.041	.766	.099	.092	.003	.448	138	.448	259	267	-1.928	0.084	-1.1	1.0	-1.4	0.9	A-	B-
91	601962	4	4	964	.639	.173	.126	.639	.060	.002	.377	148	241	.377	175	-0.917	0.078	3.7	1.1	2.8	1.1	A-	A+
92	601987	4	4	963	.720	.044	.181	.720	.054	.002	.458	195	302	.458	204	-1.604	0.080	-0.8	1.0	-0.6	1.0	C-	A+
93	604187	4	4	966	.655	.154	.099	.088	.655	.003	.494	249	257	219	.494	-1.006	0.078	-0.5	1.0	-0.5	1.0	B-	A-
94	601638	4	4	965	.729	.056	.157	.729	.058	.001	.529	197	379	.529	218	-1.512	0.082	-3.2	0.9	-3.1	0.8	A+	B+
95	602968	4	3	1926	.822	.822	.111	.034	.032	.001	.408	.408	248	211	218	-2.250	0.066	-0.7	1.0	-0.2	1.0	A+	B-
96	601988	4	4	965	.911	.911	.029	.042	.018	.001	.391	.391	226	252	160	-3.156	0.122	-1.4	0.9	-1.6	0.7	A-	A+
97	602969	4	3	966	.611	.611	.198	.104	.088	.000	.485	.485	239	176	309	-0.735	0.077	1.3	1.0	1.1	1.1	A+	A+
98	604348	4	4	966	.582	.114	.191	.582	.113	.001	.454	301	229	.454	116	-0.576	0.076	0.9	1.0	1.4	1.1	A-	A+
99	604184	4	3	964	.809	.032	.060	.097	.809	.002	.471	169	277	291	.471	-2.059	0.092	-2.0	0.9	-3.2	0.7	A+	A+
100	604968	4	3	1445	.857	.041	.074	.857	.024	.004	.411	195	265	.411	198	-2.577	0.083	-1.0	1.0	-2.2	8.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
101	602970	4	3	964	.845	.014	.099	.845	.041	.002	.410	124	305	.410	201	-2.379	0.099	-0.5	1.0	-1.2	0.9	A+	A+
102	604877	4	3	1445	.762	.015	.046	.762	.172	.005	.359	155	195	.359	220	-1.822	0.069	2.0	1.1	1.5	1.1	A-	A+
103	601963	4	4	964	.627	.185	.111	.627	.076	.002	.327	112	202	.327	181	-1.072	0.076	4.7	1.2	4.1	1.2	A+	A+
104	604878	4	3	964	.302	.066	.302	.269	.358	.005	.312	094	.312	167	083	0.781	0.082	4.0	1.2	7.0	1.7	A-	A+
105	602004	4	3	964	.439	.082	.453	.023	.439	.003	.505	314	253	206	.505	-0.026	0.075	-1.3	1.0	-0.7	1.0	A-	C-
106	601959	4	3	964	.416	.503	.048	.416	.030	.003	.489	374	172	.489	060	0.100	0.076	0.6	1.0	0.6	1.0	A+	A-
107	601960	4	3	963	.863	.011	.062	.863	.062	.001	.296	165	246	.296	101	-2.680	0.102	0.9	1.1	0.9	1.1	B+	A-
108	602005	4	3	963	.733	.733	.061	.070	.135	.001	.521	.521	233	338	257	-1.649	0.082	-3.5	0.9	-2.7	0.8	A-	A-
109	601640	4	4	963	.713	.074	.156	.713	.057	.000	.500	277	292	.500	205	-1.518	0.080	-2.3	0.9	-1.6	0.9	A+	A+
110	602001	4	4	962	.632	.039	.267	.632	.060	.002	.442	194	241	.442	286	-0.976	0.078	0.8	1.0	1.3	1.1	A+	B+
111	602006	4	3	1443	.675	.189	.031	.105	.675	.001	.440	120	230	386	.440	-1.274	0.064	0.2	1.0	0.5	1.0	A+	B-
112	601641	4	4	961	.512	.149	.278	.512	.058	.003	.411	351	117	.411	102	-0.378	0.075	4.0	1.1	3.8	1.2	A-	A-
113	602002	4	4	961	.605	.226	.605	.090	.071	.009	.495	221	.495	313	190	-0.909	0.076	-1.1	1.0	-1.3	0.9	A+	A-
114	601636	4	4	481	.578	.094	.578	.154	.173	.002	.435	165	.435	229	209	-0.828	0.104	1.1	1.1	1.0	1.1	A-	A+
115	604484	4	4	481	.628	.206	.628	.092	.073	.002	.502	230	.502	274	253	-1.097	0.106	-1.2	1.0	-1.4	0.9	B+	A-
116	601965	4	4	963	.758	.022	.119	.097	.758	.004	.401	193	291	146	.401	-1.863	0.084	0.7	1.0	0.4	1.0	A+	A+
117	604349	4	5	963	.722	.722	.166	.058	.051	.003	.486	.486	275	192	303	-1.619	0.080	-1.9	0.9	-2.1	0.9	A+	A-
118	601637	4	4	963	.709	.068	.116	.709	.104	.003	.520	218	258	.520	306	-1.544	0.079	-3.1	0.9	-3.1	0.8	A-	A+
119	604490	4	3	963	.910	.025	.033	.030	.910	.002	.350	106	230	232	.350	-3.248	0.120	-1.0	0.9	-1.2	0.8	A-	A-
120	604185	4	4	482	.764	.133	.764	.081	.021	.002	.456	256	.456	269	219	-1.868	0.119	-0.9	0.9	0.0	1.0	A-	
121	601961	4	4	966	.674	.227	.053	.046	.674	.001	.478	289	264	204	.478	-1.115	0.079	-0.1	1.0	-0.7	1.0	A+	A+
122	601639	4	4	964	.687	.042	.219	.687	.049	.004	.385	153	258	.385	167	-1.402	0.078	2.0	1.1	1.3	1.1	A-	B-
123	601991	4	5	963	.558	.558	.131	.149	.159	.004	.546	.546	200	268	281	-0.693	0.074	-3.3	0.9	-2.5	0.9	A-	A-
124	601964	4	4	963	.566	.051	.566	.358	.023	.002	.465	193	.465	325	192	-0.730	0.074	0.6	1.0	1.0	1.1	A+	C-
125	604967	4	3	963	.914	.914	.028	.034	.023	.001	.359	.359	228	189	185	-3.294	0.123	-1.2	0.9	-1.4	0.8	B+	B-
126	603609	4	3	963	.581	.060	.581	.320	.035	.004	.390	101	.390	294	144	-0.815	0.074	4.4	1.1	3.9	1.2	A-	A-
127	604189	4	3	964	.573	.024	.573	.274	.128	.002	.476	157	.476	294	239	-0.748	0.075	-1.8	1.0	-1.7	0.9	A-	A-
128	603744	4	3	482	.826	.826	.135	.019	.019	.002	.446	.446	334	198	189	-2.342	0.132	-1.2	0.9	-1.0	0.9	A+	i
129	604493	4	3	1443	.634	.213	.074	.634	.079	.000	.433	260	235	.433	151	-1.015	0.063	1.2	1.0	1.3	1.1	B-	A+
130	602008	4	3	965	.636	.125	.636	.032	.205	.001	.485	237	.485	188	298	-0.950	0.077	0.2	1.0	-0.1	1.0	A+	A+
131	601999	4	4	966	.684	.112	.684	.054	.149	.001	.404	212	.404	148	241	-1.178	0.080	2.5	1.1	2.1	1.1	A-	B-
132	601992	4	4	962	.633	.633	.082	.251	.029	.005	.484	.484	198	324	194	-0.990	0.077	-0.7	1.0	-1.0	1.0	B-	A-
133	604188	4	3	964	.681	.030	.681	.111	.173	.005	.431	133	.431	299	195	-1.394	0.078	0.4	1.0	0.0	1.0	C-	A-
134	604494	4	3	961	.857	.014	.062	.857	.065	.002	.384	164	256	.384	215	-2.632	0.101	-0.7	1.0	-1.4	0.8	B-	A+
135	602007	4	3	482	.849	.095	.849	.029	.027	.000	.317	222	.317	173	121	-2.527	0.138	1.1	1.1	0.2	1.0	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

D - 6	ın	FT	PCS		D) / - I	D/A)	D/D)	D(C)	D/D)	D/ \	Din'-	DT(A)	DT/D)	DT(C)	DT/D)		B A C E	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
136	602885	4	3	965	.755	.110	.755	.123	.011	.000	.309	163	.309	196	163	-1.687	0.084	4.2	1.2	4.1	1.3	A+	A+
137	602971	4	3	481	.796	.023	.121	.796	.058	.002	.395	033	355	.395	152	-2.154	0.124	0.0	1.0	-0.3	1.0	C-	A-
138	601993	4	3	1447	.748	.130	.748	.065	.057	.000	.427	243	.427	255	176	-1.566	0.069	1.3	1.1	0.9	1.1	A-	A-
139	602010	4	1	964	.906	.906	.062	.009	.020	.003	.363	.363	226	184	176	-3.188	0.118	-0.8	0.9	-1.3	0.8	A+	A-
140	602009	4	1	964	.966	.016	.011	.966	.006	.001	.243	103	186	.243	128	-4.388	0.183	-0.4	0.9	-0.3	0.9	A+	A-
141	604514	4	4	482	.907	.050	.021	.907	.021	.002	.311	189	167	.311	162	-3.198	0.168	0.2	1.0	-0.3	0.9	A-	
142	604190	4	4	962	.730	.093	.730	.060	.118	.000	.395	134	.395	171	298	-1.574	0.083	2.0	1.1	1.3	1.1	A+	A-
143	604191	4	4	961	.681	.074	.168	.073	.681	.005	.450	154	287	209	.450	-1.340	0.079	1.3	1.1	0.8	1.0	A+	A-
144	604495	4	4	963	.543	.057	.543	.173	.223	.003	.415	216	.415	172	212	-0.619	0.074	3.5	1.1	3.0	1.1	A+	A+
145	602887	4	5	964	.836	.130	.836	.020	.012	.002	.309	212	.309	148	171	-2.292	0.097	1.2	1.1	2.7	1.3	B+	A-
146	604969	4	4	481	.466	.046	.316	.466	.171	.002	.444	083	297	.444	162	-0.240	0.104	1.4	1.1	1.7	1.1	A-	B+
147	602000	4	3	962	.418	.136	.147	.418	.296	.003	.464	260	215	.464	127	0.235	0.078	2.1	1.1	2.2	1.1	A+	A+
148	602973	4	4	965	.775	.169	.775	.039	.016	.001	.474	330	.474	267	170	-1.834	0.087	-1.3	0.9	-1.4	0.9	A-	A+
149	604193	4	4	964	.829	.079	.053	.829	.034	.005	.434	210	251	.434	230	-2.421	0.094	-1.6	0.9	-1.7	0.8	A-	A-
150	601646	4	3	962	.882	.006	.882	.079	.031	.002	.332	146	.332	213	199	-2.827	0.109	0.3	1.0	0.0	1.0	A+	A-
151	604195	4	3	482	.849	.035	.849	.079	.035	.002	.478	176	.478	307	293	-2.546	0.139	-1.8	0.9	-2.8	0.6	A-	
152	604497	4	3	1448	.870	.870	.019	.022	.089	.000	.330	.330	174	192	207	-2.657	0.085	0.4	1.0	1.1	1.1	B+	A-
153	604498	4	3	964	.829	.020	.829	.078	.072	.002	.402	155	.402	229	252	-2.227	0.095	0.1	1.0	0.0	1.0	A+	A+
154	604192	4	4	962	.819	.021	.111	.819	.045	.004	.402	202	274	.402	170	-2.238	0.093	-1.0	1.0	-1.3	0.9	A+	A-
155	601647	4	3	964	.902	.048	.018	.902	.032	.001	.322	185	153	.322	198	-3.139	0.115	-0.6	1.0	-0.8	0.9	A-	B-
156	604485	4	4	962	.837	.049	.078	.837	.033	.003	.394	185	219	.394	227	-2.408	0.097	-0.2	1.0	-0.5	1.0	A+	A+
157	602012	4	4	961	.851	.051	.055	.851	.040	.003	.366	194	177	.366	203	-2.570	0.099	0.1	1.0	-0.2	1.0	A-	A+
158	601995	4	4	963	.781	.135	.781	.043	.042	.000	.410	215	.410	231	248	-2.003	0.086	-0.5	1.0	0.6	1.1	A+	B-
159	601994	4	4	481	.703	.135	.106	.052	.703	.004	.476	187	321	231	.476	-1.542	0.112	-1.0	1.0	-1.3	0.9	A-	A+
160	604879	4	4	1446	.767	.767	.069	.082	.078	.004	.391	.391	211	287	120	-1.898	0.069	0.5	1.0	-0.1	1.0	A+	A+
161	602015	4	3	482	.927	.039	.023	.008	.927	.002	.267	174	158	115	.267	-3.513	0.187	-0.1	1.0	0.3	1.1	A+	
162	601972	4	3	966	.904	.017	.904	.018	.061	.001	.437	180	.437	168	344	-3.030	0.118	-2.5	0.8	-2.5	0.6	A+	A+
163	604501	4	3	962	.661	.661	.149	.060	.127	.003	.571	.571	254	245	346	-1.156	0.079	-4.9	0.8	-4.5	0.8	A-	C-
164	602890	4	3	962	.945	.027	.945	.017	.008	.003	.351	280	.351	127	139	-3.829	0.152	-1.1	0.9	-2.7	0.5	A+	A-
165	601996	4	N/A	1445	.945	.009	.945	.034	.010	.003	.336	162	.336	218	160	-3.871	0.122	-1.1	0.9	-2.8	0.5	A+	A-
166	601997	4	N/A	963	.816	.135	.041	.816	.007	.001	.294	188	205	.294	095	-2.254	0.092	2.3	1.1	3.0	1.3	A-	A+
167	604970	4	3	961	.881	.035	.032	.881	.049	.002	.355	226	155	.355	194	-2.880	0.108	-0.8	0.9	0.5	1.1	A+	B-
168	602014	4	3	963	.792	.138	.031	.792	.036	.002	.343	199	151	.343	223	-2.100	0.088	1.7	1.1	1.8	1.2	A+	A-
169	604499	4	3	963	.820	.099	.019	.820	.061	.001	.438	229	192	.438	304	-2.287	0.093	-1.9	0.9	-1.8	0.8	B-	B-
170	602889	4	3	964	.797	.797	.034	.143	.024	.002	.445	.445	279	273	192	-1.959	0.090	-1.6	0.9	-0.9	0.9	B+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

D - 6	ID.	FT	PCS		D) (- I	D/A)	D/D)	D(C)	D/D)	D/ \	Din'-	DT(A)	DT(D)	DT(C)	DT(D)		B 4CE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
171	601998	4	N/A	962	.831	.004	.005	.158	.831	.002	.304	074	126	270	.304	-2.350	0.096	2.2	1.1	3.4	1.4	B+	A-
172	604486	4	3	481	.807	.067	.119	.008	.807	.000	.418	210	323	094	.418	-2.219	0.126	-0.9	0.9	-0.5	0.9	A+	A-
173	604956	5	4	1194	.628	.126	.142	.088	.628	.016	.598	349	240	236	.598	-0.587	0.069	-6.5	0.8	-5.5	8.0	A+	A-
174	604783	5	5	1189	.819	.819	.051	.041	.080	.008	.480	.480	212	217	296	-1.991	0.087	-2.3	0.9	-1.5	0.8	A-	B-
175	606159	5	2	1194	.757	.071	.757	.146	.023	.003	.427	139	.427	344	125	-1.334	0.075	-0.2	1.0	-0.5	1.0	A+	A-
176	601532	5	5	2383	.868	.868	.047	.048	.031	.006	.423	.423	217	240	204	-2.210	0.068	-2.0	0.9	-1.6	0.9	A+	A-
177	606160	5	4	1193	.796	.020	.068	.796	.114	.003	.453	226	237	.453	270	-1.490	0.080	-1.3	0.9	-1.4	0.9	A-	A-
178	604834	5	5	1192	.889	.014	.052	.889	.042	.003	.376	156	243	.376	213	-2.328	0.102	-0.3	1.0	-0.2	1.0	A+	B-
179	604865	5	4	1196	.830	.039	.085	.830	.042	.003	.476	176	340	.476	217	-1.714	0.087	-1.7	0.9	-2.3	0.8	A+	A+
180	604851	5	2	1191	.554	.140	.061	.554	.230	.015	.622	275	164	.622	355	-0.139	0.069	-6.4	0.8	-5.5	0.8	A-	A-
181	606169	5	4	1189	.485	.485	.188	.092	.229	.007	.570	.570	242	175	298	0.231	0.070	-3.0	0.9	-1.5	0.9	A+	A-
182	606168	5	4	1191	.474	.144	.474	.171	.201	.010	.404	193	.404	218	094	0.326	0.069	6.3	1.2	5.5	1.3	A-	A-
183	600850	5	5	1189	.495	.495	.158	.183	.146	.018	.611	.611	383	191	203	0.139	0.071	-5.0	0.9	-3.6	0.8	A+	A-
184	600851	5	5	1784	.529	.063	.215	.182	.529	.012	.639	198	392	237	.639	-0.022	0.057	-8.7	0.8	-5.9	0.8	A-	A-
185	601591	5	6	1786	.759	.165	.759	.040	.029	.008	.409	233	.409	215	196	-1.323	0.064	1.9	1.1	1.6	1.1	A+	A-
186	601537	5	5	1191	.503	.032	.191	.267	.503	.008	.575	174	340	248	.575	0.274	0.068	-5.1	0.9	-2.5	0.9	A-	A+
187	604837	5	4	1191	.348	.170	.228	.241	.348	.013	.403	177	184	061	.403	1.172	0.072	4.3	1.2	6.8	1.6	A-	B+
188	604788	5	4	1195	.936	.029	.936	.021	.012	.002	.346	193	.346	213	159	-2.973	0.127	-0.9	0.9	-2.8	0.6	A-	B-
189	604849	5	5	1195	.911	.027	.013	.047	.911	.002	.350	176	162	237	.350	-2.555	0.110	-0.9	0.9	-0.8	0.9	A+	A-
190	604838	5	4	1195	.604	.210	.604	.140	.044	.002	.548	433	.548	184	133	-0.164	0.068	-3.8	0.9	-3.5	0.9	A-	A+
191	601535	5	6	1195	.914	.914	.039	.017	.028	.003	.387	.387	233	198	188	-2.614	0.112	-1.7	0.9	-2.2	0.7	A-	A-
192	604850	5	5	1196	.673	.673	.120	.171	.036	.001	.476	.476	262	280	163	-0.556	0.071	-1.0	1.0	-0.4	1.0	A-	B-
193	601536	5	6	1196	.829	.829	.059	.039	.073	.001	.391	.391	172	166	277	-1.681	0.086	-0.1	1.0	1.1	1.1	A-	A+
194	604866	5	4	1790	.717	.063	.075	.139	.717	.007	.560	231	316	301	.560	-0.929	0.060	-6.1	0.8	-6.2	0.7	A+	A-
195	604786	5	N/A	1192	.790	.113	.790	.071	.023	.003	.430	328	.430	173	143	-1.357	0.081	0.1	1.0	0.6	1.0	B-	A-
196	606161	5	5	1193	.817	.057	.046	.075	.817	.004	.487	185	270	301	.487	-1.673	0.083	-2.7	0.9	-2.6	0.8	A+	B-
197	604854	5	4	1194	.580	.092	.203	.580	.121	.005	.482	159	285	.482	213	-0.280	0.067	0.4	1.0	0.2	1.0	A+	A-
198	606827	5	4	1194	.816	.037	.816	.080	.059	.009	.320	180	.320	147	154	-1.806	0.083	1.5	1.1	4.0	1.5	A+	A-
199	606274	5	4	1194	.768	.080	.768	.077	.064	.011	.495	180	.495	315	236	-1.446	0.077	-2.8	0.9	-3.1	0.8	A+	A-
200	604797	5	N/A	1194	.797	.096	.797	.071	.026	.010	.424	242	.424	200	192	-1.663	0.080	-0.5	1.0	0.0	1.0	A-	A-
201	604957	5	4	596	.760	.057	.059	.760	.112	.012	.490	162	179	.490	336	-1.396	0.108	-1.6	0.9	-1.1	0.9	A-	A+
202	606153	5	N/A	598	.798	.008	.018	.162	.798	.013	.468	106	176	379	.468	-1.681	0.114	-1.8	0.9	-1.8	0.8	A-	A-
203	606154	5	4	1196	.663	.100	.189	.663	.047	.001	.463	254	259	.463	195	-0.497	0.071	0.9	1.0	1.5	1.1	A-	A+
204	606826	5	4	598	.748	.179	.748	.040	.025	.008	.273	077	.273	209	217	-1.285	0.105	3.9	1.2	4.8	1.6	B+	B-
205	604836	5	4	1189	.546	.050	.546	.310	.084	.011	.470	155	.470	293	180	-0.136	0.070	3.0	1.1	5.7	1.3	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

D . 6		FT	PCS		D) (- I	D/A)	D/D)	D/C)	D(D)	D/ \	Din'-	DT/A)	DT/D)	DT(C)	DT(D)		B 4CE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
206	601590	5	5	2382	.639	.639	.263	.076	.019	.004	.494	.494	309	264	181	-0.574	0.050	-0.9	1.0	-1.2	1.0	A-	A-
207	604953	5	4	1189	.625	.625	.110	.204	.046	.015	.537	.537	181	327	242	-0.623	0.072	-1.2	1.0	-1.2	0.9	A-	A-
208	604853	5	2	1189	.601	.029	.279	.601	.078	.012	.604	120	476	.604	154	-0.470	0.071	-5.3	0.8	-3.8	0.8	A-	B-
209	604784	5	5	1190	.861	.861	.031	.055	.043	.010	.453	.453	173	299	198	-2.371	0.097	-1.7	0.9	-1.4	0.8	A+	A-
210	604856	5	4	1194	.594	.131	.130	.134	.594	.012	.526	179	207	322	.526	-0.380	0.068	-1.7	1.0	-1.8	0.9	A+	A+
211	604958	5	4	1191	.729	.729	.066	.085	.108	.013	.541	.541	228	345	215	-1.196	0.075	-3.4	0.9	-2.4	8.0	B-	A-
212	600853	5	3	1791	.774	.117	.047	.061	.774	.001	.360	172	191	220	.360	-1.224	0.064	2.9	1.1	3.2	1.2	A-	A-
213	606163	5	2	1191	.657	.265	.041	.657	.034	.003	.340	204	241	.340	112	-0.699	0.071	6.0	1.2	5.9	1.4	A-	A-
214	604960	5	4	596	.698	.030	.180	.089	.698	.003	.429	160	239	238	.429	-0.954	0.101	1.0	1.1	0.6	1.1	A-	A-
215	604959	5	4	1190	.834	.834	.060	.055	.046	.006	.514	.514	264	282	250	-2.048	0.089	-3.2	0.8	-2.6	0.7	A-	A-
216	604857	5	3	1191	.623	.623	.200	.045	.121	.012	.275	.275	025	113	254	-0.424	0.070	9.4	1.3	9.2	1.5	A-	A-
217	604796	5	6	1195	.610	.039	.223	.610	.127	.001	.405	129	214	.405	240	-0.192	0.068	2.7	1.1	1.8	1.1	A-	A-
218	606162	5	2	596	.611	.029	.017	.339	.611	.005	.293	221	206	139	.293	-0.451	0.096	6.7	1.3	6.0	1.5	A-	A-
219	604841	5	4	598	.881	.022	.881	.020	.070	.007	.270	109	.270	169	144	-2.413	0.137	0.6	1.1	2.0	1.4	B+	A-
220	604868	5	5	1189	.747	.034	.747	.074	.135	.011	.436	206	.436	293	166	-1.412	0.077	0.2	1.0	1.7	1.1	A+	A-
221	601542	5	3	1193	.575	.064	.575	.279	.079	.003	.417	144	.417	271	160	-0.111	0.068	3.8	1.1	3.7	1.2	A-	A-
222	604869	5	4	1194	.812	.078	.090	.812	.018	.003	.444	284	256	.444	142	-1.735	0.081	-1.6	0.9	-2.9	0.8	B+	A-
223	604790	5	4	596	.857	.025	.017	.084	.857	.017	.392	218	202	179	.392	-2.259	0.133	-0.3	1.0	-0.3	0.9	A-	A-
224	604843	5	3	1191	.615	.615	.170	.123	.088	.004	.528	.528	282	283	173	-0.358	0.069	-2.0	0.9	-1.9	0.9	A+	A-
225	604961	5	4	1195	.811	.091	.811	.034	.063	.002	.396	261	.396	155	195	-1.496	0.082	0.2	1.0	-0.1	1.0	A-	A-
226	604858	5	2	1191	.499	.073	.120	.499	.303	.005	.427	230	246	.427	140	0.199	0.068	5.4	1.2	5.9	1.3	A+	A+
227	606275	5	8	1193	.816	.117	.055	.008	.816	.004	.366	212	245	131	.366	-1.662	0.083	0.3	1.0	0.3	1.0	A+	A-
228	604962	5	4	1192	.763	.053	.148	.036	.763	.000	.381	148	294	131	.381	-1.141	0.078	3.2	1.1	2.4	1.2	A+	A+
229	604859	5	2	1784	.461	.163	.252	.114	.461	.010	.458	258	124	198	.458	0.402	0.058	5.7	1.2	4.8	1.2	A+	A+
230	606155	5	4	1194	.499	.434	.054	.499	.013	.001	.354	263	152	.354	097	0.162	0.067	7.2	1.2	8.6	1.4	A-	A-
231	606276	5	8	598	.610	.052	.197	.610	.127	.013	.344	132	176	.344	161	-0.479	0.096	5.2	1.2	4.9	1.4	A-	A-
232	604842	5	3	1190	.760	.063	.029	.760	.141	.007	.463	205	187	.463	299	-1.429	0.079	-0.2	1.0	-0.4	1.0	A+	A+
233	604862	5	4	1194	.670	.092	.116	.112	.670	.010	.570	259	284	274	.570	-0.809	0.070	-5.2	0.9	-5.2	0.7	A+	B+
234	600852	5	4	1191	.720	.056	.050	.720	.162	.011	.463	195	171	.463	284	-1.127	0.074	0.6	1.0	-1.0	0.9	A+	B-
235	606278	5	3	1191	.632	.632	.069	.248	.040	.012	.511	.511	191	325	202	-0.477	0.070	-1.4	1.0	-0.9	1.0	A+	A-
236	606165	5	4	1785	.740	.075	.740	.151	.025	.010	.394	163	.394	233	187	-1.318	0.062	3.5	1.1	3.1	1.2	A-	A-
237	601538	5	4	1189	.416	.121	.188	.262	.416	.013	.506	193	106	298	.506	0.645	0.072	2.2	1.1	5.1	1.4	A-	A-
238	601539	5	4	1190	.827	.101	.827	.037	.022	.013	.446	274	.446	183	202	-2.039	0.090	-0.8	1.0	-0.2	1.0	A-	A-
239	604793	5	4	1191	.900	.900	.030	.019	.041	.009	.309	.309	184	135	138	-2.662	0.109	0.5	1.0	0.9	1.1	B+	A+
240	606156	5	4	1792	.635	.085	.067	.635	.211	.002	.398	206	197	.398	200	-0.333	0.057	4.4	1.1	3.8	1.2	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Dof	ın	FT	PCS	N	D\/al	D/A)	D/D\	D/C)	D/D/	D/ \	D+D:	DT(A)	DT/D)	DT/C)	DT(D)	Mass	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
241	604872	5	3	1196	.729	.729	.161	.066	.041	.003	.489	.489	301	258	186	-0.922	0.075	-1.6	0.9	-1.6	0.9	A+	A-
242	604861	5	4	598	.679	.075	.147	.679	.097	.002	.394	147	258	.394	170	-0.833	0.099	2.1	1.1	1.6	1.1	A+	A+
243	606164	5	4	596	.894	.894	.027	.052	.024	.003	.450	.450	205	301	186	-2.548	0.143	-1.9	0.8	-2.8	0.5	A+	A-
244	606277	5	3	1190	.819	.819	.092	.019	.057	.013	.437	.437	271	148	205	-1.949	0.088	-0.2	1.0	1.6	1.2	A+	A-
245	604860	5	4	1193	.476	.086	.112	.319	.476	.008	.435	182	267	155	.435	0.432	0.068	3.6	1.1	4.3	1.2	A+	B-
246	606166	5	4	1189	.892	.892	.032	.043	.027	.007	.443	.443	220	265	190	-2.754	0.105	-2.3	0.9	-2.4	0.6	A+	A-
247	606157	5	4	1192	.750	.156	.040	.050	.750	.003	.422	274	198	184	.422	-1.055	0.077	-0.2	1.0	-0.6	1.0	A-	A+
248	604848	5	7	1790	.841	.024	.841	.080	.051	.003	.373	133	.373	261	177	-1.884	0.072	0.4	1.0	0.6	1.1	A+	A-
249	604966	5	3	598	.977	.005	.010	.977	.005	.003	.217	090	159	.217	155	-4.367	0.293	-0.4	0.9	-1.5	0.5	A+	A-
250	604965	5	3	1193	.916	.026	.916	.025	.030	.003	.359	210	.359	136	238	-2.742	0.112	-1.3	0.9	-1.7	0.7	A+	A-
251	606158	5	6	1189	.800	.054	.070	.067	.800	.009	.407	188	142	274	.407	-1.824	0.084	0.3	1.0	2.4	1.3	A+	A+
252	601540	5	6	1194	.666	.182	.666	.068	.080	.004	.500	257	.500	212	285	-0.766	0.070	-1.8	1.0	-2.0	0.9	A+	A+
253	606167	5	7	1190	.883	.039	.883	.040	.030	.008	.423	184	.423	242	215	-2.604	0.103	-0.9	0.9	-1.7	0.8	A+	B-
254	601592	5	6	596	.737	.114	.737	.082	.065	.002	.509	208	.509	303	307	-1.199	0.104	-2.3	0.9	-2.3	0.8	B+	A+
255	604964	5	3	1192	.953	.016	.953	.008	.022	.002	.275	198	.275	140	134	-3.436	0.147	-0.2	1.0	0.5	1.1	A+	A-
256	604794	5	6	1189	.853	.014	.100	.853	.024	.010	.359	104	254	.359	139	-2.302	0.093	0.0	1.0	1.7	1.2	A+	A+
257	606279	5	7	1196	.605	.605	.283	.062	.050	.000	.482	.482	304	272	151	-0.146	0.069	0.5	1.0	0.7	1.0	A-	A-
258	599668	6	6	611	.789	.084	.066	.789	.057	.005	.397	187	134	.397	295	-1.234	0.110	-0.3	1.0	-0.5	0.9	A+	A-
259	602174	6	6	1229	.513	.513	.197	.130	.144	.016	.467	.467	230	200	173	0.232	0.066	0.5	1.0	0.2	1.0	A+	A-
260	599670	6	6	1230	.795	.037	.795	.103	.040	.025	.417	246	.417	205	162	-1.499	0.084	0.0	1.0	0.5	1.0	A-	A+
261	599667	6	5	1230	.811	.046	.078	.063	.811	.003	.387	186	240	181	.387	-1.291	0.081	0.0	1.0	-0.1	1.0	A+	A-
262	599595	6	6	1228	.963	.015	.014	.963	.007	.002	.299	159	172	.299	136	-3.515	0.160	-0.8	0.9	-3.0	0.4	A+	A+
263	599591	6	6	1228	.913	.022	.913	.024	.030	.011	.360	164	.360	176	188	-2.598	0.114	-0.7	0.9	-1.3	0.8	A-	A-
264	599607	6	5	1228	.555	.555	.128	.245	.057	.015	.597	.597	163	415	184	0.167	0.067	-6.1	0.8	-5.0	0.8	A-	A+
265	599594	6	6	1228	.966	.005	.966	.016	.004	.009	.249	108	.249	137	115	-3.821	0.185	-0.4	0.9	-1.1	0.7	A+	A+
266	601812	6	6	1233	.592	.083	.142	.174	.592	.009	.411	188	187	189	.411	0.023	0.068	3.7	1.1	2.5	1.1	A+	A+
267	599644	6	6	1233	.542	.359	.040	.045	.542	.015	.449	229	260	204	.449	0.285	0.067	2.1	1.1	2.8	1.1	A+	A-
268	599598	6	6	1230	.780	.087	.039	.076	.780	.018	.545	322	204	270	.545	-1.311	0.081	-4.4	0.8	-4.4	0.6	A-	A+
269	599666	6	5	1230	.458	.458	.073	.224	.231	.014	.416	.416	069	340	068	0.751	0.069	5.5	1.2	5.0	1.3	A-	A+
270	599662	6	6	1230	.916	.046	.916	.009	.011	.018	.372	234	.372	168	146	-2.896	0.123	-0.7	0.9	-2.1	0.6	A+	A+
271	601794	6	6	1230	.816	.816	.055	.050	.060	.018	.471	.471	242	246	211	-1.632	0.086	-2.4	0.9	-2.3	0.8	A+	A+
272	599599	6	6	1230	.874	.066	.035	.024	.874	.001	.425	245	266	197	.425	-1.872	0.094	-2.6	0.9	-3.3	0.6	A+	A-
273	601795	6	6	1230	.828	.037	.067	.828	.063	.007	.413	193	206	.413	253	-1.461	0.085	-1.4	0.9	-1.3	0.9	A+	A+
274	599671	6	6	1230	.632	.259	.059	.632	.047	.002	.326	206	195	.326	093	-0.105	0.068	6.3	1.2	5.0	1.3	A+	A-
275	599663	6	6	1230	.968	.968	.007	.008	.014	.002	.245	.245	160	119	117	-3.627	0.175	-0.5	0.9	-1.5	0.6	B+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Def		FT	PCS	N.	D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT(A)	DT/D)	DT/C)	DT/D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
276	599615	6	6	1228	.793	.038	.066	.793	.103	.000	.327	219	238	.327	104	-1.324	0.078	1.9	1.1	2.1	1.2	A+	B+
277	599654	6	6	1228	.384	.043	.415	.158	.384	.000	.525	193	238	271	.525	1.064	0.068	-2.4	0.9	-1.8	0.9	A-	A-
278	599700	6	5	1231	.549	.549	.243	.070	.133	.005	.545	.545	286	197	276	0.119	0.066	-5.1	0.9	-4.3	0.8	A-	A-
279	601071	6	6	1231	.652	.069	.067	.652	.208	.003	.424	209	281	.424	182	-0.447	0.068	0.6	1.0	-0.6	1.0	A+	A-
280	601789	6	6	1231	.802	.802	.087	.037	.066	.008	.377	.377	208	175	199	-1.456	0.080	-0.6	1.0	-0.1	1.0	A-	A-
281	599655	6	6	1231	.836	.077	.836	.055	.028	.003	.429	338	.429	219	085	-1.686	0.084	-2.1	0.9	-3.1	0.7	A-	A-
282	601072	6	6	1231	.644	.113	.106	.644	.129	.007	.437	258	264	.437	111	-0.417	0.068	0.1	1.0	-1.0	1.0	B+	A+
283	599617	6	6	1231	.668	.032	.187	.668	.099	.015	.317	092	090	.317	253	-0.577	0.069	4.7	1.2	4.6	1.3	A+	B+
284	601790	6	6	1231	.375	.437	.054	.120	.375	.013	.462	205	229	158	.462	1.016	0.067	-0.2	1.0	-0.4	1.0	A-	B+
285	599701	6	5	1231	.590	.590	.197	.122	.085	.007	.465	.465	339	178	094	-0.118	0.066	-0.5	1.0	-1.3	0.9	A-	A-
286	601115	6	6	1227	.569	.305	.033	.569	.091	.002	.444	279	220	.444	172	-0.052	0.065	0.8	1.0	1.4	1.1	A+	A-
287	599672	6	6	615	.810	.011	.106	.810	.070	.003	.412	164	209	.412	290	-1.508	0.113	-0.8	1.0	-1.1	0.9	A-	A-
288	601753	6	6	1227	.306	.547	.069	.074	.306	.004	.422	123	250	239	.422	1.365	0.070	1.2	1.0	3.4	1.2	A-	B+
289	599723	6	5	615	.485	.485	.304	.135	.067	.010	.447	.447	206	198	181	0.372	0.092	1.0	1.0	1.0	1.1	A-	A-
290	599676	6	6	615	.889	.007	.023	.065	.889	.016	.359	144	167	211	.359	-2.398	0.146	-0.5	1.0	-0.4	0.9	A-	A+
291	599674	6	8	1223	.583	.121	.227	.583	.058	.011	.419	199	225	.419	168	-0.162	0.066	2.9	1.1	1.9	1.1	B+	A-
292	601751	6	N/A	1223	.804	.018	.034	.135	.804	.010	.437	082	224	330	.437	-1.536	0.080	-1.8	0.9	-1.8	0.8	A-	A-
293	599678	6	6	1223	.680	.091	.159	.062	.680	.008	.424	167	245	208	.424	-0.696	0.069	1.0	1.0	1.3	1.1	A+	A-
294	601754	6	6	612	.925	.925	.036	.021	.016	.002	.328	.328	223	182	118	-2.783	0.162	-0.6	0.9	-1.0	0.8	A-	B-
295	599680	6	4	1223	.865	.065	.044	.865	.023	.003	.461	310	244	.461	177	-2.021	0.090	-3.5	0.8	-3.3	0.6	A-	A-
296	602147	6	6	1223	.499	.110	.499	.258	.128	.005	.487	144	.487	298	185	0.307	0.066	0.1	1.0	0.1	1.0	A+	A-
297	599677	6	6	612	.719	.023	.211	.719	.041	.007	.471	233	390	.471	044	-0.935	0.102	-0.6	1.0	-1.4	0.9	A+	B+
298	601116	6	6	612	.508	.170	.508	.178	.131	.013	.435	293	.435	143	119	0.229	0.093	2.1	1.1	1.8	1.1	A+	A-
299	599673	6	6	1227	.709	.097	.112	.064	.709	.018	.584	190	386	264	.584	-0.889	0.071	-6.3	0.8	-5.5	0.7	B-	A+
300	599724	6	5	612	.807	.023	.101	.044	.807	.025	.324	203	044	260	.324	-1.666	0.118	1.4	1.1	2.3	1.4	A+	B-
301	602148	6	6	1222	.930	.010	.012	.044	.930	.003	.275	119	113	190	.275	-2.782	0.120	-0.5	1.0	0.9	1.2	A+	B-
302	599681	6	4	1222	.858	.052	.034	.039	.858	.016	.469	287	221	207	.469	-1.979	0.092	-3.3	0.8	-3.7	0.6	A+	C-
303	601752	6	N/A	1222	.665	.056	.665	.111	.165	.004	.499	024	.499	264	382	-0.509	0.068	-2.9	0.9	-2.4	0.9	C-	A+
304	599679	6	6	1222	.717	.038	.717	.104	.133	.008	.457	154	.457	271	245	-0.838	0.071	-1.3	1.0	-1.4	0.9	A-	A-
305	599675	6	8	611	.452	.219	.232	.452	.080	.016	.474	245	169	.474	174	0.534	0.094	0.6	1.0	1.4	1.1	A-	A-
306	601787	6	N/A	611	.570	.211	.570	.156	.046	.018	.484	279	.484	219	170	0.035	0.094	-0.2	1.0	-0.2	1.0	A-	A-
307	599669	6	6	1225	.617	.136	.617	.118	.115	.015	.430	181	.430	240	164	-0.286	0.067	1.6	1.1	0.5	1.0	A+	A+
308	602151	6	6	611	.761	.761	.066	.092	.075	.007	.407	.407	208	262	147	-1.049	0.106	-0.3	1.0	-0.4	1.0	A+	A-
309	599661	6	8	1225	.557	.189	.106	.137	.557	.011	.567	247	244	268	.567	0.048	0.065	-5.4	0.9	-5.0	0.8	A-	A-
310	599620	6	4	611	.759	.077	.057	.080	.759	.026	.539	277	232	249	.539	-1.137	0.109	-3.2	0.8	-1.3	0.9	B+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

D - 6	I.D.	FT	PCS		DV-1	D/A)	D/D)	D(C)	D(D)	D()	Din'-	DT(4)	DT/D)	DT(C)	DT/D)		D ACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
311	599656	6	8	611	.594	.111	.594	.234	.031	.030	.583	161	.583	391	189	-0.124	0.095	-3.3	0.9	-3.8	8.0	A+	A+
312	599621	6	4	1225	.845	.057	.038	.043	.845	.016	.464	302	196	219	.464	-1.859	0.089	-2.8	0.9	-3.5	0.6	B+	A-
313	601788	6	N/A	1225	.749	.019	.112	.099	.749	.021	.332	155	113	218	.332	-1.120	0.075	2.8	1.1	3.0	1.3	A+	A+
314	599601	6	8	1229	.560	.267	.560	.110	.059	.004	.505	364	.505	163	151	0.016	0.065	-2.2	0.9	-1.7	0.9	A+	A+
315	599641	6	6	1229	.683	.112	.125	.075	.683	.006	.402	200	206	187	.402	-0.664	0.069	1.8	1.1	0.7	1.0	A-	A-
316	599664	6	4	1229	.801	.033	.065	.094	.801	.007	.503	234	277	274	.503	-1.455	0.079	-3.9	0.8	-4.1	0.7	B+	A-
317	601791	6	N/A	1229	.515	.209	.515	.135	.133	.007	.529	342	.529	205	133	0.244	0.065	-3.3	0.9	-1.7	0.9	A-	B-
318	602153	6	6	614	.267	.235	.181	.285	.267	.033	.354	067	095	132	.354	1.522	0.103	1.8	1.1	4.0	1.4	A+	A-
319	599642	6	6	615	.581	.096	.581	.033	.289	.002	.378	187	.378	181	212	-0.031	0.094	3.7	1.2	2.9	1.2	A-	A-
320	599592	6	8	1226	.503	.065	.307	.503	.113	.012	.520	181	412	.520	041	0.356	0.066	-1.7	1.0	-1.6	0.9	A+	A+
321	599602	6	8	615	.558	.047	.558	.309	.083	.003	.529	149	.529	401	151	0.085	0.093	-2.3	0.9	-2.2	0.9	A-	A+
322	599596	6	4	1226	.879	.055	.879	.042	.019	.005	.415	235	.415	247	171	-2.108	0.095	-1.7	0.9	-3.2	0.6	A-	A-
323	601792	6	N/A	615	.932	.023	.932	.028	.008	.010	.275	145	.275	175	048	-2.960	0.179	-0.1	1.0	0.2	1.0	A+	A+
324	599665	6	4	615	.842	.039	.078	.842	.029	.011	.485	246	313	.485	169	-1.812	0.124	-2.4	0.8	-2.8	0.6	A+	A-
325	599608	6	6	611	.712	.070	.141	.712	.075	.002	.359	170	193	.359	191	-0.754	0.100	2.4	1.1	0.5	1.1	A-	B+
326	599597	6	4	1226	.848	.042	.052	.057	.848	.002	.430	242	245	214	.430	-1.747	0.085	-2.5	0.9	-3.0	0.7	A+	A+
327	601797	6	N/A	611	.841	.012	.121	.023	.841	.003	.345	096	253	175	.345	-1.688	0.121	0.1	1.0	0.9	1.1	B-	A-
328	602125	6	6	611	.611	.611	.106	.174	.092	.018	.550	.550	249	251	261	-0.229	0.095	-2.8	0.9	-2.6	0.8	A+	A-
329	602126	6	6	1226	.384	.218	.384	.324	.048	.026	.408	219	.408	102	160	0.896	0.066	2.0	1.1	3.8	1.2	A+	A-
330	599606	6	5	1228	.457	.457	.142	.303	.095	.003	.490	.490	105	347	142	0.590	0.065	-2.3	0.9	-1.6	0.9	A-	A-
331	601811	6	6	1228	.862	.059	.862	.037	.036	.007	.322	189	.322	125	176	-1.910	0.090	0.2	1.0	0.4	1.0	A+	A-
332	599590	6	6	2456	.818	.818	.156	.010	.011	.004	.355	.355	297	133	098	-1.523	0.058	0.3	1.0	-1.4	0.9	B-	A-
333	599643	6	6	1228	.512	.213	.235	.512	.032	.009	.298	058	182	.298	212	0.290	0.064	6.7	1.2	5.3	1.2	A-	A-
334	599593	6	8	1226	.483	.254	.100	.483	.160	.004	.504	323	068	.504	241	0.427	0.064	-2.7	0.9	-2.2	0.9	A+	A+
335	599609	6	6	1226	.651	.135	.651	.140	.060	.016	.430	211	.430	217	174	-0.483	0.067	0.0	1.0	0.2	1.0	A+	A-
336	601799	6	N/A	1226	.662	.662	.089	.080	.157	.012	.416	.416	273	128	192	-0.536	0.068	0.5	1.0	0.7	1.0	A-	A-
337	602175	6	6	615	.577	.085	.296	.577	.041	.002	.483	102	387	.483	154	-0.015	0.094	-0.5	1.0	0.3	1.0	A-	A+
338	602096	6	3	1227	.717	.060	.109	.717	.103	.011	.427	124	286	.427	200	-0.928	0.072	0.3	1.0	0.1	1.0	B-	A-
339	601730	6	3	1226	.665	.072	.223	.665	.038	.002	.465	276	284	.465	142	-0.492	0.068	-0.7	1.0	-0.9	1.0	A-	A+
340	602176	6	3	1233	.707	.035	.048	.707	.194	.016	.488	103	234	.488	333	-0.701	0.073	-0.9	1.0	-2.1	0.9	A-	A-
341	602104	6	N/A	611	.358	.403	.139	.093	.358	.007	.423	176	214	122	.423	1.148	0.096	0.8	1.0	2.5	1.2	B-	A-
342	601720	6	4	1228	.883	.883	.065	.033	.016	.003	.390	.390	239	234	148	-2.104	0.095	-1.7	0.9	-3.0	0.7	A+	A-
343	602127	6	3	1228	.655	.110	.057	.655	.169	.010	.396	246	184	.396	145	-0.465	0.067	1.2	1.0	0.5	1.0	A+	A-
344	602106	6	N/A	1228	.338	.091	.073	.486	.338	.012	.244	045	174	082	.244	1.210	0.068	6.4	1.2	8.4	1.5	A-	A+
345	602107	6	N/A	1233	.788	.048	.032	.126	.788	.007	.233	069	149	140	.233	-1.226	0.079	4.7	1.2	7.1	1.8	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

- ·		FT	PCS		5)/ 1	D/A\	D/D\	D/0\	D/D)	5/\	5.5.	D=(4)	D=(D)	D=(0)	D=(D)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
346	601721	6	4	1233	.884	.032	.884	.023	.050	.011	.421	207	.421	219	230	-2.203	0.101	-1.4	0.9	-2.2	0.7	A-	B-
347	602090	6	4	1229	.736	.079	.023	.736	.157	.006	.382	150	112	.382	279	-0.828	0.075	3.3	1.1	2.7	1.2	A-	B-
348	602091	6	4	1230	.594	.594	.023	.226	.158	.000	.413	.413	101	163	328	0.120	0.067	2.6	1.1	3.4	1.2	A-	A-
349	602083	6	4	1230	.685	.052	.092	.166	.685	.005	.436	166	220	258	.436	-0.430	0.071	0.2	1.0	0.6	1.0	A+	B-
350	602149	6	3	1230	.449	.215	.449	.264	.066	.006	.467	192	.467	238	167	0.904	0.068	0.8	1.0	4.2	1.2	A-	A+
351	602150	6	3	1231	.245	.039	.245	.176	.531	.009	.409	080	.409	123	200	1.896	0.076	-0.2	1.0	3.3	1.3	A-	A-
352	602092	6	4	1231	.744	.116	.005	.744	.132	.002	.398	189	075	.398	305	-1.007	0.073	0.4	1.0	0.4	1.0	A-	A-
353	602082	6	3	1231	.622	.053	.622	.154	.162	.010	.464	191	.464	258	201	-0.303	0.067	-0.9	1.0	-1.1	1.0	A-	A-
354	602094	6	4	1227	.688	.688	.212	.076	.022	.002	.457	.457	283	248	185	-0.711	0.069	-0.8	1.0	-0.4	1.0	A-	C-
355	602093	6	4	1230	.717	.153	.085	.717	.035	.011	.368	118	277	.368	179	-0.891	0.070	1.2	1.0	1.2	1.1	A-	A+
356	602097	6	3	612	.721	.093	.721	.155	.029	.002	.504	315	.504	316	110	-0.924	0.101	-2.7	0.9	-0.5	1.0	A-	A-
357	602098	6	3	1223	.700	.023	.154	.117	.700	.007	.479	179	325	208	.479	-0.807	0.070	-1.9	0.9	-2.0	0.9	A-	A-
358	602089	6	3	1222	.850	.042	.067	.850	.037	.004	.320	177	176	.320	149	-1.802	0.087	0.2	1.0	0.8	1.1	A+	A-
359	602099	6	3	1222	.750	.750	.145	.056	.043	.007	.387	.387	293	137	128	-1.039	0.074	0.6	1.0	0.1	1.0	A-	A+
360	601722	6	3	611	.777	.021	.082	.777	.120	.000	.363	187	288	.363	139	-1.125	0.107	0.3	1.0	0.7	1.1	A+	A+
361	602100	6	3	611	.727	.062	.727	.082	.105	.025	.418	265	.418	176	137	-0.899	0.104	0.3	1.0	0.6	1.1	A-	A-
362	601729	6	3	1229	.697	.111	.139	.697	.050	.004	.442	258	228	.442	180	-0.740	0.070	-0.7	1.0	-1.4	0.9	A-	A-
363	601728	6	3	614	.370	.199	.308	.370	.109	.015	.348	265	054	.348	060	0.941	0.095	3.6	1.2	4.0	1.3	A-	A-
364	602102	6	N/A	1229	.708	.056	.080	.143	.708	.013	.333	104	205	159	.333	-0.843	0.071	3.5	1.1	4.1	1.3	A+	A-
365	602103	6	N/A	615	.568	.062	.075	.294	.568	.002	.224	032	088	175	.224	0.035	0.093	8.8	1.4	7.9	1.6	A-	A+
366	601718	6	4	611	.856	.856	.108	.021	.012	.003	.374	.374	258	209	169	-1.829	0.125	-1.0	0.9	-0.5	0.9	B-	A-
367	601719	6	4	1226	.885	.055	.885	.020	.038	.002	.344	189	.344	152	216	-2.128	0.096	-0.6	1.0	-1.4	0.8	A-	A-
368	602105	6	N/A	1226	.448	.115	.083	.349	.448	.005	.355	.017	181	264	.355	0.601	0.064	4.6	1.1	4.7	1.2	A-	A-
369	602095	6	4	612	.722	.167	.025	.722	.077	.010	.376	160	182	.376	257	-0.976	0.102	1.8	1.1	1.9	1.2	A-	A-
370	602177	6	3	1230	.563	.070	.202	.155	.563	.011	.455	202	221	186	.455	0.154	0.069	2.5	1.1	1.8	1.1	A+	A-
371	601220	6	4	1229	.912	.041	.912	.021	.007	.020	.363	202	.363	193	121	-2.758	0.121	-0.6	1.0	-1.4	0.7	A+	B-
372	602101	6	3	614	.725	.147	.725	.073	.052	.003	.314	153	.314	188	144	-0.942	0.100	2.1	1.1	2.6	1.3	A-	A-
373	602088	6	3	1226	.874	.038	.068	.874	.020	.000	.373	194	282	.373	113	-2.028	0.091	-1.6	0.9	-2.6	0.7	A-	A-
374	601689	6	4	611	.784	.118	.075	.784	.020	.003	.431	269	267	.431	108	-1.331	0.108	-1.6	0.9	-0.2	1.0	A-	B-
375	601249	6	5	611	.849	.849	.084	.033	.016	.018	.394	.394	242	209	123	-1.889	0.128	-0.6	1.0	-0.6	0.9	A+	A+
376	601260	6	5	611	.728	.051	.095	.728	.124	.002	.407	177	149	.407	293	-0.806	0.101	0.7	1.0	-0.1	1.0	A+	A-
377	601716	6	4	1228	.953	.953	.009	.005	.015	.019	.315	.315	155	101	178	-3.693	0.175	-0.6	0.9	-2.9	0.4	A+	A-
378	601266	6	7	1228	.581	.023	.581	.077	.309	.010	.252	130	.252	298	028	-0.062	0.065	7.5	1.2	7.3	1.3	A-	A-
379	601258	6	5	1233	.778	.087	.778	.103	.026	.007	.447	187	.447	289	204	-1.145	0.078	-0.5	1.0	-1.5	0.9	A-	B-
380	601267	6	N/A	1233	.710	.192	.055	.710	.030	.013	.511	287	307	.511	177	-0.700	0.073	-2.4	0.9	-1.9	0.9	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\	•	(-)	/->	/->	(-)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
381	601717	6	4	1233	.801	.025	.801	.029	.125	.020	.282	195	.282	221	067	-1.422	0.083	4.0	1.2	4.5	1.6	A+	A+
382	601239	6	4	1229	.945	.012	.008	.945	.030	.005	.235	099	134	.235	121	-3.130	0.138	0.4	1.0	0.8	1.2	A+	A+
383	601281	6	5	1229	.855	.054	.855	.027	.056	.008	.372	181	.372	180	202	-1.844	0.092	0.1	1.0	0.7	1.1	A-	A-
384	601268	6	N/A	1229	.732	.149	.050	.732	.058	.011	.465	258	215	.465	217	-0.830	0.076	-0.3	1.0	-1.3	0.9	A+	A+
385	602068	6	N/A	1230	.658	.158	.658	.072	.111	.002	.531	320	.531	305	177	-0.252	0.069	-3.9	0.9	-3.8	0.8	A+	B-
386	601241	6	4	1228	.501	.067	.326	.103	.501	.004	.462	229	242	186	.462	0.417	0.066	0.3	1.0	0.7	1.0	A+	A-
387	601283	6	5	1228	.725	.090	.725	.016	.168	.002	.449	228	.449	160	306	-0.856	0.072	-1.4	1.0	-1.0	0.9	A+	B-
388	601242	6	4	1231	.827	.074	.827	.019	.077	.003	.342	288	.342	190	085	-1.627	0.083	0.2	1.0	0.7	1.1	A+	A-
389	601276	6	5	1231	.865	.080	.033	.865	.019	.003	.320	194	156	.320	161	-1.982	0.091	0.2	1.0	-0.4	0.9	A-	A+
390	601228	6	N/A	615	.618	.050	.618	.104	.228	.000	.469	233	.469	273	224	-0.300	0.093	-0.9	1.0	-1.0	0.9	A+	B-
391	601221	6	5	1230	.800	.019	.103	.071	.800	.007	.409	179	248	215	.409	-1.436	0.078	-1.1	1.0	-1.1	0.9	A+	A+
392	601229	6	N/A	1227	.800	.800	.040	.063	.091	.007	.475	.475	221	330	199	-1.478	0.079	-2.8	0.9	-2.8	0.8	A-	A-
393	601243	6	4	615	.829	.829	.021	.109	.024	.016	.304	.304	163	195	062	-1.762	0.121	1.0	1.1	1.7	1.3	A-	A-
394	601223	6	5	1227	.680	.680	.129	.120	.055	.017	.495	.495	146	296	285	-0.721	0.070	-1.8	0.9	-1.7	0.9	A-	B-
395	601701	6	4	1227	.447	.447	.108	.105	.329	.011	.445	.445	202	210	173	0.566	0.066	1.4	1.0	1.2	1.1	A-	A-
396	601224	6	5	612	.724	.724	.172	.052	.051	.002	.363	.363	191	215	181	-0.941	0.101	2.1	1.1	0.9	1.1	A-	A-
397	601230	6	N/A	612	.814	.047	.814	.044	.072	.023	.485	161	.485	283	259	-1.709	0.120	-1.9	0.9	-1.3	0.8	A-	A+
398	601225	6	5	1226	.709	.709	.140	.103	.045	.003	.404	.404	206	264	141	-0.817	0.069	-0.4	1.0	-0.5	1.0	A-	A-
399	601259	6	5	1222	.751	.115	.032	.751	.097	.006	.339	204	161	.339	149	-1.044	0.074	2.1	1.1	2.2	1.2	A+	A-
400	601237	6	N/A	1222	.447	.360	.099	.447	.080	.014	.486	147	246	.486	293	0.638	0.066	0.2	1.0	1.0	1.0	A+	A+
401	601690	6	4	1222	.646	.195	.106	.646	.048	.006	.459	263	218	.459	191	-0.409	0.068	-0.6	1.0	-0.8	1.0	A+	A-
402	601235	6	N/A	611	.534	.534	.211	.134	.102	.020	.491	.491	204	246	203	0.085	0.094	-0.2	1.0	-0.7	1.0	A+	A+
403	601665	6	4	1225	.783	.783	.040	.039	.124	.014	.365	.365	154	202	185	-1.316	0.078	0.9	1.0	1.9	1.2	A+	A-
404	601695	6	N/A	1225	.441	.183	.242	.441	.114	.020	.474	242	198	.474	092	0.635	0.066	0.1	1.0	1.1	1.1	A-	A-
405	601668	6	4	1229	.821	.067	.821	.059	.053	.001	.368	190	.368	161	249	-1.576	0.081	-0.6	1.0	-0.2	1.0	A+	B-
406	602069	6	N/A	1229	.727	.136	.065	.068	.727	.003	.422	223	227	206	.422	-0.925	0.072	0.1	1.0	-1.2	0.9	A-	A-
407	601261	6	7	614	.518	.018	.422	.518	.033	.010	.391	170	268	.391	135	0.170	0.091	2.7	1.1	2.0	1.1	A+	A-
408	601265	6	7	1229	.578	.116	.137	.156	.578	.013	.486	210	252	188	.486	-0.104	0.066	-0.8	1.0	-1.0	1.0	A+	A+
409	601666	6	4	614	.749	.021	.104	.098	.749	.028	.454	207	222	235	.454	-1.223	0.107	-0.6	1.0	-1.7	0.8	A-	B-
410	601226	6	7	1226	.839	.839	.016	.122	.016	.007	.358	.358	150	264	128	-1.722	0.086	0.1	1.0	0.1	1.0	A-	A-
411	601248	6	5	1226	.879	.074	.007	.879	.032	.008	.357	244	139	.357	177	-2.132	0.096	-0.9	0.9	-0.5	0.9	A-	A-
412	601269	6	N/A	1226	.788	.043	.043	.111	.788	.015	.500	236	254	277	.500	-1.349	0.079	-3.6	0.9	-3.4	0.7	B-	A-
413	601270	6	N/A	611	.802	.074	.052	.802	.067	.005	.403	242	240	.403	154	-1.377	0.112	-0.2	1.0	-1.0	0.9	A-	A-
414	601227	6	7	611	.527	.527	.350	.066	.056	.002	.321	.321	142	174	193	0.263	0.092	5.3	1.2	4.2	1.3	A-	A-
415	601250	6	5	615	.852	.138	.007	.852	.003	.000	.326	283	144	.326	120	-1.786	0.120	-0.5	1.0	0.4	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Dof	15	FT	PCS	N.	D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT(A)	DT/D)	DT/C)	DT/D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
416	601257	6	5	1228	.888	.011	.070	.019	.888	.011	.369	105	269	149	.369	-2.258	0.102	-0.9	0.9	-1.1	8.0	A+	A-
417	601714	6	4	1226	.875	.015	.875	.019	.073	.019	.284	150	.284	223	111	-2.186	0.098	0.1	1.0	1.5	1.2	A+	A-
418	601700	6	N/A	1231	.876	.041	.066	.016	.876	.001	.382	171	291	141	.382	-2.076	0.093	-1.7	0.9	-1.7	8.0	A-	B-
419	601664	6	N/A	614	.682	.218	.034	.682	.042	.023	.507	331	148	.507	220	-0.767	0.099	-1.6	0.9	-2.2	0.8	A-	A-
420	601694	6	7	1226	.665	.081	.208	.665	.034	.012	.427	177	272	.427	170	-0.552	0.068	-0.1	1.0	-0.3	1.0	A-	A+
421	601702	6	4	612	.583	.583	.114	.018	.273	.011	.343	.343	184	073	193	-0.167	0.094	4.6	1.2	4.6	1.3	A+	A+
422	600989	6	4	1231	.223	.223	.430	.202	.139	.007	.272	.272	032	.003	259	2.062	0.079	4.0	1.2	8.3	1.9	A-	A+
423	601031	6	6	1233	.820	.076	.062	.820	.020	.022	.474	231	275	.474	218	-1.605	0.087	-2.3	0.9	-2.5	0.7	B+	A-
424	600978	6	6	615	.813	.813	.115	.050	.021	.000	.400	.400	234	248	188	-1.477	0.113	-0.6	1.0	0.3	1.0	A-	A-
425	601024	6	4	611	.696	.070	.696	.174	.056	.005	.447	282	.447	176	259	-0.668	0.099	-0.6	1.0	0.1	1.0	A+	A+
426	600997	6	4	1228	.873	.053	.024	.046	.873	.003	.370	200	207	186	.370	-1.991	0.094	-0.8	1.0	-1.8	0.8	A+	B+
427	601036	6	6	1228	.582	.228	.086	.090	.582	.014	.494	199	223	272	.494	0.021	0.067	-0.7	1.0	-0.6	1.0	A+	A+
428	601005	6	4	1233	.165	.078	.650	.090	.165	.018	.219	238	.196	315	.219	2.748	0.089	3.8	1.2	9.9	3.9	A-	A+
429	601041	6	6	1230	.711	.711	.059	.139	.067	.024	.518	.518	197	290	241	-0.837	0.075	-2.7	0.9	-2.8	8.0	A+	A-
430	601012	6	4	1229	.710	.055	.098	.126	.710	.011	.510	180	292	258	.510	-0.676	0.074	-1.9	0.9	-1.9	0.9	A-	A+
431	601013	6	4	1228	.815	.815	.041	.074	.067	.003	.517	.517	255	309	264	-1.515	0.082	-4.2	0.8	-4.4	0.6	A-	A-
432	601033	6	6	1228	.937	.033	.937	.025	.003	.002	.230	126	.230	164	075	-2.939	0.125	0.2	1.0	2.7	1.7	B+	A+
433	601014	6	4	1231	.849	.034	.849	.083	.028	.006	.426	167	.426	308	183	-1.849	0.088	-2.0	0.9	-2.6	0.7	A-	A-
434	601000	6	6	1231	.711	.217	.047	.021	.711	.004	.293	166	146	170	.293	-0.794	0.070	3.9	1.1	5.3	1.4	A+	A+
435	601001	6	6	615	.961	.034	.961	.005	.000	.000	.206	168	.206	137	.000	-3.448	0.214	0.0	1.0	0.3	1.1	A+	A-
436	601017	6	4	1227	.741	.086	.065	.099	.741	.010	.527	247	232	304	.527	-1.071	0.073	-3.9	0.9	-3.9	0.7	B+	A-
437	601016	6	4	615	.715	.062	.104	.114	.715	.005	.454	241	207	253	.454	-0.875	0.100	-1.2	0.9	-1.1	0.9	C+	A-
438	600992	6	4	615	.581	.581	.145	.208	.062	.005	.453	.453	190	239	222	-0.116	0.092	-0.2	1.0	-0.1	1.0	A-	A-
439	601002	6	4	1227	.623	.097	.095	.623	.177	.009	.439	175	197	.439	248	-0.364	0.067	1.2	1.0	0.1	1.0	A-	A+
440	601039	6	6	1227	.797	.025	.135	.797	.021	.021	.419	176	252	.419	214	-1.543	0.081	-0.7	1.0	-0.7	0.9	A-	A-
441	601020	6	6	1223	.927	.927	.041	.016	.015	.002	.331	.331	247	171	119	-2.796	0.116	-1.1	0.9	-2.6	0.6	A+	A-
442	601003	6	4	1223	.872	.034	.872	.053	.038	.003	.325	162	.325	159	209	-2.095	0.092	-0.1	1.0	-1.1	0.9	A-	A-
443	600981	6	4	1223	.429	.180	.429	.134	.231	.026	.449	125	.449	175	218	0.633	0.067	2.1	1.1	3.0	1.1	B+	A+
444	601004	6	4	611	.358	.358	.077	.038	.524	.003	.333	.333	180	178	162	1.073	0.097	4.4	1.2	5.7	1.5	A-	A+
445	600984	6	6	611	.483	.455	.033	.028	.483	.002	.451	337	192	148	.451	0.398	0.093	1.2	1.1	1.4	1.1	A-	A-
446	600983	6	6	1222	.619	.037	.033	.619	.304	.007	.216	177	113	.216	087	-0.263	0.067	9.9	1.4	8.7	1.5	A-	A-
447	600985	6	6	1222	.795	.025	.016	.153	.795	.010	.371	159	177	240	.371	-1.381	0.079	0.9	1.0	-0.4	1.0	A-	A+
448	600982	6	6	611	.612	.038	.082	.259	.612	.010	.461	113	184	322	.461	-0.311	0.095	0.0	1.0	-0.1	1.0	B+	A+
449	601022	6	4	1222	.726	.042	.069	.154	.726	.010	.428	161	192	282	.428	-0.905	0.072	-0.8	1.0	-0.2	1.0	A-	A-
450	601023	6	4	1225	.847	.049	.058	.847	.040	.006	.384	147	243	.384	235	-1.793	0.087	-1.3	0.9	-1.8	0.8	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	ID	Grade	Grade	14	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
451	601018	6	6	1225	.522	.522	.286	.087	.088	.016	.496	.496	238	214	203	0.216	0.065	-1.3	1.0	-1.1	1.0	B+	A+
452	600986	6	6	1225	.764	.053	.764	.069	.087	.028	.487	244	.487	246	210	-1.259	0.077	-2.4	0.9	-2.7	0.8	A+	A-
453	600987	6	6	614	.754	.754	.138	.088	.015	.005	.495	.495	380	182	162	-1.130	0.104	-2.5	0.9	-2.5	0.8	A+	A-
454	601670	6	4	614	.899	.023	.029	.899	.041	.008	.406	187	194	.406	251	-2.456	0.147	-1.4	0.9	-1.7	0.7	A+	A-
455	601019	6	6	614	.394	.090	.132	.352	.394	.033	.393	148	146	150	.393	0.768	0.094	2.4	1.1	2.9	1.2	A+	A+
456	600979	6	6	1226	.874	.874	.062	.042	.020	.002	.358	.358	229	196	149	-2.017	0.093	-0.7	1.0	-1.8	0.8	A+	A-
457	600998	6	6	615	.738	.738	.179	.044	.037	.002	.279	.279	190	139	096	-0.947	0.103	3.9	1.2	2.2	1.3	A-	A-
458	600999	6	6	1226	.550	.038	.051	.350	.550	.011	.534	170	208	358	.534	0.114	0.066	-2.8	0.9	-2.8	0.9	A+	A+
459	601691	6	4	1226	.803	.044	.102	.803	.033	.018	.458	214	294	.458	168	-1.489	0.081	-2.0	0.9	-2.6	0.8	A+	A-
460	601034	6	6	611	.722	.722	.170	.034	.070	.003	.465	.465	328	204	156	-0.813	0.101	-1.3	0.9	-1.2	0.9	A+	A-
461	601028	6	6	611	.658	.110	.658	.113	.093	.026	.490	185	.490	327	154	-0.527	0.098	-1.2	1.0	-0.2	1.0	C+	A+
462	601035	6	6	615	.732	.732	.197	.054	.016	.002	.306	.306	186	199	112	-0.927	0.099	1.5	1.1	2.3	1.2	A+	A-
463	601029	6	6	615	.514	.047	.046	.361	.514	.033	.231	083	167	071	.231	0.144	0.091	7.1	1.3	5.4	1.3	A+	A+
464	601026	6	4	615	.842	.041	.041	.075	.842	.002	.410	135	245	281	.410	-1.712	0.118	-1.7	0.9	-1.1	0.9	A+	A-
465	601032	6	6	1229	.850	.054	.850	.054	.028	.016	.423	194	.423	218	236	-1.853	0.093	-1.5	0.9	-2.0	0.8	A-	A+
466	601030	6	6	1228	.675	.073	.675	.204	.039	.009	.427	199	.427	261	141	-0.500	0.070	0.9	1.0	0.2	1.0	A+	A+
467	601678	6	4	1229	.862	.030	.064	.862	.037	.007	.374	179	218	.374	171	-1.987	0.091	-1.0	0.9	-1.0	0.9	A-	A-
468	601044	6	6	1229	.736	.118	.093	.736	.037	.016	.476	224	276	.476	185	-0.883	0.076	-1.2	1.0	-1.3	0.9	A-	A+
469	601040	6	7	611	.583	.146	.583	.072	.196	.003	.574	345	.574	162	296	-0.129	0.093	-5.0	0.8	-4.4	0.7	A+	A-
470	602081	6	5	1223	.499	.142	.499	.132	.209	.020	.390	038	.390	134	285	0.275	0.066	5.1	1.2	5.5	1.3	A+	A-
471	602070	6	5	615	.911	.055	.911	.018	.015	.002	.357	281	.357	187	079	-2.513	0.150	-0.9	0.9	-0.4	0.9	A+	A-
472	601706	6	6	1228	.722	.096	.722	.101	.065	.016	.471	238	.471	187	253	-0.830	0.074	-1.3	1.0	-0.3	1.0	B+	A+
473	602071	6	N/A	1230	.876	.038	.876	.050	.020	.016	.464	215	.464	286	190	-2.248	0.101	-2.4	0.9	-3.8	0.5	A-	A-
474	601712	6	N/A	1228	.626	.626	.164	.161	.041	.008	.487	.487	223	278	181	-0.213	0.068	-1.7	1.0	-1.1	0.9	A-	A-
475	601256	6	7	1228	.727	.071	.099	.727	.093	.011	.493	234	311	.493	167	-0.839	0.073	-2.2	0.9	-2.3	0.8	A+	A+
476	601253	6	6	1230	.673	.673	.111	.082	.124	.009	.463	.463	185	150	318	-0.514	0.072	1.6	1.1	0.7	1.0	A+	A+
477	601244	6	7	1230	.559	.559	.122	.222	.078	.020	.504	.504	289	222	146	0.142	0.069	-0.8	1.0	-0.2	1.0	A+	A-
478	601254	6	6	1229	.773	.028	.773	.081	.107	.012	.514	165	.514	273	304	-1.138	0.080	-3.2	0.9	-3.9	0.7	A+	A-
479	601711	6	7	1228	.841	.073	.041	.045	.841	.001	.399	187	207	272	.399	-1.727	0.086	-1.3	0.9	-1.3	0.9	A+	A-
480	602063	6	5	1228	.218	.218	.172	.119	.482	.009	.265	.265	077	143	048	2.139	0.080	4.3	1.2	6.5	1.8	A+	A-
481	602066	6	5	1228	.627	.627	.271	.033	.064	.005	.427	.427	223	233	240	-0.274	0.068	1.4	1.0	0.7	1.0	A-	A-
482	602067	6	5	1231	.599	.189	.164	.599	.046	.003	.396	257	111	.396	241	-0.158	0.066	2.2	1.1	1.8	1.1	A+	A+
483	602064	6	5	1231	.652	.652	.033	.160	.152	.003	.372	.372	161	257	129	-0.448	0.068	2.2	1.1	2.2	1.1	A-	B-
484	601279	6	7	615	.642	.215	.029	.111	.642	.003	.588	371	155	312	.588	-0.437	0.094	-5.3	0.8	-4.5	0.7	A-	B-
485	602074	6	5	1227	.621	.017	.621	.342	.017	.003	.524	192	.524	428	157	-0.337	0.067	-2.7	0.9	-3.0	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

5.6		FT	PCS		5)/ 1	5/4)	D/D\	D/0\	D/D)	5/\	5.5.	57(4)	D=(D)	D=(0)	5=(5)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
486	602075	6	5	1227	.307	.176	.307	.279	.218	.020	.186	020	.186	036	105	1.337	0.070	9.8	1.4	9.9	1.7	A+	A+
487	601042	6	7	1223	.609	.290	.047	.609	.052	.001	.524	389	213	.524	148	-0.269	0.067	-3.5	0.9	-2.4	0.9	A-	A-
488	602077	6	5	1223	.492	.492	.133	.230	.138	.007	.523	.523	149	313	205	0.337	0.066	-2.3	0.9	-1.8	0.9	A+	B-
489	601299	6	7	1227	.494	.214	.215	.494	.067	.010	.603	317	290	.603	162	0.308	0.065	-7.5	8.0	-6.1	8.0	A+	B-
490	602079	6	5	611	.696	.118	.129	.054	.696	.003	.415	197	248	173	.415	-0.755	0.098	0.2	1.0	0.5	1.0	A+	A-
491	602080	6	5	611	.902	.902	.049	.018	.021	.010	.342	.342	182	193	178	-2.505	0.150	-0.9	0.9	-0.2	0.9	A+	B-
492	600993	6	7	611	.658	.172	.124	.658	.043	.003	.532	363	231	.532	171	-0.397	0.096	-3.1	0.9	-2.8	0.8	A+	B-
493	601696	6	5	611	.444	.106	.242	.444	.198	.010	.264	215	.047	.264	167	0.736	0.093	6.8	1.3	6.6	1.4	A+	A+
494	602084	6	5	611	.393	.393	.182	.358	.051	.016	.305	.305	279	.046	178	0.996	0.095	5.6	1.2	4.8	1.3	A-	A-
495	600996	6	7	1225	.560	.257	.122	.560	.051	.011	.506	234	308	.506	149	0.036	0.066	-2.6	0.9	-1.3	0.9	A-	B-
496	602085	6	5	1225	.756	.084	.098	.039	.756	.023	.436	138	312	148	.436	-1.171	0.076	-0.8	1.0	-0.8	0.9	C+	A+
497	601303	6	6	614	.660	.155	.660	.067	.114	.005	.429	192	.429	153	293	-0.565	0.096	0.2	1.0	-0.5	1.0	A+	A-
498	601715	6	N/A	614	.759	.759	.065	.106	.065	.005	.449	.449	166	260	253	-1.166	0.105	-1.4	0.9	-0.7	0.9	A+	A-
499	601290	6	7	1229	.705	.705	.214	.058	.020	.003	.404	.404	251	221	168	-0.783	0.070	1.5	1.1	-0.2	1.0	A+	B-
500	601285	6	6	1226	.612	.126	.076	.612	.185	.002	.479	344	137	.479	210	-0.193	0.066	-1.3	1.0	-0.5	1.0	A+	A-
501	601697	6	N/A	1226	.533	.381	.533	.043	.040	.003	.270	121	.270	163	202	0.223	0.065	9.9	1.3	8.4	1.4	B+	A+
502	601709	6	N/A	615	.234	.502	.153	.102	.234	.008	.288	042	163	102	.288	1.982	0.110	3.8	1.2	6.3	2.0	A-	A-
503	601294	6	7	615	.753	.063	.753	.132	.041	.011	.491	246	.491	259	240	-1.093	0.106	-2.2	0.9	-1.7	0.8	A+	A-
504	601304	6	6	615	.782	.039	.049	.119	.782	.011	.364	164	159	211	.364	-1.309	0.110	0.8	1.1	1.4	1.2	A+	A+
505	601296	6	7	1226	.695	.047	.127	.119	.695	.011	.534	188	256	335	.534	-0.706	0.070	-4.5	0.9	-4.0	0.8	A+	A-
506	601692	6	N/A	1226	.850	.088	.017	.044	.850	.001	.316	207	150	158	.316	-1.762	0.086	-0.3	1.0	2.7	1.3	A+	A+
507	601274	6	6	1226	.598	.133	.598	.158	.099	.012	.512	261	.512	234	209	-0.186	0.066	-3.2	0.9	-3.1	0.9	A+	A-
508	601708	6	7	1226	.668	.101	.121	.098	.668	.012	.453	162	245	240	.453	-0.570	0.068	-0.8	1.0	-1.6	0.9	A+	A+
509	601255	6	7	615	.210	.652	.210	.075	.057	.007	.129	.081	.129	246	093	1.898	0.108	3.4	1.2	6.9	1.9	A-	B+
510	601693	6	N/A	615	.837	.034	.837	.018	.083	.028	.354	229	.354	117	162	-1.873	0.125	0.1	1.0	-0.7	0.9	A-	B-
511	601705	6	5	1225	.550	.009	.550	.233	.205	.003	.348	068	.348	113	289	0.102	0.065	5.5	1.2	4.3	1.2	B-	B-
512	601277	6	7	1231	.651	.093	.145	.651	.105	.007	.527	293	232	.527	243	-0.454	0.068	-4.5	0.9	-4.0	0.8	A+	A-
513	602073	6	5	615	.781	.047	.070	.083	.781	.020	.430	263	191	176	.430	-1.380	0.110	-0.5	1.0	-0.7	0.9	A+	A+
514	601275	6	6	615	.389	.187	.389	.306	.081	.037	.455	140	.455	174	203	0.782	0.093	-0.6	1.0	-0.1	1.0	A-	A+
515	601301	6	N/A	1229	.884	.055	.024	.030	.884	.007	.381	212	159	205	.381	-2.163	0.101	-1.0	0.9	-0.3	1.0	A+	A+
516	601245	6	7	1230	.595	.095	.186	.595	.120	.004	.447	258	275	.447	099	0.102	0.068	1.2	1.0	1.3	1.1	A+	A+
517	599720	7	6	797	.565	.565	.274	.079	.033	.050	.449	.449	238	184	155	-0.129	0.085	1.6	1.1	1.0	1.1	A+	A+
518	599734	7	6	799	.611	.131	.099	.150	.611	.009	.471	173	164	310	.471	-0.034	0.082	-1.7	0.9	-1.1	0.9	A-	A+
519	602189	7	7	800	.640	.110	.078	.148	.640	.025	.507	175	266	238	.507	-0.363	0.084	-2.0	0.9	-1.9	0.9	B-	B-
520	599633	7	6	800	.848	.069	.848	.063	.018	.004	.372	085	.372	342	176	-1.589	0.110	-0.9	0.9	0.4	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\		(-)	/->	(-)	(-)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
521	599685	7	7	400	.840	.840	.083	.045	.033	.000	.417	.417	234	229	230	-1.510	0.146	-1.4	0.9	-1.8	0.7	B+	A-
522	599708	7	7	1592	.576	.162	.076	.168	.576	.018	.517	310	164	216	.517	0.058	0.060	-2.2	0.9	-3.2	0.9	A-	B+
523	599715	7	6	799	.593	.033	.307	.593	.045	.023	.314	159	136	.314	196	-0.054	0.082	6.0	1.2	3.9	1.3	A+	A+
524	599650	7	7	800	.566	.158	.566	.228	.046	.003	.395	200	.395	202	165	0.346	0.084	3.7	1.1	3.4	1.2	A-	A+
525	599630	7	7	800	.375	.375	.181	.270	.164	.010	.384	.384	113	208	107	1.117	0.084	3.2	1.1	3.5	1.2	A+	A+
526	599631	7	7	797	.502	.084	.153	.502	.220	.041	.497	172	277	.497	177	0.262	0.084	-0.7	1.0	0.3	1.0	A-	A-
527	599730	7	7	800	.758	.758	.128	.053	.054	.009	.458	.458	264	287	154	-1.030	0.092	-2.2	0.9	-1.9	0.8	B-	B-
528	599707	7	7	1600	.814	.056	.052	.068	.814	.010	.390	190	208	198	.390	-1.400	0.072	-0.7	1.0	-1.1	0.9	B+	A-
529	599719	7	6	800	.664	.071	.060	.664	.161	.044	.412	166	180	.412	184	-0.616	0.088	1.3	1.1	0.6	1.0	A-	B+
530	599721	7	6	800	.514	.514	.180	.156	.114	.036	.489	.489	201	205	181	0.196	0.080	-2.5	0.9	-2.8	0.9	A+	A-
531	599709	7	7	800	.573	.075	.245	.573	.066	.041	.553	174	362	.553	160	-0.133	0.082	-4.8	0.9	-4.3	0.8	A+	A+
532	599632	7	7	800	.471	.103	.193	.471	.170	.064	.458	190	163	.458	171	0.329	0.081	0.2	1.0	-0.2	1.0	A-	A+
533	599725	7	7	800	.820	.030	.108	.820	.040	.003	.464	202	342	.464	175	-1.319	0.103	-2.1	0.9	-3.1	0.6	A-	A-
534	599726	7	7	795	.684	.684	.102	.162	.047	.005	.491	.491	226	315	180	-0.399	0.091	-2.0	0.9	-2.1	0.8	A+	A+
535	599634	7	6	795	.538	.072	.538	.096	.292	.003	.491	291	.491	173	262	0.436	0.084	0.3	1.0	0.3	1.0	A-	A-
536	601120	7	7	795	.564	.174	.209	.564	.050	.004	.492	336	196	.492	163	0.288	0.085	-1.3	1.0	-0.4	1.0	A+	A-
537	599690	7	6	799	.801	.100	.801	.035	.059	.005	.515	309	.515	226	264	-1.204	0.097	-3.8	0.8	-4.1	0.6	A+	A+
538	601133	7	7	799	.383	.116	.383	.399	.093	.009	.417	176	.417	214	127	1.136	0.082	0.2	1.0	0.6	1.0	A-	A+
539	599683	7	6	799	.369	.179	.369	.115	.303	.034	.184	097	.184	233	.118	1.147	0.083	7.9	1.3	7.6	1.5	A+	A+
540	599691	7	6	400	.893	.015	.065	.023	.893	.005	.358	096	282	118	.358	-2.067	0.172	-0.5	0.9	-1.0	0.8	A+	
541	601134	7	7	798	.650	.650	.053	.266	.023	.009	.440	.440	197	278	215	-0.276	0.083	-1.0	1.0	-0.1	1.0	A+	A-
542	599733	7	6	400	.543	.040	.543	.230	.168	.020	.501	121	.501	196	284	0.197	0.112	-2.1	0.9	-2.2	0.9	B+	
543	599624	7	6	400	.335	.145	.178	.335	.315	.028	.363	109	229	.363	012	1.234	0.117	0.9	1.0	1.5	1.1	A+	
544	599710	7	6	398	.696	.108	.111	.696	.083	.003	.449	194	321	.449	156	-0.466	0.122	-1.0	0.9	-0.8	0.9	A+	A-
545	599625	7	6	398	.312	.312	.405	.194	.055	.035	.267	.267	078	023	126	1.536	0.122	3.4	1.2	4.3	1.5	B+	A+
546	599626	7	6	798	.556	.107	.246	.556	.054	.038	.474	172	259	.474	133	0.147	0.083	0.7	1.0	0.0	1.0	A+	A+
547	602161	7	7	798	.479	.234	.120	.479	.129	.038	.449	025	181	.449	345	0.566	0.082	1.7	1.1	1.3	1.1	A+	A+
548	599735	7	6	798	.538	.150	.538	.103	.167	.043	.499	078	.499	223	313	0.233	0.083	-1.0	1.0	-0.8	1.0	C-	B-
549	599736	7	6	400	.433	.160	.290	.433	.108	.010	.424	130	277	.424	103	0.856	0.116	1.4	1.1	1.6	1.1	A-	A-
550	599627	7	7	800	.751	.063	.080	.055	.751	.051	.527	201	257	245	.527	-1.196	0.097	-3.2	0.9	-3.2	0.7	C+	B+
551	599692	7	7	800	.324	.334	.164	.324	.146	.033	.122	.123	109	.122	113	1.329	0.085	9.6	1.4	9.1	1.7	A+	A+
552	599629	7	7	799	.820	.050	.084	.820	.029	.018	.454	241	261	.454	186	-1.544	0.103	-2.4	0.9	-2.5	0.7	A+	A-
553	599636	7	7	799	.348	.078	.388	.177	.348	.010	.440	176	193	149	.440	1.210	0.084	0.1	1.0	-0.1	1.0	A+	A+
554	599635	7	7	400	.408	.220	.408	.155	.190	.028	.300	107	.300	087	087	0.793	0.115	3.4	1.2	4.5	1.3	A-	A+
555	599628	7	7	400	.648	.648	.125	.095	.100	.033	.522	.522	246	277	140	-0.493	0.119	-2.3	0.9	-1.8	8.0	C+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\	•	(-)		/->	/->			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
556	601783	7	7	400	.723	.050	.723	.105	.088	.035	.483	191	.483	246	187	-0.967	0.128	-1.2	0.9	-1.3	0.8	A-	A+
557	601809	7	7	799	.601	.081	.601	.134	.163	.021	.483	140	.483	231	255	-0.157	0.082	-1.4	1.0	-1.6	0.9	A-	A-
558	599713	7	6	400	.248	.125	.390	.173	.248	.065	.299	214	.057	052	.299	1.649	0.130	2.1	1.1	3.7	1.5	C-	A-
559	599714	7	6	799	.543	.103	.543	.274	.039	.041	.378	272	.378	090	123	0.093	0.082	3.9	1.1	2.6	1.1	A-	A-
560	599647	7	7	799	.621	.621	.192	.116	.054	.018	.582	.582	313	277	211	-0.180	0.083	-5.9	0.8	-5.2	0.7	A+	A-
561	599648	7	7	400	.358	.358	.500	.095	.048	.000	.415	.415	191	222	181	1.295	0.119	1.2	1.1	1.3	1.1	A+	A-
562	599717	7	6	802	.858	.011	.062	.057	.858	.011	.368	109	172	231	.368	-1.732	0.111	-0.5	1.0	-0.4	0.9	C-	A+
563	599716	7	6	400	.820	.048	.820	.080	.025	.028	.310	124	.310	166	161	-1.551	0.149	0.5	1.0	1.0	1.2	A-	A+
564	599729	7	7	803	.407	.247	.189	.407	.152	.005	.430	091	111	.430	339	1.031	0.081	0.4	1.0	2.6	1.1	A-	A-
565	599693	7	7	402	.463	.082	.463	.087	.341	.027	.523	189	.523	238	213	0.696	0.114	-1.5	0.9	-1.2	0.9	B+	A-
566	599687	7	7	803	.493	.149	.493	.193	.137	.027	.435	234	.435	157	126	0.531	0.081	0.5	1.0	-0.1	1.0	A-	A-
567	599718	7	6	803	.765	.765	.079	.077	.037	.042	.396	.396	192	234	146	-1.147	0.097	-0.9	1.0	-0.3	1.0	B+	A+
568	602155	7	7	398	.626	.143	.626	.085	.138	.008	.402	274	.402	255	037	-0.089	0.117	1.2	1.1	0.8	1.1	A-	B-
569	599682	7	6	795	.755	.064	.755	.128	.050	.003	.487	227	.487	282	264	-0.882	0.096	-2.4	0.9	-0.6	0.9	A-	A-
570	599732	7	7	797	.531	.067	.215	.151	.531	.038	.505	214	213	249	.505	0.114	0.083	-3.1	0.9	-3.1	0.8	A+	A+
571	599727	7	6	799	.875	.034	.030	.875	.035	.026	.353	211	146	.353	171	-2.084	0.125	-0.8	0.9	-1.9	0.7	A-	B-
572	599686	7	7	802	.458	.458	.247	.166	.100	.030	.423	.423	176	173	166	0.689	0.082	1.8	1.1	1.3	1.1	A+	A+
573	599722	7	6	800	.741	.048	.048	.160	.741	.004	.468	167	229	321	.468	-0.729	0.093	-0.9	1.0	-1.3	0.9	A+	A-
574	599684	7	7	799	.677	.096	.677	.109	.093	.025	.449	186	.449	230	219	-0.539	0.086	-0.5	1.0	-0.6	1.0	A+	A+
575	599712	7	7	800	.299	.123	.299	.460	.090	.029	.018	075	.018	.166	128	1.377	0.086	9.9	1.5	8.7	1.7	A-	A-
576	599711	7	7	798	.525	.248	.132	.525	.078	.018	.548	246	254	.548	191	0.392	0.081	-2.9	0.9	-2.9	0.9	A+	A+
577	602215	7	6	797	.694	.129	.082	.055	.694	.040	.541	343	220	202	.541	-0.825	0.090	-5.0	0.8	-4.7	0.7	A+	A+
578	602190	7	5	799	.542	.170	.542	.194	.080	.014	.568	330	.568	211	204	0.257	0.081	-5.3	0.8	-4.1	0.8	A-	A-
579	602193	7	3	799	.492	.190	.492	.073	.237	.009	.457	399	.457	100	082	0.565	0.080	-0.5	1.0	-0.4	1.0	A-	A-
580	602180	7	5	803	.390	.131	.390	.364	.098	.017	.557	086	.557	319	215	1.103	0.082	-4.1	0.9	-3.2	0.8	A-	A-
581	602139	7	5	800	.383	.100	.383	.309	.183	.026	.306	162	.306	080	101	1.026	0.084	5.5	1.2	5.4	1.4	A-	A+
582	602197	7	6	800	.628	.134	.628	.033	.189	.018	.446	250	.446	206	195	-0.282	0.084	0.4	1.0	-0.1	1.0	A-	A+
583	602140	7	6	797	.344	.344	.083	.427	.109	.038	.489	.489	190	187	178	1.171	0.086	0.1	1.0	-0.1	1.0	A+	A-
584	602211	7	6	800	.659	.060	.659	.098	.154	.030	.486	201	.486	287	182	-0.569	0.085	-2.9	0.9	-2.5	0.8	A+	A-
585	602166	7	6	800	.313	.143	.355	.313	.131	.059	.235	116	.037	.235	139	1.221	0.086	5.3	1.2	6.4	1.5	A-	A-
586	602216	7	7	800	.453	.065	.155	.321	.453	.006	.556	087	322	296	.556	0.982	0.085	-3.4	0.9	-2.6	0.8	A-	B-
587	602178	7	4	800	.440	.440	.084	.375	.098	.004	.385	.385	113	336	.026	1.059	0.085	5.2	1.2	5.1	1.4	A-	A+
588	602192	7	4	795	.584	.205	.117	.584	.078	.016	.470	353	143	.470	092	0.131	0.086	0.4	1.0	0.1	1.0	A+	A-
589	602219	7	7	795	.531	.067	.235	.159	.531	.009	.573	279	267	256	.573	0.464	0.085	-4.2	0.9	-2.6	0.9	A-	A-
590	602220	7	7	799	.652	.145	.106	.652	.080	.016	.514	308	260	.514	119	-0.303	0.084	-3.4	0.9	-2.8	0.8	A-	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS						>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
591	602213	7	6	798	.297	.297	.335	.227	.104	.038	.396	.396	127	105	118	1.516	0.086	0.6	1.0	1.6	1.1	A+	A-
592	602198	7	7	798	.734	.051	.088	.734	.102	.025	.562	228	277	.562	268	-0.852	0.091	-4.2	0.8	-4.6	0.7	A+	A-
593	602194	7	7	798	.509	.150	.249	.509	.079	.013	.320	278	088	.320	022	0.485	0.081	5.7	1.2	4.1	1.2	A+	A-
594	602214	7	7	398	.523	.276	.523	.078	.085	.030	.420	228	.420	092	124	0.372	0.116	1.8	1.1	2.1	1.2	A+	A+
595	602199	7	7	398	.751	.053	.088	.751	.043	.065	.554	287	297	.554	182	-1.202	0.142	-2.5	0.8	-2.9	0.6	B-	A+
596	602195	7	7	800	.478	.273	.183	.478	.056	.011	.357	217	054	.357	178	0.549	0.080	3.7	1.1	3.4	1.2	A+	A+
597	602200	7	7	400	.510	.113	.158	.510	.205	.015	.343	133	172	.343	101	0.309	0.113	2.1	1.1	2.4	1.2	A-	A+
598	602179	7	7	400	.353	.200	.300	.353	.098	.050	.445	269	134	.445	.049	1.036	0.119	0.2	1.0	0.4	1.0	A+	A-
599	602217	7	7	799	.389	.389	.264	.190	.116	.040	.528	.528	142	237	200	0.997	0.084	-2.0	0.9	-1.4	0.9	B-	A+
600	602181	7	7	399	.494	.113	.256	.494	.065	.060	.611	250	366	.611	063	0.315	0.118	-4.4	0.8	-3.8	0.7	A-	A-
601	602201	7	7	399	.406	.206	.143	.188	.406	.058	.113	.091	004	144	.113	0.822	0.118	8.6	1.5	7.8	1.7	A-	A+
602	602164	7	5	400	.663	.020	.033	.285	.663	.000	.432	152	151	346	.432	-0.332	0.118	-0.3	1.0	-0.7	0.9	A-	A+
603	602228	7	7	400	.550	.178	.160	.550	.095	.018	.421	068	237	.421	267	0.217	0.115	1.5	1.1	1.1	1.1	A+	A-
604	602196	7	6	803	.659	.111	.659	.135	.088	.008	.515	346	.515	230	163	-0.298	0.083	-3.9	0.9	-3.6	8.0	A+	A-
605	602165	7	5	402	.468	.127	.291	.468	.087	.027	.456	238	195	.456	066	0.673	0.114	0.8	1.0	0.6	1.0	A-	A-
606	602231	7	7	402	.460	.187	.177	.460	.149	.027	.298	.092	245	.298	134	0.715	0.114	4.8	1.2	4.7	1.4	A-	A+
607	602182	7	6	402	.587	.065	.587	.110	.209	.030	.487	233	.487	203	196	0.025	0.116	-0.7	1.0	-1.2	0.9	C+	A+
608	602142	7	6	400	.415	.120	.415	.050	.405	.010	.560	327	.560	241	206	0.960	0.116	-2.5	0.9	-2.2	0.9	A-	B-
609	602144	7	7	800	.589	.120	.116	.165	.589	.010	.575	262	347	210	.575	-0.031	0.081	-5.7	0.8	-4.7	0.8	A-	A+
610	602141	7	7	799	.647	.138	.150	.647	.048	.004	.481	284	288	.481	049	-0.312	0.084	-2.1	0.9	-0.7	1.0	A-	A-
611	602143	7	7	798	.590	.123	.198	.590	.061	.028	.473	295	182	.473	174	0.008	0.083	-1.4	1.0	-0.5	1.0	A-	A-
612	601784	7	N/A	398	.744	.744	.058	.073	.063	.063	.545	.545	306	300	152	-1.128	0.140	-2.6	0.8	-2.2	0.7	A-	A-
613	601704	7	6	795	.847	.009	.025	.111	.847	.009	.395	108	177	285	.395	-1.686	0.111	-0.8	1.0	-1.0	0.8	B+	A-
614	601827	7	Ge	800	.529	.179	.114	.144	.529	.035	.491	217	174	213	.491	0.204	0.083	-0.6	1.0	-0.3	1.0	A+	A+
615	602202	7	Ge	795	.787	.126	.042	.045	.787	.000	.384	256	223	135	.384	-1.119	0.098	0.6	1.0	1.3	1.2	A+	A+
616	602236	7	Ge	800	.671	.671	.165	.105	.029	.030	.520	.520	255	286	200	-0.594	0.087	-2.7	0.9	-2.5	0.8	A+	A-
617	601761	7	8	800	.600	.600	.131	.101	.121	.046	.499	.499	233	236	162	-0.240	0.085	-1.3	1.0	0.0	1.0	A+	A-
618	602218	7	Ge	797	.606	.123	.168	.606	.068	.035	.359	158	145	.359	200	-0.294	0.084	3.0	1.1	2.7	1.2	A-	A-
619	601828	7	Ge	797	.297	.060	.129	.461	.297	.053	.388	122	068	174	.388	1.420	0.089	1.9	1.1	2.2	1.2	A+	A-
620	601762	7	8	797	.594	.078	.183	.594	.082	.064	.373	110	144	.373	210	-0.321	0.086	2.1	1.1	2.0	1.1	A-	A+
621	602221	7	Ge	802	.779	.060	.779	.107	.042	.011	.413	162	.413	229	225	-1.173	0.096	-0.9	1.0	-1.0	0.9	A+	A+
622	601786	7	Ge	802	.513	.172	.151	.137	.513	.027	.413	220	157	115	.413	0.351	0.081	0.5	1.0	-0.1	1.0	A+	A-
623	601765	7	6	802	.814	.814	.036	.050	.060	.040	.363	.363	121	240	162	-1.644	0.109	-0.4	1.0	-1.1	0.9	A+	A-
624	601766	7	6	800	.794	.013	.794	.065	.129	.000	.432	106	.432	343	234	-1.093	0.099	-0.9	1.0	-1.0	0.9	A-	B-
625	601822	7	Ge	800	.893	.893	.041	.043	.023	.001	.312	.312	128	196	197	-2.058	0.125	-0.3	1.0	0.2	1.0	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/->	-(-)	-/->	-/->	-/\		/->		(a)				Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
626	602222	7	Ge	800	.706	.119	.054	.116	.706	.005	.431	157	270	244	.431	-0.502	0.090	0.4	1.0	1.5	1.1	A+	B-
627	601671	7	8	795	.501	.255	.501	.175	.057	.013	.391	137	.391	124	294	0.634	0.085	4.6	1.2	4.2	1.3	A-	A-
628	601815	7	N/A	798	.310	.310	.075	.361	.222	.033	.309	.309	183	134	009	1.451	0.085	3.2	1.1	3.5	1.2	A-	A-
629	602060	7	8	798	.399	.196	.295	.085	.399	.026	.407	208	071	193	.407	0.976	0.081	1.6	1.1	1.3	1.1	A+	A+
630	601684	7	6	798	.810	.104	.038	.810	.028	.021	.389	224	150	.389	160	-1.384	0.102	-0.4	1.0	0.0	1.0	A+	C-
631	602145	7	Ge	801	.621	.621	.075	.121	.152	.031	.506	.506	228	256	166	-0.217	0.083	-1.9	0.9	-0.7	1.0	A-	A-
632	601683	7	6	400	.630	.310	.033	.008	.630	.020	.345	224	090	153	.345	-0.254	0.115	1.6	1.1	2.0	1.2	A-	
633	602050	7	8	801	.562	.562	.065	.105	.210	.059	.473	.473	254	261	094	0.000	0.082	-0.3	1.0	-0.3	1.0	A-	A-
634	601674	7	6	398	.591	.091	.176	.116	.591	.028	.540	205	196	294	.540	0.024	0.117	-1.7	0.9	-1.6	0.9	A-	A-
635	601685	7	6	800	.795	.020	.043	.139	.795	.004	.214	099	034	164	.214	-1.238	0.095	2.8	1.2	4.9	1.6	A-	A+
636	601823	7	N/A	800	.801	.801	.099	.049	.016	.035	.517	.517	331	208	150	-1.486	0.103	-3.1	0.8	-3.6	0.6	A+	A+
637	601785	7	N/A	801	.832	.080	.832	.035	.036	.018	.456	258	.456	223	168	-1.554	0.106	-1.9	0.9	-2.0	0.7	A+	A-
638	602108	7	8	801	.463	.463	.112	.225	.160	.040	.500	.500	243	279	035	0.638	0.082	-0.4	1.0	-0.7	1.0	A-	A-
639	602109	7	8	800	.768	.059	.103	.058	.768	.014	.508	238	282	223	.508	-1.096	0.093	-3.2	0.9	-3.9	0.7	A+	B-
640	601824	7	N/A	400	.693	.185	.053	.068	.693	.003	.519	302	236	265	.519	-0.635	0.120	-3.0	0.9	-1.8	0.8	A-	A-
641	602110	7	8	400	.240	.240	.293	.233	.223	.013	.349	.349	197	279	.144	1.779	0.129	0.6	1.0	1.2	1.1	A+	B-
642	601710	7	6	799	.753	.120	.063	.753	.060	.004	.306	109	142	.306	217	-0.963	0.090	1.3	1.1	1.9	1.2	A-	A-
643	601825	7	N/A	399	.852	.038	.058	.852	.045	.008	.425	231	243	.425	191	-1.705	0.153	-1.4	0.9	-2.0	0.6	A-	A-
644	601767	7	6	399	.529	.053	.070	.336	.529	.013	.411	171	223	184	.411	0.316	0.114	1.3	1.1	1.2	1.1	A+	A+
645	601679	7	8	799	.764	.034	.168	.033	.764	.003	.404	199	265	181	.404	-0.968	0.091	-1.0	1.0	0.1	1.0	A-	A-
646	601768	7	6	799	.657	.031	.049	.657	.227	.036	.411	223	141	.411	221	-0.466	0.086	1.0	1.0	1.2	1.1	A-	A-
647	601833	7	N/A	799	.451	.081	.451	.303	.121	.044	.455	081	.455	219	215	0.641	0.082	1.1	1.0	1.5	1.1	A-	A+
648	601680	7	8	802	.698	.698	.075	.153	.067	.006	.385	.385	183	215	169	-0.537	0.086	0.5	1.0	1.5	1.1	A+	A-
649	601834	7	Ge	802	.334	.302	.197	.130	.334	.037	.427	136	119	169	.427	1.361	0.086	1.2	1.1	2.8	1.2	A+	B-
650	601688	7	6	402	.463	.463	.289	.102	.129	.017	.481	.481	082	342	260	0.714	0.114	-0.8	1.0	-1.3	0.9	A+	A-
651	601699	7	6	803	.553	.108	.553	.218	.079	.042	.446	232	.446	131	203	0.157	0.082	1.4	1.1	0.6	1.0	A-	A-
652	601703	7	8	803	.682	.682	.220	.054	.029	.015	.426	.426	244	189	175	-0.459	0.085	0.1	1.0	-0.2	1.0	A+	A-
653	601660	7	8	402	.711	.070	.087	.097	.711	.035	.546	134	265	327	.546	-0.721	0.127	-2.8	0.8	-2.1	0.8	A+	A-
654	601826	7	Ge	803	.736	.088	.051	.067	.736	.057	.457	151	185	243	.457	-1.021	0.096	-0.9	1.0	-0.8	0.9	B+	A+
655	601835	7	Ge	402	.455	.455	.182	.149	.154	.060	.485	.485	255	109	142	0.647	0.116	-0.5	1.0	-0.1	1.0	B+	A+
656	601677	7	8	399	.622	.025	.130	.198	.622	.025	.329	022	010	285	.329	-0.225	0.118	3.4	1.2	2.3	1.2	A+	B+
657	601687	7	6	802	.549	.077	.549	.165	.187	.022	.393	211	.393	212	111	0.229	0.081	2.2	1.1	3.1	1.2	A-	A-
658	601218	7	6	400	.645	.140	.040	.148	.645	.028	.511	243	203	247	.511	-0.336	0.120	-1.5	0.9	-0.9	0.9	A+	A+
659	602234	7	Ge	803	.269	.269	.088	.265	.347	.030	.215	.215	092	152	.079	1.783	0.090	5.8	1.3	6.4	1.6	A-	A+
660	602146	7	8	398	.636	.636	.043	.294	.028	.000	.285	.285	151	168	184	-0.116	0.117	3.7	1.2	2.7	1.3	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-4->	- 4-1	- (-)	>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
661	601287	7	6	400	.860	.860	.075	.028	.025	.013	.481	.481	316	211	159	-1.782	0.158	-1.7	0.8	-2.7	0.6	A+	
662	601772	7	4	795	.870	.029	.039	.870	.059	.003	.387	163	217	.387	261	-1.912	0.118	-1.0	0.9	-1.2	0.8	A-	A-
663	601273	7	6	800	.341	.341	.368	.145	.099	.048	.278	.278	.140	290	169	1.192	0.085	6.0	1.2	5.7	1.4	A+	B+
664	601278	7	7	402	.525	.045	.525	.197	.231	.003	.424	.000	.424	208	304	0.428	0.113	0.2	1.0	0.1	1.0	A-	A-
665	601067	7	6	799	.442	.063	.085	.388	.442	.023	.358	183	193	113	.358	0.752	0.082	4.8	1.2	5.2	1.3	A+	A-
666	601771	7	4	802	.531	.531	.168	.165	.092	.044	.534	.534	237	271	162	0.207	0.082	-3.3	0.9	-3.1	8.0	A+	A-
667	601271	7	6	798	.605	.605	.150	.130	.068	.046	.566	.566	301	245	186	-0.163	0.085	-3.8	0.9	-2.4	0.9	B+	B+
668	601355	7	7	400	.678	.678	.153	.113	.055	.003	.497	.497	278	269	204	-0.425	0.119	-2.4	0.9	-1.9	0.8	A-	A+
669	601769	7	4	800	.713	.220	.713	.025	.019	.024	.415	257	.415	191	174	-0.817	0.090	0.5	1.0	0.1	1.0	A+	A+
670	601305	7	7	797	.601	.113	.112	.144	.601	.030	.549	177	227	314	.549	-0.272	0.085	-3.8	0.9	-2.9	0.8	A-	A+
671	601284	7	8	797	.525	.033	.088	.525	.304	.051	.451	204	299	.451	137	0.093	0.084	1.7	1.1	1.0	1.1	A-	A-
672	601310	7	6	797	.783	.072	.107	.783	.018	.021	.406	212	224	.406	163	-1.424	0.099	-0.1	1.0	-0.4	1.0	A-	A-
673	601350	7	6	797	.705	.054	.119	.082	.705	.040	.492	233	259	214	.492	-0.958	0.092	-3.1	0.9	-2.6	0.8	B+	B+
674	601297	7	6	797	.724	.099	.122	.724	.049	.006	.536	296	315	.536	176	-0.861	0.089	-3.9	0.9	-4.1	0.7	A+	B-
675	601362	7	6	797	.464	.464	.154	.272	.070	.039	.464	.464	197	169	209	0.485	0.083	-0.3	1.0	-0.2	1.0	A+	A+
676	601319	7	7	797	.491	.073	.235	.491	.147	.055	.522	187	268	.522	169	0.293	0.083	-2.2	0.9	-2.4	0.9	A-	A+
677	601770	7	4	797	.591	.190	.156	.591	.021	.043	.551	307	249	.551	168	-0.218	0.084	-3.2	0.9	-2.5	0.9	A+	A-
678	601298	7	6	802	.594	.594	.180	.125	.087	.015	.535	.535	232	273	218	-0.051	0.082	-3.4	0.9	-3.0	0.8	A+	A-
679	601363	7	6	802	.294	.294	.243	.292	.137	.034	.306	.306	120	114	009	1.558	0.088	3.8	1.2	3.3	1.3	B-	A-
680	601320	7	7	802	.686	.037	.069	.686	.167	.041	.484	154	241	.484	274	-0.678	0.089	-1.7	0.9	-2.4	0.8	A+	A+
681	601321	7	7	795	.598	.218	.598	.126	.055	.004	.513	273	.513	261	220	0.142	0.087	-1.3	1.0	-0.6	1.0	A-	B-
682	601364	7	6	795	.601	.148	.107	.136	.601	.008	.562	222	258	315	.562	0.107	0.088	-2.2	0.9	-2.9	0.8	B+	A+
683	601351	7	6	795	.589	.374	.020	.018	.589	.000	.489	428	126	121	.489	0.207	0.087	0.1	1.0	-0.8	1.0	A-	A-
684	601316	7	6	795	.370	.313	.101	.213	.370	.004	.416	301	080	084	.416	1.411	0.088	2.9	1.1	3.6	1.3	A+	A-
685	601713	7	4	795	.767	.068	.128	.767	.029	.008	.461	261	303	.461	132	-1.010	0.096	-2.0	0.9	-1.8	0.8	A-	A+
686	601286	7	6	795	.864	.864	.055	.035	.043	.003	.430	.430	230	253	223	-1.817	0.114	-2.2	0.9	-2.1	0.7	A+	A+
687	601317	7	6	400	.473	.473	.108	.185	.223	.013	.431	.431	244	209	110	0.567	0.111	-0.7	1.0	-0.7	1.0	B+	
688	601356	7	6	798	.551	.551	.168	.214	.033	.034	.385	.385	291	058	177	0.152	0.081	2.5	1.1	1.4	1.1	A+	A+
689	601318	7	6	798	.717	.717	.125	.108	.036	.014	.521	.521	322	256	176	-0.684	0.088	-3.9	0.8	-3.8	0.7	A+	A-
690	601746	7	4	400	.913	.048	.010	.913	.020	.010	.371	192	127	.371	192	-2.385	0.193	-0.5	0.9	-1.4	0.7	A-	<u> </u>
691	601366	7	7	400	.380	.440	.380	.110	.040	.030	.229	.069	.229	247	156	0.985	0.114	4.4	1.2	5.4	1.4	B-	
692	601747	7	4	798	.703	.083	.140	.703	.043	.031	.343	146	189	.343	128	-0.689	0.088	1.8	1.1	1.5	1.1	A-	A+
693	601774	7	7	798	.456	.098	.456	.302	.109	.035	.406	149	.406	150	223	0.646	0.081	1.5	1.1	1.4	1.1	A-	A-
694	601352	7	6	798	.608	.078	.608	.179	.118	.018	.502	197	.502	293	164	-0.061	0.083	-1.2	1.0	-1.3	0.9	A+	A+
695	601781	7	8	798	.447	.447	.239	.143	.130	.040	.547	.547	197	213	226	0.731	0.082	-2.9	0.9	-2.4	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Dof	ın	FT	PCS	N.	D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT/A)	DT/D)	DT(C)	DT/D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
696	601748	7	4	398	.653	.653	.103	.091	.085	.068	.540	.540	290	178	227	-0.523	0.126	-1.8	0.9	-1.5	0.8	A-	B+
697	601749	7	4	400	.613	.128	.148	.613	.108	.005	.415	186	247	.415	151	-0.082	0.116	1.0	1.1	0.8	1.1	A+	A-
698	601750	7	4	800	.519	.204	.519	.150	.101	.026	.362	115	.362	121	202	0.293	0.081	4.4	1.2	3.0	1.2	A+	A-
699	601311	7	6	800	.830	.029	.055	.830	.055	.031	.500	182	304	.500	214	-1.719	0.109	-2.6	0.8	-3.7	0.6	A+	A+
700	601745	7	8	400	.613	.195	.613	.093	.085	.015	.490	151	.490	293	236	-0.101	0.117	-0.5	1.0	-0.2	1.0	A+	A-
701	601367	7	8	800	.658	.658	.121	.145	.066	.010	.419	.419	183	228	168	-0.402	0.084	0.3	1.0	0.7	1.1	A-	A-
702	601312	7	6	799	.760	.031	.095	.081	.760	.033	.500	196	253	249	.500	-1.160	0.095	-3.0	0.9	-2.7	0.7	A+	A+
703	601376	7	8	799	.770	.770	.046	.144	.033	.008	.407	.407	238	215	160	-1.085	0.092	-0.5	1.0	-1.3	0.9	A-	A-
704	601353	7	6	799	.339	.164	.263	.200	.339	.034	.409	132	196	054	.409	1.207	0.085	1.4	1.1	2.9	1.2	A+	A-
705	601686	7	4	799	.292	.119	.343	.292	.182	.065	.459	154	118	.459	118	1.426	0.088	-1.0	1.0	1.5	1.1	A-	A-
706	601313	7	6	399	.747	.075	.068	.747	.108	.003	.487	257	293	.487	199	-0.873	0.126	-1.9	0.9	-2.4	0.7	A+	A-
707	601354	7	6	399	.649	.113	.123	.110	.649	.005	.509	279	167	281	.509	-0.305	0.117	-2.1	0.9	-1.2	0.9	A-	A-
708	601314	7	6	799	.583	.174	.583	.184	.050	.009	.275	.042	.275	224	217	0.055	0.081	6.2	1.2	6.7	1.4	A +	A+
709	601322	7	8	399	.456	.173	.456	.186	.165	.020	.254	112	.254	215	.088	0.673	0.115	5.9	1.3	5.3	1.4	A-	A+
710	601307	7	6	802	.707	.032	.045	.187	.707	.029	.474	153	139	343	.474	-0.688	0.089	-1.8	0.9	-2.2	0.8	B+	A-
711	601323	7	8	400	.665	.158	.665	.115	.053	.010	.528	256	.528	305	197	-0.381	0.119	-2.4	0.9	-2.3	0.8	A-	A-
712	601324	7	8	802	.746	.050	.150	.746	.045	.010	.465	216	257	.465	220	-0.842	0.090	-2.0	0.9	-2.0	0.8	A-	A+
713	601291	7	7	802	.481	.119	.090	.481	.298	.013	.404	272	228	.404	079	0.609	0.081	3.0	1.1	2.7	1.1	A-	A+
714	601315	7	6	802	.692	.042	.692	.140	.102	.024	.530	184	.530	289	243	-0.568	0.087	-3.5	0.9	-3.0	0.8	A+	A+
715	601308	7	6	402	.796	.149	.032	.022	.796	.000	.410	334	103	189	.410	-1.120	0.134	-0.8	0.9	0.1	1.0	B+	A-
716	601306	7	8	402	.363	.363	.167	.336	.117	.017	.409	.409	285	116	019	1.260	0.118	1.5	1.1	1.5	1.1	C-	A+
717	601359	7	6	402	.406	.067	.406	.393	.065	.070	.472	146	.472	196	197	0.891	0.118	-0.1	1.0	0.2	1.0	B+	A+
718	601361	7	6	401	.511	.075	.511	.352	.050	.013	.411	147	.411	213	225	0.468	0.114	1.1	1.1	0.7	1.1	A-	A+
719	601282	7	8	401	.743	.125	.060	.743	.040	.032	.443	192	191	.443	210	-0.950	0.131	-0.1	1.0	-0.4	0.9	A-	A-
720	601309	7	6	401	.798	.100	.798	.030	.018	.055	.396	127	.396	244	153	-1.532	0.151	-0.2	1.0	0.8	1.2	A-	A-
721	601280	7	7	401	.464	.464	.125	.160	.192	.060	.423	.423	132	161	121	0.577	0.117	2.0	1.1	2.0	1.1	A-	A+
722	601365	7	7	799	.672	.083	.144	.672	.090	.011	.415	158	200	.415	209	-0.396	0.085	0.0	1.0	-0.3	1.0	B-	A-
723	601300	7	6	400	.720	.068	.143	.720	.050	.020	.533	202	313	.533	204	-0.748	0.126	-1.9	0.9	-2.1	0.8	B+	B+
724	601773	7	6	399	.679	.083	.095	.128	.679	.015	.558	227	253	280	.558	-0.511	0.121	-3.4	0.8	-3.0	0.7	A-	B-
725	601272	7	6	400	.280	.158	.300	.230	.280	.033	.399	137	040	186	.399	1.684	0.126	0.5	1.0	2.6	1.3	A-	B-
726	601357	7	8	800	.523	.523	.148	.280	.039	.011	.413	.413	230	167	171	0.218	0.079	0.5	1.0	1.2	1.1	A-	A-
727	601050	7	6	400	.785	.113	.038	.785	.063	.003	.478	297	189	.478	237	-1.211	0.132	-2.2	0.9	-2.4	0.7	A+	B+
728	601132	7	7	797	.655	.051	.198	.655	.054	.041	.535	193	343	.535	157	-0.626	0.088	-3.2	0.9	-2.9	0.8	A-	A-
729	601123	7	7	399	.579	.113	.188	.579	.085	.035	.586	260	286	.586	179	-0.030	0.117	-3.3	0.9	-3.0	0.8	A-	A-
730	601099	7	6	799	.615	.217	.615	.078	.064	.028	.385	111	.385	203	209	-0.137	0.083	2.4	1.1	1.5	1.1	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

D - 6	i D	FT	PCS		D) (- I	D/A)	D/D)	D/C)	D/D)	D/ \	Din'-	DT/A)	DT/D)	DT(C)	DT/D)		DACE.	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
731	601124	7	7	797	.629	.036	.054	.266	.629	.015	.501	194	244	298	.501	-0.370	0.085	-1.2	1.0	-1.2	0.9	A+	C-
732	601379	7	6	795	.745	.115	.082	.057	.745	.003	.494	281	255	230	.494	-0.811	0.095	-2.5	0.9	-2.0	0.8	A+	A-
733	601079	7	6	797	.324	.217	.256	.173	.324	.030	.351	043	035	259	.351	1.325	0.089	4.7	1.2	5.5	1.5	A+	A+
734	601080	7	6	800	.251	.398	.251	.180	.131	.040	.161	.183	.161	150	204	1.648	0.091	4.7	1.2	5.9	1.6	A-	A-
735	601125	7	7	800	.468	.060	.168	.263	.468	.043	.496	216	255	149	.496	0.410	0.081	-2.0	0.9	-1.8	0.9	A-	A+
736	601049	7	7	800	.340	.089	.340	.393	.141	.038	.359	036	.359	113	216	1.107	0.084	1.7	1.1	2.0	1.1	A-	A-
737	601064	7	6	802	.417	.392	.070	.084	.417	.039	.490	181	190	241	.490	0.836	0.082	-1.1	1.0	-0.9	1.0	C-	A-
738	601108	7	6	802	.273	.426	.273	.137	.123	.040	.176	.132	.176	134	212	1.685	0.090	5.5	1.3	7.4	1.8	A+	B+
739	601077	7	6	795	.806	.060	.081	.806	.045	.008	.454	249	237	.454	208	-1.322	0.104	-1.0	1.0	-0.7	0.9	A+	B-
740	601111	7	7	795	.531	.043	.126	.299	.531	.001	.491	216	333	195	.491	0.553	0.087	2.1	1.1	2.9	1.2	A+	A-
741	601052	7	7	799	.473	.131	.262	.473	.126	.008	.525	278	211	.525	187	0.665	0.080	-3.9	0.9	-3.5	0.8	A+	A-
742	601112	7	7	400	.255	.255	.245	.170	.293	.038	.301	.301	181	144	.091	1.672	0.125	1.1	1.1	3.1	1.3	A+	
743	601045	7	6	798	.405	.285	.135	.405	.152	.024	.217	.040	149	.217	147	0.946	0.081	7.0	1.3	7.3	1.4	A-	A-
744	601043	7	6	400	.185	.185	.253	.415	.093	.055	.135	.135	.061	076	.002	2.118	0.138	2.4	1.2	3.7	1.6	A-	
745	601066	7	6	798	.585	.114	.140	.585	.107	.054	.566	246	282	.566	204	-0.101	0.083	-5.0	0.8	-4.3	0.8	A+	A-
746	601129	7	7	798	.568	.568	.155	.251	.023	.004	.579	.579	255	404	115	0.203	0.081	-5.4	0.8	-4.2	0.8	A-	B-
747	601113	7	7	799	.571	.178	.146	.571	.095	.010	.501	219	240	.501	213	0.179	0.081	-1.9	0.9	-1.8	0.9	A-	A-
748	601037	7	6	798	.862	.024	.862	.080	.030	.004	.323	168	.323	213	119	-1.726	0.111	-0.2	1.0	1.0	1.2	A+	A-
749	601046	7	7	798	.587	.158	.169	.587	.065	.021	.580	267	297	.580	177	0.043	0.082	-4.2	0.9	-3.8	0.8	A+	A-
750	601038	7	6	400	.663	.085	.663	.220	.033	.000	.439	254	.439	263	156	-0.336	0.119	0.2	1.0	8.0	1.1	A-	A+
751	601047	7	7	400	.163	.163	.470	.253	.098	.018	.316	.316	178	.143	197	2.598	0.149	0.4	1.0	2.2	1.4	B-	A+
752	601084	7	7	400	.405	.153	.278	.405	.153	.013	.389	214	131	.389	085	0.848	0.114	0.7	1.0	2.0	1.1	A-	A-
753	601109	7	N/A	799	.125	.125	.210	.269	.372	.024	.175	.175	092	057	.068	2.800	0.116	1.5	1.1	6.3	2.2	A-	A+
754	601118	7	6	799	.630	.080	.630	.141	.099	.050	.556	162	.556	222	300	-0.413	0.085	-3.6	0.9	-2.9	0.8	A+	B+
755	601085	7	7	799	.486	.131	.243	.100	.486	.040	.547	177	258	209	.547	0.404	0.081	-3.9	0.9	-3.0	0.9	A-	A-
756	601058	7	7	799	.479	.260	.105	.479	.149	.006	.498	371	079	.498	141	0.600	0.081	-1.9	0.9	-1.4	0.9	A+	A-
757	601101	7	6	399	.790	.083	.053	.790	.055	.020	.502	261	209	.502	258	-1.279	0.138	-1.8	0.9	-2.3	0.7	A+	A-
758	601081	7	7	400	.795	.030	.065	.108	.795	.003	.369	101	244	223	.369	-1.170	0.135	-0.3	1.0	-0.3	1.0	A+	A-
759	601075	7	6	802	.761	.060	.062	.112	.761	.005	.471	254	249	227	.471	-0.921	0.091	-2.5	0.9	-2.6	0.8	A+	A+
760	601060	7	7	802	.413	.084	.413	.278	.202	.024	.368	020	.368	207	126	0.954	0.082	3.8	1.1	4.9	1.3	A-	A-
761	601107	7	6	400	.835	.010	.835	.068	.063	.025	.338	061	.338	091	303	-1.666	0.153	0.1	1.0	-0.2	1.0	A+	B+
762	601065	7	7	802	.623	.147	.623	.104	.095	.031	.581	307	.581	239	215	-0.202	0.084	-5.2	0.8	-4.4	0.7	A+	A-
763	601059	7	7	400	.453	.210	.110	.453	.178	.050	.442	287	118	.442	096	0.633	0.117	1.4	1.1	1.4	1.1	B-	A-
764	601076	7	6	803	.768	.044	.093	.768	.075	.020	.456	182	312	.456	159	-1.051	0.094	-1.8	0.9	-1.6	0.8	A+	A-
765	601082	7	7	803	.543	.075	.294	.543	.061	.027	.379	246	089	.379	223	0.253	0.081	3.9	1.1	3.4	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\	•	(-)		/->				Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
766	601057	7	6	401	.726	.010	.192	.072	.726	.000	.359	086	283	156	.359	-0.665	0.123	0.3	1.0	2.4	1.3	C+	A+
767	601083	7	7	401	.641	.047	.641	.279	.022	.010	.474	279	.474	289	173	-0.206	0.117	-0.7	1.0	0.0	1.0	A-	A-
768	601131	7	7	401	.289	.150	.187	.344	.289	.030	.339	204	242	.110	.339	1.645	0.125	2.7	1.2	2.5	1.3	A-	A+
769	601054	7	7	400	.315	.133	.253	.315	.288	.013	.329	044	250	.329	041	1.339	0.120	1.3	1.1	2.5	1.2	A-	A-
770	601117	7	6	400	.195	.195	.163	.385	.238	.020	.208	.208	133	151	.124	2.121	0.135	1.4	1.1	3.0	1.5	A+	
771	601130	7	7	400	.528	.243	.528	.190	.040	.000	.532	346	.532	222	155	0.389	0.114	-1.9	0.9	-1.7	0.9	A+	B-
772	601051	7	6	799	.228	.434	.228	.143	.156	.039	.134	.156	.134	182	087	2.015	0.094	5.4	1.3	8.1	1.9	A-	A-
773	601110	7	7	802	.395	.395	.176	.186	.224	.019	.477	.477	126	364	044	1.009	0.082	-1.7	0.9	0.0	1.0	B+	A+
774	601086	7	7	803	.481	.481	.166	.249	.102	.003	.542	.542	240	320	137	0.654	0.080	-4.6	0.9	-4.3	0.8	C-	A-
775	599651	8	N/A	319	.426	.433	.078	.426	.060	.003	.421	292	137	.421	123	0.832	0.127	0.5	1.0	0.8	1.1	B+	A+
776	599610	8	7	160	.594	.131	.594	.100	.175	.000	.246	234	.246	108	024	-0.094	0.170	1.0	1.1	1.6	1.1	B+	
777	599698	8	6	158	.481	.057	.481	.291	.158	.013	.122	095	.122	004	100	0.287	0.171	3.4	1.2	3.1	1.2	A-	
778	599640	8	N/A	314	.350	.102	.280	.258	.350	.010	.373	059	155	168	.373	0.984	0.130	0.5	1.0	0.8	1.1	A+	ĺ
779	599613	8	6	318	.431	.113	.431	.157	.296	.003	.340	252	.340	229	.001	0.592	0.125	0.4	1.0	0.6	1.0	A-	A+
780	599583	8	8	639	.798	.064	.060	.798	.074	.005	.391	270	165	.391	187	-1.386	0.107	-1.5	0.9	-1.6	0.8	B+	A+
781	599645	8	7	160	.400	.069	.288	.400	.244	.000	.323	.136	255	.323	180	0.791	0.172	0.2	1.0	0.4	1.0	A-	
782	599611	8	6	314	.637	.137	.637	.140	.076	.010	.407	163	.407	199	168	-0.439	0.128	-0.3	1.0	-1.0	0.9	A+	
783	599612	8	6	313	.371	.371	.310	.198	.109	.013	.434	.434	146	173	165	0.747	0.128	-1.6	0.9	-1.4	0.9	A+	
784	599581	8	8	633	.713	.713	.120	.025	.136	.006	.453	.453	199	174	301	-0.700	0.096	-3.7	0.9	-1.8	0.9	B+	A+
785	599638	8	N/A	318	.550	.160	.157	.129	.550	.003	.456	245	194	180	.456	0.005	0.124	-1.3	0.9	-0.9	0.9	B-	A-
786	599600	8	8	316	.525	.095	.060	.288	.525	.032	.337	110	126	160	.337	-0.027	0.126	1.6	1.1	1.6	1.1	A+	A+
787	599696	8	6	316	.541	.032	.136	.272	.541	.019	.508	119	272	261	.508	-0.078	0.125	-2.8	0.9	-2.6	0.8	A-	A-
788	599704	8	N/A	316	.532	.142	.532	.161	.139	.025	.443	219	.443	195	120	-0.041	0.125	-1.4	0.9	-1.4	0.9	A-	A+
789	599603	8	8	315	.648	.191	.105	.648	.048	.010	.424	209	199	.424	175	-0.299	0.129	-1.2	0.9	-1.6	0.9	A+	A+
790	599705	8	N/A	315	.460	.184	.152	.187	.460	.016	.200	.035	124	129	.200	0.604	0.124	2.3	1.1	2.3	1.2	A+	A-
791	599616	8	6	318	.381	.236	.381	.167	.208	.009	.350	073	.350	077	251	1.206	0.128	0.9	1.1	2.8	1.2	A-	A+
792	599706	8	N/A	318	.692	.063	.082	.164	.692	.000	.334	158	175	183	.334	-0.343	0.132	0.4	1.0	0.1	1.0	A+	B-
793	599604	8	8	318	.742	.742	.098	.047	.104	.009	.515	.515	253	252	255	-0.666	0.140	-2.5	0.8	-1.9	0.8	A+	A-
794	599688	8	8	318	.692	.054	.692	.091	.164	.000	.377	026	.377	176	318	-0.514	0.133	-1.5	0.9	-1.2	0.9	A+	A-
795	599728	8	N/A	318	.456	.110	.239	.189	.456	.006	.485	153	237	224	.485	0.681	0.126	-1.1	1.0	-0.5	1.0	A-	B-
796	599689	8	8	319	.674	.260	.674	.047	.019	.000	.446	336	.446	210	129	-0.438	0.132	-1.7	0.9	-0.2	1.0	A+	A-
797	599622	8	6	319	.508	.144	.176	.508	.163	.009	.413	185	248	.413	098	0.401	0.126	1.6	1.1	0.2	1.0	A-	A-
798	599694	8	7	319	.630	.630	.125	.166	.069	.009	.534	.534	273	310	200	-0.413	0.125	-3.5	0.8	-3.4	8.0	B+	A-
799	599623	8	6	319	.536	.132	.536	.245	.082	.006	.285	163	.285	119	135	0.046	0.121	1.6	1.1	2.7	1.2	A-	A+
800	599652	8	N/A	319	.376	.216	.260	.138	.376	.009	.298	.082	285	143	.298	0.804	0.124	1.0	1.1	0.6	1.0	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS		_													Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
801	599699	8	6	318	.849	.047	.019	.085	.849	.000	.338	073	139	312	.338	-1.617	0.161	-0.8	0.9	-0.6	0.9	A-	A-
802	599653	8	7	158	.253	.253	.177	.209	.361	.000	.372	.372	248	278	.096	1.464	0.193	-0.4	1.0	-0.6	0.9	A-	
803	599605	8	7	318	.582	.582	.195	.151	.069	.003	.247	.247	022	226	120	-0.097	0.121	1.6	1.1	2.2	1.1	A+	A+
804	599695	8	7	158	.563	.133	.234	.563	.051	.019	.401	197	232	.401	088	-0.101	0.173	-0.8	1.0	-0.8	0.9	A+	
805	599660	8	7	318	.519	.088	.230	.519	.129	.035	.465	219	188	.465	261	0.103	0.121	-2.9	0.9	-2.7	0.9	A-	A+
806	599584	8	7	317	.685	.148	.685	.114	.051	.003	.345	169	.345	192	166	-0.590	0.128	-0.5	1.0	-0.4	1.0	A+	B+
807	599658	8	6	317	.205	.205	.379	.208	.183	.025	.413	.413	.011	093	224	1.839	0.149	-1.0	0.9	-0.4	0.9	A-	A-
808	599614	8	6	160	.525	.119	.525	.219	.106	.031	.476	154	.476	293	134	0.144	0.171	-2.1	0.9	-2.0	0.9	A-	
809	599649	8	7	157	.452	.089	.420	.452	.032	.006	.232	126	119	.232	090	0.489	0.174	1.9	1.1	3.6	1.4	A-	
810	599659	8	N/A	317	.511	.297	.511	.104	.069	.019	.455	103	.455	235	281	0.237	0.123	-1.3	0.9	-1.2	0.9	A-	A-
811	601114	8	7	317	.495	.495	.120	.148	.211	.025	.463	.463	168	187	157	0.302	0.124	-1.3	0.9	-1.3	0.9	A+	A-
812	599702	8	N/A	319	.571	.028	.304	.571	.085	.013	.380	113	175	.380	234	-0.013	0.123	0.3	1.0	0.3	1.0	A-	A-
813	599586	8	7	160	.606	.125	.606	.150	.088	.031	.435	071	.435	228	171	-0.211	0.180	0.3	1.0	-0.6	0.9	A+	
814	601119	8	7	160	.638	.081	.088	.638	.150	.044	.558	150	245	.558	266	-0.432	0.185	-2.0	0.9	-2.0	8.0	B+	
815	599731	8	N/A	160	.719	.719	.094	.125	.019	.044	.526	.526	302	220	093	-0.913	0.200	-1.9	0.8	2.1	1.4	A+	
816	599587	8	7	319	.658	.053	.658	.147	.113	.028	.438	160	.438	191	189	-0.507	0.130	-0.9	1.0	-0.8	0.9	A-	A+
817	599703	8	N/A	159	.629	.031	.076	.629	.264	.000	.345	176	245	.345	161	-0.284	0.175	-0.2	1.0	-0.3	1.0	A-	
818	601122	8	7	159	.472	.063	.182	.472	.264	.019	.164	202	101	.164	.042	0.422	0.172	3.4	1.2	2.9	1.3	A+	
819	599589	8	6	317	.243	.079	.243	.309	.360	.010	.323	096	.323	192	001	1.669	0.141	0.4	1.0	1.7	1.2	A-	i
820	599588	8	6	159	.201	.208	.277	.302	.201	.013	.200	129	.043	055	.200	1.898	0.211	1.0	1.1	1.5	1.3	A+	1
821	601121	8	7	319	.699	.085	.088	.699	.119	.009	.407	184	148	.407	232	-0.658	0.132	-0.9	1.0	-1.2	0.9	A-	A-
822	599639	8	N/A	158	.411	.127	.203	.234	.411	.025	.414	106	127	177	.414	0.741	0.179	0.1	1.0	-0.1	1.0	A-	
823	599582	8	8	632	.737	.022	.051	.737	.179	.011	.406	153	169	.406	279	-0.987	0.099	-1.3	0.9	-1.1	0.9	A+	B-
824	599697	8	6	315	.283	.235	.295	.283	.184	.003	.365	254	.066	.365	201	1.557	0.136	-0.1	1.0	-0.2	1.0	A-	A+
825	599619	8	6	318	.324	.076	.324	.481	.107	.013	.290	063	.290	135	137	1.362	0.134	1.9	1.1	2.4	1.3	A+	A-
826	599585	8	7	317	.391	.391	.240	.202	.145	.022	.344	.344	.011	190	156	0.824	0.126	0.8	1.0	0.5	1.0	C+	A-
827	599637	8	N/A	313	.559	.559	.137	.109	.179	.016	.383	.383	207	185	100	-0.176	0.125	-0.9	1.0	-1.1	0.9	B+	
828	601801	8	5	158	.354	.165	.228	.228	.354	.025	.391	.001	219	130	.391	1.035	0.184	0.3	1.0	0.4	1.0	A+	1
829	601725	8	5	318	.635	.072	.110	.176	.635	.006	.415	174	218	205	.415	-0.056	0.128	-0.2	1.0	-0.5	1.0	B-	A-
830	601744	8	N/A	160	.444	.094	.175	.269	.444	.019	.448	226	112	190	.448	0.625	0.175	-0.3	1.0	-0.6	0.9	C-	
831	601804	8	N/A	319	.382	.382	.376	.169	.069	.003	.250	.250	.008	262	111	0.783	0.124	1.8	1.1	1.2	1.1	A-	A+
832	602158	8	5	315	.457	.108	.457	.210	.210	.016	.402	176	.402	186	116	0.616	0.124	-1.0	1.0	-1.1	0.9	A-	A+
833	601759	8	N/A	314	.624	.194	.624	.089	.070	.022	.472	200	.472	211	205	-0.416	0.128	-2.2	0.9	-2.0	8.0	A+	
834	601778	8	5	313	.358	.121	.367	.358	.137	.016	.224	078	086	.224	051	0.816	0.129	2.5	1.1	3.0	1.2	A-	
835	601779	8	5	318	.682	.091	.682	.195	.028	.003	.463	161	.463	336	182	-0.678	0.132	-1.3	0.9	-1.6	0.8	A-	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
836	601741	8	N/A	318	.377	.245	.377	.176	.198	.003	.336	039	.336	212	150	0.863	0.127	1.8	1.1	1.8	1.2	A+	A-
837	601742	8	N/A	316	.541	.111	.541	.241	.098	.010	.433	056	.433	236	279	-0.050	0.124	-0.9	1.0	-1.3	0.9	A+	B-
838	602111	8	N/A	315	.337	.295	.194	.337	.171	.003	.157	012	086	.157	069	1.256	0.130	4.0	1.2	4.0	1.4	A-	A+
839	602114	8	6	318	.396	.082	.459	.396	.057	.006	.424	081	359	.424	019	0.980	0.128	-0.4	1.0	-0.4	1.0	A+	B-
840	601780	8	5	318	.418	.066	.387	.120	.418	.009	.394	226	152	164	.394	0.877	0.127	1.7	1.1	1.3	1.1	B-	A-
841	602054	8	6	319	.357	.260	.245	.357	.125	.013	.354	163	106	.354	130	0.889	0.126	0.3	1.0	0.1	1.0	A-	A+
842	602055	8	5	158	.298	.215	.310	.152	.298	.025	.440	193	157	102	.440	1.167	0.185	-1.2	0.9	-0.6	0.9	A-	
843	601726	8	N/A	318	.264	.267	.138	.296	.264	.035	.345	176	137	038	.345	1.385	0.136	-0.1	1.0	-0.2	1.0	B-	A-
844	602116	8	5	317	.716	.133	.057	.716	.069	.025	.417	258	137	.417	122	-0.842	0.135	-1.2	0.9	-1.1	0.9	B+	A+
845	601739	8	N/A	160	.300	.231	.325	.131	.300	.013	.445	200	112	164	.445	1.269	0.184	-1.1	0.9	-0.8	0.9	A-	
846	601734	8	N/A	317	.489	.123	.252	.489	.104	.032	.337	140	.007	.337	217	0.319	0.124	2.0	1.1	1.5	1.1	A+	A-
847	601735	8	N/A	160	.575	.575	.225	.150	.044	.006	.482	.482	242	222	199	0.017	0.175	-1.1	0.9	-1.1	0.9	A+	
848	601667	8	N/A	319	.583	.176	.583	.129	.091	.022	.400	088	.400	277	129	-0.101	0.124	-0.1	1.0	-0.4	1.0	A-	A-
849	601669	8	N/A	317	.644	.644	.076	.167	.104	.010	.478	.478	258	204	210	-0.381	0.127	-2.3	0.9	-2.1	0.8	A+	
850	601737	8	N/A	317	.353	.379	.145	.114	.353	.010	.391	192	193	026	.391	1.042	0.128	-0.3	1.0	0.2	1.0	A-	i
851	601738	8	N/A	158	.449	.342	.146	.449	.044	.019	.406	104	223	.406	170	0.562	0.177	0.1	1.0	0.4	1.0	A+	
852	601740	8	N/A	313	.377	.102	.336	.163	.377	.022	.240	066	.001	179	.240	0.690	0.128	2.9	1.2	3.1	1.2	A-	i
853	602118	8	6	319	.414	.075	.414	.414	.097	.000	.366	.016	309	.366	109	0.907	0.128	1.2	1.1	1.7	1.1	A+	B-
854	601733	8	N/A	157	.287	.255	.268	.153	.287	.038	.464	122	138	087	.464	1.293	0.192	-1.3	0.9	-0.7	0.9	A+	i
855	602117	8	5	157	.325	.293	.325	.255	.089	.038	.201	.188	.201	137	195	1.078	0.186	2.4	1.2	2.2	1.3	A+	1
856	601802	8	5	319	.777	.063	.060	.100	.777	.000	.415	203	228	232	.415	-1.071	0.146	-0.9	0.9	-1.6	0.8	B-	A-
857	601723	8	5	314	.248	.248	.258	.319	.150	.026	.344	.344	.047	175	129	1.554	0.143	0.5	1.0	0.7	1.1	A+	
858	601736	8	N/A	319	.351	.241	.226	.172	.351	.009	.349	161	101	112	.349	1.067	0.127	0.6	1.0	1.4	1.1	A+	A-
859	601782	8	N/A	158	.399	.127	.184	.399	.279	.013	.228	155	083	.228	070	0.673	0.174	1.5	1.1	1.3	1.1	A-	
860	602115	8	5	318	.220	.088	.346	.220	.343	.003	.165	266	119	.165	.138	1.710	0.143	1.4	1.1	2.3	1.3	A-	A+
861	601724	8	5	316	.418	.418	.279	.149	.136	.019	.514	.514	194	178	210	0.547	0.126	-2.6	0.9	-2.3	0.9	A-	A+
862	602113	8	6	318	.286	.261	.274	.170	.286	.009	.382	203	070	102	.382	1.733	0.136	-0.4	1.0	0.7	1.1	A-	A-
863	601743	8	N/A	317	.495	.129	.495	.230	.107	.038	.408	082	.408	129	194	0.274	0.124	0.2	1.0	0.0	1.0	A+	A-
864	601263	8	6	315	.781	.114	.781	.057	.029	.019	.409	212	.409	224	145	-1.146	0.150	-1.9	0.9	-2.4	0.7	B+	A+
865	602058	8	6	314	.908	.908	.026	.026	.019	.022	.358	.358	179	116	145	-2.624	0.226	-0.3	0.9	-1.2	0.7	B+	
866	602086	8	7	314	.385	.108	.172	.385	.319	.016	.327	076	188	.327	095	0.787	0.128	1.7	1.1	1.9	1.2	A-	
867	601328	8	6	318	.676	.110	.057	.676	.154	.003	.396	170	256	.396	186	-0.643	0.131	-0.3	1.0	-0.5	1.0	A-	A-
868	602129	8	6	318	.638	.239	.050	.066	.638	.006	.430	198	298	197	.430	-0.454	0.128	-0.9	1.0	-0.4	1.0	A+	A+
869	602209	8	7	315	.286	.168	.349	.286	.181	.016	.134	068	049	.134	.028	1.297	0.135	2.7	1.2	5.0	1.6	A+	A-
870	602203	8	6	315	.552	.552	.067	.302	.048	.032	.371	.371	149	159	149	-0.096	0.126	0.4	1.0	-0.1	1.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Def	ID	FT	PCS	N.	D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT/A)	DT/D)	DT(C)	DT/D)	D.A	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
871	602210	8	7	315	.784	.048	.092	.784	.057	.019	.348	144	249	.348	065	-1.168	0.151	-0.2	1.0	-0.2	1.0	A-	A+
872	601264	8	6	319	.884	.884	.085	.022	.009	.000	.306	.306	272	057	147	-1.822	0.185	-0.6	0.9	-0.1	1.0	A+	A-
873	602206	8	6	318	.934	.934	.019	.031	.016	.000	.224	.224	181	127	072	-2.597	0.233	-0.1	1.0	0.0	1.0	B+	A-
874	602135	8	7	318	.371	.116	.208	.371	.299	.006	.247	128	207	.247	.012	1.116	0.130	3.1	1.2	3.6	1.3	A-	A-
875	602207	8	6	321	.925	.925	.028	.044	.003	.000	.337	.337	241	223	058	-2.617	0.222	-0.7	0.9	-2.0	0.5	B+	
876	602119	8	7	158	.203	.184	.354	.260	.203	.000	.344	.007	127	183	.344	1.784	0.207	-0.2	1.0	-0.5	0.9	A-	
877	602120	8	7	318	.428	.154	.208	.201	.428	.009	.264	082	092	129	.264	0.600	0.121	1.6	1.1	1.5	1.1	B+	A-
878	601325	8	8	158	.519	.108	.120	.247	.519	.006	.452	248	198	201	.452	0.132	0.170	-1.8	0.9	-1.8	0.9	A+	
879	602121	8	7	317	.316	.316	.385	.158	.136	.006	.345	.345	124	132	135	1.188	0.130	0.3	1.0	0.6	1.0	A-	A-
880	601327	8	8	317	.344	.110	.199	.344	.325	.022	.356	140	040	.356	188	1.012	0.128	0.2	1.0	0.3	1.0	B-	B-
881	601330	8	8	157	.325	.108	.325	.446	.089	.032	.096	009	.096	.082	060	1.099	0.186	3.8	1.3	3.4	1.4	A-	
882	601756	8	8	160	.494	.050	.494	.250	.206	.000	.080	042	.080	132	.065	0.421	0.173	4.4	1.3	3.5	1.4	A-	
883	602076	8	7	319	.674	.113	.674	.132	.069	.013	.364	163	.364	181	135	-0.538	0.130	-0.1	1.0	0.2	1.0	B-	A+
884	602062	8	7	160	.613	.094	.144	.613	.106	.044	.450	126	174	.450	188	-0.296	0.183	-0.1	1.0	-0.6	0.9	A+	
885	601732	8	8	159	.308	.189	.308	.258	.226	.019	.332	157	.332	160	.001	1.228	0.185	0.5	1.0	0.5	1.1	B+	
886	601217	8	8	317	.555	.054	.555	.117	.262	.013	.480	188	.480	088	328	0.047	0.123	-1.9	0.9	-1.9	0.9	A+	i .
887	601219	8	6	158	.779	.082	.082	.779	.044	.013	.432	118	236	.432	261	-1.177	0.208	-0.9	0.9	-0.9	0.8	A+	i .
888	602057	8	6	158	.823	.823	.019	.044	.108	.006	.153	.153	105	121	.017	-1.464	0.222	1.0	1.1	2.5	1.7	A+	
889	602078	8	7	158	.639	.057	.639	.203	.095	.006	.591	209	.591	314	289	-0.342	0.180	-3.5	0.8	-2.8	0.7	A+	
890	601222	8	6	314	.334	.089	.334	.092	.475	.010	.365	194	.365	102	147	1.069	0.132	0.3	1.0	0.6	1.1	A-	
891	602056	8	7	317	.454	.227	.199	.454	.085	.035	.397	114	119	.397	233	0.483	0.124	0.2	1.0	0.0	1.0	B-	
892	602059	8	7	157	.675	.675	.204	.083	.032	.006	.412	.412	235	217	133	-0.606	0.184	-0.7	1.0	-0.6	0.9	A+	
893	602133	8	7	321	.567	.567	.137	.190	.103	.003	.379	.379	223	193	120	-0.014	0.125	0.7	1.0	1.1	1.1	A+	
894	602128	8	6	317	.713	.085	.713	.066	.120	.016	.468	219	.468	221	230	-0.945	0.136	-1.4	0.9	-2.0	0.8	B+	A-
895	602205	8	6	319	.944	.006	.944	.044	.003	.003	.212	102	.212	196	090	-2.743	0.257	-0.2	1.0	-0.3	0.9	A-	B-
896	602208	8	7	318	.437	.230	.214	.437	.116	.003	.286	.016	199	.286	192	0.561	0.125	3.4	1.2	3.1	1.2	A-	A-
897	601326	8	8	318	.550	.214	.123	.550	.110	.003	.394	251	141	.394	151	0.049	0.120	-1.1	1.0	-1.4	0.9	A+	B-
898	601338	8	6	317	.716	.044	.079	.716	.142	.019	.496	134	306	.496	259	-0.973	0.137	-2.2	0.9	-2.2	0.8	B+	A-
899	601371	8	6	318	.465	.465	.242	.195	.091	.006	.422	.422	139	265	146	0.628	0.125	-0.2	1.0	0.2	1.0	A+	A+
900	602136	8	8	319	.555	.072	.166	.198	.555	.009	.321	137	215	110	.321	-0.049	0.122	1.2	1.1	1.1	1.1	A-	A+
901	601755	8	8	317	.432	.054	.237	.432	.243	.035	.215	182	209	.215	.166	0.590	0.125	4.2	1.2	3.5	1.2	A-	A+
902	601372	8	6	321	.408	.122	.231	.224	.408	.016	.443	024	243	216	.443	0.765	0.127	-1.3	0.9	-0.6	1.0	A+	
903	602204	8	6	315	.759	.051	.051	.118	.759	.022	.384	169	269	139	.384	-1.013	0.146	-0.2	1.0	0.4	1.1	A+	A-
904	602131	8	7	319	.511	.072	.119	.511	.292	.006	.287	177	151	.287	094	0.169	0.121	1.7	1.1	1.6	1.1	A-	B+
905	602061	8	7	317	.360	.123	.268	.240	.360	.010	.383	126	119	152	.383	1.009	0.127	0.1	1.0	0.0	1.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

		FT	PCS			-/-\	-/->	-/a\	-/->	-/\		(-)	/->	(-)	(-)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
906	602087	8	7	317	.584	.584	.136	.123	.142	.016	.477	.477	212	262	160	-0.249	0.126	-1.6	0.9	-1.4	0.9	A+	A+
907	602212	8	7	319	.332	.370	.332	.219	.078	.000	.282	145	.282	106	072	1.445	0.131	2.2	1.1	2.3	1.2	A+	A-
908	601329	8	6	315	.702	.702	.098	.089	.070	.041	.488	.488	277	164	131	-0.940	0.139	-1.5	0.9	-1.2	0.9	B+	A-
909	601757	8	4	158	.810	.051	.101	.810	.038	.000	.451	345	271	.451	102	-1.353	0.215	-1.1	0.9	-1.2	0.7	B+	l
910	601073	8	6	315	.664	.105	.664	.191	.038	.003	.355	233	.355	147	158	-0.368	0.129	-0.5	1.0	-0.1	1.0	A+	A+
911	601288	8	7	160	.244	.125	.544	.244	.069	.019	.042	141	.179	.042	141	1.591	0.196	2.1	1.2	2.9	1.4	A-	
912	601247	8	6	317	.580	.092	.580	.196	.117	.016	.387	113	.387	254	116	-0.233	0.125	-0.2	1.0	-0.8	0.9	A+	B+
913	601763	8	6	313	.534	.272	.093	.534	.080	.022	.550	264	192	.550	265	-0.075	0.124	-3.7	0.9	-3.4	0.8	B+	
914	602072	8	4	317	.656	.047	.066	.224	.656	.006	.431	208	233	223	.431	-0.450	0.128	-0.9	1.0	-1.2	0.9	A-	B+
915	601707	8	4	319	.596	.596	.113	.085	.201	.006	.496	.496	228	252	238	0.093	0.127	-2.9	0.9	-2.3	0.8	A-	A+
916	601332	8	6	317	.293	.215	.186	.290	.293	.016	.303	094	069	110	.303	1.352	0.134	1.0	1.1	1.5	1.1	A-	
917	601675	8	6	319	.589	.144	.141	.119	.589	.006	.509	296	271	160	.509	-0.013	0.127	-3.0	0.9	-1.9	0.8	A+	A+
918	601340	8	6	157	.420	.420	.293	.198	.083	.006	.456	.456	114	315	172	0.637	0.176	-2.2	0.9	-2.0	0.8	A-	
919	601344	8	6	321	.530	.246	.065	.159	.530	.000	.372	170	234	149	.372	0.184	0.124	1.0	1.1	0.9	1.1	C+	
920	601341	8	6	314	.354	.354	.293	.213	.127	.013	.404	.404	089	246	088	0.959	0.130	-0.1	1.0	-0.1	1.0	A+	
921	602132	8	4	314	.510	.121	.510	.277	.073	.019	.422	169	.422	166	173	0.169	0.124	-0.2	1.0	-0.9	0.9	A+	
922	601349	8	6	313	.201	.304	.201	.208	.259	.029	.142	.161	.142	180	067	1.715	0.152	2.0	1.2	2.1	1.3	A+	
923	601289	8	6	317	.562	.139	.186	.562	.098	.016	.415	100	285	.415	156	-0.132	0.125	-0.7	1.0	-0.8	1.0	B+	A-
924	602123	8	4	317	.227	.092	.249	.416	.227	.016	.194	.047	.044	201	.194	1.646	0.146	1.7	1.1	2.9	1.4	A-	A-
925	601233	8	6	318	.315	.315	.418	.192	.072	.003	.311	.311	.027	232	235	1.201	0.133	0.7	1.0	1.7	1.2	A-	A+
926	602124	8	4	318	.616	.154	.138	.616	.082	.009	.503	217	287	.503	223	-0.354	0.127	-2.5	0.9	-2.6	0.8	A-	B+
927	601295	8	6	316	.636	.076	.636	.203	.079	.006	.435	124	.435	270	208	-0.512	0.128	-0.9	1.0	-0.8	0.9	A+	A-
928	602137	8	4	315	.454	.073	.194	.244	.454	.035	.413	212	118	127	.413	0.387	0.125	-1.1	1.0	-0.8	1.0	A-	A-
929	602134	8	4	315	.524	.121	.524	.241	.089	.025	.351	060	.351	241	093	0.268	0.125	0.4	1.0	0.1	1.0	A+	A+
930	601342	8	6	318	.538	.132	.138	.186	.538	.006	.387	133	120	258	.387	0.440	0.124	-0.5	1.0	0.0	1.0	A+	A+
931	601074	8	6	319	.756	.756	.075	.091	.075	.003	.543	.543	263	322	255	-0.795	0.142	-3.8	0.8	-3.2	0.6	B+	A-
932	601343	8	6	319	.589	.589	.132	.066	.213	.000	.472	.472	328	238	153	0.141	0.126	-1.9	0.9	-1.5	0.9	A-	A+
933	601760	8	6	319	.542	.129	.542	.223	.100	.006	.445	110	.445	288	180	0.370	0.125	-1.5	0.9	-1.7	0.9	B+	A+
934	601240	8	6	319	.533	.144	.147	.172	.533	.003	.394	158	163	211	.394	0.295	0.126	0.7	1.0	0.2	1.0	A+	A+
935	600988	8	6	321	.321	.321	.305	.209	.162	.003	.423	.423	173	221	073	1.243	0.132	-1.6	0.9	-0.7	0.9	C+	
936	602053	8	4	321	.673	.673	.125	.069	.131	.003	.475	.475	223	208	283	-0.561	0.131	-1.9	0.9	-2.1	0.8	A+	
937	601676	8	6	321	.511	.206	.511	.162	.115	.006	.431	160	.431	194	233	0.265	0.124	-1.1	1.0	-0.6	1.0	A+	
938	602122	8	4	319	.317	.251	.317	.198	.232	.003	.207	206	.207	.084	093	1.118	0.129	2.4	1.1	1.5	1.1	B+	A+
939	601292	8	6	319	.796	.044	.796	.063	.097	.000	.434	203	.434	237	255	-1.322	0.146	-1.4	0.9	-2.2	0.7	B+	A+
940	601731	8	6	158	.329	.152	.260	.260	.329	.000	.374	069	132	213	.374	1.050	0.180	-0.2	1.0	0.4	1.0	B+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

	.=	FT	PCS					- / - >	>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
941	601302	8	6	158	.557	.158	.184	.557	.101	.000	.324	128	235	.324	078	-0.020	0.170	0.1	1.0	-0.3	1.0	A-	
942	601251	8	6	318	.616	.167	.116	.098	.616	.003	.439	205	232	214	.439	-0.260	0.122	-2.5	0.9	-2.2	0.9	A+	A-
943	601336	8	6	318	.632	.050	.632	.223	.088	.006	.466	132	.466	300	244	-0.346	0.123	-2.9	0.9	-2.8	0.8	B+	A-
944	602130	8	4	158	.348	.348	.386	.184	.076	.006	.267	.267	108	137	069	0.938	0.178	0.8	1.1	0.8	1.1	B+	
945	601358	8	6	318	.456	.160	.456	.242	.116	.025	.337	195	.337	150	077	0.426	0.121	0.1	1.0	0.2	1.0	A+	A+
946	601337	8	6	160	.506	.244	.506	.181	.063	.006	.083	.011	.083	030	112	0.295	0.168	3.7	1.2	4.1	1.3	A+	
947	601339	8	6	317	.388	.256	.170	.180	.388	.006	.323	056	156	127	.323	0.824	0.124	0.3	1.0	0.9	1.1	A+	A+
948	601662	8	4	317	.492	.092	.492	.334	.082	.000	.289	054	.289	170	178	0.339	0.120	1.9	1.1	1.5	1.1	B-	A-
949	601252	8	6	160	.463	.125	.306	.463	.094	.013	.378	199	144	.378	152	0.471	0.169	-0.4	1.0	-0.4	1.0	A-	1
950	601331	8	7	317	.290	.290	.325	.271	.095	.019	.309	.309	018	164	122	1.310	0.133	0.9	1.1	1.1	1.1	A+	A-
951	601661	8	4	160	.363	.194	.300	.363	.106	.038	.244	128	025	.244	081	0.905	0.177	1.3	1.1	1.5	1.1	B-	
952	601293	8	6	317	.508	.224	.107	.508	.158	.003	.343	073	171	.343	218	0.288	0.122	1.3	1.1	0.7	1.1	A+	A-
953	601262	8	7	157	.758	.083	.758	.089	.064	.006	.444	051	.444	391	204	-1.084	0.200	-1.2	0.9	-0.9	0.8	A+	
954	602138	8	6	317	.577	.107	.136	.158	.577	.022	.488	260	236	090	.488	-0.088	0.125	-2.1	0.9	-1.4	0.9	A+	A+
955	601333	8	7	317	.316	.202	.271	.186	.316	.025	.452	098	185	140	.452	1.214	0.132	-1.8	0.9	-1.1	0.9	A+	A-
956	602051	8	4	160	.581	.125	.194	.581	.094	.006	.225	056	028	.225	245	-0.016	0.175	2.1	1.1	2.0	1.2	A-	
957	601727	8	6	319	.583	.075	.176	.166	.583	.000	.372	043	221	236	.372	-0.037	0.123	-0.4	1.0	0.4	1.0	A+	A+
958	601246	8	6	319	.263	.263	.351	.188	.176	.022	.426	.426	075	214	095	1.529	0.137	-1.0	0.9	-0.4	1.0	A+	A+
959	601334	8	7	319	.665	.665	.063	.053	.194	.025	.358	.358	199	254	069	-0.529	0.130	0.5	1.0	0.8	1.1	A-	A-
960	601347	8	6	159	.208	.138	.579	.208	.069	.006	065	171	.344	065	313	1.863	0.208	2.9	1.4	3.2	1.7	A-	
961	601672	8	6	159	.528	.528	.138	.120	.214	.000	.448	.448	142	220	252	0.192	0.170	-1.5	0.9	-1.4	0.9	A-	
962	601698	8	4	317	.186	.120	.186	.360	.319	.016	.263	247	.263	.045	037	2.058	0.155	0.4	1.0	2.3	1.4	A-	
963	601673	8	6	317	.663	.663	.117	.117	.088	.016	.445	.445	253	204	116	-0.499	0.129	-1.3	0.9	-1.3	0.9	A+	
964	601335	8	6	159	.736	.057	.736	.113	.076	.019	.443	226	.443	244	164	-0.930	0.195	-1.1	0.9	-1.0	0.8	A+	
965	601758	8	6	158	.715	.063	.715	.082	.127	.013	.431	291	.431	262	136	-0.796	0.193	-1.0	0.9	-0.9	0.8	A+	
966	601238	8	6	158	.646	.646	.139	.152	.063	.000	.352	.352	239	178	089	-0.370	0.181	0.0	1.0	4.1	1.7	A+	
967	601345	8	6	158	.234	.120	.285	.354	.234	.006	.546	063	226	176	.546	1.774	0.204	-1.9	0.8	-2.4	0.6	A+	i
968	601360	8	6	157	.580	.580	.178	.159	.070	.013	.420	.420	204	246	.024	-0.123	0.175	-1.0	0.9	0.4	1.0	A+	
969	601764	8	6	318	.689	.689	.072	.116	.116	.006	.496	.496	208	334	220	-0.354	0.132	-2.2	0.9	-2.4	0.8	A-	A+
970	602052	8	4	318	.569	.569	.173	.110	.148	.000	.518	.518	269	309	164	0.131	0.125	-2.6	0.9	-2.1	0.8	B+	B+
971	602065	8	4	157	.191	.548	.217	.191	.038	.006	.264	151	052	.264	.042	1.953	0.217	0.5	1.1	1.1	1.2	A-	
972	601346	8	6	315	.568	.054	.149	.200	.568	.029	.599	198	273	280	.599	-0.179	0.126	-3.7	0.8	-3.4	0.8	A+	B-
973	600980	8	6	318	.481	.104	.481	.305	.110	.000	.359	146	.359	186	157	0.569	0.125	1.5	1.1	1.2	1.1	A+	A-
974	601776	8	6	316	.468	.193	.468	.184	.139	.016	.492	193	.492	229	161	0.293	0.124	-2.6	0.9	-1.4	0.9	A-	A-
975	601232	8	7	158	.437	.437	.260	.158	.101	.044	.444	.444	161	263	160	0.414	0.174	-1.3	0.9	-1.3	0.9	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade										. ,					in	in	out	out	/F	/B
976	601348	8	6	317	.215	.215	.170	.372	.224	.019	.163	.163	081	.061	079	1.843	0.148	2.3	1.2	2.9	1.4	A+	
977	601777	8	6	315	.549	.549	.152	.130	.143	.025	.427	.427	214	181	116	-0.064	0.125	-1.5	0.9	-0.7	1.0	A+	A+
978	601384	8	6	317	.628	.139	.628	.136	.098	.000	.441	309	.441	175	157	-0.296	0.124	-2.4	0.9	-1.2	0.9	A+	A+
979	601231	8	7	319	.489	.097	.223	.172	.489	.019	.468	108	159	319	.468	0.244	0.122	-2.3	0.9	-1.8	0.9	B+	A-
980	601663	8	4	159	.321	.201	.321	.220	.233	.025	.169	.022	.169	043	122	1.142	0.183	2.2	1.2	2.5	1.3	A+	
981	601234	8	6	315	.340	.178	.156	.289	.340	.038	.316	168	111	006	.316	0.964	0.131	0.6	1.0	0.2	1.0	A-	A+
982	601775	8	6	317	.338	.167	.123	.357	.338	.016	.359	205	151	047	.359	0.982	0.130	-0.2	1.0	-0.1	1.0	A-	A+
983	601069	8	8	313	.435	.115	.150	.284	.435	.016	.505	202	240	165	.505	0.418	0.125	-2.6	0.9	-2.0	0.9	A+	ldot
984	601097	8	N/A	159	.610	.069	.270	.050	.610	.000	.568	275	352	233	.568	-0.193	0.174	-3.7	8.0	-2.9	0.7	A-	
985	601090	8	6	160	.288	.069	.131	.475	.288	.038	.381	108	264	051	.381	1.303	0.187	-0.4	1.0	0.1	1.0	A-	
986	601100	8	7	160	.588	.206	.094	.094	.588	.019	.491	238	128	268	.491	-0.084	0.177	-1.6	0.9	-1.3	0.9	A+	
987	600990	8	6	315	.413	.140	.216	.413	.203	.029	.329	154	178	.329	.015	0.603	0.126	1.0	1.1	1.6	1.1	B-	A+
988	601006	8	7	313	.150	.185	.150	.556	.080	.029	022	125	022	.190	013	2.136	0.169	2.2	1.3	4.1	1.9	A+	
989	601009	8	7	317	.120	.120	.328	.401	.145	.006	.023	.023	024	.028	005	2.551	0.184	1.3	1.2	2.6	1.7	A+	A-
990	601093	8	6	317	.205	.205	.148	.230	.401	.016	.292	.292	243	189	.140	1.792	0.150	1.0	1.1	1.2	1.2	A-	A-
991	601096	8	8	317	.555	.060	.180	.189	.555	.016	.468	208	194	225	.468	-0.107	0.125	-1.7	0.9	-2.0	0.9	A+	A-
992	601087	8	8	316	.475	.104	.475	.310	.092	.019	.253	092	.253	044	161	0.264	0.125	3.2	1.2	2.0	1.1	A-	A+
993	601055	8	6	316	.377	.101	.247	.260	.377	.016	.396	261	071	132	.396	0.753	0.128	0.1	1.0	0.4	1.0	A-	B-
994	601025	8	7	316	.453	.098	.203	.453	.234	.013	.301	215	084	.301	093	0.371	0.125	1.5	1.1	0.9	1.1	A+	A-
995	601007	8	7	315	.479	.118	.181	.479	.210	.013	.251	183	069	.251	040	0.308	0.124	3.0	1.1	2.8	1.2	A+	A+
996	601106	8	8	318	.440	.101	.176	.440	.283	.000	.365	175	252	.365	073	0.924	0.125	1.1	1.1	1.2	1.1	A-	A-
997	600991	8	6	318	.582	.204	.160	.054	.582	.000	.446	213	247	193	.446	0.230	0.125	-1.0	1.0	-1.3	0.9	A-	B-
998	601068	8	7	318	.252	.132	.550	.252	.060	.006	.189	169	.008	.189	097	1.951	0.141	1.7	1.1	2.6	1.3	A+	A+
999	601062	8	7	319	.314	.050	.314	.072	.564	.000	.208	171	.208	222	004	1.550	0.133	2.7	1.2	2.7	1.3	C+	A+
1000	601021	8	6	319	.451	.125	.238	.182	.451	.003	.150	170	.052	116	.150	0.814	0.125	4.4	1.2	3.6	1.3	B+	A+
1001	601008	8	6	319	.683	.025	.683	.207	.085	.000	.382	087	.382	297	157	-0.491	0.133	-0.2	1.0	-0.7	0.9	A-	A+
1002	601094	8	7	319	.304	.147	.304	.376	.163	.009	.296	238	.296	130	.048	1.494	0.137	2.3	1.2	2.8	1.3	A-	A-
1003	600994	8	6	321	.816	.140	.816	.022	.022	.000	.395	295	.395	142	206	-1.462	0.155	-0.4	1.0	-1.1	0.8	A+	
1004	601104	8	7	158	.323	.190	.323	.342	.146	.000	.177	175	.177	024	007	1.082	0.180	1.5	1.1	1.7	1.2	A+	
1005	601105	8	8	318	.657	.657	.248	.047	.038	.009	.342	.342	245	148	068	-0.475	0.126	-0.4	1.0	-0.4	1.0	A-	A-
1006	601056	8	6	318	.223	.107	.223	.230	.418	.022	.038	127	.038	126	.164	1.655	0.143	2.6	1.2	3.3	1.4	A-	A+
1007	600995	8	6	158	.532	.070	.152	.532	.196	.051	.236	061	108	.236	152	-0.063	0.175	1.5	1.1	1.2	1.1	A-	
1008	601128	8	8	317	.464	.079	.215	.230	.464	.013	.417	065	087	287	.417	0.454	0.121	-1.3	1.0	-1.4	0.9	B-	B+
1009	602112	8	N/A	160	.338	.125	.231	.288	.338	.019	.258	051	142	045	.258	1.068	0.179	1.1	1.1	1.1	1.1	A-	
1010	601681	8	N/A	317	.498	.306	.079	.498	.085	.032	.406	177	117	.406	155	0.247	0.122	-0.7	1.0	-0.7	1.0	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1011	604000	Grade	Grade	457	400						242					0.704	0.477	in	in	out	out	/F	/B
1011	601098	8	6	157	.408	.204	.268	.408	.115	.006	.343	055	193	.343	145	0.701	0.177	0.7	1.1	0.7	1.1	A-	Α.
1012	601095	8	8 N/A	317 157	.678	.678	.110	.107	.085 .516	.019	.341	.341	040 247	206	182	-0.606	0.132 0.177	0.1	1.0	0.4	1.0 0.9	Α-	A+
1013	601682	8		319	.516	.121	.191	.127		.045		172		006	.440	0.097		-0.7	1.0	-0.7		A-	Α.
1014	601807 601027	8	N/A 8	319	.884	.022	.031	.884	.056	.006	.352 .500	201 .500	172 253	.352 202	172 188	-2.006 -0.215	0.185 0.125	-0.6 -2.4	0.9	-0.6 -2.5	0.9	C+	A+ B-
		8				.608		.122		.019									0.9			Α-	В-
1016	601806		N/A 8	160	.525	.106	.525	.175	.150	.044	.356	264	.356	.023	117	0.156	0.177	1.4	1.1	1.0	1.1	A+	
1017	601063	8		160	.613	.613	.163	.094	.088	.044	.446	.446	126	146	230	-0.296	0.183	-0.4	1.0	-0.1	1.0	Α-	
1018	601088	8	N/A 7	317	.672	.672	.047	.028	.249	.003	.523	.523	218	204	352	-0.507	0.128	-3.3	0.8	-2.3	0.8	Α-	
1019	601061	8	,	159	.233	.233	.170	.359	.226	.013	.233	.233	138	.057	123	1.686	0.201	0.8	1.1	1.6	1.3	A+	
1020	601010	8	8	159	.654	.151	.069	.113	.654	.013	.583	274	196	339	.583	-0.447	0.180	-3.2	0.8	-2.8	0.7	Α-	
1021	601015	8		317	.476	.177	.180	.139	.476	.028	.477	209	179	167	.477	0.385	0.124	-1.9	0.9	-1.9	0.9	Α-	
1022	601011	8	8	317	.457	.107	.230	.457	.177	.028	.410	121	095	.410	247	0.477	0.124	-0.2	1.0	-0.2	1.0	A-	
1023	601053	8	8	158	.228	.253	.228	.342	.158	.019	.210	.043	.210	179	.046	1.795	0.207	1.4	1.2	2.4	1.5	B-	
1024	601070	8	,	158	.310	.367	.184	.310	.095	.044	.127	.136	102	.127	111	1.257	0.190	3.2	1.3	4.0	1.6	Α-	_
1025	601102	8	7	319	.749	.069	.091	.749	.063	.028	.423	243	188	.423	099	-1.044	0.143	-0.6	1.0	-1.0	0.9	A+	A-
1026	601127	8	8	160	.475	.100	.113	.300	.475	.013	.404	237	146	159	.404	0.413	0.169	-0.7	1.0	-1.0	0.9	B-	
1027	601092	8	6	313	.326	.185	.326	.310	.157	.022	.391	053	.391	173	139	0.965	0.132	-0.4	1.0	0.2	1.0	B-	_
1028	601091	8	6	317	.716	.047	.716	.164	.063	.010	.470	183	.470	327	159	-0.790	0.133	-2.4	0.9	-2.0	0.8	B+	Α-
1029	601126	8	N/A	315	.083	.054	.768	.073	.083	.022	153	088	.343	156	153	2.985	0.213	1.6	1.3	3.9	2.4	A-	A+
1030	601089	8	6	158	.279	.139	.481	.057	.279	.044	.191	209	.095	032	.191	1.443	0.196	2.3	1.2	2.8	1.5	A-	
1031	601103	8	7	321	.277	.146	.277	.371	.199	.006	.170	177	.170	.020	050	1.490	0.138	2.7	1.2	3.6	1.5	A-	
1032	600842	11	7	718	.403	.403	.074	.096	.426	.001	.315	.315	195	246	062	1.254	0.081	-0.1	1.0	0.1	1.0	A-	A-
1033	600646	11	7	714	.775	.775	.130	.050	.039	.006	.335	.335	200	144	121	-0.672	0.094	-1.6	0.9	-1.9	0.9	A-	
1034	601630	11	7	719	.655	.022	.655	.056	.266	.001	.372	124	.372	189	257	0.005	0.084	-1.2	1.0	-1.8	0.9	A+	B-
1035	600826	11	7	717	.728	.014	.036	.728	.220	.001	.333	098	158	.333	257	-0.384	0.089	-0.5	1.0	-0.2	1.0	A-	
1036	602260	11	7	717	.459	.159	.459	.195	.187	.000	.255	031	.255	172	121	0.951	0.081	3.4	1.1	3.1	1.1	C-	
1037	602644	11	7	719	.349	.330	.195	.349	.120	.007	.126	.090	175	.126	084	1.450	0.084	5.4	1.2	6.3	1.3	A+	A+
1038	604162	11	7	715	.435	.435	.106	.066	.392	.001	.290	.290	214	264	020	1.179	0.081	2.6	1.1	2.5	1.1	C-	A-
1039	601556	11	8	717	.374	.314	.190	.374	.121	.001	.341	103	199	.341	111	1.361	0.084	0.6	1.0	1.6	1.1	A-	
1040	601524	11	7	717	.520	.520	.272	.127	.078	.003	.445	.445	201	251	174	0.659	0.081	-3.2	0.9	-3.0	0.9	B-	
1041	601502	11	8	717	.713	.202	.713	.050	.034	.001	.449	348	.449	159	156	-0.297	0.088	-2.5	0.9	-2.6	0.8	A+	
1042	601455	11	8	717	.593	.593	.144	.163	.093	.007	.518	.518	309	225	197	0.301	0.082	-5.9	8.0	-5.1	0.8	A-	
1043	601458	11	8	719	.752	.013	.752	.141	.089	.006	.412	133	.412	272	216	-0.540	0.092	-2.2	0.9	-3.0	0.8	A+	A-
1044	601557	11	8	719	.577	.129	.234	.057	.577	.003	.455	209	294	113	.455	0.380	0.081	-4.9	0.9	-4.5	0.8	A+	A+
1045	600825	11	7	719	.604	.043	.604	.291	.061	.001	.364	111	.364	286	106	0.258	0.082	-1.7	1.0	-1.9	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
1046	601503	11	8	719	.665	.131	.665	.131	.061	.013	.429	211	.429	191	169	-0.082	0.085	-2.1	0.9	-2.2	0.9	A-	A+
1047	604829	11	7	715	.859	.859	.042	.046	.053	.000	.380	.380	188	212	223	-1.175	0.112	-1.4	0.9	-2.6	0.7	A-	A-
1048	601523	11	8	715	.720	.720	.084	.164	.028	.004	.475	.475	263	301	173	-0.231	0.089	-3.5	0.9	-3.8	0.8	A+	A-
1049	600548	11	8	715	.333	.076	.137	.333	.445	.010	.176	119	236	.176	.056	1.665	0.085	3.8	1.1	4.0	1.2	A+	A+
1050	600836	11	8	718	.740	.070	.740	.086	.095	.010	.357	178	.357	216	143	-0.414	0.091	-1.2	1.0	-2.2	0.9	A-	A-
1051	604515	11	7	718	.717	.050	.105	.121	.717	.007	.403	.000	269	257	.403	-0.276	0.088	-2.1	0.9	-1.9	0.9	A-	B-
1052	602658	11	8	718	.447	.107	.306	.447	.125	.014	.302	165	139	.302	044	1.014	0.080	0.7	1.0	0.9	1.0	A+	A-
1053	602659	11	8	714	.415	.242	.269	.415	.062	.013	.261	103	121	.261	045	1.090	0.081	1.6	1.0	1.5	1.1	A-	
1054	600843	11	7	714	.740	.029	.740	.063	.167	.001	.383	159	.383	168	260	-0.447	0.089	-2.7	0.9	-3.6	0.8	A-	
1055	601629	11	8	714	.266	.177	.325	.266	.217	.015	.215	093	124	.215	.056	1.850	0.090	1.4	1.1	1.7	1.1	A+	
1056	602261	11	7	962	.288	.090	.288	.190	.429	.002	.281	023	.281	208	071	2.299	0.077	2.1	1.1	2.9	1.2	C-	A-
1057	604176	11	7	482	.255	.635	.255	.042	.069	.000	.420	284	.420	065	132	2.453	0.113	-1.1	0.9	-0.9	0.9	C-	
1058	604516	11	7	480	.473	.213	.473	.190	.110	.015	.338	197	.338	180	026	1.435	0.099	0.9	1.0	0.3	1.0	B-	A-
1059	600837	11	7	483	.443	.110	.099	.348	.443	.000	.488	120	224	290	.488	1.689	0.100	-3.3	0.9	-2.0	0.9	A-	A-
1060	602661	11	4	532	.790	.790	.043	.111	.055	.002	.396	.396	126	277	211	-0.441	0.113	-1.5	0.9	-2.3	0.8	A-	
1061	604163	11	8	531	.836	.030	.068	.066	.836	.000	.399	226	271	165	.399	-0.741	0.123	-1.8	0.9	-2.8	0.7	B+	
1062	604799	11	Ge	532	.227	.278	.120	.367	.227	.008	.381	.008	193	191	.381	2.527	0.112	-0.4	1.0	-0.2	1.0	A-	
1063	600651	11	7	532	.603	.258	.603	.062	.075	.002	.433	221	.433	219	220	0.574	0.095	-3.2	0.9	-2.9	0.9	A-	A-
1064	604180	11	6	533	.289	.113	.289	.467	.122	.009	.373	174	.373	111	167	2.171	0.104	-0.6	1.0	0.8	1.1	A-	A-
1065	601544	11	4	533	.675	.038	.026	.675	.259	.002	.460	207	162	.460	333	0.251	0.099	-2.6	0.9	-2.5	0.8	C-	
1066	600749	11	7	533	.411	.411	.306	.201	.079	.004	.527	.527	230	221	231	1.520	0.095	-5.2	0.8	-4.7	0.8	A-	
1067	600844	11	6	533	.257	.158	.257	.317	.250	.019	.241	060	.241	174	.028	2.319	0.107	1.8	1.1	3.2	1.3	A-	
1068	604798	11	4	533	.863	.863	.032	.075	.030	.000	.356	.356	177	220	196	-0.985	0.131	-1.0	0.9	-2.4	0.7	A+	
1069	602258	11	Ge	533	.462	.462	.096	.387	.047	.009	.403	.403	271	210	060	1.268	0.095	-0.9	1.0	-0.8	1.0	A-	
1070	602647	11	7	532	.376	.126	.244	.241	.376	.013	.407	152	166	171	.407	1.657	0.098	-1.1	1.0	-1.1	0.9	A+	
1071	600845	11	6	532	.329	.098	.284	.329	.276	.013	.219	151	064	.219	047	1.907	0.101	3.2	1.1	3.6	1.2	A-	
1072	604801	11	Ge	532	.481	.085	.481	.235	.149	.006	.262	161	.262	159	139	1.029	0.096	0.2	1.0	0.0	1.0	A+	
1073	602263	11	7	531	.663	.196	.663	.098	.032	.011	.304	138	.304	202	078	0.301	0.100	0.8	1.0	0.2	1.0	A-	
1074	600846	11	6	531	.420	.138	.420	.316	.090	.036	.375	238	.375	108	098	1.421	0.096	-0.5	1.0	-0.3	1.0	A+	
1075	604517	11	8	533	.499	.499	.266	.206	.024	.004	.444	.444	289	166	151	1.132	0.094	-3.7	0.9	-3.3	0.9	A-	A+
1076	600712	11	7	533	.413	.069	.308	.413	.205	.006	.164	098	.054	.164	190	1.538	0.096	5.2	1.2	4.3	1.2	A+	B-
1077	604165	11	8	532	.652	.152	.652	.160	.026	.009	.246	196	.246	062	111	0.308	0.098	1.2	1.1	1.9	1.1	A+	A-
1078	600828	11	7	532	.630	.032	.179	.630	.156	.004	.278	069	208	.278	095	0.443	0.096	1.4	1.1	1.1	1.1	A+	A-
1079	604177	11	8	481	.599	.119	.195	.599	.077	.010	.189	098	192	.189	.066	0.747	0.100	2.3	1.1	4.0	1.2	A+	
1080	601545	11	4	481	.738	.738	.081	.146	.035	.000	.343	.343	166	238	116	0.064	0.109	-0.9	1.0	-0.9	0.9	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1081 602646 11	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1082 601525 11			Grade	Grade															in	in	out		/F	/B
1088 602262 11				-																				
1084 600827 11 7 480 429 429 429 231 315 017 008 465	-																							
1085 604949 11 8																								
1086 605040 11				,												-							A+	
1088 601547 11 6e				_																				_
1088 604164 11 8		605040	11	7					.590		.000		106						0.8	1.0	0.8	1.1	B+	A-
1089 601543 11		601547	11	Ge	481											-	0.920			1.1		1.1	A+	
1090 604178 11 8 532 .853 .853 .066 .055 .024 .002 .363 .363 145 254 209 0.928 .0.128 .1.2 .0.9 2.3 .0.7 A	1088	604164	11	8	481	.453	.223	.262	.453	.048	.015	.268	133	127	.268	049	1.446	0.100	2.0	1.1	1.3	1.1	A-	
1091 600785 11 Ge 531 290 0.73 290 401 234 0.02 1.82 2.12 1.82 -0.55 0.10 2.159 0.103 2.6 1.1 3.6 1.3 A 1.99 0.052 0.052 11 8 533 3.743 0.052 1.43 7.743 0.08 0.00 4.23 -1.43 -2.86 4.23 -2.17 -0.099 0.05 -2.3 0.9 -2.9 0.8 A A A 1.092 0.052 1.1 3.6 0.052 1.1 3.6 0.052 0.052 1.1 3.6 0.052 1.1	1089	601543	11	4	481	.778	.058	.013	.778	.152	.000	.326	187	058	.326	237	-0.159	0.115	-1.3	0.9	-0.2	1.0	C-	
1092 604522 11 8 533 .743 .032 .143 .743 .083 .000 .423 .143 286 .423 217 0.099 .0.105 .2.3 .0.9 2.9 0.8 A+ A- .093 .00550 .11 .7 .532 .620 .030 .620 .032 .327 .433 .006 .528 .115 .310 240 .528 .1406 .0.095 .4.5 .0.9 3.5 .0.9 .4.4 .	1090	604178	11	8	532	.853	.853	.066	.055	.024	.002	.363	.363	145	254	209	-0.928	0.128	-1.2	0.9	-2.3	0.7	A-	
1093 602650 11 8 533 .433 .058 .176 .327 .433 .006 .528 .115 .310 .240 .528 1.406 .0.095 .4.5 0.9 .3.5 0.9 A+ .1094 601550 11 7 532 .620 .030 .620 .032 .314 .004 .216 .173 .216 .185 .085 .0.486 .0.096 .3.1 1.1 .2.3 1.1 A+ A- .1095 601470 11 8 .532 .596 .079 .164 .596 .154 .008 .502 .208 .189 .502 .305 .0.598 .0.95 .4.3 .0.9 .4.1 0.8 A- .1095 .0.141 .1095 .1095 .1.141 .1095 .0.141 .1095 .1.141 .1095 .0.141 .1095 .1.141	1091	600785	11	Ge	531	.290	.073	.290	.401	.234	.002	.182	212	.182	055	.010	2.159	0.103	2.6	1.1	3.6	1.3	A-	
1094 601550 11 7 532 6.20 0.30 6.20 0.32 3.14 0.04 2.16 -1.73 2.16 -1.85 -0.85 0.486 0.096 3.1 1.1 2.3 1.1 A+ A-1095 604170 11 8 532 5.96 0.79 1.64 5.96 1.54 0.08 5.02 -2.08 -1.89 5.02 -3.05 0.598 0.095 -4.3 0.9 -4.1 0.8 A-A-1096 601549 11 7 533 7.62 7.62 0.98 0.64 0.71 0.06 4.54 4.54 -2.24 -2.29 -1.90 -0.243 0.109 -2.9 0.9 3.0 0.7 A+ A-1096 601549 11 8 531 5.67 5.65 2.60 0.83 0.83 0.08 4.89 4.89 -2.84 -2.25 -1.51 0.791 0.095 -3.2 0.9 -2.7 0.9 A-1098 601528 11 6e 533 3.30 1.61 3.30 2.50 2.50 0.09 1.97 0.29 1.97 -1.52 0.074 1.914 0.100 3.6 1.2 2.9 1.2 A-1099 602266 11 6e 533 5.89 0.71 1.80 5.89 1.46 0.13 4.65 -1.61 -1.197 4.65 -3.05 0.641 0.096 -2.6 0.9 -2.7 0.9 A-1101 604831 11 6e 533 3.53 1.09 1.58 3.68 3.53 0.13 3.10 -0.75 -2.26 -0.58 3.10 1.792 0.098 1.7 1.1 0.9 1.1 A-1102 600803 11 6e 532 3.30 2.90 2.41 3.80 0.85 0.06 3.62 -2.49 -0.26 3.62 -1.63 1.662 0.097 0.8 1.0 0.9 1.1 A+11104 0.00 0.05 0	1092	604522	11	8	533	.743	.032	.143	.743	.083	.000	.423	143	286	.423	217	-0.099	0.105	-2.3	0.9	-2.9	0.8	A+	A-
1095 604170 11 8 532 596 0.79 1.64 5.96 1.54 0.08 5.02 -2.08 -1.89 5.02 -3.05 0.598 0.095 -4.3 0.9 -4.1 0.8 A- A- 1096 601549 11 7 533 7.62 7.62 0.98 0.64 0.71 0.06 4.54 4.54 4.284 -2.29 -1.90 -0.243 0.109 -2.9 0.9 -3.0 0.7 A+ A- 1097 602268 11 8 531 5.67 5.67 5.67 5.67 5.67 0.083 0.083 0.08 4.89 4.89 -2.84 -2.25 -1.51 0.791 0.095 -3.2 0.9 -2.7 0.9 A- 1098 601528 11 Ge 533 3.30 1.61 3.30 2.50 2.50 0.09 1.97 0.099 1.97 -1.52 -0.074 1.914 0.100 3.6 1.2 2.9 1.2 A- 1099 602266 11 Ge 533 5.89 0.71 1.80 5.89 1.46 0.013 4.65 -1.61 -1.97 4.65 -3.05 0.641 0.096 -2.6 0.9 -2.7 0.9 A- 1101 604831 11 Ge 533 3.53 1.09 1.58 3.68 3.53 0.06 3.65 -2.49 -0.26 3.62 -1.63 1.662 0.097 0.8 1.0 0.9 1.1 A- 1102 600803 11 Ge 532 3.80 2.90 2.41 3.80 0.85 0.06 3.62 -2.49 -0.26 3.62 -1.63 1.662 0.097 0.8 1.0 0.9 1.1 A- 1104 604518 11 Ge 532 3.55 1.05 3.97 3.55 1.41 0.02 2.63 -1.34 -0.74 2.63 -1.28 1.792 0.099 2.3 1.1 3.6 1.2 A+ 1104 604518 11 Ge 532 5.09 0.17 1.18 5.09 3.44 0.01 1.14 -1.04 -1.71 1.41 0.02 0.095 7.7 1.3 5.6 1.3 A- 1105 601548 11 7 532 6.96 6.96 1.05 1.39 0.56 0.04 4.57 4.57 -2.17 -2.54 -2.35 0.113 0.101 3.4 0.9 -3.2 0.8 A+ 1107 602666 11 7 531 7.33 7.33 7.33 1.51 0.72 0.43 0.02 4.85 4.85 -3.15 -2.88 -1.41 -0.053 0.105 3.7 0.8 -3.8 0.7 A- 1107 602666 11 7 531 7.82 6.96 6.96 1.05 1.39 0.56 0.04 4.57 4.57 -2.17 -2.54 -2.35 0.113 0.101 3.4 0.9 -3.2 0.8 A+ 1106 604158 11 Ge 531 7.82 6.96 6.96 1.05 1.39 0.56 0.04 4.85 4.85 -3.15 -2.88 -1.41	1093	602650	11	8	533	.433	.058	.176	.327	.433	.006	.528	115	310	240	.528	1.406	0.095	-4.5	0.9	-3.5	0.9	A+	
1096 601549 11	1094	601550	11	7	532	.620	.030	.620	.032	.314	.004	.216	173	.216	185	085	0.486	0.096	3.1	1.1	2.3	1.1	A+	A-
1097 602268 11 8 531 .567 .567 .260 .083 .083 .088 .489 .489 .284 .245 .151 0.791 0.095 -3.2 0.9 -2.7 0.9 A- 1098 601528 11 Ge 533 .330 .161 .330 .250 .250 .009 .197 .029 .197 .152 .074 .1914 0.100 3.6 1.2 2.9 1.2 A- 1099 602266 11 Ge 533 .589 .071 .180 .589 .146 .013 .465 .161 .197 .465 .305 0.641 0.096 -2.6 0.9 -2.7 0.9 A- 1100 604803 11 7 533 .478 .227 .203 .478 .086 .006 .501 .208 .312 .501 .111 .1195 0.094 .38 0.9 .32 0.9 .32 0.9 .4. 1101 604831 11 Ge 533 .353 .109 .158 .368 .353 .013 .310 .075 .236 .058 .310 1.792 0.098 1.7 1.1 0.9 1.1 A- 1102 600803 11 Ge 532 .380 .290 .241 .380 .085 .006 .362 .249 .026 .362 .163 1.662 0.097 0.8 1.0 0.9 1.1 A+ 1103 601594 11 Ge 532 .355 .105 .397 .355 .141 .002 .263 .134 .074 .263 .128 1.792 0.099 2.3 1.1 3.6 1.2 A+ 1105 601548 11 Ge 532 .509 .017 .118 .509 .344 .011 .141 .104 .171 .141 .020 .1024 0.095 7.7 1.3 5.6 1.3 A- 1106 604158 11 Ge 531 .840 .030 .040 .840 .090 .000 .395 .220 .139 .355 .280 .0772 0.124 .18 0.9 .3.0 0.7 A- 1107 602666 11 7 531 .733 .733 .151 .072 .043 .002 .485 .485 .315 .288 .141 .0.053 0.105 .3.7 0.8 .3.8 0.7 A- 1108 600848 11 Ge 531 .271 .104 .428 .271 .185 .013 .304 .081 .154 .304 .066 .2.246 .0.055 .0.45 .0.05 .0.45	1095	604170	11	8	532	.596	.079	.164	.596	.154	.008	.502	208	189	.502	305	0.598	0.095	-4.3	0.9	-4.1	8.0	A-	A-
1098 601528 11 Ge 533 .330 .161 .330 .250 .250 .009 .197 .029 .197 .152 .074 1.914 0.100 3.6 1.2 2.9 1.2 A-	1096	601549	11	7	533	.762	.762	.098	.064	.071	.006	.454	.454	284	229	190	-0.243	0.109	-2.9	0.9	-3.0	0.7	A+	A-
1099 602266 11 Ge 533 5.89 0.71 1.80 5.89 1.46 0.13 0.465 0.161 0.197 0.465 0.305 0.641 0.096 0.26 0.9 0.27 0.9 A+ 1100 604803 11 7 533 0.478 0.203 0.478 0.86 0.06 0.501 0.208 0.312 0.501 0.111 0.195 0.094 0.38 0.9 0.3.2 0.9 A- 1101 0.0833 11 Ge 532 0.380 0.290 0.241 0.380 0.885 0.06 0.362 0.249 0.026 0.362 0.249 0.026 0.362 0.163 0.662 0.097 0.8 1.0 0.9 1.1 A+ 1104 0.04518 11 Ge 532 0.355 0.05 0.397 0.355 0.141 0.002 0.263 0.134 0.074 0.263 0.134 0.074 0.263 0.128 0.1792 0.099 0.2 0.11 0.6 0.1548 11 Ge 532 0.509 0.17 0.18 0.509 0.44 0.11 0.14 0	1097	602268	11	8	531	.567	.567	.260	.083	.083	.008	.489	.489	284	245	151	0.791	0.095	-3.2	0.9	-2.7	0.9	A-	
1100 604803 11 7 533 .478 .227 .203 .478 .086 .006 .501 .208 .312 .501 .111 1.195 .0094 -3.8 0.9 -3.2 0.9 A- 1101 604831 11 Ge 533 .353 .109 .158 .368 .353 .013 .310 075 236 058 .310 1.792 .0098 1.7 1.1 0.9 1.1 A- 1102 600803 11 Ge 532 .380 .290 .241 .380 .085 .006 .362 249 026 .362 163 1.662 0.097 0.8 1.0 0.9 1.1 A+ 1103 601954 11 Ge 532 .355 .105 .397 .355 .141 .002 .263 138 1.792 .0099 2.3 1.1 3.6 1.2 A+ 1103	1098	601528	11	Ge	533	.330	.161	.330	.250	.250	.009	.197	.029	.197	152	074	1.914	0.100	3.6	1.2	2.9	1.2	A-	
1101 604831 11 Ge 533 .353 .109 .158 .368 .353 .013 .310 075 236 058 .310 1.792 0.098 1.7 1.1 0.9 1.1 A- 1102 600803 11 Ge 532 .380 .290 .241 .380 .085 .006 .362 249 .026 .362 163 1.662 0.097 0.8 1.0 0.9 1.1 A+ 1103 601954 11 Ge 532 .355 .105 .397 .355 .141 .002 .263 134 074 .263 128 1.792 0.099 2.3 1.1 3.6 1.2 A+ 1104 604518 11 Ge 532 .509 .017 .118 .509 .344 .011 .141 104 171 .141 .020 .0095 .77 1.3 .56 1.3 A-<	1099	602266	11	Ge	533	.589	.071	.180	.589	.146	.013	.465	161	197	.465	305	0.641	0.096	-2.6	0.9	-2.7	0.9	A+	
1102 600803 11 Ge 532 .380 .290 .241 .380 .085 .006 .362 249 026 .362 163 1.662 0.097 0.8 1.0 0.9 1.1 A+ 1103 601954 11 Ge 532 .355 .105 .397 .355 .141 .002 .263 134 074 .263 128 1.792 0.099 2.3 1.1 3.6 1.2 A+ 1104 604518 11 Ge 532 .509 .017 .118 .509 .344 .011 .141 104 171 .141 .020 1.024 0.095 .77 1.3 5.6 1.3 A- 1105 601548 11 Ge 531 .840 .030 .040 .840 .099 .020 .395 220 139 .395 280 -0.772 0.124 -1.8 0.9 -3.0 <	1100	604803	11	7	533	.478	.227	.203	.478	.086	.006	.501	208	312	.501	111	1.195	0.094	-3.8	0.9	-3.2	0.9	A-	
1103 601954 11 Ge 532 .355 .105 .397 .355 .141 .002 .263 134 074 .263 128 1.792 0.099 2.3 1.1 3.6 1.2 A+ 1104 604518 11 Ge 532 .509 .017 .118 .509 .344 .011 .141 104 171 .141 .020 1.024 0.095 7.7 1.3 5.6 1.3 A- 1105 601548 11 7 532 .696 .696 .105 .139 .056 .004 .457 .457 217 254 235 0.113 0.101 -34 0.99 -3.2 0.8 A+ 1106 604158 11 Ge 531 .840 .030 .040 .890 .092 .485 .485 315 288 141 -0.053 0.105 -3.7 0.8 -3.8 0.7 <	1101	604831	11	Ge	533	.353	.109	.158	.368	.353	.013	.310	075	236	058	.310	1.792	0.098	1.7	1.1	0.9	1.1	A-	
1104 604518 11 Ge 532 .509 .017 .118 .509 .344 .011 .141 104 171 .141 .020 1.024 0.095 7.7 1.3 5.6 1.3 A- 1105 601548 11 7 532 .696 .696 .105 .139 .056 .004 .457 .457 217 254 235 0.113 0.101 -3.4 0.9 -3.2 0.8 A+ 1106 604158 11 Ge 531 .840 .030 .040 .840 .090 .000 .395 220 139 .395 280 -0.772 0.124 -1.8 0.9 -3.0 0.7 A- 1107 602666 11 7 531 .733 .733 .151 .072 .043 .002 .485 .485 315 288 141 -0.053 0.105 04 1.0 0.3	1102	600803	11	Ge	532	.380	.290	.241	.380	.085	.006	.362	249	026	.362	163	1.662	0.097	0.8	1.0	0.9	1.1	A+	
1105 601548 11 7 532 .696 .696 .105 .139 .056 .004 .457 217 254 235 0.113 0.101 -3.4 0.9 -3.2 0.8 A+ 1106 604158 11 Ge 531 .840 .030 .040 .840 .090 .000 .395 220 139 .395 280 -0.772 0.124 -1.8 0.9 -3.0 0.7 A- 1107 602666 11 7 531 .733 .733 .151 .072 .043 .002 .485 315 288 141 -0.053 0.105 -3.7 0.8 -3.8 0.7 A- 1108 600688 11 Ge 531 .782 .089 .782 .109 .019 .002 .320 171 .320 246 0.105 -0.4 1.0 0.3 1.0 A- 1109	1103	601954	11	Ge	532	.355	.105	.397	.355	.141	.002	.263	134	074	.263	128	1.792	0.099	2.3	1.1	3.6	1.2	A+	
1106 604158 11 Ge 531 .840 .030 .040 .840 .090 .000 .395 220 139 .395 280 -0.772 0.124 -1.8 0.9 -3.0 0.7 A- 1107 602666 11 7 531 .733 .733 .151 .072 .043 .002 .485 .485 315 288 141 -0.053 0.105 -3.7 0.8 -3.8 0.7 A- 1108 600688 11 Ge 531 .271 .104 .428 .271 .185 .013 .304 081 154 .304 066 2.246 0.105 -0.4 1.0 0.3 1.0 A- 1109 600829 11 Ge 531 .782 .089 .782 .109 .019 .002 .320 171 .320 249 055 -0.357 0.112 -0.5 1.0 -1.1	1104	604518	11	Ge	532	.509	.017	.118	.509	.344	.011	.141	104	171	.141	.020	1.024	0.095	7.7	1.3	5.6	1.3	A-	
1107 602666 11 7 531 .733 .733 .151 .072 .043 .002 .485 .485 315 288 141 -0.053 0.105 -3.7 0.8 -3.8 0.7 A- 1108 600688 11 Ge 531 .271 .104 .428 .271 .185 .013 .304 081 154 .304 066 2.246 0.105 -0.4 1.0 0.3 1.0 A- 1109 600829 11 Ge 531 .782 .089 .782 .109 .019 .002 .320 171 .320 -249 055 -0.357 0.112 -0.5 1.0 -1.1 0.9 A+ 1110 604519 11 Ge 531 .567 .234 .567 .147 .032 .021 .278 124 .278 157 082 0.746 0.096 2.1 1.1 1.6	1105	601548	11	7	532	.696	.696	.105	.139	.056	.004	.457	.457	217	254	235	0.113	0.101	-3.4	0.9	-3.2	0.8	A+	
1108 600688 11 Ge 531 .271 .104 .428 .271 .185 .013 .304 081 154 .304 066 2.246 0.105 -0.4 1.0 0.3 1.0 A- 1109 600829 11 Ge 531 .782 .089 .782 .109 .019 .002 .320 171 .320 249 055 -0.357 0.112 -0.5 1.0 -1.1 0.9 A+ 1110 604519 11 Ge 531 .567 .234 .567 .147 .032 .021 .278 124 .278 157 082 0.746 0.096 2.1 1.1 1.6 1.1 A- 1111 600838 11 Ge 533 .475 .263 .161 .475 .084 .017 .350 141 149 .350 173 1.208 0.095 0.8 1.0 0.0	1106	604158	11	Ge	531	.840	.030	.040	.840	.090	.000	.395	220	139	.395	280	-0.772	0.124	-1.8	0.9	-3.0	0.7	A-	
1109 600829 11 Ge 531 .782 .089 .782 .109 .019 .002 .320 171 .320 249 055 -0.357 0.112 -0.5 1.0 -1.1 0.9 A+ 1110 604519 11 Ge 531 .567 .234 .567 .147 .032 .021 .278 124 .278 157 082 0.746 0.096 2.1 1.1 1.6 1.1 A- 1111 600838 11 Ge 533 .475 .263 .161 .475 .084 .017 .350 141 149 .350 173 1.208 0.095 0.8 1.0 0.0 1.0 A- 1112 600833 11 Ge 533 .814 .066 .045 .066 .814 .009 .365 225 213 154 .365 -0.624 0.119 -1.3 0.9 -1.6	1107	602666	11	7	531	.733	.733	.151	.072	.043	.002	.485	.485	315	288	141	-0.053	0.105	-3.7	0.8	-3.8	0.7	A-	
1110 604519 11 Ge 531 .567 .234 .567 .147 .032 .021 .278 124 .278 157 082 0.746 0.096 2.1 1.1 1.6 1.1 A- 1111 600838 11 Ge 533 .475 .263 .161 .475 .084 .017 .350 141 149 .350 173 1.208 0.095 0.8 1.0 0.0 1.0 A- A- 1112 600833 11 Ge 533 .814 .066 .045 .066 .814 .009 .365 225 213 154 .365 -0.624 0.119 -1.3 0.9 -1.6 0.8 B- A- 1113 604179 11 8 533 .672 .111 .071 .145 .672 .002 .417 200 185 254 .417 0.287 0.099 -1.8 0.9 -2.2 0.9 A+ A- 1114 604159 11 <	1108	600688	11	Ge	531	.271	.104	.428	.271	.185	.013	.304	081	154	.304	066	2.246	0.105	-0.4	1.0	0.3	1.0	A-	
1111 600838 11 Ge 533 .475 .263 .161 .475 .084 .017 .350 141 149 .350 173 1.208 0.095 0.8 1.0 0.0 1.0 A- A- 1112 600833 11 Ge 533 .814 .066 .045 .066 .814 .009 .365 225 213 154 .365 -0.624 0.119 -1.3 0.9 -1.6 0.8 B- A- 1113 604179 11 8 533 .672 .111 .071 .145 .672 .002 .417 200 185 254 .417 0.287 0.099 -1.8 0.9 -2.2 0.9 A+ A- 1114 604159 11 Ge 533 .752 .028 .086 .752 .126 .008 .281 107 240 .281 097 -0.195 0.108 -0.1 1.0 0.9 1.1 A+ A+	1109	600829	11	Ge	531	.782	.089	.782	.109	.019	.002	.320	171	.320	249	055	-0.357	0.112	-0.5	1.0	-1.1	0.9	A+	
1112 600833 11 Ge 533 .814 .066 .045 .066 .814 .009 .365 225 213 154 .365 -0.624 0.119 -1.3 0.9 -1.6 0.8 B- A- 1113 604179 11 8 533 .672 .111 .071 .145 .672 .002 .417 200 185 254 .417 0.287 0.099 -1.8 0.9 -2.2 0.9 A+ A- 1114 604159 11 Ge 533 .752 .028 .086 .752 .126 .008 .281 107 240 .281 097 -0.195 0.108 -0.1 1.0 0.9 1.1 A+ A+	1110	604519	11	Ge	531	.567	.234	.567	.147	.032	.021	.278	124	.278	157	082	0.746	0.096	2.1	1.1	1.6	1.1	A-	
1112 600833 11 Ge 533 .814 .066 .045 .066 .814 .009 .365 225 213 154 .365 -0.624 0.119 -1.3 0.9 -1.6 0.8 B- A- 1113 604179 11 8 533 .672 .111 .071 .145 .672 .002 .417 200 185 254 .417 0.287 0.099 -1.8 0.9 -2.2 0.9 A+ A- 1114 604159 11 Ge 533 .752 .028 .086 .752 .126 .008 .281 107 240 .281 097 -0.195 0.108 -0.1 1.0 0.9 1.1 A+ A+	1111	600838	11	Ge	533	.475	.263	.161	.475	.084	.017	.350	141	149	.350	173	1.208	0.095	0.8	1.0	0.0	1.0	A-	A-
1113 604179 11 8 533 .672 .111 .071 .145 .672 .002 .417 200 185 254 .417 0.287 0.099 -1.8 0.9 -2.2 0.9 A+ A- 1114 604159 11 Ge 533 .752 .028 .086 .752 .126 .008 .281 107 240 .281 097 -0.195 0.108 -0.1 1.0 0.9 1.1 A+ A+	1112	600833	11	Ge	533	.814	.066	.045	.066	.814	.009	.365	225	213	154	.365	-0.624	0.119	-1.3	0.9	-1.6	0.8	B-	A-
1114 604159 11 Ge 533 .752 .028 .086 .752 .126 .008 .281107240 .281097 -0.195 0.108 -0.1 1.0 0.9 1.1 A+ A+	1113	604179	11	8	533	.672	.111	.071	.145	.672	.002	.417	200	185	254	.417	0.287	0.099	-1.8	0.9	-2.2	0.9	A+	A-
	1114	604159	11	Ge	533	.752	.028	.086			.008	.281				097	-0.195		-0.1	1.0	0.9		A+	_
							.291												2.8				Α-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1116	602648	Grade 11	Grade Ge	532	.632	.632	.102	.218	.045	.004	.543	.543	185	411	177	0.430	0.097	-6.2	in 0.8	-5.1	0.7	/F A-	/B C-
1117	604830	11	Ge	532	.624	.032	.102	.624	.124	.004	.222	130	066	.222	149	0.430	0.097	2.7	1.1	2.2	1.1	B-	B-
1118	601527	11	Ge	532	.743	.058	.081	.743	.107	.011	.373	134	200	.373	214	-0.197	0.107	-1.0	1.0	-1.2	0.9	A+	B-
1119	600834	11	Ge	532	.541	.290	.083	.541	.087	.000	.320	102	222	.320	185	0.873	0.094	1.3	1.0	1.3	1.1	A-	A-
1120	602267	11	8	532	.607	.607	.239	.073	.075	.006	.303	.303	150	226	077	0.543	0.096	1.0	1.0	0.4	1.0	B+	A+
1121	602649	11	Ge	481	.638	.119	.127	.638	.110	.006	.223	.000	175	.223	161	0.564	0.101	1.6	1.1	2.2	1.1	A+	i
1122	601632	11	Ge	481	.572	.083	.572	.158	.187	.000	.408	158	.408	239	182	0.904	0.098	-2.2	0.9	-1.4	0.9	A-	
1123	600848	11	8	481	.289	.210	.405	.089	.289	.006	.395	166	229	.006	.395	2.259	0.108	-1.0	1.0	-0.1	1.0	B-	1
1124	600849	11	N/A	482	.228	.430	.272	.228	.066	.004	.340	077	197	.340	064	2.620	0.117	0.3	1.0	0.4	1.0	A-	1
1125	604521	11	8	482	.772	.029	.060	.772	.139	.000	.365	101	155	.365	287	-0.164	0.114	-1.4	0.9	-2.1	0.8	A-	1
1126	601504	11	Ge	482	.473	.102	.288	.135	.473	.002	.471	133	283	201	.471	1.325	0.098	-3.3	0.9	-3.2	0.9	A-	1
1127	604168	11	8	480	.752	.031	.060	.752	.152	.004	.359	141	172	.359	237	0.069	0.112	-1.1	0.9	-1.4	0.9	A-	A-
1128	601529	11	8	480	.773	.040	.058	.127	.773	.002	.303	087	132	233	.303	-0.052	0.115	-0.9	1.0	1.0	1.1	A+	B-
1129	601505	11	Ge	480	.506	.094	.506	.290	.106	.004	.456	175	.456	208	263	1.304	0.099	-4.0	0.9	-3.1	0.9	A+	A-
1130	601530	11	8	483	.406	.087	.236	.248	.406	.023	.462	139	255	147	.462	1.824	0.102	-1.3	1.0	-1.3	0.9	A+	B-
1131	600815	11	Ge	483	.625	.091	.139	.625	.128	.017	.435	210	246	.435	144	0.760	0.103	-1.6	0.9	-1.4	0.9	A+	A+
1132	604169	11	8	483	.747	.116	.747	.091	.035	.010	.387	221	.387	214	138	0.109	0.113	-1.2	0.9	-1.5	0.8	A-	A-
1133	601631	11	Ge	481	.518	.100	.518	.106	.270	.006	.416	112	.416	146	274	1.163	0.099	-2.2	0.9	-1.7	0.9	A-	
1134	600847	11	8	481	.526	.133	.526	.262	.056	.023	.364	112	.364	197	150	1.090	0.100	-1.0	1.0	-0.3	1.0	A+	
1135	602669	11	A1	717	.194	.292	.163	.340	.194	.011	.216	.008	137	071	.216	2.400	0.101	1.3	1.1	2.7	1.3	A-	
1136	601551	11	A1	715	.455	.455	.175	.179	.180	.011	.401	.401	265	160	089	1.068	0.081	-1.4	1.0	-1.7	0.9	A+	A+
1137	601552	11	A1	718	.216	.078	.297	.400	.216	.010	.153	.000	118	001	.153	2.240	0.095	1.6	1.1	3.2	1.3	A-	A+
1138	602668	11	N/A	714	.224	.279	.224	.270	.209	.018	.140	106	.140	042	.059	2.089	0.095	2.6	1.1	3.2	1.2	A+	
1139	604832	11	A2	481	.472	.260	.156	.472	.112	.000	.327	118	197	.327	126	1.363	0.098	0.5	1.0	0.2	1.0	A-	
1140	602653	11	6	481	.815	.052	.037	.815	.096	.000	.407	186	152	.407	299	-0.427	0.122	-1.7	0.9	-2.8	0.7	A+	
1141	604950	11	A1	482	.506	.243	.203	.506	.039	.008	.422	225	215	.422	132	1.158	0.098	-2.1	0.9	-2.0	0.9	A-	
1142	602269	11	6	482	.486	.486	.208	.212	.085	.010	.439	.439	186	245	148	1.250	0.098	-2.8	0.9	-2.7	0.9	A+	
1143	602270	11	6	480	.675	.071	.675	.217	.027	.010	.378	103	.378	267	157	0.471	0.104	-1.5	0.9	-0.4	1.0	A-	A+
1144	604524	11	A2	483	.621	.162	.621	.184	.025	.008	.433	266	.433	193	156	0.811	0.102	-2.3	0.9	-1.9	0.9	A-	A-
1145	602657	11	6	481	.568	.052	.220	.568	.146	.015	.255	106	091	.255	141	0.908	0.100	2.7	1.1	1.7	1.1	A-	
1146	604171	11	A2	481	.405	.137	.152	.405	.297	.008	.424	110	219	.424	179	1.691	0.101	-1.5	1.0	-1.2	0.9	B-	\vdash
1147	602259	11	6	717	.580	.580	.153	.204	.059	.004	.422	.422	194	274	120	0.367	0.082	-2.8	0.9	-2.5	0.9	A-	\vdash
1148	604952	11	7	718	.586	.159	.586	.163	.081	.011	.499	188	.499	290	176	0.375	0.081	-5.5	0.9	-5.3	0.8	A+	B-
1149	601554	11	6	714	.468	.157	.186	.468	.185	.004	.284	056	177	.284	128	0.858	0.080	0.7	1.0	0.1	1.0	A-	
1150	604806	11	7	714	.727	.035	.163	.727	.070	.006	.381	088	306	.381	114	-0.390	0.089	-2.5	0.9	-2.8	0.8	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade						` '									in	in	out	out	/F	/B
1151	600839	11	6	715	.836	.056	.039	.066	.836	.003	.332	203	152	174	.332	-1.000	0.107	-0.9	0.9	-1.0	0.9	A-	A-
1152	601461	11	6	718	.673	.673	.146	.082	.089	.010	.387	.387	218	119	181	-0.049	0.085	-1.4	1.0	-1.6	0.9	A+	A-
1153	604804	11	6	719	.125	.388	.136	.331	.125	.020	.028	.035	138	.102	.028	2.913	0.118	1.8	1.2	4.7	1.7	A-	A+
1154	602274	11	7	715	.197	.050	.197	.697	.053	.003	.287	098	.287	186	015	2.484	0.099	-0.3	1.0	1.9	1.2	B-	A-
1155	601507	11	6	717	.782	.024	.782	.134	.059	.001	.348	145	.348	209	211	-0.717	0.096	-1.1	0.9	-1.0	0.9	A+	
1156	604805	11	6	717	.565	.565	.163	.156	.113	.003	.314	.314	195	215	028	0.442	0.081	1.3	1.0	1.1	1.1	A+	
1157	600822	11	6	719	.545	.118	.235	.545	.099	.003	.393	233	197	.393	108	0.528	0.080	-2.0	1.0	-2.1	0.9	B-	A+
1158	604160	11	A2	719	.239	.239	.271	.104	.378	.007	.238	.238	019	231	031	2.051	0.093	1.0	1.1	1.8	1.1	A-	A+
1159	604181	11	6	719	.143	.435	.210	.143	.199	.013	.052	.048	022	.052	053	2.746	0.111	1.7	1.1	4.6	1.6	A-	A-
1160	602654	11	A2	715	.376	.376	.115	.123	.382	.004	.400	.400	193	220	119	1.458	0.083	-2.0	0.9	-1.4	0.9	B-	A-
1161	600823	11	6	715	.685	.043	.685	.208	.063	.000	.369	217	.369	230	138	-0.022	0.086	-0.8	1.0	-1.2	0.9	B+	A-
1162	601955	11	6	715	.439	.201	.090	.439	.264	.006	.313	065	246	.313	110	1.154	0.081	1.5	1.0	1.3	1.1	A+	A+
1163	600824	11	6	718	.625	.164	.127	.625	.081	.003	.307	106	179	.307	179	0.218	0.082	0.1	1.0	0.6	1.0	A+	A-
1164	601463	11	6	718	.652	.652	.152	.148	.046	.003	.378	.378	225	157	202	0.088	0.083	-1.5	1.0	-1.5	0.9	A+	A-
1165	602655	11	A2	718	.220	.178	.220	.542	.057	.003	.314	.095	.314	321	018	2.230	0.095	-0.5	1.0	-0.2	1.0	A-	A-
1166	601506	11	6	714	.633	.633	.165	.136	.060	.006	.403	.403	140	232	209	0.098	0.082	-4.4	0.9	-3.3	0.9	A+	
1167	601555	11	6	714	.325	.325	.444	.130	.083	.018	.244	.244	.076	224	151	1.524	0.085	2.1	1.1	1.7	1.1	A+	
1168	604808	11	7	714	.457	.118	.284	.457	.125	.017	.316	134	081	.316	147	0.884	0.080	0.1	1.0	0.4	1.0	A-	
1169	604174	11	A2	481	.102	.761	.102	.112	.025	.000	.080	.124	.080	176	139	3.713	0.159	1.4	1.2	2.8	1.5	A-	
1170	600835	11	A2	481	.805	.031	.062	.100	.805	.002	.383	158	200	254	.383	-0.367	0.121	-1.7	0.9	-2.4	0.8	A+	
1171	600840	11	A2	482	.315	.058	.529	.315	.095	.002	.234	192	189	.234	.109	2.104	0.106	2.2	1.1	1.8	1.1	A-	
1172	604175	11	A2	482	.280	.125	.280	.098	.496	.002	.309	081	.309	125	145	2.304	0.110	0.8	1.0	1.4	1.1	A-	
1173	604951	11	A2	480	.181	.148	.096	.575	.181	.000	.147	263	173	.178	.147	3.105	0.127	2.5	1.2	2.8	1.3	A-	A+
1174	600841	11	A2	480	.485	.015	.038	.454	.485	.008	.329	062	056	289	.329	1.391	0.099	0.4	1.0	1.5	1.1	A+	A+
1175	602656	11	A2	480	.367	.175	.367	.310	.142	.006	.331	129	.331	306	.092	1.965	0.103	1.2	1.1	0.7	1.0	A-	B+
1176	602271	11	A2	483	.364	.385	.364	.184	.050	.017	.304	122	.304	153	092	2.042	0.104	2.3	1.1	1.8	1.1	A-	A-
1177	604833	11	A2	483	.354	.095	.360	.354	.186	.004	.330	105	214	.330	059	2.123	0.105	1.0	1.0	1.4	1.1	A+	A-
1178	601508	11	A2	483	.286	.166	.379	.286	.170	.000	.238	266	130	.238	.145	2.517	0.111	2.4	1.1	2.8	1.2	A-	A+
1179	604527	11	A2	481	.370	.027	.366	.370	.235	.002	.371	176	224	.371	090	1.879	0.103	0.0	1.0	0.0	1.0	A-	
1180	604526	11	A2	481	.179	.139	.179	.044	.634	.004	.383	107	.383	063	183	3.056	0.130	0.0	1.0	0.7	1.1	B-	
1181	600930	A1	A1	717	.569	.087	.569	.243	.088	.014	.403	184	.403	234	113	0.396	0.082	-0.3	1.0	-0.7	1.0	A-	
1182	600929	A1	A1	1433	.356	.161	.316	.356	.117	.050	.252	049	028	.252	084	1.308	0.059	2.4	1.1	2.9	1.1	A+	A+
1183	600933	A1	A1	2870	.504	.076	.266	.125	.504	.029	.390	185	079	225	.390	0.670	0.041	-3.1	1.0	-3.2	0.9	A+	A+
1184	600937	A1	A1	1436	.218	.329	.218	.169	.219	.066	.218	.057	.218	065	042	2.005	0.068	0.9	1.0	1.5	1.1	Α-	Α-
1185	600935	A1	A1	2868	.398	.398	.154	.257	.144	.047	.484	.484	195	151	141	1.105	0.042	-7.4	0.9	-6.5	0.9	A+	A+
1103	300333	, \ <u>+</u>	, \ <u>+</u>	2000	.550	.550	.157	.23,	.177	.047	, -10-f	0-7	.133	.131	.171	1.103	0.072	7.7	0.5	0.5	0.5	, · ·	, · ·

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1100	600042	Grade	Grade	4.422	207						270	270	010	000	000	2.402	0.070	in	in	out	out	/F	/B
1186	600942	A1	A1	1432	.207	.207	.235	.298	.185	.075	.279	.279	019	066	066	2.103	0.070	0.7	1.0	1.5	1.1	Α-	A-
1187	600944	A1	A1	2867	.509	.128	.148	.190	.509	.026	.415	092	188	206	.415	0.655	0.040	-6.0	0.9	-5.2	0.9	Α-	A-
1188	600951	A1	A1	1434	.335	.335	.132	.236	.285	.013	.344	.344	109	137	113	1.418	0.059	-2.5	0.9	-1.9	0.9	A-	Α-
1189	600965	A1	A1	1432	.262	.262	.256	.241	.214	.027	.169	.169	022	028	066	1.878	0.064	2.4	1.1	2.8	1.1	A-	A+
1190	600949	A1	A1	1432	.511	.511	.108	.124	.245	.013	.461	.461	193	241	146	0.685	0.056	-6.4	0.9	-5.9	0.9	A+	B-
1191	600950	A1	A1	1433	.311	.311	.381	.170	.125	.013	.187	.187	.095	162	138	1.747	0.061	4.3	1.1	4.5	1.2	A-	B-
1192	600927	A1	A1	717	.658	.151	.658	.116	.070	.006	.352	178	.352	124	221	-0.019	0.085	-0.1	1.0	-0.7	1.0	C+	
1193	600955	A1	A1	1434	.667	.069	.667	.131	.089	.045	.503	172	.503	231	199	-0.150	0.063	-4.2	0.9	-3.9	0.8	Α-	A-
1194	600934	A1	A1	1434	.416	.195	.416	.243	.094	.053	.255	.034	.255	112	105	1.099	0.059	5.7	1.1	5.2	1.2	A+	A-
1195	600956	A1	A1	1433	.470	.470	.239	.132	.140	.019	.400	.400	104	195	162	0.939	0.057	-2.6	1.0	-2.6	0.9	Α-	B-
1196	600940	A1	A1	1433	.352	.107	.352	.279	.218	.043	.397	048	.397	178	122	1.448	0.060	-1.9	1.0	-1.6	1.0	A+	B+
1197	600945	A1	A1	1432	.341	.142	.341	.180	.316	.022	.441	204	.441	068	150	1.470	0.060	-4.0	0.9	-3.3	0.9	Α-	A+
1198	600963	A1	A1	1432	.244	.136	.348	.207	.244	.065	.193	017	.125	151	.193	1.914	0.066	2.8	1.1	3.6	1.2	A-	A+
1199	600975	A1	A1	1429	.402	.250	.402	.190	.107	.051	.244	.007	.244	116	058	1.086	0.058	4.5	1.1	4.1	1.1	Α-	A+
1200	600952	A1	A1	1429	.471	.066	.216	.471	.200	.047	.435	142	168	.435	155	0.771	0.057	-5.0	0.9	-4.6	0.9	Α-	A-
1201	600976	A1	A1	715	.297	.164	.297	.393	.133	.014	.228	049	.228	053	130	1.730	0.086	1.3	1.1	1.9	1.1	A-	<u> </u>
1202	600936	A1	A1	714	.475	.475	.132	.167	.205	.022	.461	.461	137	217	172	0.790	0.080	-4.7	0.9	-3.8	0.9	B+	A+
1203	600941	A1	A1	717	.179	.488	.085	.179	.230	.018	015	.080	168	015	.088	2.350	0.102	3.0	1.2	5.5	1.5	A-	A+
1204	600946	A1	A1	1434	.436	.126	.436	.281	.116	.041	.338	081	.338	174	126	0.932	0.057	-0.8	1.0	-0.7	1.0	A+	A-
1205	600954	A1	A1	717	.273	.511	.116	.273	.095	.006	.277	029	189	.277	140	1.878	0.088	0.2	1.0	1.1	1.1	A-	A+
1206	600964	A1	A1	1433	.268	.069	.208	.428	.268	.027	.261	111	147	.039	.261	1.837	0.063	1.4	1.0	1.2	1.1	A+	A-
1207	600928	A1	A1	1429	.400	.400	.351	.106	.126	.017	.414	.414	232	132	082	1.177	0.057	-3.5	0.9	-3.4	0.9	A+	A+
1208	600926	A1	A1	2866	.588	.171	.102	.588	.121	.017	.376	266	175	.376	005	0.342	0.041	-2.3	1.0	-2.8	1.0	B-	A-
1209	600953	A1	A1	715	.365	.101	.365	.152	.304	.078	.387	069	.387	008	197	1.241	0.084	-1.3	1.0	-1.2	1.0	A+	
1210	600966	A1	A1	1433	.350	.131	.350	.280	.214	.027	.139	078	.139	110	.078	1.509	0.060	5.8	1.1	5.7	1.2	A+	A-
1211	601837	A1	A1	717	.658	.658	.121	.117	.080	.024	.535	.535	197	247	236	-0.014	0.085	-5.5	0.8	-5.2	0.8	A+	A-
1212	602184	A1	A1	1432	.756	.756	.186	.026	.024	.008	.312	.312	188	152	116	-0.547	0.065	-1.0	1.0	0.5	1.0	A+	A-
1213	602171	A1	A1	1434	.514	.514	.248	.105	.097	.036	.393	.393	163	173	130	0.672	0.058	-1.5	1.0	-1.9	1.0	A+	A-
1214	601841	A1	A1	1434	.759	.048	.087	.070	.759	.036	.458	192	227	219	.458	-0.681	0.069	-3.2	0.9	-4.5	0.7	A-	A-
1215	602241	A1	A1	1433	.626	.114	.091	.159	.626	.009	.477	200	154	290	.477	0.224	0.059	-6.5	0.9	-5.9	8.0	A+	A-
1216	601793	A1	A1	1433	.572	.043	.572	.066	.313	.006	.419	105	.419	151	310	0.502	0.057	-4.1	0.9	-4.3	0.9	B-	A+
1217	602159	A1	A1	1433	.239	.239	.309	.214	.227	.012	.146	.146	.050	149	039	1.981	0.065	3.0	1.1	3.4	1.2	A-	A+
1218	601144	A1	A1	1434	.445	.213	.445	.141	.188	.013	.387	067	.387	257	133	1.058	0.058	-0.9	1.0	-0.8	1.0	A-	A+
1219	601370	A1	A1	1434	.551	.100	.130	.551	.170	.049	.409	105	174	.409	167	0.377	0.058	-2.8	1.0	-2.4	0.9	A+	A+
1220	600931	A1	A1	1429	.326	.154	.197	.285	.326	.038	.283	.030	007	225	.283	1.503	0.060	1.2	1.0	1.2	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1221	ID			N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1 1 2 2 1		Grade	Grade						• •									in	in	out	out	/F	/B
-	601410	A1	A1	1433	.500	.112	.223	.500	.128	.038	.396	128	140	.396	136	0.650	0.057	-2.7	1.0	-2.0	1.0	A+	A+
	600939	A1	A1	1436	.229	.172	.282	.277	.229	.040	.228	019	.012	073	.228	1.974	0.066	0.7	1.0	1.2	1.1	A-	B+
	602247	A1	A1	1436	.352	.217	.237	.352	.158	.036	.171	.007	024	.171	063	1.298	0.059	4.0	1.1	4.0	1.1	A-	A+
	601168	A1	A1	1433	.668	.116	.126	.668	.064	.026	.446	167	199	.446	171	-0.130	0.060	-3.5	0.9	-4.0	0.9	A+	A-
	601858	A1	A1	1436	.719	.070	.719	.091	.066	.054	.480	149	.480	212	207	-0.610	0.066	-3.3	0.9	-4.3	0.8	B+	A-
1226	601412	A1	A1	1433	.373	.155	.202	.219	.373	.050	.364	013	198	076	.364	1.222	0.058	-1.6	1.0	-1.9	1.0	A+	A-
1227	601831	A1	A1	1436	.297	.082	.219	.297	.351	.052	.162	060	110	.162	.109	1.557	0.062	3.4	1.1	3.6	1.1	A-	A+
1228	602229	A1	A1	1433	.211	.211	.272	.306	.165	.047	.174	.174	.017	018	079	2.129	0.068	1.6	1.1	2.3	1.1	A-	A+
1229	601387	A1	A1	1433	.386	.451	.386	.085	.039	.039	.356	111	.356	196	106	1.184	0.058	-2.6	1.0	-1.8	1.0	A+	A+
1230	601855	A1	A1	1436	.467	.467	.092	.295	.093	.052	.461	.461	148	172	168	0.707	0.057	-5.7	0.9	-5.4	0.9	A-	A-
1231	601864	A1	A1	1436	.210	.210	.347	.233	.144	.067	.126	.126	.092	031	048	2.054	0.069	2.4	1.1	3.6	1.2	A+	A+
1232	601181	A1	A1	1435	.676	.676	.064	.130	.102	.028	.507	.507	178	205	240	-0.280	0.062	-4.9	0.9	-5.1	0.8	A+	B-
1233	601810	A1	A1	1435	.221	.221	.145	.501	.081	.052	.243	.243	172	.131	159	2.026	0.068	0.9	1.0	2.6	1.1	A+	A+
1234	601411	A1	A1	1435	.558	.181	.114	.558	.112	.036	.380	123	109	.380	192	0.298	0.058	-1.1	1.0	-1.5	1.0	A+	A-
1235	601856	A1	A1	1435	.399	.399	.165	.167	.208	.063	.302	.302	164	090	.031	0.998	0.059	1.6	1.0	1.8	1.1	A+	A+
1236	602169	A1	A1	1435	.516	.516	.268	.105	.052	.061	.458	.458	150	181	176	0.430	0.059	-5.0	0.9	-4.4	0.9	A+	A+
1237	601414	A1	A1	1435	.422	.422	.205	.213	.105	.056	.402	.402	142	080	117	0.908	0.059	-2.6	1.0	-2.2	0.9	A+	A+
1238	601832	A1	A1	1435	.240	.235	.215	.240	.240	.070	.228	.005	137	.228	.059	1.863	0.067	2.4	1.1	2.5	1.1	A+	A+
1239	602255	A1	A1	1435	.265	.105	.265	.381	.192	.056	.311	047	.311	060	061	1.742	0.065	0.6	1.0	1.0	1.0	A+	A+
1240	602232	A1	A1	1435	.408	.096	.408	.285	.137	.075	.320	069	.320	098	058	0.929	0.059	2.3	1.1	1.5	1.0	A+	A+
1241	601861	A1	A1	1435	.262	.088	.140	.452	.262	.059	.330	086	193	.022	.330	1.752	0.065	0.3	1.0	1.2	1.1	A-	A-
1242	601417	A1	A1	1432	.644	.141	.644	.122	.064	.029	.394	169	.394	196	116	-0.089	0.061	-2.7	0.9	-1.4	0.9	B+	A-
1243	602235	A1	A1	1432	.409	.115	.409	.309	.136	.031	.344	105	.344	092	149	1.060	0.058	0.5	1.0	0.8	1.0	A-	A-
1244	601182	A1	A1	1432	.380	.147	.204	.212	.380	.057	.341	014	114	166	.341	1.133	0.060	-0.2	1.0	-0.8	1.0	A+	A+
1245	601420	A1	A1	1432	.360	.134	.167	.279	.360	.059	.383	004	192	124	.383	1.230	0.060	-1.5	1.0	-1.5	1.0	A+	A-
1246	602162	A1	A1	1432	.437	.183	.173	.437	.136	.072	.391	105	151	.391	121	0.808	0.059	-2.1	1.0	-1.9	1.0	A-	A-
1247	600957	A1	A1	1432	.292	.143	.262	.222	.292	.082	.350	079	072	116	.350	1.553	0.063	-0.5	1.0	-0.3	1.0	A+	A-
1248	602183	A1	A1	1434	.301	.301	.224	.206	.250	.020	.312	.312	077	168	052	1.586	0.061	-1.9	1.0	-1.5	1.0	A+	A+
1249	602256	A1	A1	1434	.213	.213	.273	.215	.271	.027	.319	.319	074	108	046	2.083	0.068	-1.5	1.0	-1.2	0.9	A-	A-
1250	602156	A1	A1	1434	.350	.156	.253	.350	.206	.036	.099	.066	058	.099	036	1.292	0.059	5.4	1.1	4.7	1.2	A+	A+
1251	602239	A1	A1	1434	.258	.114	.258	.227	.386	.016	.083	112	.083	139	.158	1.823	0.064	3.6	1.1	4.2	1.2	B-	A+
1252	600961	A1	A1	1434	.291	.234	.250	.291	.195	.029	.247	134	018	.247	054	1.609	0.062	0.2	1.0	-0.1	1.0	A-	A+
1253	601857	A1	A1	1434	.221	.181	.376	.171	.221	.051	.249	034	.027	151	.249	1.980	0.067	0.2	1.0	1.7	1.1	A-	A+
1254	602240	A1	A1	1434	.409	.170	.199	.219	.409	.004	.369	197	096	153	.369	1.095	0.057	-3.7	0.9	-3.4	0.9	A+	A-
1255	602157	A1	A1	1434	.236	.149	.446	.151	.236	.017	.055	083	.057	006	.055	1.968	0.065	3.8	1.1	3.6	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1256	CO1 421	Grade	Grade	1.42.4	422				105		201					1.000	0.057	in	in_	out	out	/F	/B
1256	601421	A1	A1	1434 1434	.423	.190	.186	.423	.185	.017	.301	071	164 207	.301	088 223	1.006	0.057 0.058	-2.8 -5.6	1.0	-2.1	1.0	A-	A- C-
1257 1258	602244 601185	A1 A1	A1 A1	1434	.035	.635 .214	.121	.110	.125	.010	.188	.491	028	231	223	0.048 2.121	0.058	0.6	0.9 1.0	-5.7 0.4	1.0	A-	A+
1258	602163		A1 A1	1434	.214	.186	.315		.238			029	.028		.210	1.959	0.067	0.6	1.0		1.0	A-	1
1260	602238	A1 A1	A1 A1	1434	.414	.141	.414	.245	.238	.017	.210	029	.314	141 153	064	1.023	0.057	-1.3	1.0	0.4 -0.6	1.0	A- A+	A+ A+
1261	602254	A1	A1	1434	.414	.172	.219	.426	.167	.027	.200	034	068	.200	064	0.991	0.057	3.1	1.1	2.6	1.1	A+	A+
1261	602257	A1 A1	A1 A1	1434	.312	.306		.249			.232	.022	.232		041	1.539	0.060	0.8	1.1				
1262	601424	A1 A1	A1 A1	1434	.345	.151	.312	.317	.115	.017	.232	109	224	129 019	.375	1.364	0.059	-3.0	0.9	0.6 -3.1	1.0 0.9	A-	A+ A-
1263	600968	A1 A1	A1	1434	.233	.313	.269	.161	.233	.026	.167	.109	118	019	.167	2.063	0.066	1.7	1.1	3.2	1.2	Α-	_
1264	601846			1432						.024					073		0.057		0.9	-3.1		A+	A+
1265	601374	A1 A1	A1 A1	1432	.423	.145	.423	.253 .187	.171 .214	.008	.365 .260	046 053	.365 .260	300 086	076	1.097 1.503	0.060	-3.8 1.3	1.0	2.1	0.9	A-	A+
1267	601374	A1 A1	A1	1432	.545	.545	.103	.129	.214		.309	.309	156	167	061	0.527	0.057	0.3		-0.5	1.1	A-	A+ ^
1268				1432	.322		.322	.400	.108	.012	.245	069	.245	059	061	1.566	0.060	1.9	1.0	2.2	1.0	Α-	Α-
1269	601186 601137	A1 A1	A1 A1	1432	.646	.149	.086	.142	.646	.021	.455	252	161	059	.455	0.110	0.060	-5.2	1.1 0.9	-4.9	0.8	A+	A+ ^
1270	601381			1433	.299	.230		.142	.271	.014	.111	027	.111		.062	1.798	0.062	5.8		5.6	1.2	A+	Α-
1270	600972	A1 A1	A1 A1	1433	.300	.125	.299	.264	.300	.020	.323	027	080	131 118	.323	1.798	0.062	-0.7	1.2	-0.9	1.0	A-	A+ A+
1271	602252	A1 A1	A1	1433	.392	.365	.098	.121	.392	.019	.323	110	172	272	.481		0.058	-5.5	0.9	-5.1	0.9	A+ ^	A+ A-
1272	601382	A1 A1	A1	1434	.554	.554	.224	.085	.114	.024	.267	.267	172	272	064	1.314 0.515	0.058	3.9	1.1	3.4	1.1	A-	A- A+
1273	601375	A1 A1	A1 A1	1434	.280	.266	.224	.216	.280	.024	.237	039	121	114	.237	1.862	0.058	3.9	1.1	3.4	1.1	A-	A+ A-
1274	602185	A1	A1	1434	.381	.256	.175	.176	.381	.040	.458	195	132	188	.458	1.376	0.059	-4.8	0.9	-3.4	0.9	A+	A- A-
1275	601400	A1	A1	1434	.602	.602	.175	.149	.070	.012	.398	.398	152	156	169	0.252	0.059	-4.6	1.0	-3.4	1.0	A+ A+	A- A-
1277	601847	A1	A1	1434	.452	.452	.280	.151	.084	.031	.447	.336	099	244	171	0.232	0.058	-3.7	0.9	-2.4	0.9	A-	A-
1277	601796	A1 A1	A1	1434	.432	.432	.267	.395	.199	.032	.294	102	.294	081	019	1.938	0.065	1.5	1.1	2.7	1.1	A- A+	A- A-
1279	602172	A1	A1	1434	.593	.593	.095	.174	.123	.045	.353	.353	208	139	019	0.273	0.058	0.7	1.0	0.6	1.0	A+	B-
1280	601842	A1	A1	1436	.395	.478	.395	.087	.024	.016	.387	112	.387	290	146	1.226	0.059	-0.5	1.0	0.6	1.0	A-	A+
1280	601403	A1	A1	1436	.516	.516	.171	.231	.064	.017	.365	.365	131	194	111	0.638	0.058	-0.5	1.0	-1.5	1.0	A+	A+
1281	600943	A1	A1	1436	.349	.183	.328	.349	.118	.022	.179	.043	031	.179	111	1.437	0.060	5.6	1.1	6.0	1.2	A-	A+
1283	601147	A1	A1	1436	.361	.163	.219	.236	.361	.021	.281	.026	073	201	.281	1.380	0.060	2.7	1.1	2.6	1.1	A-	A+
1283	601383	A1	A1	1436	.330	.453	.087	.330	.111	.020	.171	007	074	.171	086	1.539	0.061	6.7	1.2	6.7	1.3	A-	A-
1285	601141	A1	A1	1436	.655	.093	.655	.131	.076	.046	.559	222	.559	282	194	-0.156	0.062	-7.6	0.8	-7.1	0.7	A+	A-
1286	602186	A1	A1	1436	.733	.113	.056	.072	.733	.027	.533	243	213	264	.531	-0.526	0.066	-5.9	0.8	-6.3	0.7	A+	A-
1287	601798	A1	A1	1436	.305	.305	.265	.277	.100	.053	.368	.368	115	056	115	1.617	0.062	0.1	1.0	0.8	1.0	A+	A-
1288	601377	A1	A1	1436	.375	.155	.287	.375	.134	.033	.156	009	029	.156	063	1.242	0.060	7.5	1.2	8.2	1.3	A+	A-
1289	601848	A1	A1	1436	.323	.323	.217	.225	.183	.053	.399	.399	152	150	045	1.513	0.062	-1.6	1.0	-0.4	1.0	A-	A-
1290	600947	A1	A1	1434	.215	.215	.163	.223	.351	.033	.182	.182	071	102	.068	2.220	0.068	2.7	1.1	3.4	1.2	A+	A+
1230	000347		Δī	1434	.213	.213	.103	.224	.551	.040	.102	.102	071	102	.000	2.220	0.006	۷./	1.1	5.4	1.2	ΑΤ.	ΑΤ

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1001	60400=	Grade	Grade								222					0.=00	0.0=0	in	in	out	out	/F	/B
1291	601385	A1	A1	1434	.515	.515	.204	.158	.107	.016	.383	.383	130	209	135	0.703	0.058	-0.6	1.0	-0.4	1.0	A+	A+
1292	601849	A1	A1	1434	.563	.074	.563	.174	.137	.052	.464	137	.464	266	119	0.370	0.059	-4.3	0.9	-4.1	0.9	A-	A-
1293	602173	A1	A1	1434	.519	.064	.283	.114	.519	.020	.470	170	169	271	.470	0.672	0.058	-3.5	0.9	-3.3	0.9	A+	A+
1294	601378	A1	A1	1434	.182	.038	.182	.628	.114	.037	.124	007	.124	.037	027	2.486	0.072	3.0	1.1	6.0	1.5	Α-	A+
1295	601157	A1	A1	1434	.467	.467	.181	.206	.096	.050	.514	.514	209	138	200	0.851	0.058	-6.6	0.9	-6.1	0.9	Α-	B-
1296	601142	A1	A1	1434	.666	.666	.090	.096	.117	.032	.540	.540	222	289	201	-0.109	0.062	-6.7	0.8	-6.7	0.8	A+	A-
1297	602187	A1	A1	1434	.648	.058	.648	.156	.096	.043	.529	140	.529	305	188	-0.047	0.062	-5.5	0.9	-5.6	0.8	A+	A-
1298	601407	A1	A1	1434	.592	.155	.090	.592	.117	.046	.347	052	189	.347	134	0.238	0.060	2.0	1.1	8.0	1.0	A+	A-
1299	601820	A1	A1	1433	.733	.040	.054	.141	.733	.033	.439	107	217	250	.439	-0.474	0.067	-2.8	0.9	-3.4	0.8	A-	A-
1300	601388	A1	A1	1433	.320	.320	.240	.248	.161	.031	.224	.224	059	042	072	1.640	0.061	3.0	1.1	3.5	1.1	A+	A-
1301	601843	A1	A1	1433	.518	.040	.193	.218	.518	.032	.489	140	118	308	.489	0.675	0.058	-5.6	0.9	-4.6	0.9	B-	A+
1302	601850	A1	A1	1433	.246	.214	.281	.236	.246	.024	.086	.042	.046	084	.086	2.077	0.065	4.9	1.2	5.6	1.3	A-	A+
1303	600958	A1	A1	1433	.385	.144	.154	.286	.385	.031	.118	043	037	.037	.118	1.316	0.058	9.0	1.2	9.1	1.3	A+	A+
1304	601169	A1	A1	1433	.373	.373	.241	.222	.136	.029	.321	.321	054	159	066	1.390	0.059	0.5	1.0	0.6	1.0	A+	A-
1305	601413	A1	A1	1433	.214	.214	.472	.137	.144	.034	.270	.270	.022	109	103	2.260	0.068	0.3	1.0	2.5	1.1	A+	A-
1306	601145	A1	A1	1433	.736	.736	.112	.080	.036	.036	.578	.578	282	287	198	-0.493	0.067	-6.5	0.8	-7.5	0.7	A+	A+
1307	602225	A1	A1	1433	.168	.168	.405	.215	.140	.073	.211	.211	.232	224	113	2.526	0.074	0.8	1.0	3.1	1.2	A-	B+
1308	601183	A1	A1	1432	.261	.163	.297	.230	.261	.050	.195	043	.074	093	.195	1.851	0.064	2.9	1.1	3.9	1.2	A-	A+
1309	601844	A1	A1	1432	.607	.122	.607	.164	.078	.030	.502	192	.502	219	162	0.178	0.059	-5.3	0.9	-5.2	0.9	A-	A-
1310	602242	A1	A1	1432	.363	.233	.201	.363	.151	.052	.301	.087	145	.301	157	1.283	0.059	1.6	1.0	1.9	1.1	A-	A+
1311	601390	A1	A1	1432	.330	.330	.215	.195	.207	.052	.315	.315	059	120	012	1.454	0.060	0.4	1.0	0.3	1.0	A+	B+
1312	601415	A1	A1	1432	.433	.095	.233	.202	.433	.037	.307	085	076	092	.307	0.981	0.058	0.2	1.0	-0.5	1.0	A+	A-
1313	601851	A1	A1	1432	.325	.325	.208	.219	.205	.043	.274	.274	043	142	.015	1.499	0.060	1.5	1.0	1.4	1.1	A+	A-
1314	601821	A1	A1	1432	.467	.087	.159	.211	.467	.078	.457	090	169	150	.457	0.709	0.058	-5.1	0.9	-4.9	0.9	A+	A+
1315	600962	A1	A1	1432	.383	.137	.307	.383	.107	.066	.069	.094	.082	.069	098	1.151	0.059	9.9	1.2	9.9	1.3	A-	A+
1316	601146	A1	A1	1432	.520	.074	.159	.520	.172	.076	.400	151	185	.400	040	0.452	0.059	-2.2	1.0	-2.1	1.0	A+	A+
1317	601391	A1	A1	1429	.304	.231	.253	.304	.183	.029	.277	.022	105	.277	119	1.634	0.061	2.2	1.1	2.0	1.1	A+	A+
1318	601865	A1	A1	1429	.348	.222	.325	.348	.081	.025	.194	007	058	.194	081	1.414	0.059	4.8	1.1	4.7	1.2	A+	A+
1319	600969	A1	A1	1429	.268	.127	.268	.356	.202	.048	.143	.057	.143	055	.015	1.796	0.064	4.7	1.2	4.9	1.2	A-	A+
1320	601153	A1	A1	1429	.529	.529	.132	.116	.205	.018	.437	.437	178	221	122	0.580	0.057	-6.3	0.9	-5.5	0.9	A+	A-
1321	602227	A1	A1	714	.343	.343	.161	.223	.228	.045	.274	.274	069	067	010	1.367	0.085	1.6	1.1	1.8	1.1	A-	
1322	601845	A1	A1	1429	.640	.112	.640	.169	.047	.032	.481	220	.481	224	081	0.008	0.060	-5.2	0.9	-5.0	0.8	A-	B-
1323	601852	A1	A1	1429	.377	.267	.164	.165	.377	.027	.372	043	187	127	.372	1.271	0.058	-2.9	0.9	-2.1	0.9	A-	A-
1324	601184	A1	A1	1429	.547	.060	.547	.316	.032	.046	.369	114	.369	178	135	0.413	0.058	-2.5	1.0	-2.5	0.9	A-	A+
1325	601389	A1	A1	714	.338	.153	.276	.338	.142	.092	.203	043	032	.203	.070	1.282	0.086	3.9	1.1	3.5	1.2	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1326 602243 A1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1327 601174	1226	602242	Grade	Grade	4.420	24.4						407					4 504	0.064	in	in	out	out	/F	/B
1328 601393 A1																								A+
1329 601860 A1	-																							
1330 602233 A1																								A+
1331 601852 A1																-					-			
1332 601867 A1																								
1334 601867 A1																				_				
1336 601392 A1	-															-					-			
1335 602248 A1																								Α-
1336 601422 A1																							A-	—
1337 602152 A1																							A+	
1338 601416 A1	-		A1	A1			.087					.367								_			A-	
1339 602230	1337	602152	A1	A1	1429		.169			.178	.033				.116	042			7.3	1.2	7.4	1.2	A-	A-
1340 601418 A1	1338	601416	A1	A1	1431		.140	.201			.054	.287	080	091		.287	1.905	0.065		1.0	1.2	1.1	A+	A+
1341 602249 A1	1339	602230	A1	A1	715		.509	.084	.260	.088	.059	.571	.571	171	256	171	0.604	0.081	-7.8	0.8	-7.0	0.8	A+	<u> </u>
1342 601396	1340	601418	A1	A1				.476			.048			.419		195	0.755			1.0		0.9	A+	A+
1343 601866 A1	1341	602249	A1	A1	1429	.359	.359	.195	.272	.136	.039	.382	.382	134	096	124	1.330	0.059	-2.2	1.0	-1.7	1.0	A+	A+
1344 602250 A1	1342	601396	A1	A1	1431	.331	.152	.331	.335	.128	.055	.162	045	.162	041	.057	1.440	0.060	5.3	1.1	5.8	1.2	A+	A+
1345 601178 A1	1343	601866	A1	A1	715	.513	.183	.513	.148	.077	.078	.416	103	.416	125		0.518	0.082	-2.2	1.0	-2.2	0.9	A+	
1346 600938 A1 A1 714 .416 .185 .164 .416 .212 .024 .378 187 143 .378 068 1.057 0.081 -0.9 1.0 -1.2 1.0 A- A- 1347 601404 A1 A1 1434 .290 .259 .222 .204 .290 .025 .278 077 090 061 .278 1.708 0.062 0.5 1.0 1.3 1.1 A+ 1348 601401 A1 A1 717 .349 .349 .307 .172 .160 .013 .272 .272 119 101 070 1.377 0.083 0.3 1.0 1.3 1.1 A+ 1349 601369 A1 A1 717 .513 .513 .172 .179 .134 .003 .383 .383 .131 .193 .205 .0636 0.079 -3.2 0.9 <td< td=""><td>1344</td><td>602250</td><td>A1</td><td>A1</td><td>714</td><td>.466</td><td>.466</td><td>.212</td><td>.240</td><td>.074</td><td>.008</td><td>.341</td><td>.341</td><td>134</td><td>189</td><td>121</td><td>0.856</td><td>0.080</td><td>-2.0</td><td>1.0</td><td>-2.1</td><td>0.9</td><td>A-</td><td>A-</td></td<>	1344	602250	A1	A1	714	.466	.466	.212	.240	.074	.008	.341	.341	134	189	121	0.856	0.080	-2.0	1.0	-2.1	0.9	A-	A-
1347 601404 A1 A1 1434 .290 .259 .222 .204 .290 .025 .278 077 090 061 .278 1.708 0.062 0.5 1.0 1.3 1.1 A+ A- 1348 601401 A1 A1 717 .349 .349 .307 .172 .160 .013 .272 119 101 070 1.377 0.083 0.3 1.0 1.3 1.1 A+ 1349 601369 A1 A1 717 .513 .513 .172 .179 .134 .003 .383 .383 113 193 205 .0636 0.079 -3.2 0.9 -3.0 0.9 A- A+ 1350 602170 A1 A1 717 .357 .357 .133 .336 .163 .011 .283 .283 .214 .078 .042 1.331 0.082 .07 1.0 0.	1345	601178	A1	A1	1430	.218	.618	.094	.066	.218	.004	.132	.089	184	149	.132	2.137	0.067	2.8	1.1	3.5	1.2	A+	A+
1348 601401 A1 A1 717 .349 .349 .307 .172 .160 .013 .272 .272 119 101 070 1.377 0.083 0.3 1.0 1.3 1.1 A- A+ 1349 601369 A1 A1 717 .513 .513 .172 .179 .134 .003 .383 .383 113 193 205 0.636 0.079 32 0.9 -3.0 0.9 A- A+ 1350 602170 A1 A1 717 .251 .134 .165 .441 .251 .010 .229 095 123 031 .229 1.899 0.091 1.0 1.1 1.1 A- A+ 1351 601800 A1 A1 717 .357 .357 .133 .336 .163 .011 .283 .283 214 078 042 1.331 0.082 0.7	1346	600938	A1	A1	714	.416	.185	.164	.416	.212	.024	.378	187	143	.378	068	1.057	0.081	-0.9	1.0	-1.2	1.0	A-	A-
1349 601369 A1 A1 717 .513 .513 .172 .179 .134 .003 .383 .383 113 193 205 0.636 0.079 -3.2 0.9 -3.0 0.9 A- A+ 1350 602170 A1 A1 717 .251 .134 .165 .441 .251 .010 .229 095 123 031 .229 1.899 0.091 1.0 1.1 1.1 1.1 A- A- 1351 601800 A1 A1 717 .357 .357 .133 .336 .163 .011 .283 .283 214 078 042 1.331 0.082 0.7 1.0 0.3 1.0 A+ A+ 1352 601808 A1 A1 1434 .327 .130 .327 .211 .315 .017 .290 123 .290 128 033 1.525 0.060 <td< td=""><td>1347</td><td>601404</td><td>A1</td><td>A1</td><td>1434</td><td>.290</td><td>.259</td><td>.222</td><td>.204</td><td>.290</td><td>.025</td><td>.278</td><td>077</td><td>090</td><td>061</td><td>.278</td><td>1.708</td><td>0.062</td><td>0.5</td><td>1.0</td><td>1.3</td><td>1.1</td><td>A+</td><td>A-</td></td<>	1347	601404	A1	A1	1434	.290	.259	.222	.204	.290	.025	.278	077	090	061	.278	1.708	0.062	0.5	1.0	1.3	1.1	A+	A-
1350 602170 A1 A1 717 .251 .134 .165 .441 .251 .010 .229 095 123 031 .229 1.899 0.091 1.0 1.1 1.1 1.1 A- A- 1351 601800 A1 A1 717 .357 .133 .336 .163 .011 .283 .283 214 078 042 1.331 0.082 0.7 1.0 0.3 1.0 A+ A+ 1352 601808 A1 A1 1434 .327 .130 .327 .211 .315 .017 .290 123 .290 128 .033 1.525 0.060 0.2 1.0 1.0 A- A- 1353 600959 A1 A1 717 .342 .324 .121 .276 .251 .028 .376 .188 095 087 1.458 0.084 -1.3 1.0 -0.4 1.0	1348	601401	A1	A1	717	.349	.349	.307	.172	.160	.013	.272	.272	119	101	070	1.377	0.083	0.3	1.0	1.3	1.1	A-	A+
1351 601800 A1 A1 717 .357 .357 .133 .336 .163 .011 .283 .283 214 078 042 1.331 0.082 0.7 1.0 0.3 1.0 A+ A+ 1352 601808 A1 A1 1434 .327 .130 .327 .211 .315 .017 .290 128 033 1.525 0.060 0.2 1.0 1.0 1.0 A- A- 1353 600959 A1 A1 717 .324 .324 .121 .276 .251 .028 .376 188 095 087 1.458 0.084 -1.3 1.0 -1.4 0.9 A+ A- 1354 601399 A1 A1 717 .346 .376 .191 .039 .335 .335 097 144 058 1.319 0.083 -0.3 1.0 -0.4 1.0 A+ A+ </td <td>1349</td> <td>601369</td> <td>A1</td> <td>A1</td> <td>717</td> <td>.513</td> <td>.513</td> <td>.172</td> <td>.179</td> <td>.134</td> <td>.003</td> <td>.383</td> <td>.383</td> <td>113</td> <td>193</td> <td>205</td> <td>0.636</td> <td>0.079</td> <td>-3.2</td> <td>0.9</td> <td>-3.0</td> <td>0.9</td> <td>A-</td> <td>A+</td>	1349	601369	A1	A1	717	.513	.513	.172	.179	.134	.003	.383	.383	113	193	205	0.636	0.079	-3.2	0.9	-3.0	0.9	A-	A+
1352 601808 A1 A1 1434 .327 .130 .327 .211 .315 .017 .290 123 .290 128 033 1.525 0.060 0.2 1.0 1.0 1.0 A- A- 1353 600959 A1 A1 717 .324 .324 .121 .276 .251 .028 .376 188 095 087 1.458 0.084 -1.3 1.0 -1.4 0.9 A+ A- 1354 601399 A1 A1 717 .346 .346 .177 .247 .191 .039 .335 .335 097 144 058 1.319 0.083 -0.3 1.0 -0.4 1.0 A+ A+ 1355 601814 A1 A1 .159 .441 .240 .124 .036 .354 101 .354 153 106 0.870 0.080 -0.6 1.0 -0.7 <	1350	602170	A1	A1	717	.251	.134	.165	.441	.251	.010	.229	095	123	031	.229	1.899	0.091	1.0	1.1	1.1	1.1	A-	A-
1353 600959 A1 A1 717 .324 .324 .121 .276 .251 .028 .376 .188 095 087 1.458 0.084 -1.3 1.0 -1.4 0.9 A+ A- 1354 601399 A1 A1 717 .346 .346 .177 .247 .191 .039 .335 .335 097 144 058 1.319 0.083 -0.3 1.0 -0.4 1.0 A+ A+ 1355 601814 A1 A1 717 .441 .159 .441 .240 .124 .036 .354 101 .354 153 106 0.870 0.080 -0.6 1.0 -0.7 1.0 A+ A+ 1356 601143 A1 A1 1434 .289 .289 .324 .188 .146 .053 .320 .320 033 160 052 1.642 0.062 0.4 <	1351	601800	A1	A1	717	.357	.357	.133	.336	.163	.011	.283	.283	214	078	042	1.331	0.082	0.7	1.0	0.3	1.0	A+	A+
1354 601399 A1 A1 717 .346 .346 .177 .247 .191 .039 .335 .335 097 144 058 1.319 0.083 -0.3 1.0 -0.4 1.0 A+ A+ 1355 601814 A1 A1 A1 .159 .441 .240 .124 .036 .354 101 .354 153 106 0.870 0.080 -0.6 1.0 -0.7 1.0 A+ A- 1356 601143 A1 A1 1434 .289 .289 .324 .188 .146 .053 .320 .320 033 160 052 1.642 0.062 0.4 1.0 0.1 1.0 A+ A+ 1357 601402 A1 A1 1434 .517 .517 .140 .251 .066 .026 .359 .359 175 130 138 0.596 0.057 -1.5 1.0 -1.7 1.0 A+ A+ 1358 600967 A1	1352	601808	A1	A1	1434	.327	.130	.327	.211	.315	.017	.290	123	.290	128	033	1.525	0.060	0.2	1.0	1.0	1.0	A-	A-
1355 601814 A1 A1 717 .441 .159 .441 .240 .124 .036 .354 101 .354 153 106 0.870 0.080 -0.6 1.0 -0.7 1.0 A+ A- 1356 601143 A1 A1 1434 .289 .289 .324 .188 .146 .053 .320 .320 033 160 052 1.642 0.062 0.4 1.0 0.1 1.0 A+ A+ 1357 601402 A1 A1 1434 .517 .517 .140 .251 .066 .026 .359 .359 175 130 138 0.596 0.057 -1.5 1.0 -1.7 1.0 A+ A- 1358 600967 A1 A1 1434 .310 .262 .167 .227 .310 .034 .278 .035 141 147 .278 1.569 0.061 1.0 1.0 1.0 1.1 A- A+ 1359 602223	1353	600959	A1	A1	717	.324	.324	.121	.276	.251	.028	.376	.376	188	095	087	1.458	0.084	-1.3	1.0	-1.4	0.9	A+	A-
1356 601143 A1 A1 1434 .289 .289 .324 .188 .146 .053 .320 .320 033 160 052 1.642 0.062 0.4 1.0 0.1 1.0 A+ A+ 1357 601402 A1 A1 1434 .517 .517 .140 .251 .066 .026 .359 .359 175 130 138 0.596 0.057 -1.5 1.0 -1.7 1.0 A+ A- 1358 600967 A1 A1 1434 .310 .262 .167 .227 .310 .034 .278 .035 141 147 .278 1.569 0.061 1.0 1.0 1.7 1.1 A- A+ 1359 602223 A1 A1 1434 .361 .203 .222 .361 .153 .061 .297 058 102 .297 059 1.252 0.059 1.6 1.0 2.4 1.1 A-	1354	601399	A1	A1	717	.346	.346	.177	.247	.191	.039	.335	.335	097	144	058	1.319	0.083	-0.3	1.0	-0.4	1.0	A+	A+
1357 601402 A1 A1 1434 .517 .517 .140 .251 .066 .026 .359 .359 175 130 138 0.596 0.057 -1.5 1.0 -1.7 1.0 A+ A- 1358 600967 A1 A1 1434 .310 .262 .167 .227 .310 .034 .278 .035 141 147 .278 1.569 0.061 1.0 1.0 1.7 1.1 A- A+ 1359 602223 A1 A1 1434 .361 .203 .222 .361 .153 .061 .297 058 102 .297 059 1.252 0.059 1.6 1.0 2.4 1.1 A-	1355	601814	A1	A1	717	.441	.159	.441	.240	.124	.036	.354	101	.354	153	106	0.870	0.080	-0.6	1.0	-0.7	1.0	A+	A-
1357 601402 A1 A1 1434 .517 .517 .140 .251 .066 .026 .359 .359 175 130 138 0.596 0.057 -1.5 1.0 -1.7 1.0 A+ A- 1358 600967 A1 A1 1434 .310 .262 .167 .227 .310 .034 .278 .035 141 147 .278 1.569 0.061 1.0 1.0 1.7 1.1 A- A+ 1359 602223 A1 A1 1434 .361 .203 .222 .361 .153 .061 .297 058 102 .297 059 1.252 0.059 1.6 1.0 2.4 1.1 A-	1356	601143	A1	A1	1434	.289	.289	.324	.188	.146	.053	.320	.320	033	160	052	1.642	0.062	0.4	1.0	0.1	1.0	A+	A+
1358 600967 A1 A1 1434 .310 .262 .167 .227 .310 .034 .278 .035 141 147 .278 1.569 0.061 1.0 1.0 1.7 1.1 A- A+ 1359 602223 A1 A1 1434 .361 .203 .222 .361 .153 .061 .297 058 102 .297 059 1.252 0.059 1.6 1.0 2.4 1.1 A- A-	1357	601402	A1	A1	1434	.517	.517	.140	.251	.066	.026	.359	.359	175	130	138	0.596	0.057	-1.5	1.0	-1.7	1.0	A+	A-
1359 602223 A1 A1 1434 .361 .203 .222 .361 .153 .061 .297058102 .297059 1.252 0.059 1.6 1.0 2.4 1.1 A- A-	1358	600967	A1	A1	1434	.310	.262	.167	.227	.310	.034	.278	.035	141	147	.278	1.569	0.061	1.0	1.0	1.7	1.1	A-	A+
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																						0.8	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
1361	601817	A1	A1	1433	.580	.169	.105	.121	.580	.026	.350	161	121	121	.350	0.331	0.057	-0.5	1.0	-0.7	1.0	A-	A+
1362	602245	A1	A1	1433	.816	.059	.816	.064	.058	.004	.312	117	.312	159	193	-0.888	0.071	-0.9	1.0	-1.8	0.9	A-	B-
1363	600970	A1	A1	717	.276	.294	.198	.227	.276	.004	.385	099	093	209	.385	1.864	0.088	-2.1	0.9	-1.7	0.9	A+	A-
1364	601839	A1	A1	1433	.735	.078	.072	.735	.098	.017	.374	058	201	.374	217	-0.432	0.064	-1.9	0.9	-1.9	0.9	A-	A-
1365	601405	A1	A1	717	.464	.464	.180	.198	.142	.015	.477	.477	227	151	223	0.910	0.080	-5.2	0.9	-5.0	0.9	A-	A-
1366	601373	A1	A1	717	.110	.110	.367	.206	.310	.007	.077	.077	.079	161	.033	3.099	0.123	1.4	1.1	2.7	1.4	A-	A-
1367	602168	A1	A1	717	.400	.145	.400	.173	.259	.022	.138	006	.138	141	.049	1.203	0.081	5.7	1.2	5.2	1.2	A+	A+
1368	601160	A1	A1	1433	.366	.276	.366	.184	.158	.016	.272	024	.272	167	054	1.347	0.058	2.3	1.1	2.1	1.1	A+	A+
1369	601406	A1	A1	717	.286	.286	.174	.223	.276	.040	.160	.160	020	086	.054	1.746	0.088	3.5	1.1	3.8	1.2	A+	B+
1370	601829	A1	A1	1433	.244	.183	.244	.288	.260	.025	.161	001	.161	059	026	1.978	0.065	2.8	1.1	4.3	1.2	A+	A-
1371	601803	A1	A1	717	.368	.140	.269	.368	.158	.066	.193	055	.015	.193	061	1.261	0.084	4.3	1.1	4.3	1.2	A+	A-
1372	601818	A1	A1	717	.234	.120	.264	.318	.234	.064	.252	051	051	018	.252	2.005	0.094	1.0	1.1	1.6	1.1	A-	A+
1373	601154	A1	A1	717	.499	.499	.173	.170	.095	.063	.476	.476	156	164	201	0.631	0.082	-4.3	0.9	-3.8	0.9	B+	B-
1374	602224	A1	A1	1433	.433	.062	.103	.433	.355	.047	.241	114	147	.241	.008	0.957	0.057	4.4	1.1	4.3	1.1	A-	A-
1375	601819	A1	A1	1433	.315	.315	.184	.341	.102	.059	.305	.305	098	039	091	1.516	0.061	0.5	1.0	1.0	1.0	A+	A-
1376	601408	A1	A1	716	.437	.437	.143	.193	.217	.011	.408	.408	160	188	157	0.992	0.079	-4.6	0.9	-3.9	0.9	A+	A+
1377	601386	A1	A1	716	.584	.109	.144	.584	.163	.000	.439	200	237	.439	191	0.362	0.079	-4.4	0.9	-4.0	0.9	A+	A-
1378	601863	A1	A1	716	.349	.068	.133	.349	.441	.008	.263	054	178	.263	070	1.407	0.082	-0.1	1.0	0.5	1.0	A+	A-
1379	601838	A1	A1	716	.732	.048	.127	.732	.074	.020	.478	153	294	.478	159	-0.447	0.090	-3.0	0.9	-3.5	0.8	B+	A-
1380	601840	A1	A1	716	.620	.189	.073	.620	.091	.028	.403	123	114	.403	220	0.114	0.082	-1.7	1.0	-1.9	0.9	A-	A-
1381	601830	A1	A1	716	.247	.314	.205	.186	.247	.048	.242	079	047	.037	.242	1.880	0.091	0.7	1.0	1.2	1.1	A-	B+
1382	602246	A1	A1	716	.318	.226	.233	.318	.173	.049	.172	.004	051	.172	.011	1.486	0.085	3.0	1.1	3.7	1.2	A-	A+
1383	601409	A1	A1	716	.439	.102	.254	.439	.149	.056	.235	051	048	.235	048	0.885	0.081	3.4	1.1	3.0	1.1	A+	A-
1384	602226	A1	A1	716	.235	.144	.225	.335	.235	.062	.228	006	047	026	.228	1.931	0.093	8.0	1.0	1.8	1.1	A-	A-
1385	602167	A1	A1	714	.233	.289	.212	.249	.233	.018	.244	021	104	072	.244	2.026	0.093	0.7	1.0	1.7	1.1	A+	C+
1386	601423	A1	A1	714	.314	.478	.314	.142	.060	.007	.291	081	.291	183	111	1.588	0.085	0.4	1.0	0.6	1.0	A+	A-
1387	602188	A1	A1	714	.395	.084	.395	.360	.153	.008	.273	040	.273	176	096	1.182	0.081	1.5	1.0	1.9	1.1	A+	A-
1388	600971	A1	A1	1433	.419	.156	.251	.419	.156	.018	.271	113	050	.271	119	1.089	0.057	2.2	1.0	2.6	1.1	A+	A+
1389	601180	A1	A1	1431	.674	.069	.079	.137	.674	.041	.440	137	174	249	.440	-0.250	0.062	-3.9	0.9	-4.7	8.0	A+	A-
1390	601854	A1	A1	714	.214	.199	.294	.231	.214	.062	.311	023	.004	133	.311	2.074	0.096	0.1	1.0	-0.1	1.0	A+	A-
1391	602253	A1	A1	714	.328	.377	.328	.200	.083	.013	.237	.063	.237	196	150	1.510	0.084	2.2	1.1	2.0	1.1	A-	A+
1392	601419	A1	A1	714	.265	.265	.209	.217	.280	.029	.171	.171	088	049	.063	1.816	0.090	2.4	1.1	3.1	1.2	A-	B+
1393	602251	A1	A1	1431	.323	.341	.323	.150	.144	.042	.278	045	.278	067	152	1.461	0.060	0.9	1.0	1.3	1.0	A-	A-
1394	602237	A1	A1	714	.620	.128	.105	.074	.620	.073	.472	240	190	133	.472	-0.073	0.086	-3.7	0.9	-3.8	0.8	B+	C-
1395	601394	A1	A1	714	.452	.210	.452	.210	.104	.024	.392	174	.392	128	120	0.885	0.080	-1.5	1.0	-1.6	1.0	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1396 600973	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1398 601368 A1	1206	600070			745	244				` '		246					4.007	0.000					-	/B
1388 601368 A1																								\vdash
1399 601136 A1	_																							
1400 601836 A1																								_
1401 602160																-					-			_
1402 601812 A1	_																							-
1404 601805																								1
1404 600932																-					-			1
1405 601398 A1																								
1406 602154 A1																							A-	
1407 601380 A1																								_
1408 601135 A1			A1	A1																1.0			A-	A+
1409 601138	1407	601380	A1	A1	1431						.027					057	1.190			1.0			A-	A+
1410 601139 A1	1408	601135	A1	A1				.137	.178		.011	.465	136		309	.465	0.107			0.9	-5.1		A-	A-
1411 601140 A1	1409	601138	A1	A1	1433		.060	.203	.645	.054	.038	.506	130	282	.506	186	-0.048		-5.1	0.9		0.8	A-	A-
1412 601152 A1	1410	601139	A1	A1			.133	.134	.504		.014	.388	197	146		121	0.798			0.9	-2.3		A-	A+
1413 601158 A1	1411	601140	A1	A1	1430	.713	.126	.713	.111	.036	.015	.405	200	.405	209	145	-0.332	0.062	-3.2	0.9	-3.4	0.9	A-	B-
1414 601167	1412	601152	A1	A1	1436	.297	.198	.306	.297	.143	.057	.084	.003	.059	.084	015	1.545	0.062	6.2	1.2	5.8	1.2	A-	A+
1415 601159 A1 A1 1432 .490 .068 .268 .490 .116 .058 .387 125 120 .387 173 .0.584 .0.058 -1.0 1.0 -1.6 1.0 A- A- 1416 601162 A1 A1 1434 .483 .184 .181 .483 .119 .034 .349 080 123 .349 135 0.663 0.057 -1.5 1.0 -1.1 1.0 A- 1417 601173 A1 A1 1434 .330 .204 .202 .220 .330 .043 030 .090 .053 .127 .030 1.373 0.060 9.4 1.2 9.4 1.3 A+ +1418 601179 A1 A1 A1 .432 .269 .066 .133 .269 .515 .017 .097 .019 119 .097 .049 .512 .982 .995 .045	1413	601158	A1	A1	1436	.364	.253	.220	.364	.132	.032	.402	158	132	.402	046	1.250	0.059	-2.3	1.0	-2.0	0.9	A-	B-
1416 601162 A1 A1 1434 .483 .184 .181 .483 .119 .034 .349 .080 .123 .349 135 0.663 0.057 -1.5 1.0 -1.1 1.0 A- 1417 601173 A1 A1 1434 .330 .204 .202 .220 .330 .043 030 090 .053 .127 030 1.373 0.060 9.4 1.2 9.4 1.3 A+ A+ 1418 601171 A1 A1 1432 .480 .119 .182 .480 .205 .015 .314 123 .314 123 0.817 0.057 0.1 1.0 0.0 1.0 A- A- 1419 601179 A1 A1 A1 .432 .269 .066 .133 .269 .515 .017 .097 019 .119 .097 .046 1.859 0.063 4.1 1.1	1414	601167	A1	A1	1432	.180	.180	.270	.226	.276	.050	.264	.264	133	094	.078	2.360	0.074	0.5	1.0	2.0	1.1	A-	A+
1417 601173 A1 A1 1434 .330 .204 .202 .220 .330 .043 030 090 .053 .127 030 1.373 0.060 9.4 1.2 9.4 1.3 A+ A+ 1418 601171 A1 A1 1432 .480 .119 .182 .480 .205 .015 .314 123 127 .314 123 0.817 0.057 0.1 1.0 0.0 1.0 A- A- 1419 601179 A1 A1 1432 .269 .066 .133 .269 .515 .017 .097 019 119 .097 .046 1.859 0.063 4.1 1.1 5.1 .2 A- A- 1420 601151 A1 A1 1436 .218 .057 .218 .585 .095 .045 .010 199 .022 .066 .401 .142 .601163 A	1415	601159	A1	A1	1432	.490	.068	.268	.490	.116	.058	.387	125	120	.387	173	0.584	0.058	-1.0	1.0	-1.6	1.0	A-	A-
1418 601171 A1 A1 1432 .480 .119 .182 .480 .205 .015 .314 123 127 .314 123 0.817 0.057 0.1 1.0 0.0 1.0 A- A- 1419 601179 A1 A1 1432 .269 .066 .133 .269 .515 .017 .097 019 119 .097 .046 1.859 0.063 4.1 1.1 5.1 1.2 A- A- 1420 601151 A1 A1 1436 .218 .057 .218 .585 .095 .045 .010 109 .010 .237 144 2.159 0.069 7.0 1.3 9.1 1.6 A+ B+ 1421 601163 A1 A1 1433 .283 .223 .119 .357 .283 .017 .307 .059 168 160 .307 1.876 0.062 -	1416	601162	A1	A1	1434	.483	.184	.181	.483	.119	.034	.349	080	123	.349	135	0.663	0.057	-1.5	1.0	-1.1	1.0	A-	A-
1419 601179 A1 A1 1432 .269 .066 .133 .269 .515 .017 .097 019 119 .097 .046 1.859 0.063 4.1 1.1 5.1 1.2 A- A- 1420 601151 A1 A1 1436 .218 .057 .218 .585 .095 .045 .010 109 .010 .237 144 2.159 0.069 7.0 1.3 9.1 1.6 A+ B+ 1421 601163 A1 A1 1434 .386 .149 .192 .222 .386 .052 .305 141 001 096 .305 1.249 0.059 3.5 1.1 2.9 1.1 A- A- 1422 601165 A1 A1 1433 .283 .223 .119 .357 .283 .017 .307 .059 168 160 .307 1.876 0.062 -	1417	601173	A1	A1	1434	.330	.204	.202	.220	.330	.043	030	090	.053	.127	030	1.373	0.060	9.4	1.2	9.4	1.3	A+	A+
1420 601151 A1 A1 1436 .218 .057 .218 .585 .095 .045 .010 109 .010 .237 144 2.159 0.069 7.0 1.3 9.1 1.6 A+ B+ 1421 601163 A1 A1 1434 .386 .149 .192 .222 .386 .052 .305 141 001 096 .305 1.249 0.059 3.5 1.1 2.9 1.1 A- 1422 601165 A1 A1 1433 .283 .223 .119 .357 .283 .017 .307 .059 168 160 .307 1.876 0.062 -0.1 1.0 1.1 1.1 A- 1423 601166 A1 A1 1432 .571 .049 .571 .244 .069 .066 .461 140 .461 156 199 0.229 0.059 -4.0 0.9	1418	601171	A1	A1	1432	.480	.119	.182	.480	.205	.015	.314	123	127	.314	123	0.817	0.057	0.1	1.0	0.0	1.0	A-	A-
1421 601163 A1 A1 1434 .386 .149 .192 .222 .386 .052 .305 .141 .001 .096 .305 1.249 0.059 3.5 1.1 2.9 1.1 A- A- 1422 601165 A1 A1 1433 .283 .223 .119 .357 .283 .017 .307 .059 168 160 .307 1.876 0.062 -0.1 1.0 1.1 1.1 A- 1423 601166 A1 A1 1432 .571 .049 .571 .244 .069 .066 .461 140 .461 156 199 0.229 0.059 -4.0 0.9 -4.0 0.9 A- A- 1424 601172 A1 A1 1429 .451 .451 .078 .291 .099 .081 .470 .470 167 129 160 0.058 -5.6 0.9 <td< td=""><td>1419</td><td>601179</td><td>A1</td><td>A1</td><td>1432</td><td>.269</td><td>.066</td><td>.133</td><td>.269</td><td>.515</td><td>.017</td><td>.097</td><td>019</td><td>119</td><td>.097</td><td>.046</td><td>1.859</td><td>0.063</td><td>4.1</td><td>1.1</td><td>5.1</td><td>1.2</td><td>A-</td><td>A-</td></td<>	1419	601179	A1	A1	1432	.269	.066	.133	.269	.515	.017	.097	019	119	.097	.046	1.859	0.063	4.1	1.1	5.1	1.2	A-	A-
1422 601165 A1 A1 1433 .283 .223 .119 .357 .283 .017 .307 .059 168 160 .307 1.876 0.062 -0.1 1.0 1.1 1.1 A- A- 1423 601166 A1 A1 1432 .571 .049 .571 .244 .069 .066 .461 140 .461 156 199 0.229 0.059 -4.0 0.9 -4.0 0.9 A- A- 1424 601172 A1 A1 1429 .451 .451 .078 .291 .099 .081 .470 .470 167 129 160 0.776 0.058 -5.6 0.9 -5.3 0.9 A+ A- 1425 601177 A1 A1 715 .702 .034 .702 .151 .036 .077 .332 103 .332 124 095 -0.499 0.095	1420	601151	A1	A1	1436	.218	.057	.218	.585	.095	.045	.010	109	.010	.237	144	2.159	0.069	7.0	1.3	9.1	1.6	A+	B+
1423 601166 A1 A1 1432 .571 .049 .571 .244 .069 .066 .461 140 .461 156 199 0.229 0.059 -4.0 0.9 -4.0 0.9 A- A- 1424 601172 A1 A1 1429 .451 .451 .078 .291 .099 .081 .470 .470 167 129 160 0.776 0.058 -5.6 0.9 -5.3 0.9 A+ A- 1425 601177 A1 A1 715 .702 .034 .702 .151 .036 .077 .332 103 .332 124 095 -0.499 0.095 0.3 1.0 0.0 1.0 A+ 1426 601150 A1 A1 1431 .384 .180 .162 .231 .384 .043 .459 100 180 160 .459 1.147 0.058 -5.0	1421	601163	A1	A1	1434	.386	.149	.192	.222	.386	.052	.305	141	001	096	.305	1.249	0.059	3.5	1.1	2.9	1.1	A-	A-
1424 601172 A1 A1 1429 .451 .451 .078 .291 .099 .081 .470 .470 167 129 160 0.076 0.058 -5.6 0.9 -5.3 0.9 A+ A- 1425 601177 A1 A1 A1 715 .702 .034 .702 .151 .036 .077 .332 103 .332 124 095 -0.499 0.095 0.3 1.0 0.0 1.0 A+ 1426 601150 A1 A1 1431 .384 .180 .162 .231 .384 .043 .459 100 180 160 .459 1.147 0.058 -5.0 0.9 -4.5 0.9 A- A- 1427 600960 A1 A1 1431 .248 .430 .220 .248 .066 .036 .229 .034 084 .229 147 1.879 0.065	1422	601165	A1	A1	1433	.283	.223	.119	.357	.283	.017	.307	.059	168	160	.307	1.876	0.062	-0.1	1.0	1.1	1.1	A-	A-
1425 601177 A1 A1 715 .702 .034 .702 .151 .036 .077 .332 103 .332 124 095 -0.499 0.095 0.3 1.0 0.0 1.0 A+ 1426 601150 A1 A1 1431 .384 .180 .162 .231 .384 .043 .459 100 180 160 .459 1.147 0.058 -5.0 0.9 -4.5 0.9 A- A- 1427 600960 A1 A1 1431 .248 .430 .220 .248 .066 .036 .229 .034 084 .229 147 1.879 0.065 1.6 1.1 3.0 1.1 A- A- 1428 600974 A1 A1 717 .365 .179 .292 .146 .365 .018 .269 074 030 213 .269 1.275 0.082 0.7 1.0 0.6 1.0 A- 1429 601156 A1 A1 <	1423	601166	A1	A1	1432	.571	.049	.571	.244	.069	.066	.461	140	.461	156	199	0.229	0.059	-4.0	0.9	-4.0	0.9	A-	A-
1426 601150 A1 A1 1431 .384 .180 .162 .231 .384 .043 .459 100 160 .459 1.147 0.058 -5.0 0.9 -4.5 0.9 A- A- 1427 600960 A1 A1 1431 .248 .430 .220 .248 .066 .036 .229 .034 084 .229 147 1.879 0.065 1.6 1.1 3.0 1.1 A- A- 1428 600974 A1 A1 A1 717 .365 .179 .292 .146 .365 .018 .269 074 030 213 .269 1.275 0.082 0.7 1.0 0.6 1.0 A- A+ 1429 601156 A1 A1 717 .530 .039 .239 .183 .530 .010 .406 034 183 264 .406 0.539 0.079 -3.8 0.9 -3.3 0.9 A+ A-	1424	601172	A1	A1	1429	.451	.451	.078	.291	.099	.081	.470	.470	167	129	160	0.776	0.058	-5.6	0.9	-5.3	0.9	A+	A-
1427 600960 A1 A1 1431 .248 .430 .220 .248 .066 .036 .229 .034 084 .229 147 1.879 0.065 1.6 1.1 3.0 1.1 A- A- 1428 600974 A1 A1 A1 717 .365 .179 .292 .146 .365 .018 .269 074 030 213 .269 1.275 0.082 0.7 1.0 0.6 1.0 A- A+ 1429 601156 A1 A1 717 .530 .039 .239 .183 .530 .010 .406 034 183 264 .406 0.539 0.079 -3.8 0.9 -3.3 0.9 A+ A-	1425	601177	A1	A1	715	.702	.034	.702	.151	.036	.077	.332	103	.332	124	095	-0.499	0.095	0.3	1.0	0.0	1.0	A+	
1427 600960 A1 A1 1431 .248 .430 .220 .248 .066 .036 .229 .034 084 .229 147 1.879 0.065 1.6 1.1 3.0 1.1 A- A- 1428 600974 A1 A1 A1 717 .365 .179 .292 .146 .365 .018 .269 074 030 213 .269 1.275 0.082 0.7 1.0 0.6 1.0 A- A+ 1429 601156 A1 A1 717 .530 .039 .239 .183 .530 .010 .406 034 183 264 .406 0.539 0.079 -3.8 0.9 -3.3 0.9 A+ A-	1426	601150	A1	A1	1431	.384	.180	.162	.231	.384	.043	.459	100	180	160	.459	1.147	0.058	-5.0	0.9	-4.5	0.9	A-	A-
1428 600974 A1 A1 717 .365 .179 .292 .146 .365 .018 .269 074 030 213 .269 1.275 0.082 0.7 1.0 0.6 1.0 A- A+ 1429 601156 A1 A1 717 .530 .039 .239 .183 .530 .010 .406 034 183 264 .406 0.539 0.079 -3.8 0.9 -3.3 0.9 A+ A-	1427	600960	A1	A1	1431	.248	.430	.220	.248	.066	.036	.229	.034	084	.229	147		0.065	1.6	1.1	3.0	1.1	A-	A-
1429 601156 A1 A1 717 .530 .039 .239 .183 .530 .010 .406034183264 .406 0.539 0.079 -3.8 0.9 -3.3 0.9 A+ A-	1428	600974	A1	A1	717	.365	.179	.292	.146	.365	.018	.269	074	030	213	.269	1.275	0.082	0.7	1.0	0.6	1.0	A-	A+
	-	601156	A1	A1	717						.010		034			.406			-3.8	0.9	-3.3	0.9	A+	A-
	-									.658														1

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
4.424	601161	Grade	Grade	1.12.1	402						205	020	205	400	007	4.442	0.057	in	in	out	out	/F	/B
1431	601161	A1	A1	1434	.402	.263	.402	.249	.067	.019	.295	039	.295	188	097	1.142	0.057	1.5	1.0	2.0	1.1	Α-	A+
1432	601170	A1	A1	1433	.341	.519	.341	.078	.043	.020	.323	071	.323	186	144	1.465	0.059	-0.2	1.0	0.2	1.0	Α-	A+
1433	601149	A1	A1	717	.138	.138	.343	.315	.144	.060	.214	.214	.083	034	120	2.731	0.113	0.3	1.0	2.1	1.2	Α-	A+
1434	601176	A1	A1	717	.600	.082	.600	.191	.070	.057	.407	156	.407	171	135	0.154	0.084	-1.6	1.0	-1.8	0.9	B+	A-
1435	601148	A1	A1	1433	.265	.125	.392	.265	.193	.027	006	081	.162	006	054	1.835	0.063	6.4	1.2	6.3	1.3	Α-	B+
1436	600948	A1	A1	1429	.232	.107	.190	.232	.442	.029	.151	067	081	.151	.062	2.043	0.066	3.3	1.1	4.6	1.2	A+	A-
1437	604671	Ge	Ge	2127	.592	.035	.592	.162	.134	.027	.376	155	.376	233	236	0.413	0.051	-5.6	0.9	-5.3	0.9	A+	A-
1438	604400	Ge	Ge	1065	.678	.052	.678	.128	.074	.069	.475	123	.475	209	213	-0.069	0.075	-3.0	0.9	-3.3	0.8	A+	Α-
1439	604389	Ge	Ge	1063	.410	.114	.209	.209	.410	.058	.493	169	164	167	.493	1.398	0.069	-4.2	0.9	-3.5	0.9	Α-	A-
1440	604418	Ge	Ge	532	.397	.243	.160	.397	.100	.102	.283	009	130	.283	119	1.304	0.099	2.7	1.1	2.7	1.1	Α-	D.
1441	604707	Ge	Ge	1064	.468	.168	.180	.174	.468	.010	.253	108	057	122	.253	1.175	0.066	3.5	1.1	3.0	1.1	A+	B+
1442	604378	Ge	Ge	1065	.573	.027	.099	.285	.573	.016	.515	130	258	300	.515	0.711	0.068	-6.0	0.9	-5.6	0.8	A+	A+
1443	604392	Ge	Ge	1067	.504	.166	.172	.145	.504	.013	.374	178	149	128	.374	1.055	0.065	-1.9	1.0	-2.0	1.0	A-	A+
1444	604395	Ge	Ge	1064	.603	.057	.085	.603	.217	.038	.419	092	244	.419	140	0.460	0.069	-1.7	1.0	-0.9	1.0	B-	A+
1445	604763	Ge	Ge	532	.265	.107	.265	.359	.214	.055	.307	069	.307	170	.138	2.122	0.105	0.3	1.0	1.4	1.1	Α-	
1446	604474	Ge	Ge	1065	.621	.051	.621	.102	.154	.072	.512	168	.512	225	206	0.265	0.072	-4.6	0.9	-4.7	0.8	A-	A+
1447	604600	Ge	Ge	1064	.199	.192	.243	.356	.199	.010	.344	018	188	082	.344	2.751	0.082	-1.3	0.9	-1.8	0.9	A+	A-
1448	604361	Ge	Ge	530	.213	.449	.211	.117	.213	.009	.429	149	126	100	.429	2.524	0.115	-1.5	0.9	-0.4	1.0	A-	A-
1449	604360	Ge	Ge	1064	.346	.346	.190	.196	.248	.021	.322	.322	085	202	046	1.765	0.070	1.7	1.1	2.1	1.1	A+	A+
1450	604354	Ge	Ge	1070	.249	.139	.234	.320	.249	.005	.252	095	120	108	.252	2.257	0.075	-0.1	1.0	0.6	1.0	A-	A+
1451	604453	Ge	Ge	1065	.684	.058	.684	.091	.064	.055	.352	137	.352	219	253	-0.294	0.080	-2.9	0.9	-3.5	0.8	A+	A+
1452	604718	Ge	Ge	1064	.834	.049	.834	.051	.032	.035	.390	148	.390	202	085	-1.016	0.094	-0.7	1.0	-1.0	0.9	A-	A-
1453	605047	Ge	Ge	1064	.410	.087	.382	.410	.107	.015	.324	184	106	.324	112	1.447	0.067	0.3	1.0	1.1	1.0	A+	A-
1454	604658	Ge	Ge	2128	.304	.372	.304	.219	.072	.034	.234	.053	.234	134	127	2.006	0.051	4.8	1.1	5.6	1.2	A+	A-
1455	604371	Ge	Ge	1064	.118	.091	.329	.434	.118	.028	.106	048	028	.063	.106	3.308	0.100	1.5	1.1	4.3	1.5	A-	A-
1456	604417	Ge	Ge	1064	.627	.071	.138	.136	.627	.028	.497	158	252	187	.497	0.374	0.069	-4.4	0.9	-3.9	0.9	A-	A-
1457	604742	Ge	Ge	1065	.465	.465	.303	.155	.055	.022	.331	.331	190	089	083	1.209	0.067	1.8	1.0	1.8	1.1	A+	A+
1458	604358	Ge	Ge	1065	.585	.165	.154	.585	.080	.016	.436	220	268	.436	053	0.644	0.068	-2.9	0.9	-2.9	0.9	A+	A-
1459	604758	Ge	Ge	1064	.681	.039	.681	.167	.071	.043	.396	197	.396	135	115	0.031	0.073	-0.3	1.0	0.1	1.0	A+	A-
1460	604740	Ge	Ge	1064	.403	.137	.102	.403	.334	.024	.358	.014	.000	.358	315	1.458	0.067	-0.4	1.0	-0.2	1.0	A+	A-
1461	604437	Ge	Ge	1065	.319	.511	.319	.108	.046	.016	.377	182	.377	126	107	1.956	0.071	-1.7	1.0	-1.3	0.9	A-	A-
1462	604729	Ge	Ge	1065	.612	.612	.116	.203	.052	.018	.362	.362	235	110	158	0.498	0.069	0.0	1.0	0.4	1.0	A+	A+
1463	604659	Ge	Ge	1598	.287	.287	.213	.272	.188	.040	.263	.263	161	016	033	2.087	0.060	2.8	1.1	4.6	1.2	A-	A+
1464	604405	Ge	Ge	1065	.590	.590	.132	.124	.135	.020	.436	.436	169	212	185	0.605	0.068	-2.7	0.9	-2.3	0.9	A+	A+
1465	604693	Ge	Ge	1065	.421	.421	.227	.247	.085	.020	.405	.405	060	215	219	1.425	0.068	-2.7	0.9	-2.1	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1466	604438	Grade	Grade	1065	261	.318	.216	.361	.081		201		213	.291		1.721	0.070	in	in 1.0	out 2.2	out	/F	/B
1466 1467	604764	Ge	Ge	1065 1065	.361 .580					.024	.409	040			028	0.637	0.068	0.8	1.0		1.1	A-	A- B-
1467	604393	Ge	Ge Ge	1065	.580	.031	.170	.580 .472	.195	.024	.234	083 067	268 129	.409	164 124	0.637	0.069	-2.1 2.0	1.0	-2.1 1.3	0.9 1.0	C-	
	604393	Ge Ge	Ge	1064	.255	.082		.347	.255	.037	.347		129	070	.347	2.293	0.069	-0.2	1.0	0.5		A+	A+
1469 1470	604397	Ge	Ge	1065	.533	.082	.281	.533	.012	.004	.437	051 165	325	.437	139	0.965	0.076	-4.2	0.9	-3.7	0.9	A+	A+
1470	604397	Ge	Ge	1067	.150	.080	.150	.250	.504	.004	.148	024	.148	070	028	3.153	0.067	1.4	1.1	4.7	1.5	A+ A+	A- A+
1471	604373	Ge	Ge	1067	.150			.250	.492	.008	.285				.285		0.091	2.1		1.8			_
1472	604731	Ge	Ge	1067	.209	.058	.167	.414	.209	.012	.285	178 .024	105 181	115 .037	.187	1.141 2.673	0.081	2.1	1.1	5.5	1.1	A-	A- A+
1473	604755	Ge	Ge	1067	.458	.082	.458	.330	.113	.017	.316		.316	160	067	1.289	0.067		1.0	1.6		Α-	
												146						1.8			1.1	A+	A+
1475	605048	Ge	Ge	1067	.369	.187	.331	.369	.105	.008	.316	211	078	.316	076	1.755	0.069	0.5	1.0	0.4	1.0	A+	A+
1476	604423	Ge	Ge	1067	.685	.685	.090	.187	.031	.007	.292	.292	130	171	114	0.195	0.071	1.8	1.1	1.2	1.1	A+	A+
1477	604427	Ge	Ge	1067	.794	.094	.047	.794	.057	.008	.500	297	237	.500	222	-0.480	0.082	-3.8	0.8	-4.7	0.7	A-	Α-
1478	604641	Ge	Ge	1067	.370 .521	.135	.377	.370	.090	.028	.199	106	013	.199	069	1.707	0.069	5.5 -6.7	1.2	5.0	1.2	A-	A+
1479	604765	Ge	Ge	1067		.085	.521	.344	.040	.009	.493	097	.493	384	107	1.010	0.067		0.9	-6.0	0.8	Α-	Α-
1480	604408	Ge	Ge	1064	.396	.396	.181	.337	.073	.012	.423	.423	200	186	102	1.625	0.068	-3.0	0.9	-3.1	0.9	A+	Α-
1481	604709	Ge	Ge	1064	.270	.446	.270	.214	.038	.033	.154	074	.154	.011	093	2.253	0.074	3.6	1.1	4.0	1.2	Α-	A+
1482	604448	Ge	Ge	1064	.316	.470	.141	.060	.316	.013	.393	086	248	148	.393	2.029	0.071	-2.8	0.9	-1.7	0.9	A+	A+
1483	604442	Ge	Ge	1064	.533	.039	.187	.533	.207	.035	.415	151	123	.415	256	0.896	0.068	-3.2	0.9	-3.0	0.9	A-	B+
1484	604367	Ge	Ge	1064	.343	.157	.284	.186	.343	.030	.556	235	161	197	.556	1.847	0.070	-6.6	0.8	-5.1	0.8	A-	A-
1485	604730	Ge	Ge	1064	.574	.132	.167	.574	.086	.041	.391	103	218	.391	150	0.671	0.069	-1.6	1.0	-0.8	1.0	A+	A-
1486	604409	Ge	Ge	1064	.511	.079	.198	.193	.511	.019	.357	078	080	249	.357	1.046	0.067	0.8	1.0	1.4	1.1	A-	A-
1487	604464	Ge	Ge	1063	.596	.596	.191	.151	.053	.009	.389	.389	180	197	170	0.649	0.068	-2.3	1.0	-2.3	0.9	C+	A+
1488	604589	Ge	Ge	1063	.228	.228	.192	.477	.064	.040	.421	.421	279	022	119	2.470	0.078	-2.6	0.9	-1.9	0.9	A+	A+
1489	604646	Ge	Ge	1063	.121	.100	.121	.412	.326	.041	.002	.089	.002	072	.081	3.317	0.098	2.8	1.2	4.8	1.6	Α-	A-
1490	604428	Ge	Ge	1063	.412	.412	.224	.215	.128	.021	.328	.328	149	112	082	1.502	0.067	1.2	1.0	1.6	1.1	A+	B+
1491	605049	Ge	Ge	1063	.687	.085	.097	.687	.095	.037	.480	216	245	.480	202	0.080	0.073	-3.7	0.9	-4.2	0.8	A+	A+
1492	604766	Ge	Ge	1063	.178	.104	.321	.363	.178	.034	.264	134	072	.004	.264	2.832	0.085	0.7	1.0	1.5	1.1	A+	Α-
1493	604601	Ge	Ge	1063	.294	.280	.240	.294	.143	.043	.148	025	102	.148	.060	2.064	0.073	4.5	1.2	4.3	1.2	A+	A+
1494	604390	Ge	Ge	1063	.214	.214	.204	.379	.142	.061	.213	.213	032	037	064	2.518	0.080	1.6	1.1	4.3	1.3	Α-	Α-
1495	604762	Ge	Ge	1063	.570	.081	.176	.570	.135	.039	.387	094	141	.387	232	0.689	0.068	-0.6	1.0	-1.0	1.0	A-	A-
1496	604752	Ge	Ge	1063	.342	.205	.307	.342	.091	.055	.178	.047	101	.178	062	1.779	0.070	5.6	1.2	4.4	1.2	Α-	Α+
1497	605887	Ge	Ge	1065	.499	.058	.108	.499	.316	.019	.265	097	117	.265	128	1.056	0.067	4.0	1.1	4.0	1.1	A-	A-
1498	605050	Ge	Ge	1065	.578	.234	.092	.578	.068	.029	.397	191	160	.397	192	0.632	0.068	-0.9	1.0	-0.8	1.0	A+	Α-
1499	604767	Ge	Ge	1065	.523	.112	.523	.239	.112	.014	.344	226	.344	123	104	0.956	0.067	1.2	1.0	1.4	1.1	A-	C-
1500	604672	Ge	Ge	533	.636	.165	.124	.066	.636	.009	.470	185	347	143	.470	0.431	0.097	-3.1	0.9	-3.1	8.0	A+	ш

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
4504	604440	Grade	Grade	4005	42.4						246	247	246	04.4	245	4 442	0.000	in	in	out	out	/F	/B
1501	604412	Ge	Ge	1065	.424	.245	.424	.247	.064	.021	.346	217	.346	014	215	1.412	0.068	1.8	1.1	0.8	1.0	Α-	A+
1502	604471	Ge	Ge	1065	.645	.070	.167	.090	.645	.027	.469	145	249	267	.469	0.291	0.071	-4.6	0.9	-4.2	0.8	A+	A-
1503	604402	Ge	Ge	1065	.324	.158	.324	.317	.180	.021	.373	122	.373	188	053	1.932	0.071	0.3	1.0	1.6	1.1	Α-	A-
1504	604602	Ge	Ge	1065	.120	.266	.272	.314	.120	.028	.230	.031	121	014	.230	3.377	0.100	0.6	1.0	3.2	1.4	A-	A-
1505	604757	Ge	Ge	533	.584	.081	.229	.584	.088	.019	.339	099	158	.339	164	0.668	0.095	0.0	1.0	-0.4	1.0	Α-	_
1506	604425	Ge	Ge	1065	.803	.803	.060	.057	.069	.011	.447	.447	206	226	230	-0.584	0.083	-2.6	0.9	-3.8	0.7	A+	Α-
1507	604710	Ge	Ge	1065	.622	.133	.111	.096	.622	.039	.402	137	204	176	.402	0.379	0.070	-1.2	1.0	-1.3	0.9	A-	A+
1508	604451	Ge	Ge	1065	.404	.227	.404	.211	.111	.047	.459	187	.459	150	156	1.447	0.069	-2.6	0.9	-1.5	1.0	Α-	A+
1509	604653	Ge	Ge	1065	.341	.189	.341	.307	.108	.055	.139	017	.139	050	002	1.757	0.071	8.1	1.3	7.0	1.3	Α-	A+
1510	604466	Ge	Ge	1063	.456	.209	.241	.456	.048	.046	.373	127	138	.373	120	1.202	0.068	0.2	1.0	0.6	1.0	A+	A+
1511	605882	Ge	Ge	1063	.587	.143	.587	.150	.079	.041	.521	209	.521	252	162	0.563	0.069	-5.4	0.9	-5.1	0.8	Α-	A+
1512	604720	Ge	Ge	1063	.353	.165	.353	.181	.249	.053	.190	.021	.190	198	.066	1.709	0.071	6.8	1.2	6.3	1.3	Α-	A+
1513	605903	Ge	Ge	1063	.457	.120	.277	.457	.085	.062	.341	126	079	.341	149	1.148	0.069	2.6	1.1	2.0	1.1	Α-	A-
1514	604439	Ge	Ge	1063	.433	.062	.106	.377	.433	.022	.501	162	237	215	.501	1.379	0.068	-4.8	0.9	-4.2	0.9	A+	Α-
1515	604479	Ge	Ge	1063	.535	.136	.150	.130	.535	.050	.458	157	167	189	.458	0.789	0.069	-2.7	0.9	-2.6	0.9	A+	Α-
1516	604695	Ge	Ge	1063	.612	.224	.078	.612	.052	.034	.426	208	203	.426	141	0.446	0.070	-2.1	1.0	-2.0	0.9	A-	A-
1517	604379	Ge	Ge	1063	.509	.037	.213	.205	.509	.037	.343	135	208	075	.343	0.958	0.068	0.6	1.0	1.0	1.0	A-	B-
1518	604426	Ge	Ge	1063	.612	.051	.115	.154	.612	.068	.541	155	241	272	.541	0.317	0.072	-5.8	0.8	-5.7	0.8	A+	B-
1519	604435	Ge	Ge	1063	.350	.202	.350	.202	.175	.071	.420	028	.420	199	138	1.678	0.071	-0.7	1.0	0.2	1.0	A+	A-
1520	604655	Ge	Ge	531	.371	.245	.313	.371	.049	.023	.095	.014	.006	.095	146	1.690	0.097	6.0	1.2	5.0	1.3	A+	
1521	604581	Ge	Ge	1064	.562	.064	.149	.562	.191	.034	.396	169	197	.396	119	0.732	0.068	-0.6	1.0	-0.4	1.0	A+	A-
1522	604440	Ge	Ge	1064	.601	.070	.107	.160	.601	.014	.406	254	219	200	.406	0.432	0.071	-4.8	0.9	-4.3	0.8	A+	A-
1523	604399	Ge	Ge	1064	.315	.124	.407	.315	.095	.059	.361	165	142	.361	023	1.900	0.072	-0.6	1.0	0.7	1.0	B-	A-
1524	604667	Ge	Ge	1064	.615	.057	.126	.615	.149	.053	.366	080	231	.366	127	0.383	0.071	-0.7	1.0	-0.8	1.0	A-	A+
1525	604748	Ge	Ge	1064	.295	.441	.160	.295	.051	.054	.243	037	092	.243	086	2.023	0.073	3.4	1.1	4.3	1.2	A-	A+
1526	604769	Ge	Ge	1064	.172	.170	.172	.322	.278	.057	019	.060	019	065	.148	2.843	0.087	5.6	1.3	7.4	1.7	A-	C+
1527	604715	Ge	Ge	1064	.591	.116	.591	.157	.084	.053	.485	145	.485	247	175	0.520	0.070	-5.0	0.9	-4.0	0.9	A+	A+
1528	605883	Ge	Ge	1064	.326	.054	.097	.479	.326	.044	.162	114	154	.094	.162	1.882	0.071	6.4	1.2	5.3	1.2	A-	A+
1529	604663	Ge	Ge	1064	.527	.527	.160	.214	.056	.043	.498	.498	124	270	181	0.870	0.068	-5.8	0.9	-5.7	0.8	B+	A+
1530	604603	Ge	Ge	1064	.139	.139	.196	.454	.134	.076	.140	.140	021	.099	092	3.079	0.094	2.0	1.1	4.8	1.5	A-	A+
1531	604382	Ge	Ge	1064	.364	.364	.390	.120	.066	.060	.426	.426	018	293	155	1.649	0.070	-1.7	1.0	-1.3	1.0	A+	A+
1532	604359	Ge	Ge	1065	.369	.085	.369	.397	.109	.040	.386	047	.386	211	100	1.641	0.070	0.2	1.0	0.1	1.0	A-	A-
1533	606225	Ge	Ge	1065	.455	.048	.224	.455	.248	.025	.246	112	175	.246	002	1.236	0.067	6.0	1.2	4.8	1.2	A-	A-
1534	604386	Ge	Ge	1065	.670	.670	.174	.092	.049	.015	.470	.470	272	193	181	0.208	0.071	-3.2	0.9	-3.3	0.8	A+	A-
1535	604716	Ge	Ge	1065	.571	.052	.085	.270	.571	.023	.356	099	179	169	.356	0.694	0.068	-0.3	1.0	0.3	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1536 604665 Ge Ge 1065 5.12 1.54 2.04 5.12 1.01 0.29 4.70 -1.72 -2.29 4.70 -1.56 0.958 0.067 3.2 0.9 -3.3 0.9 4.7 4.7 1.55 0.566 0.566 0.065 3.27	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1537 604669 Ge Ge 1065 493 100 493 294 608 046 376 -061 376 -177 -187 0.999 0.068 0.02 1.0 0.9 1.0 B A-1539 604694 Ge Ge 1065 222 222 1.08 1.59 3.98 0.66 3.66 3.66 3.66 -1.19 -0.84 2.333 0.080 2.0 0.9 -1.2 0.9 A- A-1540 0.04713 Ge Ge 533 540 0.51 540 2.31 1.11 0.08 5.05 -1.42 5.05 -2.71 -1.74 0.723 0.088 3.1 0.9 -2.7 0.9 A- A-1540 0.04713 Ge Ge 1065 3.35 1.58 3.35 2.89 111 0.09 2.00 -0.26 2.00 0.09 -1.21 0.98 A- A-1542 0.0443 Ge Ge 1065 4.45 4.45 193 185 0.97 0.01 4.14 4.14 -1.64 -1.42 -1.24 1.137 0.099 0.88 1.0 -1.0 1.0 A- A-1548 0.04460 Ge Ge 1064 -2.21 1.71 1.79 3.48 2.21 0.57 2.67 0.18 -0.99 -0.26 -	4506	604665	Grade	Grade	4005	540						470					0.050	0.007	in	in	out	out	/F	/B
1538 604694 Ge Ge 1065 327 327 311 126 074 062 391 391 015 -230 -181 1.808 0.072 -0.2 1.0 -0.3 1.0 A = B+																								
1539 604483 Ge Ge 1065 222 222 222 108 159 398 .066 .366 .366 .160 .119 .084 2.333 0.080 .20 0.9 .1.2 0.9 A.																								_
1540 604713 Ge Ge 533 5.40 .051 5.50 231 .111 .068 .505 .342 .350 .021 .174 .0723 .0098 .3.1 .09 .2.7 .0.9 .A. A+ .1541 .05884 Ge Ge .066 .335 .158 .335 .289 .111 .059 .230 .026 .230 .094 .143 .1644 .072 .3.1 .1.1 .2.2 .1.1 A. A- .4.1 .4.	-																							
1541 605884 Ge Ge 1065 435 158 335 128 335 128 335 128 335 128 335 128 335 128 335 128 335 128 335 128 335 128 335 128 335 128 1																-								_
1542 60443 Ge Ge 1065 .445 .445 .193 .185 .097 .081 .414 .144 .156 .142 .124 .137 .069 .08 .10 .1.0 .1.0 .1.0 .4.4 .154 .154 .104 .104 .104 .104 .104 .105 .094 .091 .267 .2417 .0080 .1.8 .1.1 .2.5 .1.2 .4.4 .154 .144 .145 .104 .104 .104 .105 .082 .005 .493 .2.26 .2.39 .1.33 .0.067 .5.6 .0.9 .5.0 .0.9 .4.4 .154 .145 .1.4 .154 .1.4																								-
1543 604460 Ge Ge 1064 .221 .177 .197 .348 .221 .057 .267 .018 .094 .094 .095 .267 .2411 .0080 1.8 1.1 .2.5 1.2 A+ A+ .1544 .604712 .66 Ge 1064 .411 .089 .249 .441 .203 .048 .498 .320 .433 .269 .493 .173 .234 .1330 .0.067 .56 .0.9 .50 .0.9 A+ A+ .1546 .604363 .66 Ge 1064 .411 .089 .249 .411 .203 .048 .498 .185 .140 .498 .220 .1375 .0.68 .50 .0.9 .4.5 .0.9 A+ A+ .1546 .604363 .66 .66 .1064 .280 .155 .324 .175 .280 .066 .379 .105 .073 .137 .379 .2031 .0.74 .1.0 .1.0 .0.1 .1.0 A+ A+ .1549 .604388 .66 .66 .1064 .355 .055 .438 .355 .120 .022 .307 .143 .131 .307 .056 .1716 .0.69 .16 .1.1 .2.1 .1.1 A+ A+ .1549 .604388 .66 .66 .1064 .608 .079 .608 .181 .100 .032 .399 .157 .399 .249 .0.79 .0.454 .0.69 .1.1 .1.0 .1.6 .0.9 A+ A+ .1549 .604388 .66 .66 .1064 .428 .0.39 .428 .360 .134 .0.00 .346 .0.15 .346 .267 .0.01 .1.207 .0.07 .1.0 .0.4 .0.4 A+ .1552 .604731 .66 .66 .1064 .428 .0.39 .428 .360 .134 .0.00 .346 .0.15 .346 .267 .0.01 .1.207 .0.097 .1.0 .0.4 .0.4 A+ .1552 .604731 .66 .66 .1064 .255 .102 .255 .314 .251 .078 .288 .0.37 .1.14 .1.55 .1.25 .2.006 .0.774 .1.1																								-
1544 604712 Ge Ge 1064 .440 .419 .440 .055 .082 .005 .493 .269 .493 .173 .234 1.330 0.067 .5.6 0.9 .5.0 0.9 A+ A-1545 604746 Ge Ge 1064 .280 .155 .324 .175 .280 .066 .379 .105 .075 .107 .175 .073 .231 .133 .225 .1375 .008 .5.0 .0.9 .4.5 0.9 A- A-1547 .040363 Ge Ge 1064 .280 .155 .324 .175 .280 .066 .379 .137 .379 .2031 .0074 .1.0 .0.1 .1.0 .0.1 .1.0 A- A-1547 .04778 .0478 .0478 .0488 .220 .1375 .008 .070 .0074 .1.0 .0.1 .0	-																							-
1545 604746 Ge Ge 1064 .411 .089 .249 .411 .203 .048 .498 .185 .140 .498 .220 1.375 0.068 .5.0 0.9 .4.5 0.9 A. A+ .1546 604363 Ge Ge 1064 .280 .155 .324 .175 .280 .066 .379 .105 .073 .137 .379 .2.031 .0074 .1.0 1.0 .0.1 1.0 A. A+ .1548 .040727 Ge Ge 1064 .355 .065 .438 .355 .120 .022 .307 .143 .131 .307 .056 .1716 0.069 .1.6 1.1 .2.1 .1.1 A. A- .1549 .044313 Ge Ge 1064 .608 .079 .008 .181 .100 .032 .399 .157 .399 .249 .079 0.454 0.069 .1.1 1.0 .1.0 0.1 1.0 A. A+ .1551 .04413 Ge Ge .532 .438 .039 .428 .360 .134 .040 .375 .104 .375 .203 .124 .1309 0.068 .05 1.0 0.7 1.0 A. A+ .1552 .064143 Ge Ge .064 .290 .466 .290 .466 .290 .317 .050 .056 .144 .107 .144 .145 .125 .206 .0074 .1.1 .1.2 .1.1 A. A- .1552 .064143 Ge Ge .064 .290 .466 .290 .137 .050 .056 .144 .107 .144 .145 .125 .206 .0074 .0.69 .1.1 .1.0 .1.0 .1.0 .0.1 A. A- .1552 .064143 Ge Ge .064 .290 .466 .290 .137 .050 .056 .144 .107 .144 .145 .125 .2.006 .0.74 .1.1																								
1546 604363 Ge Ge 1064 280 1.55 3.24 1.75 2.80 0.66 3.79 1.05 -0.73 -1.37 3.79 2.031 0.074 -1.0 1.0 0.1 1.0 A. A+ 1547 604763 Ge Ge 1064 5.56 1.68 1.42 1.02 5.62 2.026 4.38 -1.93 -1.33 -2.25 4.38 0.700 0.067 -3.6 0.9 -3.3 0.9 A+ A- 1549 604388 Ge Ge 1064 6.08 0.79 6.08 1.81 1.00 0.32 3.99 1.57 3.99 -2.49 -0.79 0.454 0.069 -1.1 1.0 -1.6 0.9 A. A+ 1550 604413 Ge Ge 532 4.38 1.75 4.38 1.03 2.31 0.60 3.46 -1.05 3.46 -2.67 0.01 1.207 0.097 1.0 1.0 0.4 1.0 A+ A- 1552 604731 Ge Ge 1064 2.25 4.38 6.99 1.37 0.50 0.56 1.44 1.07 1.44 -1.45 -1.25 2.006 0.074 6.1 1.2 5.8 1.3 A+ A- 1553 604743 Ge Ge 1064 2.25 1.02 2.25 3.14 2.51 0.78 2.89 0.27 -1.86 2.89 1.08 2.281 0.107 1.4 1.1 1.1 1.1 1.1 A+ 1.55 604455 Ge Ge 6.532 6.92 6.92 1.94 0.56 0.49 0.09 3.71 3.71 -2.40 1.04 -1.63 0.15 0.100 1.0 1.0 0.0 1.0 A+ A- 1.555 6.04731 Ge Ge 5.32 6.92 6.92 1.94 0.56 0.49 0.09 3.71 3.71 -2.40 1.04 -1.63 0.15 0.100 1.0 1.0 0.0 1.0 A+ 1.555 0.4748 Ge Ge 1064 5.51 0.09 0.56 8.04 0.09 0.09 3.71 3.71 -2.40 1.04 -1.63 0.115 0.100 1.0 1.0 0.0 1.0 A+ 1.555 0.4743 Ge Ge 5.32 6.92 6.92 1.94 0.56 8.04 0.09 0.09 3.71 3.71 -2.40 1.04 -1.63 0.115 0.100 1.0 1.0 0.0 1.0 A+ 1.555 0.4748 Ge Ge 1065 5.66 6.94 0.275 0.048 0.058 0.068 0.044 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 8.04 0.059 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.056 0.0																							A+	-
1547 604727 Ge																							A-	A+
1548 604768 Ge Ge 1064 355 0.65 4.38 3.55 1.20 0.22 3.07 -1.43 -1.31 3.07 -0.56 1.716 0.069 1.6 1.1 2.1 1.1 A-			Ge	Ge			.155				.066									1.0			A-	A+
1549 604388 Ge Ge 1064 6.08 0.079 6.08 1.81 1.00 0.32 3.399 -1.57 3.399 -2.49 -0.79 0.454 0.069 -1.1 1.0 -1.6 0.9 A-	1547	604727	Ge	Ge	1064		.168				.026	.438	193	133	225	.438	0.700		-3.6	0.9	-3.3	0.9	A+	A-
1550 604413 Ge Ge 532 .438 .167 .438 .103 .231 .060 .346 .105 .346 .267 .001 1.207 0.097 1.0 1.0 0.4 1.0 A+ A+ A+ 1551 .06454 Ge Ge .064 .428 .039 .428 .360 .134 .040 .375 .104 .375 .203 .124 .1309 .0.68 .0.5 1.0 0.7 1.0 A- A+ A+ 1552 .064731 Ge Ge .064 .290 .466 .290 .137 .050 .056 .144 .107 .144 .1.45 .1.25 .2.006 .0.074 .61 .1.2 .5.8 1.3 A+ A+ .1553 .064714 .66 Ge .064 .255 .102 .255 .134 .251 .078 .280 .132 .280 .009 .076 .2168 .0.077 .19 .1.1 .2.7 1.2 A- A+ .1554 .04644 .066	1548	604768	Ge	Ge	1064		.065	.438		.120	.022	.307	143	131	.307	056	1.716	0.069	1.6	1.1	2.1	1.1	A-	A-
1551 604454 Ge Ge 1064 .428 .039 .428 .360 .134 .040 .375 .104 .375 .203 .124 1.309 0.068 .0.5 1.0 0.7 1.0 A A A 1552 604731 Ge Ge 1064 .250 .466 .290 .137 .050 .056 .144 .107 .144 .145 .125 .206 .0074 6.1 1.2 5.8 1.3 A A A 1553 604714 Ge Ge 1064 .255 .102 .255 .314 .251 .078 .280 .132 .280 .009 .076 .2168 0.077 1.9 1.1 2.7 1.2 A A A 1554 604364 Ge Ge 532 .256 .196 .395 .256 .139 .015 .289 .027 .186 .289 .108 .2281 0.107 1.4 1.1 1.1 1.1 .1 .1 .1	1549	604388	Ge	Ge	1064	.608	.079	.608	.181	.100	.032	.399	157	.399	249	079	0.454		-1.1	1.0	-1.6	0.9	A-	A+
1552 604731 Ge Ge 1064 .290 .466 .290 .137 .050 .056 .144 .107 .144 .145 .125 .2.006 .0.074 6.1 1.2 5.8 1.3 A+ A-	1550	604413	Ge	Ge		.438	.167	.438	.103		.060		105	.346	267	.001	1.207	0.097	1.0	1.0	0.4	1.0	A+	A-
1553 604714 Ge Ge 1064 .255 .102 .255 .314 .251 .078 .280 132 .280 .009 .076 .2.168 0.077 1.9 1.1 2.7 1.2 A- A- 1554 604364 Ge Ge .532 .256 .196 .395 .256 .139 .015 .289 .027 186 .289 .108 .2.281 .0.107 1.4 .1.1 .1.1 .1.1 .1.1 A+ .1.1	1551	604454	Ge	Ge	1064	.428	.039	.428	.360	.134	.040	.375	104	.375	203	124	1.309	0.068	-0.5	1.0	0.7	1.0	A-	A+
1554 604364 Ge Ge 532 .256 .196 .395 .256 .139 .015 .289 .027 .186 .289 .108 .2281 0.107 1.4 1.1 1.1 1.1 1.1 1.1 1.1 1.555 604743 Ge Ge 532 .692 .692 .194 .056 .049 .009 .371 .371 .240 .104 .163 0.115 0.100 .1.0 1.0 0.0 1.0 0.0 1.0 A+ 1.556 .566 .044 .049 .056 .046 .012 .463 .063 .235 .463 .260 0.723 0.067 -4.9 0.9 -4.4 0.9 A- 1.557 604728 Ge Ge 1065 .804 .059 .056 .804 .044 .037 .430 .199 .196 .430 .169 -0.757 0.087 -2.1 0.9 -3.4 0.7 B+ B- 1.558 605898 Ge Ge 1064 .531 .090 .200 .138 .531 .040 .408 .139 .138 .156 .408 0.318 0.067 .18 1.0 1.8 1.0 A+ 1.559 604698 Ge Ge .532 .442 .256 .239 .442 .058 .006 .372 .195 .136 .372 .128 1.329 0.094 0.1 1.0 0.1 1.0 A- 1.0 .408 .1569 .064741 Ge Ge .532 .269 .269 .241 .325 .141 .024 .423 .423 .017 .187 .188 .194 0.106 .1.4 0.9 -1.3 0.9 A- 1.560 .064745 Ge Ge .532 .363 .363 .387 .188 .045 .015 .427 .183 .202 .427 .182 0.660 0.095 .2.7 0.9 -2.1 0.9 A- 1.564 .064385 Ge Ge .532 .363 .363 .363 .387 .188 .045 .015 .316 .316 .316 .316 .202 .427 .182 0.660 0.095 .2.7 0.9 .2.1 0.9 A- 1.564 .564 .572 .466 .572 .346 .056 .030 .468 .194 .468 .192 .172 0.520 0.068 .38 0.9 .3.6 0.9 A- 1.566 .572 .346 .325 .346 .326 .3354 .3	1552	604731	Ge	Ge	1064	.290	.466	.290	.137	.050	.056	.144	.107	.144	145	125	2.006	0.074	6.1	1.2	5.8	1.3	A+	A-
1555 604743 Ge Ge 532 692 692 1.94 0.56 0.49 0.09 0.09 0.371 0.371 0.240 0.104 0.163 0.115 0.100 0.10 0.0 1.0 0.0	1553	604714	Ge	Ge	1064	.255	.102	.255	.314	.251	.078	.280	132	.280	.009	076	2.168	0.077	1.9	1.1	2.7	1.2	A-	A+
1556 604455 Ge Ge 1065 .566 .049 .207 .566 .166 .012 .463 .063 .235 .463 .260 0.723 0.067 .4.9 0.9 .4.4 0.9 A- 1557 604728 Ge Ge 1065 .804 .059 .056 .804 .044 .037 .430 .199 .196 .430 .169 .0.757 0.087 .2.1 0.9 .3.4 0.7 B+ B- 1558 605898 Ge Ge 1064 .531 .090 .200 .138 .531 .040 .408 .139 .138 .156 .408 0.818 0.067 .1.8 1.0 .1.8 1.0 .1.8 1.0 A+ 1559 604698 Ge Ge 532 .442 .256 .239 .442 .058 .006 .372 .195 .136 .372 .128 1.329 0.094 0.1 1.0 0.1 1.0 0.1 1.0 A- 1.560 604741 Ge Ge Ge 532 .269 .269 .241 .325 .141 .024 .423 .423 .017 .187 .188 .2.194 0.106 .1.4 0.9 .1.3 0.9 A- 1.561 604745 Ge Ge Ge 532 .579 .064 .203 .579 .139 .015 .427 .146 .107 .205 .436 1.320 0.068 .2.0 1.0 .1.9 0.9 A- 1.563 604381 Ge Ge Ge 532 .363 .363 .383 .383 .388 .048 .045 .017 .316 .316 .016 .202 .191 .1.695 0.098 .0.7 1.0 0.9 1.1 A+ 1.566 604385 Ge Ge Ge 1065 .409 .312 .409 .161 .081 .038 .354 .128 .119 .354 .205 .056 .0068 .1.46 .0.067 .0.14 .1.0 .0.14 .1.1 A- 1.566 604365 Ge Ge Ge 1065 .572 .034 .126 .572 .246 .023 .354 .128 .119 .354 .205 .0.664 .0.067 .1.10 .0.2 1.0 A+ A- 1.566 604305 Ge Ge 1065 .527 .527 .243 .138 .048 .044 .436 .436 .436 .184 .186 .0.95 .0.95 0.066 .0.067 .2.1 1.0 .2.5 0.9 A+ A- 1.566 604702 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441 .191 .245 .441 .148 0.720 0.067 .4.5 0.9 .3.9 0.9 A- A- 1.569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441 .191 .245 .441 .148 0.720 0.067 .4.5 0.9 .3.9 0.9 A- A- 1.569 .556 .067 .140 .556	1554	604364	Ge	Ge	532	.256	.196	.395	.256	.139	.015	.289	.027	186	.289	108	2.281	0.107	1.4	1.1	1.1	1.1	A+	
1557 604728 Ge Ge 1065 .804 .059 .056 .804 .044 .037 .430 199 196 .430 169 0.757 0.087 -2.1 0.9 -3.4 0.7 B+ B- 1558 605898 Ge Ge 1064 .531 .090 .200 .138 .531 .040 .408 139 138 156 .408 0.818 0.067 -1.8 1.0 -1.8 1.0 A+ 1559 604698 Ge Ge 532 .442 .256 .239 .442 .058 .006 .372 195 136 .372 128 1.329 0.094 0.1 1.0 0.1 1.0 0.1 1.0 A- 1560 604741 Ge Ge 532 .269 .269 .241 .325 .141 .024 .423 .423 197 187 188 .2194 0.106 -1.4 0.9 -1.3 0.9 A- 1561 604745 Ge Ge 1065 .425 .061 .105 .368 .425 .040 .436 146 107 205 .436 1.320 0.068 .2.0 1.0 -1.9 0.9 A- A- 1562 604436 Ge Ge 532 .363 .363 .363 .387 .188 .045 .017 .316 .316 .316 016 202 111 1.695 0.098 0.7 1.0 0.9 1.1 A+ 1564 604385 Ge Ge 1064 .599 .190 .599 .126 .056 .030 .468 .194 .468 192 172 0.520 0.068 -3.8 0.9 -3.6 0.9 A- 1.566 604369 Ge Ge 1065 .572 .034 .126 .572 .246 .023 .354 103 .354 103 .354 105 .056 .0664 0.068 1.4 1.0 1.4 1.1 A- A- 1.566 604369 Ge Ge 1065 .259 .200 .301 .259 .196 .044 .169 .027 .031 .169 .069 2.192 0.076 4.7 1.2 4.9 1.3 A- A- 1.568 604702 Ge Ge 1065 .527 .527 .243 .138 .048 .044 .436 .436 .436 .436 .184 .186 .095 0.820 0.067 -2.1 1.0 -2.5 0.9 A+ A- 1.569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441 .191 .245 .441 .148 0.720 0.067 -4.5 0.9 .3.9 0.9 A+ A- 1.569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441 .191 .245 .441 .148 0.720 0.067 -4.5 0.9 .3.9 0.9 A+ A- 1.569 605886 Ge Ge 1065 .556 .067 .140	1555	604743	Ge	Ge	532		.692	.194	.056	.049	.009	.371	.371	240	104	163	0.115	0.100	-1.0	1.0	0.0	1.0	A+	
1558 605898 Ge Ge 1064 .531 .090 .200 .138 .531 .040 .408 139 136 .408 0.818 0.067 -1.8 1.0 0.1 0.0 1.0 0.0 372 -1.95 -1.36 .372 -1.18 1.329 0.094 0.1 1.0 0.1 0.0 4 1561 604745 Ge Ge Ge 1.05	1556	604455	Ge	Ge	1065	.566	.049	.207	.566	.166	.012	.463	063	235	.463	260	0.723	0.067	-4.9	0.9	-4.4	0.9	A-	B-
1559 604698 Ge Ge 532 .442 .256 .239 .442 .058 .006 .372 136 .372 128 1.329 0.094 0.1 1.0 0.1 1.0 A- 1560 604741 Ge Ge 532 .269 .241 .325 .141 .024 .423 .423 017 187 188 2.194 0.106 -1.4 0.9 -1.3 0.9 A- 1561 604745 Ge Ge Ge 1065 .425 .061 .105 .368 .425 .040 .436 146 107 205 .436 1.320 0.068 -2.0 1.0 -1.9 0.9 A- 1562 604436 Ge Ge 532 .579 .064 .203 .579 .139 .015 .427 183 202 .427 182 0.660 0.095 -2.1 0.9 A+	1557	604728	Ge	Ge	1065	.804	.059	.056	.804	.044	.037	.430	199	196	.430	169	-0.757	0.087	-2.1	0.9	-3.4	0.7	B+	B-
1560 604741 Ge Ge 532 .269 .241 .325 .141 .024 .423 .423 017 187 188 2.194 0.106 -1.4 0.9 -1.3 0.9 A- 1561 604745 Ge Ge Ge 1065 .425 .061 .105 .368 .425 .040 .436 146 107 205 .436 1.320 0.068 -2.0 1.0 -1.9 0.9 A- 1562 604436 Ge Ge Ge 532 .579 .064 .203 .579 .139 .015 .427 183 .202 .427 182 0.660 0.095 -2.7 0.9 -2.1 0.9 A- 1563 604381 Ge Ge 532 .363 .387 .188 .045 .017 .316 .316 016 202 191 1.695 0.098 0.7 1.0 0.9 <	1558	605898	Ge	Ge	1064	.531	.090	.200	.138	.531	.040	.408	139	138	156	.408	0.818	0.067	-1.8	1.0	-1.8	1.0	A+	
1561 604745 Ge Ge 1065 .425 .061 .105 .368 .425 .040 .436 146 107 205 .436 1.320 0.068 -2.0 1.0 -1.9 0.9 A- A- 1562 604436 Ge Ge 532 .579 .064 .203 .579 .139 .015 .427 183 202 .427 182 0.660 0.095 -2.7 0.9 -2.1 0.9 A+ 1563 604381 Ge Ge 532 .363 .363 .387 .188 .045 .017 .316 .316 016 202 191 1.695 0.098 0.7 1.0 0.9 1.1 A+ 1564 604385 Ge Ge Ge 1065 .599 .190 .599 .126 .056 .030 .468 194 .468 192 172 0.520 0.068 -3.8	1559	604698	Ge	Ge	532	.442	.256	.239	.442	.058	.006	.372	195	136	.372	128	1.329	0.094	0.1	1.0	0.1	1.0	A-	
1562 604436 Ge Ge 532 .579 .064 .203 .579 .139 .015 .427 183 202 .427 182 0.660 0.095 -2.7 0.9 -2.1 0.9 A+ 1563 604381 Ge Ge Ge 532 .363 .363 .387 .188 .045 .017 .316 .316 016 202 191 1.695 0.098 0.7 1.0 0.9 1.1 A+ 1564 604385 Ge Ge 1064 .599 .190 .599 .126 .056 .030 .468 194 .468 192 172 0.520 0.068 -3.8 0.9 -3.6 0.9 A- 1565 604431 Ge Ge 1065 .409 .312 .409 .161 .081 .038 .354 103 .354 169 053 1.406 0.068 1.4 1.0	1560	604741	Ge	Ge	532	.269	.269	.241	.325	.141	.024	.423	.423	017	187	188	2.194	0.106	-1.4	0.9	-1.3	0.9	A-	
1563 604381 Ge Ge 532 .363 .363 .387 .188 .045 .017 .316 .316 016 202 191 1.695 0.098 0.7 1.0 0.9 1.1 A+ 1564 604385 Ge Ge 1064 .599 .190 .599 .126 .056 .030 .468 194 .468 192 172 0.520 0.068 -3.8 0.9 -3.6 0.9 A- 1565 604431 Ge Ge 1065 .409 .312 .409 .161 .081 .038 .354 103 .354 169 053 1.406 0.068 1.4 1.0 1.4 1.1 A- 1566 604369 Ge Ge Ge .572 .034 .126 .572 .246 .023 .354 128 119 .354 205 0.664 0.067 0.1 1.0 0.2	1561	604745	Ge	Ge	1065	.425	.061	.105	.368	.425	.040	.436	146	107	205	.436	1.320	0.068	-2.0	1.0	-1.9	0.9	A-	A-
1564 604385 Ge Ge 1064 .599 .190 .599 .126 .056 .030 .468 194 .468 192 172 0.520 0.068 -3.8 0.9 -3.6 0.9 A- 1565 604431 Ge Ge 1065 .409 .312 .409 .161 .081 .038 .354 103 .354 169 053 1.406 0.068 1.4 1.0 1.4 1.1 A- A+ 1566 604369 Ge Ge Ge 1065 .572 .034 .126 .572 .246 .023 .354 128 119 .354 205 0.664 0.067 0.1 1.0 0.2 1.0 A+ 1567 605899 Ge Ge 1065 .259 .200 .301 .259 .196 .044 .169 .027 031 .169 069 2.192 0.076 4.7	1562	604436	Ge	Ge	532	.579	.064	.203	.579	.139	.015	.427	183	202	.427	182	0.660	0.095	-2.7	0.9	-2.1	0.9	A+	
1565 604431 Ge Ge 1065 .409 .312 .409 .161 .081 .038 .354 103 .354 169 053 1.406 0.068 1.4 1.0 1.4 1.1 A- A+ 1566 604369 Ge Ge 1065 .572 .034 .126 .572 .246 .023 .354 128 119 .354 205 0.664 0.067 0.1 1.0 0.2 1.0 A+ 1567 605899 Ge Ge 1065 .259 .200 .301 .259 .196 .044 .169 .027 031 .169 069 2.192 0.076 4.7 1.2 4.9 1.3 A- 1568 604702 Ge Ge 1065 .527 .243 .138 .048 .044 .436 .436 184 186 095 0.820 0.067 -2.1 1.0 -2.5	1563	604381	Ge	Ge	532	.363	.363	.387	.188	.045	.017	.316	.316	016	202	191	1.695	0.098	0.7	1.0	0.9	1.1	A+	
1566 604369 Ge Ge 1065 .572 .034 .126 .572 .246 .023 .354 119 .354 205 0.664 0.067 0.1 1.0 0.2 1.0 A+ A- 1567 605899 Ge Ge 1065 .259 .200 .301 .259 .196 .044 .169 .027 031 .169 069 2.192 0.076 4.7 1.2 4.9 1.3 A- A+ 1568 604702 Ge Ge 1065 .527 .243 .138 .048 .044 .436 184 186 095 0.820 0.067 -2.1 1.0 -2.5 0.9 A+ A- 1569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441 191 245 .441 148 0.720 0.067 -4.5 0.9 -3.9 <td< td=""><td>1564</td><td>604385</td><td>Ge</td><td>Ge</td><td>1064</td><td>.599</td><td>.190</td><td>.599</td><td>.126</td><td>.056</td><td>.030</td><td>.468</td><td>194</td><td>.468</td><td>192</td><td>172</td><td>0.520</td><td>0.068</td><td>-3.8</td><td>0.9</td><td>-3.6</td><td>0.9</td><td>A-</td><td></td></td<>	1564	604385	Ge	Ge	1064	.599	.190	.599	.126	.056	.030	.468	194	.468	192	172	0.520	0.068	-3.8	0.9	-3.6	0.9	A-	
1567 605899 Ge Ge 1065 .259 .200 .301 .259 .196 .044 .169 .027 031 .169 069 2.192 0.076 4.7 1.2 4.9 1.3 A- A+ 1568 604702 Ge Ge 1065 .527 .527 .243 .138 .048 .044 .436 .436 184 186 095 0.820 0.067 -2.1 1.0 -2.5 0.9 A+ A- 1569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441 191 245 .441 148 0.720 0.067 -4.5 0.9 -3.9 0.9 A+	1565	604431	Ge	Ge	1065	.409	.312	.409	.161	.081	.038	.354	103	.354	169	053	1.406	0.068	1.4	1.0	1.4	1.1	A-	A+
1568 604702 Ge Ge 1065 .527 .527 .243 .138 .048 .044 .436 .436184186095 0.820 0.067 -2.1 1.0 -2.5 0.9 A+ A- 1569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441191245 .441148 0.720 0.067 -4.5 0.9 -3.9 0.9 A+ A-	1566	604369	Ge	Ge	1065	.572	.034	.126	.572	.246	.023	.354	128	119	.354	205	0.664	0.067	0.1	1.0	0.2	1.0	A+	A-
1569 605886 Ge Ge 1065 .556 .067 .140 .556 .208 .030 .441191245 .441148 0.720 0.067 -4.5 0.9 -3.9 0.9 A+ A-	1567	605899	Ge	Ge	1065	.259	.200	.301	.259	.196	.044	.169	.027	031	.169	069	2.192	0.076	4.7	1.2	4.9	1.3	A-	A+
	1568	604702	Ge	Ge	1065	.527	.527	.243	.138	.048	.044	.436	.436	184	186	095	0.820	0.067	-2.1	1.0	-2.5	0.9	A+	A-
	1569	605886	Ge	Ge	1065	.556	.067	.140	.556	.208	.030	.441	191	245	.441	148	0.720	0.067	-4.5	0.9	-3.9	0.9	A+	A-
ן אר עון ביין מיין מיין מיין אריין מיין אריין מיין מיין ביין ביין מיין מיין מיין מ	1570	604469	Ge	Ge	532	.145	.145	.199	.421	.158	.077	.375	.375	.061	098	127	2.995	0.132	-1.0	0.9	0.0	1.0	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
1571	604419	Ge	Ge	1065	.255	.278	.268	.151	.255	.049	.145	.021	074	.022	.145	2.218	0.076	5.0	1.2	6.1	1.4	A+	A+
1572	605885	Ge	Ge	532	.487	.197	.487	.100	.122	.094	.398	043	.398	195	184	0.874	0.098	-0.3	1.0	-0.9	1.0	A-	
1573	604394	Ge	Ge	1065	.318	.177	.214	.238	.318	.054	.421	186	135	090	.421	1.834	0.072	-2.1	0.9	-2.0	0.9	A+	A+
1574	604457	Ge	Ge	1065	.549	.147	.187	.549	.106	.010	.382	069	255	.382	190	0.833	0.066	-1.8	1.0	-1.7	0.9	A-	A+
1575	604377	Ge	Ge	1065	.290	.167	.290	.390	.133	.020	.219	001	.219	160	043	2.040	0.072	2.5	1.1	2.7	1.1	A-	A+
1576	604747	Ge	Ge	533	.328	.328	.257	.263	.135	.017	.376	.376	073	152	202	1.856	0.100	-1.3	0.9	-1.2	0.9	A-	A-
1577	604456	Ge	Ge	533	.557	.353	.557	.030	.056	.004	.422	310	.422	148	137	0.786	0.094	-2.3	0.9	-1.2	1.0	A+	A+
1578	604734	Ge	Ge	1065	.501	.501	.214	.077	.204	.005	.164	.164	091	103	026	1.077	0.066	8.3	1.2	7.0	1.2	A-	B+
1579	604420	Ge	Ge	1065	.439	.439	.325	.093	.132	.011	.273	.273	125	108	093	1.350	0.067	4.0	1.1	3.7	1.1	A-	A-
1580	604387	Ge	Ge	1065	.473	.473	.226	.212	.076	.012	.467	.467	201	241	148	1.186	0.066	-4.6	0.9	-4.1	0.9	A+	A-
1581	604403	Ge	Ge	1065	.403	.101	.329	.403	.130	.038	.412	086	208	.412	138	1.463	0.068	-1.4	1.0	-1.6	1.0	A-	A-
1582	605900	Ge	Ge	533	.351	.167	.268	.351	.191	.023	.229	105	074	.229	022	1.726	0.098	3.6	1.2	4.0	1.2	A-	B-
1583	604406	Ge	Ge	533	.460	.460	.068	.295	.161	.017	.316	.316	153	098	125	1.207	0.094	1.0	1.0	1.2	1.1	A-	A+
1584	604462	Ge	Ge	533	.533	.141	.148	.533	.150	.028	.460	077	264	.460	189	0.828	0.095	-2.3	0.9	-2.4	0.9	A-	C-
1585	604756	Ge	Ge	533	.619	.060	.101	.619	.191	.028	.431	074	174	.431	233	0.408	0.097	-1.5	1.0	-1.8	0.9	B-	A+
1586	604749	Ge	Ge	1065	.488	.027	.410	.056	.488	.018	.504	076	357	154	.504	1.104	0.067	-6.8	0.9	-5.7	8.0	A+	A-
1587	604370	Ge	Ge	533	.433	.103	.433	.240	.178	.045	.421	158	.421	143	093	1.265	0.096	-0.8	1.0	-0.5	1.0	A+	A-
1588	604365	Ge	Ge	1065	.320	.169	.111	.335	.320	.065	.362	055	105	070	.362	1.796	0.071	0.5	1.0	0.8	1.0	A+	A-
1589	604754	Ge	Ge	1065	.208	.208	.238	.327	.181	.047	.309	.309	022	100	076	2.564	0.081	0.8	1.0	1.1	1.1	A-	A-
1590	604421	Ge	Ge	1065	.681	.072	.057	.681	.155	.035	.418	135	198	.418	195	0.084	0.072	-2.3	0.9	-1.8	0.9	A+	A-
1591	604356	Ge	Ge	1065	.482	.482	.212	.178	.056	.071	.449	.449	141	159	159	0.986	0.068	-2.1	1.0	-2.0	0.9	A+	A+
1592	604546	Ge	Ge	533	.342	.197	.268	.342	.109	.084	.316	115	034	.316	045	1.639	0.101	2.2	1.1	2.1	1.1	A-	A+
1593	605901	Ge	Ge	1065	.405	.047	.405	.397	.100	.052	.381	122	.381	171	072	1.424	0.069	0.4	1.0	0.3	1.0	A-	A+
1594	604590	Ge	Ge	1065	.506	.125	.506	.212	.077	.080	.339	131	.339	081	098	0.833	0.069	3.1	1.1	1.4	1.1	A-	A-
1595	604482	Ge	Ge	1062	.420	.051	.143	.308	.420	.024	.293	075	183	140	.293	1.248	0.069	1.1	1.0	0.8	1.0	A-	A-
1596	604380	Ge	Ge	1062	.702	.073	.702	.172	.051	.002	.385	140	.385	291	108	0.063	0.071	-2.7	0.9	-1.9	0.9	A+	A+
1597	604366	Ge	Ge	1062	.299	.299	.282	.261	.118	.041	.307	.307	129	114	.013	1.980	0.073	1.9	1.1	2.2	1.1	A+	A+
1598	604410	Ge	Ge	1062	.545	.107	.545	.271	.063	.013	.143	012	.143	060	154	0.804	0.067	8.0	1.2	7.6	1.3	A+	A-
1599	604432	Ge	Ge	532	.404	.355	.177	.404	.047	.017	.396	216	179	.396	033	1.535	0.096	-1.2	1.0	-0.2	1.0	A-	
1600	606220	Ge	Ge	532	.453	.098	.333	.453	.092	.024	.226	091	091	.226	070	1.283	0.095	4.0	1.1	4.0	1.2	A-	
1601	604750	Ge	Ge	1062	.706	.026	.706	.170	.084	.014	.432	113	.432	269	192	-0.005	0.073	-3.2	0.9	-3.9	0.8	A+	A-
1602	604661	Ge	Ge	1064	.550	.043	.139	.550	.246	.022	.367	109	182	.367	173	0.800	0.067	-1.0	1.0	-1.1	1.0	A-	
1603	604422	Ge	Ge	532	.305	.526	.085	.068	.305	.017	.421	163	157	148	.421	2.059	0.102	-0.9	1.0	-1.0	0.9	A+	
1604	604429	Ge	Ge	1062	.606	.606	.151	.095	.120	.029	.517	.517	196	256	180	0.479	0.069	-5.7	0.9	-4.8	0.8	A+	A-
1605	604759	Ge	Ge	532	.624	.624	.092	.154	.098	.032	.468	.468	208	247	094	0.435	0.098	-2.7	0.9	-1.7	0.9	A+	
_505				332			.552		.550	.552	00		00			5.155	0.000	,	3.5		0.5		

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade										. ,					in	in	out	out	/F	/B
1606	604401	Ge	Ge	532	.374	.141	.337	.374	.096	.053	.361	110	107	.361	098	1.617	0.098	0.7	1.0	1.6	1.1	A+	
1607	604475	Ge	Ge	1062	.489	.148	.275	.489	.057	.031	.383	151	158	.383	097	1.037	0.067	0.6	1.0	1.4	1.1	A-	B-
1608	604591	Ge	Ge	1062	.187	.187	.191	.412	.174	.036	.380	.380	054	180	039	2.702	0.085	-1.0	1.0	-0.1	1.0	A-	A-
1609	604673	Ge	Ge	1062	.557	.199	.099	.557	.103	.042	.427	105	166	.427	230	0.665	0.068	-2.0	1.0	-1.7	0.9	A-	A-
1610	604433	Ge	Ge	1062	.501	.104	.501	.243	.114	.039	.459	157	.459	215	158	0.949	0.068	-3.2	0.9	-2.6	0.9	A+	A+
1611	604407	Ge	Ge	532	.214	.214	.425	.258	.047	.056	.112	.112	.180	125	102	2.531	0.114	3.7	1.3	4.3	1.4	A+	
1612	605902	Ge	Ge	532	.696	.062	.073	.696	.107	.062	.497	138	177	.497	283	-0.094	0.108	-2.8	0.9	-2.8	0.8	A+	
1613	604447	Ge	Ge	532	.382	.382	.214	.188	.139	.077	.422	.422	062	124	182	1.511	0.099	-0.4	1.0	-0.7	1.0	A+	
1614	606221	Ge	Ge	1062	.332	.246	.332	.195	.184	.044	.238	.006	.238	032	162	1.791	0.071	4.6	1.2	4.7	1.2	B-	A-
1615	604470	Ge	Ge	1064	.333	.333	.174	.285	.162	.047	.378	.378	151	143	035	1.789	0.070	-0.4	1.0	-0.8	1.0	A+	
1616	605041	Ge	Ge	532	.293	.293	.265	.271	.090	.081	.441	.441	162	095	093	1.988	0.105	-1.2	1.0	-1.3	0.9	B+	
1617	604670	Ge	Ge	1062	.138	.121	.196	.497	.138	.049	.028	.032	101	.102	.028	3.122	0.095	4.3	1.3	6.6	1.8	A+	A-
1618	604461	Ge	Ge	530	.381	.162	.406	.381	.047	.004	.124	094	005	.124	077	1.563	0.097	6.7	1.3	6.0	1.4	A-	A+
1619	604373	Ge	Ge	530	.300	.070	.266	.351	.300	.013	.381	161	247	050	.381	1.965	0.103	-1.0	1.0	-0.9	0.9	A+	B-
1620	605043	Ge	Ge	1065	.242	.206	.272	.270	.242	.009	.296	046	077	133	.296	2.363	0.077	1.8	1.1	1.1	1.1	B-	A+
1621	604676	Ge	Ge	530	.291	.243	.336	.291	.106	.025	.204	100	034	.204	058	1.996	0.104	2.9	1.2	4.1	1.3	A-	A-
1622	604633	Ge	Ge	1065	.250	.094	.308	.307	.250	.041	.412	093	151	115	.412	2.254	0.077	-1.7	0.9	-0.7	1.0	A+	A+
1623	606223	Ge	Ge	1062	.477	.127	.165	.477	.215	.016	.471	151	164	.471	230	1.095	0.066	-5.2	0.9	-5.1	0.9	A-	A-
1624	604674	Ge	Ge	530	.383	.383	.115	.266	.221	.015	.440	.440	098	196	171	1.533	0.098	-1.5	0.9	-1.4	0.9	A+	B-
1625	604449	Ge	Ge	1065	.575	.575	.052	.254	.110	.010	.460	.460	151	314	120	0.664	0.067	-4.1	0.9	-3.6	0.9	A+	A+
1626	606222	Ge	Ge	1065	.637	.056	.637	.146	.141	.021	.406	086	.406	190	223	0.322	0.069	-1.8	1.0	-1.9	0.9	A-	A+
1627	604477	Ge	Ge	1065	.677	.025	.075	.677	.201	.022	.481	140	232	.481	259	0.102	0.071	-3.9	0.9	-2.9	0.9	A-	A-
1628	606224	Ge	Ge	1065	.701	.033	.149	.701	.098	.019	.446	098	273	.446	184	-0.020	0.073	-2.7	0.9	-2.7	0.9	A-	A-
1629	604444	Ge	Ge	1065	.458	.102	.162	.232	.458	.046	.454	110	101	239	.454	1.128	0.068	-2.4	0.9	-1.8	0.9	A-	A-
1630	604459	Ge	Ge	1065	.482	.110	.482	.255	.121	.033	.481	147	.481	250	122	1.044	0.067	-3.5	0.9	-3.4	0.9	A+	A-
1631	604677	Ge	Ge	1065	.305	.305	.290	.218	.139	.048	.381	.381	119	113	073	1.907	0.073	0.2	1.0	-0.1	1.0	A+	A+
1632	605042	Ge	Ge	1062	.458	.102	.210	.458	.170	.061	.279	031	094	.279	041	1.081	0.068	4.9	1.1	4.5	1.1	A-	A+
1633	604411	Ge	Ge	1065	.362	.168	.198	.362	.237	.036	.266	067	157	.266	.007	1.631	0.070	4.4	1.1	4.7	1.2	A-	A+
1634	604398	Ge	Ge	1065	.514	.107	.514	.192	.144	.044	.487	094	.487	205	233	0.855	0.068	-4.1	0.9	-4.0	0.9	A+	A+
1635	604434	Ge	Ge	530	.262	.204	.270	.194	.262	.070	.452	135	097	095	.452	2.082	0.109	-1.4	0.9	-1.1	0.9	A+	A+
1636	604476	Ge	Ge	530	.294	.164	.251	.211	.294	.079	.505	154	130	128	.505	1.865	0.105	-2.9	0.9	-2.6	0.8	B-	A-
1637	604579	Ge	Ge	530	.557	.076	.557	.202	.083	.083	.420	085	.420	192	160	0.471	0.099	-1.1	1.0	-0.8	1.0	A+	A+
1638	604592	Ge	Ge	530	.277	.277	.343	.181	.108	.091	.216	.216	.043	106	054	1.935	0.107	3.5	1.2	3.4	1.3	A-	A+
1639	604593	Ge	Ge	1065	.614	.108	.614	.146	.068	.065	.407	126	.407	181	176	0.270	0.071	-1.5	1.0	-1.0	1.0	A+	A-
1640	604445	Ge	Ge	535	.566	.170	.566	.165	.088	.011	.323	216	.323	230	.025	0.739	0.094	0.1	1.0	1.5	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade	_									. ,					in	in	out	out	/F	/B
1641	604362	Ge	Ge	535	.267	.224	.344	.155	.267	.009	.203	.025	251	.056	.203	2.238	0.105	1.9	1.1	2.6	1.2	A-	A+
1642	605044	Ge	Ge	535	.191	.191	.581	.194	.030	.004	.294	.294	.096	326	171	2.748	0.117	0.5	1.0	0.1	1.0	A+	A-
1643	604683	Ge	Ge	535	.411	.127	.183	.273	.411	.006	.407	154	057	282	.407	1.489	0.095	-1.6	0.9	-1.3	0.9	A+	B-
1644	604580	Ge	Ge	1070	.612	.148	.612	.127	.102	.011	.332	186	.332	173	073	0.567	0.067	0.2	1.0	0.9	1.0	A+	A-
1645	604415	Ge	Ge	1070	.426	.207	.426	.159	.198	.010	.265	090	.265	129	090	1.438	0.066	3.6	1.1	3.5	1.1	A-	A+
1646	604383	Ge	Ge	535	.862	.019	.026	.862	.088	.006	.305	107	172	.305	191	-1.031	0.132	-0.3	1.0	0.2	1.0	A+	B-
1647	604414	Ge	Ge	535	.639	.639	.043	.194	.118	.006	.546	.546	214	339	225	0.402	0.097	-5.4	0.8	-5.0	0.7	A-	A-
1648	604596	Ge	Ge	1070	.877	.019	.877	.058	.040	.007	.324	167	.324	154	195	-1.125	0.098	-0.9	0.9	-1.2	0.9	B+	A-
1649	604721	Ge	Ge	535	.497	.213	.497	.230	.037	.022	.342	138	.342	180	072	1.037	0.094	1.1	1.0	0.7	1.0	A+	B-
1650	604430	Ge	Ge	535	.421	.060	.322	.187	.421	.011	.403	073	188	186	.403	1.428	0.095	-0.6	1.0	-0.4	1.0	A-	A+
1651	604441	Ge	Ge	1070	.336	.161	.272	.214	.336	.018	.401	168	034	223	.401	1.865	0.069	-1.7	1.0	-0.9	1.0	A-	B-
1652	604682	Ge	Ge	1070	.209	.209	.269	.333	.149	.040	.183	.183	033	055	010	2.567	0.080	2.3	1.1	3.8	1.3	A-	A-
1653	604472	Ge	Ge	535	.254	.254	.234	.335	.151	.026	.205	.205	034	127	.062	2.288	0.107	2.7	1.2	3.3	1.3	A-	A+
1654	604696	Ge	Ge	535	.594	.594	.150	.187	.039	.030	.270	.270	111	103	081	0.542	0.097	3.3	1.1	2.9	1.2	A-	A-
1655	604458	Ge	Ge	535	.230	.379	.122	.234	.230	.036	.378	016	077	198	.378	2.422	0.110	-0.4	1.0	0.2	1.0	A+	A+
1656	604639	Ge	Ge	1070	.244	.127	.244	.220	.358	.051	.214	025	.214	048	035	2.324	0.076	2.7	1.1	3.9	1.2	A-	A-
1657	604478	Ge	Ge	1070	.694	.064	.694	.153	.064	.025	.446	229	.446	212	170	0.089	0.072	-2.8	0.9	-3.1	0.9	A+	A-
1658	604699	Ge	Ge	1070	.286	.286	.193	.353	.131	.037	.445	.445	153	106	152	2.100	0.073	-2.8	0.9	-2.3	0.9	A-	A-
1659	604384	Ge	Ge	1070	.394	.165	.394	.316	.098	.027	.338	.002	.338	178	180	1.556	0.067	0.7	1.0	0.9	1.0	A-	A-
1660	604468	Ge	Ge	1070	.551	.066	.146	.551	.201	.036	.460	157	207	.460	212	0.783	0.067	-4.0	0.9	-4.0	0.9	B+	A-
1661	604372	Ge	Ge	1070	.343	.326	.208	.343	.090	.033	.276	052	152	.276	055	1.800	0.069	2.3	1.1	2.9	1.1	A+	A+
1662	604368	Ge	Ge	1067	.274	.160	.274	.393	.136	.038	.113	015	.113	020	016	2.134	0.073	5.0	1.2	4.7	1.2	A-	A-
1663	604761	Ge	Ge	535	.445	.355	.142	.445	.056	.002	.419	119	311	.419	188	1.401	0.092	-2.0	0.9	-2.1	0.9	A-	A+
1664	604737	Ge	Ge	535	.536	.054	.082	.325	.536	.002	.490	219	190	303	.490	0.984	0.092	-5.3	0.9	-5.0	0.8	A+	A-
1665	604640	Ge	Ge	535	.251	.608	.251	.069	.065	.008	.204	102	.204	087	056	2.371	0.105	1.5	1.1	2.1	1.2	A-	A+
1666	604717	Ge	Ge	1067	.642	.100	.642	.207	.023	.028	.468	183	.468	247	149	0.360	0.069	-3.9	0.9	-3.8	0.9	A+	A-
1667	604733	Ge	Ge	1067	.473	.099	.307	.473	.095	.026	.258	092	104	.258	137	1.156	0.066	2.7	1.1	3.7	1.1	A-	A-
1668	604599	Ge	Ge	535	.843	.032	.086	.843	.039	.000	.337	169	202	.337	187	-0.704	0.123	-0.8	0.9	-1.7	0.8	B+	B-
1669	604719	Ge	Ge	535	.544	.054	.150	.544	.230	.022	.318	136	159	.318	103	0.902	0.093	1.1	1.0	0.9	1.0	A-	A+
1670	604374	Ge	Ge	1067	.310	.370	.147	.310	.157	.016	.249	104	182	.249	.069	1.977	0.070	2.2	1.1	2.2	1.1	A-	A+
1671	605046	Ge	Ge	1067	.509	.200	.105	.177	.509	.009	.462	240	160	189	.462	1.045	0.065	-6.2	0.9	-5.5	0.9	A+	A-
1672	604463	Ge	Ge	535	.626	.051	.107	.626	.196	.021	.293	153	032	.293	168	0.517	0.096	1.1	1.0	1.4	1.1	B+	A+
1673	604736	Ge	Ge	535	.365	.105	.351	.365	.153	.026	.417	127	172	.417	111	1.742	0.096	-2.2	0.9	-1.2	1.0	A-	A+
1674	604701	Ge	Ge	535	.161	.198	.286	.312	.161	.043	.172	014	.008	025	.172	2.941	0.123	0.9	1.1	1.8	1.2	A-	A-
1675	604355	Ge	Ge	535	.587	.587	.135	.204	.049	.026	.308	.308	157	076	142	0.695	0.095	1.2	1.0	1.6	1.1	A+	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1070	604446	Grade	Grade	100=	500						2-4		` '	, ,		0 - 10		in	in	out	out	/F	/B
1676	604416	Ge	Ge	1067	.609	.241	.609	.091	.037	.023	.354	148	.354	201	133	0.542	0.067	-0.6	1.0	-1.3	1.0	B-	Α-
1677	604738	Ge	Ge	1067	.352	.075	.330	.187	.352	.056	.276	119	.025	112	.276	1.692	0.069	2.6	1.1	2.6	1.1	A+	Α-
1678	605045	Ge	Ge	535	.256	.256	.258	.280	.155	.051	.290	.290	002	130	056	2.267	0.105	0.3	1.0	1.2	1.1	A+	A+
1679	604668	Ge	Ge	535	.402	.232	.200	.120	.402	.047	.426	058	225	141	.426	1.509	0.095	-2.0	0.9	-1.7	0.9	A-	A-
1680	604662	Ge	Ge	1067	.350	.157	.350	.126	.191	.057	.318	127	.318	141	060	1.420	0.072	-1.3	1.0	-1.0	1.0	A+	A+
1681	604679	Ge	Ge	1067	.147	.518	.183	.120	.147	.032	.037	.069	.006	076	.037	3.013	0.090	2.7	1.2	4.5	1.4	A+	A-
1682	604473	Ge	Ge	1067	.320	.481	.098	.320	.041	.060	.374	042	187	.374	141	1.852	0.070	-1.1	1.0	-0.4	1.0	A+	B+
1683	604739	Ge	Ge	1067	.366	.080	.366	.369	.128	.057	.364	071	.364	081	146	1.619	0.069	-0.4	1.0	0.5	1.0	A-	A-
1684	604691	Ge	Ge	532	.656	.656	.167	.109	.060	.008	.254	.254	105	184	032	0.306	0.097	0.9	1.0	1.1	1.1	A-	ldot
1685	604376	Ge	Ge	532	.368	.056	.368	.391	.124	.004	.143	038	.143	082	145	1.517	0.097	2.4	1.1	2.2	1.1	A-	
1686	604404	Ge	Ge	532	.115	.479	.280	.120	.115	.006	.273	024	023	168	.273	3.314	0.141	-0.4	1.0	0.4	1.1	C-	
1687	604357	Ge	Ge	532	.451	.271	.451	.175	.070	.034	.317	186	.317	042	011	1.203	0.094	1.1	1.0	1.0	1.0	A-	
1688	604547	Ge	Ge	532	.466	.139	.235	.466	.117	.043	.274	115	077	.274	094	1.129	0.097	4.5	1.2	3.9	1.2	A-	
1689	604548	Ge	Ge	1064	.479	.069	.253	.479	.137	.062	.419	118	152	.419	154	1.051	0.068	-0.7	1.0	-0.8	1.0	A-	A-
1690	604604	Ge	Ge	1065	.310	.082	.287	.286	.310	.035	.399	133	046	218	.399	1.966	0.072	-1.2	1.0	-1.0	1.0	A+	A+
1691	604605	Ge	Ge	1064	.102	.321	.217	.312	.102	.047	.118	.003	112	.087	.118	3.482	0.106	1.6	1.1	3.3	1.4	A-	A+
1692	604732	Ge	Ge	1065	.153	.508	.120	.135	.153	.084	.164	.023	088	.063	.164	2.893	0.091	2.4	1.1	3.8	1.4	A-	A+
1693	604735	Ge	Ge	533	.550	.550	.175	.084	.184	.008	.396	.396	110	181	232	0.810	0.094	-1.8	1.0	-1.4	0.9	C-	A-
1694	603086	A2	A2	963	.146	.648	.056	.099	.146	.051	.166	.109	118	142	.166	3.205	0.098	2.2	1.1	4.1	1.5	A+	
1695	603043	A2	A2	962	.577	.078	.162	.577	.152	.031	.351	087	194	.351	167	0.815	0.072	-0.4	1.0	-0.1	1.0	A-	A+
1696	603000	A2	A2	480	.483	.204	.483	.131	.163	.019	.443	152	.443	205	200	1.293	0.100	-2.5	0.9	-2.3	0.9	A-	
1697	603018	A2	A2	964	.729	.729	.117	.085	.041	.028	.466	.466	232	208	148	0.058	0.080	-3.2	0.9	-3.6	0.7	A+	A-
1698	603098	A2	A2	960	.281	.230	.314	.158	.281	.017	.379	145	233	.037	.379	2.370	0.077	-0.5	1.0	-0.2	1.0	A-	
1699	603042	A2	A2	960	.718	.034	.138	.718	.085	.025	.325	123	156	.325	186	0.111	0.078	-0.2	1.0	-0.8	0.9	A+	A+
1700	603094	A2	A2	960	.804	.041	.804	.078	.044	.033	.392	120	.392	249	151	-0.562	0.092	-1.0	0.9	-1.9	0.8	A+	A-
1701	603038	A2	A2	1440	.553	.553	.282	.083	.065	.017	.432	.432	217	195	173	0.998	0.058	-4.0	0.9	-2.7	0.9	A-	A+
1702	603047	A2	A2	1444	.433	.085	.240	.433	.234	.008	.473	150	297	.473	124	1.595	0.059	-4.5	0.9	-3.8	0.9	A-	A+
1703	603051	A2	A2	964	.492	.492	.048	.174	.270	.017	.428	.428	.021	216	277	1.247	0.071	-2.1	1.0	-1.4	0.9	A+	A-
1704	603064	A2	A2	960	.312	.045	.312	.115	.502	.027	.458	097	.458	135	264	2.157	0.076	-2.0	0.9	-0.7	1.0	A-	A+
1705	603083	A2	A2	960	.208	.279	.349	.208	.109	.054	.075	.102	047	.075	091	2.763	0.087	5.6	1.3	7.0	1.6	A-	A+
1706	603050	A2	A2	960	.597	.069	.597	.159	.141	.034	.447	161	.447	253	202	0.698	0.073	-4.8	0.9	-3.7	0.8	B+	A-
1707	603067	A2	A2	963	.486	.130	.486	.159	.206	.020	.382	193	.382	146	122	1.346	0.071	0.9	1.0	0.3	1.0	A+	A-
1708	603095	A2	A2	963	.869	.040	.070	.020	.869	.002	.300	118	224	125	.300	-0.884	0.101	-0.6	1.0	-1.8	0.8	A-	C-
1709	603084	A2	A2	963	.121	.121	.425	.119	.292	.044	.350	.350	104	053	053	3.700	0.110	-0.2	1.0	0.4	1.0	Α-	A-
1710	603112	A2	A2	962	.826	.060	.039	.826	.054	.021	.347	192	140	.347	126	-0.666	0.094	-1.2	0.9	-1.9	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1711	603065	Grade A2	Grade A2	1440	.485	.163	.173	.485	.133	.047	.443	230	118	.443	137	1.261	0.059	-2.9	in 0.9	-2.5	out 0.9	/F A+	/B B-
1711	603074	A2 A2	A2 A2	962	.614	.035	.163	.463	.161	.026	.511	124	254	.511	157	0.648	0.039	-5.3	0.9	-4.5	0.9	A+	D-
1713	603074	A2 A2	A2	962	.367	.033	.232	.367	.258	.069	.425	124	234	.425	140	1.815	0.075	-2.1	0.9	-1.8	0.8	A-	
1714	603075	A2	A2	962	.342	.209	.229	.174	.342	.047	.494	189	127	135	.494	1.906	0.075	-4.4	0.9	-3.6	0.8	A-	A-
1715	603070	A2	A2	1442	.514	.514	.233	.132	.092	.029	.495	.495	165	257	197	1.123	0.058	-6.3	0.9	-5.2	0.8	A-	A-
1716	603071	A2	A2	963	.437	.437	.130	.372	.043	.019	.518	.518	202	276	141	1.478	0.071	-5.9	0.9	-5.6	0.8	A-	
1717	603127	A2	A2	481	.187	.187	.349	.312	.096	.056	.364	.364	.125	267	130	2.833	0.126	-0.2	1.0	-0.5	0.9	A+	
1718	603087	A2	A2	962	.442	.152	.442	.174	.167	.066	.355	192	.355	139	053	1.383	0.072	0.6	1.0	0.0	1.0	A-	A+
1719	603088	A2	A2	482	.504	.147	.504	.201	.141	.006	.317	135	.317	172	107	1.171	0.099	0.6	1.0	1.2	1.1	B+	
1720	603120	A2	A2	963	.677	.064	.118	.108	.677	.032	.423	133	185	192	.423	0.392	0.076	-2.2	0.9	-2.9	0.8	A+	A-
1721	603063	A2	A2	963	.493	.133	.195	.493	.157	.022	.431	198	225	.431	099	1.360	0.071	-2.9	0.9	-2.9	0.9	A+	A+
1722	603116	A2	A2	963	.357	.357	.163	.191	.232	.057	.443	.443	186	110	098	1.954	0.075	-1.2	1.0	-1.5	0.9	A+	B-
1723	603096	A2	A2	963	.247	.178	.247	.216	.262	.098	.265	.031	.265	162	.030	2.533	0.084	3.5	1.2	3.8	1.3	A+	A-
1724	603082	A2	A2	964	.441	.132	.193	.441	.206	.028	.435	130	148	.435	200	1.550	0.072	-2.6	0.9	-2.2	0.9	A-	A+
1725	603041	A2	A2	964	.260	.146	.132	.435	.260	.027	.485	186	027	209	.485	2.553	0.081	-2.1	0.9	-2.0	0.9	A+	B-
1726	603117	A2	A2	964	.404	.164	.182	.176	.404	.075	.508	067	221	194	.508	1.630	0.074	-5.6	0.9	-4.6	0.8	A+	A-
1727	603052	A2	A2	961	.497	.056	.084	.341	.497	.021	.377	111	136	203	.377	1.270	0.071	1.0	1.0	0.0	1.0	A+	A-
1728	603099	A2	A2	961	.798	.050	.798	.084	.027	.041	.453	176	.453	227	140	-0.527	0.092	-2.6	0.9	-3.5	0.7	B+	A-
1729	603039	A2	A2	961	.339	.189	.247	.339	.161	.064	.183	.023	003	.183	073	1.978	0.076	8.3	1.3	7.6	1.4	A-	A-
1730	603101	A2	A2	964	.445	.445	.213	.163	.162	.018	.453	.453	133	217	177	1.583	0.071	-2.2	0.9	-2.5	0.9	A+	A+
1731	603019	A2	A2	958	.545	.153	.157	.132	.545	.014	.433	081	246	242	.433	1.081	0.071	-3.4	0.9	-2.3	0.9	A-	A-
1732	603053	A2	A2	964	.258	.258	.404	.060	.268	.010	.447	.447	330	138	.028	2.616	0.081	-1.4	0.9	-0.7	1.0	A-	A-
1733	603020	A2	A2	964	.590	.590	.125	.137	.114	.034	.481	.481	227	232	092	0.824	0.072	-4.7	0.9	-2.0	0.9	A+	A-
1734	603048	A2	A2	964	.341	.341	.110	.090	.396	.062	.460	.460	214	173	085	2.015	0.076	-1.2	1.0	-0.6	1.0	A-	A-
1735	603072	A2	A2	484	.337	.337	.362	.128	.161	.012	.521	.521	174	189	243	2.156	0.106	-3.2	0.9	-2.4	0.9	A-	A-
1736	603045	A2	A2	484	.632	.632	.207	.087	.068	.006	.466	.466	260	205	225	0.705	0.102	-3.9	0.9	-3.1	0.8	A+	A+
1737	603111	A2	A2	484	.205	.205	.322	.236	.198	.039	.370	.370	122	096	100	2.921	0.125	0.0	1.0	0.7	1.1	A+	A-
1738	603066	A2	A2	966	.288	.288	.068	.152	.465	.027	.595	.595	121	076	350	2.349	0.078	-6.3	0.8	-6.3	0.7	A-	A+
1739	603073	A2	A2	966	.461	.083	.306	.461	.116	.034	.399	112	194	.399	108	1.440	0.071	-0.4	1.0	-0.7	1.0	A-	A-
1740	603049	A2	A2	484	.322	.322	.252	.165	.192	.068	.567	.567	100	212	243	2.100	0.109	-3.9	0.8	-3.6	0.8	A-	A+
1741	603100	A2	A2	964	.566	.087	.566	.080	.247	.020	.423	138	.423	218	189	0.959	0.070	-3.1	0.9	-3.1	0.9	A-	
1742	603076	A2	A2	964	.331	.163	.156	.331	.301	.050	.319	043	042	.319	157	2.033	0.074	1.4	1.0	1.5	1.1	A+	
1743	603089	A2	A2	964	.197	.102	.547	.113	.197	.042	.504	143	154	117	.504	2.874	0.087	-3.4	0.8	-3.0	0.8	A-	
1744	603097	A2	A2	964	.577	.106	.577	.122	.148	.047	.412	188	.412	127	158	0.831	0.071	-2.6	0.9	-2.5	0.9	A-	
1745	603046	A2	A2	482	.535	.095	.129	.170	.535	.071	.457	118	211	215	.457	0.927	0.101	-3.9	0.9	-2.9	8.0	B+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1746	602999	Grade A2	Grade A2	962	.194	.278	.329	.149	.194	.051	.482	128	079	197	.482	2.888	0.089	-2.3	in 0.9	-1.8	out 0.9	/F A+	/B
1747	603118	A2 A2	A2	962	.283	.283	.246	.246	.197	.028	.374	.374	143	087	112	2.339	0.089	0.5	1.0	0.3	1.0	A+	
1747	603077	A2 A2	A2 A2	482	.145	.259	.299	.257	.145	.039	.298	069	092	012	.298	3.308	0.078	0.0	1.0	0.3	1.0	A-	
1749	603121	A2	A2	482	.355	.079	.154	.369	.355	.044	.448	081	146	186	.448	1.933	0.104	-1.8	0.9	-1.4	0.9	A-	
1750	603121	A2	A2	482	.483	.483	.230	.168	.058	.060	.436	.436	057	291	076	1.260	0.104	-1.6	1.0	-1.7	0.9	A+	
1751	603103	A2	A2	480	.506	.027	.135	.323	.506	.008	.418	049	189	272	.418	1.214	0.099	-1.8	0.9	-1.6	0.9	A+	
1752	603023	A2	A2	960	.376	.194	.376	.201	.185	.044	.356	097	.356	175	115	1.807	0.074	1.7	1.1	1.8	1.1	A+	Α-
1753	603119	A2	A2	960	.185	.241	.317	.224	.185	.033	.315	030	032	174	.315	3.036	0.092	1.8	1.1	2.9	1.3	A-	A+
1754	603104	A2	A2	960	.459	.124	.223	.190	.459	.004	.502	268	166	217	.502	1.492	0.071	-4.7	0.9	-3.7	0.9	A+	Α-
1755	603040	A2	A2	958	.656	.113	.656	.075	.149	.007	.435	144	.435	193	290	0.554	0.073	-3.5	0.9	-2.3	0.9	A-	A-
1756	603105	A2	A2	958	.255	.255	.341	.281	.105	.018	.469	.469	109	246	080	2.579	0.081	-2.0	0.9	-1.8	0.9	A+	A-
1757	603024	A2	A2	958	.264	.264	.298	.258	.157	.024	.423	.423	128	167	098	2.505	0.080	-1.2	1.0	0.1	1.0	A+	A+
1758	603062	A2	A2	958	.224	.399	.261	.224	.090	.026	.379	155	121	.379	032	2.752	0.084	0.0	1.0	0.0	1.0	A+	A+
1759	604700	A2	A2	961	.533	.533	.071	.306	.055	.035	.325	.325	167	086	138	1.057	0.072	2.4	1.1	4.3	1.2	A-	B-
1760	603013	A2	A2	966	.619	.063	.619	.227	.082	.009	.421	147	.421	254	163	0.751	0.071	-3.9	0.9	-1.9	0.9	B-	A-
1761	604570	A2	A2	482	.531	.531	.077	.214	.137	.042	.396	.396	161	157	087	1.074	0.100	-0.7	1.0	0.7	1.0	A-	
1762	604625	A2	A2	958	.573	.573	.161	.184	.072	.010	.449	.449	243	203	177	0.950	0.071	-3.1	0.9	-2.1	0.9	A-	A+
1763	604530	A2	A2	962	.393	.393	.226	.197	.157	.028	.476	.476	170	183	147	1.727	0.072	-3.6	0.9	-3.0	0.9	B+	A-
1764	604686	A2	A2	478	.333	.153	.297	.333	.151	.067	.332	074	116	.332	052	1.992	0.106	1.3	1.1	1.8	1.1	A-	
1765	603037	A2	A2	964	.510	.189	.104	.183	.510	.015	.457	147	203	222	.457	1.276	0.071	-4.0	0.9	-3.3	0.9	A-	C+
1766	604572	A2	A2	484	.628	.155	.628	.099	.054	.064	.384	191	.384	126	133	0.511	0.107	-0.6	1.0	0.5	1.0	A-	A+
1767	604537	A2	A2	964	.569	.165	.569	.163	.046	.058	.414	168	.414	147	137	0.852	0.073	-1.1	1.0	0.5	1.0	A+	B-
1768	604685	A2	A2	480	.500	.119	.150	.500	.223	.008	.320	186	217	.320	043	1.323	0.100	3.2	1.1	2.2	1.1	A-	A+
1769	604539	A2	A2	958	.310	.411	.310	.190	.071	.018	.387	134	.387	195	078	2.240	0.076	0.5	1.0	0.8	1.0	C-	A+
1770	604540	A2	A2	963	.299	.299	.290	.233	.102	.077	.464	.464	086	168	116	2.238	0.079	-2.2	0.9	-1.1	0.9	A+	A-
1771	604703	A2	A2	480	.904	.904	.046	.031	.017	.002	.257	.257	143	154	132	-1.193	0.160	-0.3	1.0	0.3	1.0	A+	A-
1772	604629	A2	A2	964	.403	.403	.152	.240	.142	.064	.485	.485	153	191	121	1.658	0.074	-4.3	0.9	-3.5	0.9	A+	A-
1773	603003	A2	A2	484	.349	.176	.271	.349	.182	.023	.439	121	208	.439	114	2.057	0.105	-0.8	1.0	0.6	1.0	A+	A+
1774	604550	A2	A2	961	.459	.074	.204	.459	.240	.023	.316	121	111	.316	125	1.452	0.071	3.1	1.1	2.7	1.1	A+	A-
1775	604544	A2	A2	482	.324	.143	.440	.324	.050	.044	.398	071	191	.398	108	2.059	0.105	-0.9	1.0	-1.0	0.9	B-	
1776	604627	A2	A2	963	.342	.291	.177	.181	.342	.010	.293	039	207	092	.293	2.099	0.075	2.7	1.1	2.8	1.1	A-	A+
1777	604626	A2	A2	964	.217	.483	.112	.174	.217	.014	.390	181	193	006	.390	2.792	0.086	-0.6	1.0	0.2	1.0	A+	A-
1778	604552	A2	A2	964	.525	.139	.144	.525	.175	.017	.335	.041	242	.335	211	1.085	0.071	1.4	1.0	0.2	1.0	A+	A-
1779	604619	A2	A2	964	.231	.084	.231	.230	.441	.014	.281	129	.281	147	017	2.696	0.084	2.0	1.1	3.4	1.3	A-	A+
1780	604578	A2	A2	964	.327	.074	.327	.381	.186	.033	.461	119	.461	220	161	2.063	0.077	-2.6	0.9	-1.7	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Trans Goldson Grade Grade Grade N P(A) P(A) P(B) P(C) P(D) P(Z-	Z-	MS-		
1782 604607 A2			out		
1783 604568 A2 A2 960 .579 .579 .084 .164 .129 .044 .524 .524 .194 .274 .184 .0.63 .0.73 .6.3 0.8 .4.5 1784 603004 A2 A2 960 .243 .243 .333 .257 .117 .050 .418 .418 .063 .196 .111 .2.539 .003 .1.4 .0.9 .0.1 .118 .063 .04660 A2 A2 A2 964 .402 .183 .402 .243 .130 .044 .487 .249 .487 .120 .1637 .0.074 .2.9 .0.9 .0.1 .178 .178 .06460 A2 A2 .4	3.3	3.3	1.3		
1784 603004 A2 A2 960 .243 .243 .333 .257 .117 .050 .418 .418 063 196 .111 .2.539 .0.83 1.4 .0.9 .0.1			1.0	_	_
1785 604660	-4.5	-4.5	0.8	8 A+	+ A-
1786 604582 A2 A2 963 .345 .345 .347 .159 .013 .448 .448 .417 .165 .173 2.083 0.075 .2.5 0.9 2.4 1787 604621 A2 A2 963 .680 .080 .680 .102 .132 .006 .255 .048 .255 .140 .157 0.404 0.075 1.6 .11 2.1 1788 60454 A2 A2 963 .407 .327 .407 .145 .108 .013 .379 .180 .379 .173 .096 1.753 0.073 .0.1 1.0 .0.8 1789 604556 A2 A2 963 .514 .151 .257 .514 .058 .021 .402 .128 .236 .402 .096 1.208 0.071 -2.1 1.0 .0.5 1790 603005 A2 A2 963 .118 .561 .118 .137 .152 .032 .175 .056 .175 .077 .132 3.720 0.110 2.5 1.2 4.8 1791 604656 A2 A2 963 .638 .638 .189 .128 .034 .011 .486 .486 .258 .253 .162 0.609 0.073 .5.4 0.9 4.5 1793 604664 A2 A2 962 .364 .126 .248 .364 .227 .035 .174 .036 .133 .174 .0.04 1.889 0.075 6.4 1.2 7.0 1793 604664 A2 A2 962 .539 .169 .096 .539 .183 .014 .415 .180 .171 .415 .183 1.072 0.071 .2.6 0.9 -2.5 1794 603001 A2 A2 962 .296 .246 .286 .296 .124 .048 .190 .126 .048 .190 .074 .2147 0.078 4.7 1.2 4.4 1797 603011 A2 A2 962 .296 .246 .286 .296 .296 .244 .048 .190 .126 .048 .190 .074 .2147 0.078 4.7 1.2 4.4 1797 603011 A2 A2 962 .277 .277 .188 .260 .207 .069 .244 .244 .059 .058 .047 .213 0.079 .2.7 1.3 .7 1798 604658 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 .128 .116 .161 .428 .176 0.079 .2.7 1.1 .3.7 1799 604632 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 .128 .116 .161 .428 .176 0.079 .2.7 1.1 .3.7 1800 604610 A2 A2 962 .356 .113 .299 .232 .356 .071 .428 .128 .116 .161 .428 .176 0.079 .2.7 .1 .3.4 1801			1.0	_	+ A+
1787 604621 A2 A2 963 6.680 0.80 6.680 0.102 0.132 0.06 0.255 0.048 0.255 0.140 0.157 0.404 0.075 1.6 1.1 0.1 1788 604614 A2 A2 963 4.07 3.27 4.07 1.45 1.08 0.13 3.79 0.180 3.79 0.173 0.096 1.753 0.073 0.1 1.0 0.8 1789 604556 A2 A2 963 5.14 1.51 2.57 5.14 0.58 0.21 4.02 0.128 0.245 0.096 1.753 0.073 0.1 1.0 0.58 1790 603005 A2 A2 963 1.18 5.61 1.18 1.37 1.52 0.32 1.75 0.56 1.75 0.77 0.132 3.720 0.110 2.5 1.2 4.8 1791 604609 A2 A2 963 6.38 6.38 1.89 1.28 0.34 0.01 4.86 4.86 0.258 0.253 0.609 0.073 5.4 0.9 4.5 1792 604656 A2 A2 962 3.64 1.26 2.48 3.64 2.27 0.35 1.74 0.36 0.133 1.74 0.024 1.889 0.075 6.4 1.2 7.0 1793 604664 A2 A2 962 3.381 1.05 2.82 3.81 0.04 0.029 3.82 1.51 0.240 3.82 0.08 1.815 0.074 -0.2 1.0 0.1 1795 603001 A2 A2 962 2.02 2.02 1.95 2.93 2.41 0.69 3.87 3.87 0.129 0.06 0.140 2.843 0.089 0.6 1.0 0.1 1796 604657 A2 A2 962 2.26 2.26 2.26 2.26 2.26 2.26 2.27 0.27 1.18 3.72 1798 604558 A2 A2 962 2.77 2.77 1.18 2.05 0.27 0.69 2.44 2.44 0.59 0.08 0.074 2.147 0.078 4.7 1.3 1.72 1798 604558 A2 A2 962 2.78 4.11 1.47 2.78 1.29 0.06 0.140 0.14 0.81 0.26 2.286 0.079 7.0 1.3 7.2 1799 604660 A2 A2 962 2.78 4.11 1.47 2.78 1.29 0.06 0.140 0.81 0.06 0.075 0.4 0.9 0.075 0.4 0.0 0.075 0.4 0.0 0.075 0.4 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.075 0.4 0.0 0.0 0.075 0.4 0.0 0.075			0.9		
1788 604614 A2	-2.4	-2.4	0.9	9 A-	- A-
1789 604556 A2	2.1	2.1	1.1	1 A+	+ A-
1790 603005 A2 A2 963 .118 .561 .118 .137 .152 .032 .175 .056 .175 .077 .132 3.720 0.110 2.5 1.2 4.8 1791 604609 A2 A2 963 .638 .638 .189 .128 .034 .011 .486 .486 .258 .253 .162 0.609 0.073 .5.4 0.9 .4.5 1792 604656 A2 A2 962 .364 .126 .248 .364 .227 .035 .174 .036 .133 .174 .024 1.889 0.075 6.4 1.2 7.0 1793 604664 A2 A2 962 .539 .169 .096 .539 .183 .014 .415 .180 .171 .415 .183 1.072 0.071 .2.6 0.9 .2.5 .2.6	-0.8	-0.8	1.0	0 B-	- A-
1791 604609 A2 A2 963 .638 .638 .189 .128 .034 .011 .486 .486 .258 .253 .162 0.609 0.073 .5.4 0.9 .4.5 1792 604656 A2 A2 962 .364 .126 .248 .364 .227 .035 .174 .036 .133 .174 .024 1.889 0.075 6.4 1.2 7.0 1793 604664 A2 A2 962 .539 .169 .096 .059 .014 .415 .180 .171 .415 .183 1.072 0.071 .2.6 0.9 .2.5 1794 603001 A2 A2 962 .381 .105 .282 .381 .204 .029 .382 .151 .240 .382 .008 .1815 .0.74 .0.2 1.0 0.1 1795 603010 A2 A2 962 .202 .202 .195 .293 .241 .069 .387 .387 .129 .006 .140 .2.843 0.089 .0.6 1.0 0.1 1796 604657 A2 A2 962 .296 .246 .286 .296 .124 .048 .190 .126 .048 .190 .074 .2.147 0.078 4.7 1.2 4.4 1797 603011 A2 A2 962 .277 .277 .188 .260 .207 .069 .244 .244 .055 .058 .047 .2.13 0.079 2.7 1.1 3.7 1798 604658 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 .116 .161 .428 1.768 0.075 .2.4 0.9 .1.4 1800 604610 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 .116 .161 .428 1.768 0.075 .2.4 0.9 .1.4 1801 604622 A2 A2 962 .629 .049 .159 .629 .107 .056 .358 .121 .087 .358 .200 0.408 0.075 0.4 1.0 0.9 1802 604666 A2 A2 .962 .519 .113 .519 .075 .250 .044 .380 .188 .380 .137 .096 .1.019 0.072 .0.2 1.0 0.3 1804 604553 A2 A2 .963 .393 .172 .283 .142 .393 .010 .423 .136 .180 .137 .017 .046 .0.00 .0.72 .0.2 1.0 0.3 1805 603014 A2 A2 .963 .425 .519 .113 .519 .075 .250 .044 .380 .188 .380 .137 .096 .1.513 .0.072 .1.7 1.0 .1.7 1806 603002 A2 A2 .963 .422 .157 .160 .234 .422 .028 .480 .145 .116 .168 .422 .063 .1513 .0.072 .1.7 .1.	-0.5	-0.5	1.0	0 A+	+ A-
1792 604656 A2 A2 962 .364 .126 .248 .364 .227 .035 .174 .036 133 .174 024 1.889 0.075 6.4 1.2 7.0 1793 604664 A2 A2 962 .539 .169 .096 .539 .183 .014 .415 180 171 .415 183 1.072 0.071 -2.6 0.9 -2.5 1794 603001 A2 A2 962 .381 .105 .282 .381 .004 .029 .382 151 240 .382 .008 1.815 0.074 -0.2 1.0 0.1 1795 603010 A2 A2 962 .296 .246 .286 .296 .124 .048 .190 .074 2.147 0.078 .47 1.2 4.4 1797 603011 A2 A2 962 .277 .277 .188 <t< td=""><td>4.8</td><td>4.8</td><td>1.8</td><td>8 A-</td><td>- A+</td></t<>	4.8	4.8	1.8	8 A-	- A+
1793 604664 A2 A2 962 .539 .169 .096 .539 .183 .014 .415 180 171 .415 183 1.072 0.071 -2.6 0.9 -2.5 1794 603001 A2 A2 962 .381 .105 .282 .381 .204 .029 .382 151 240 .382 008 1.815 0.074 -0.2 1.0 0.1 1795 603010 A2 A2 962 .202 .202 .124 .069 .387 .387 129 .006 140 .2843 0.089 -0.6 1.0 0.1 1796 604657 A2 A2 962 .277 .277 .188 .260 .207 .069 .244 .244 059 .058 047 .2213 .0079 .27 1.1 3.7 1798 604558 A2 A2 962 .278 .411	-4.5	-4.5	0.8	8 A+	+ B-
1794 603001 A2 A2 962 .381 .105 .282 .381 .204 .029 .382 151 240 .382 008 1.815 0.074 -0.2 1.0 0.1 1795 603010 A2 A2 962 .202 .202 .195 .293 .241 .069 .387 .387 129 .006 140 .2.843 .0.089 -0.6 1.0 0.1 1796 604657 A2 A2 962 .296 .246 .286 .296 .124 .048 .190 126 .048 .190 .074 .2.147 .0.078 4.7 1.2 4.4 1797 603011 A2 A2 962 .277 .188 .260 .207 .069 .244 .244 .059 .047 2.213 .0079 .7 1.1 3.7 1798 604528 A2 A2 962 .356 .113 <	7.0	7.0	1.4	4 A+	r
1795 603010 A2 A2 962 .202 .202 .195 .293 .241 .069 .387 .387 129 .006 140 2.843 0.089 -0.6 1.0 0.1 1796 604657 A2 A2 962 .296 .246 .286 .296 .124 .048 .190 146 .081 .0074 2.147 0.078 4.7 1.2 4.4 1797 603011 A2 A2 962 .277 .277 .188 .260 .207 .069 .244 .244 059 058 047 .2213 0.079 2.7 1.1 3.7 1798 604558 A2 A2 962 .278 .411 .147 .278 .129 .036 .081 .096 146 .081 .026 .2286 0.079 .70 1.3 .72 1799 604632 A2 A2 962 .356 <td< td=""><td>-2.5</td><td>-2.5</td><td>0.9</td><td>9 A-</td><td>-</td></td<>	-2.5	-2.5	0.9	9 A-	-
1796 604657 A2 A2 962 .296 .246 .286 .296 .124 .048 .190 .126 .048 .190 .074 2.147 0.078 4.7 1.2 4.4 1797 603011 A2 A2 962 .277 .277 .188 .260 .207 .069 .244 .244 .059 .058 047 2.213 0.079 2.7 1.1 3.7 1798 604558 A2 A2 962 .278 .411 .147 .278 .129 .036 .081 .096 146 .081 .026 .2286 .0.079 7.0 1.3 7.2 1799 604632 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 128 116 .161 .428 1.768 .0.075 .24 .0.9 139 .469 296 171 -0.046 .0.80 .3.2	0.1	0.1	1.0	0 A-	
1797 603011 A2 A2 962 .277 .277 .188 .260 .207 .069 .244 .244 059 058 047 2.213 0.079 2.7 1.1 3.7 1798 604558 A2 A2 962 .278 .411 .147 .278 .129 .036 .081 .096 146 .081 .026 2.286 0.079 7.0 1.3 7.2 1799 604632 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 128 116 161 .428 1.768 0.075 24 0.9 -1.4 1800 604610 A2 A2 962 .730 .053 .730 .129 .063 .025 .469 139 .469 296 171 -0.046 0.080 -3.2 0.99 -3.4 1801 604622 A2 A2 962	0.1	0.1	1.0	0 A-	-
1798 604558 A2 A2 962 .278 .411 .147 .278 .129 .036 .081 .096 146 .081 .026 2.286 0.079 7.0 1.3 7.2 1799 604632 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 128 116 161 .428 1.768 0.075 24 0.9 -1.4 1800 604610 A2 A2 962 .730 .053 .730 .129 .063 .025 .469 139 .469 296 171 -0.046 0.080 -3.2 0.9 -3.4 1801 604622 A2 A2 962 .629 .049 .159 .629 .107 .056 .358 121 087 .358 200 0.408 0.075 0.4 1.0 0.9 1802 604666 A2 A2 962	4.4	4.4	1.3	3 A+	+ A-
1799 604632 A2 A2 962 .356 .113 .229 .232 .356 .071 .428 128 161 .428 1.768 0.075 -2.4 0.9 -1.4 1800 604610 A2 A2 962 .730 .053 .730 .129 .063 .025 .469 139 .469 296 171 -0.046 0.080 -3.2 0.9 -3.4 1801 604622 A2 A2 962 .629 .049 .159 .629 .107 .056 .358 121 087 .358 200 0.408 0.075 0.4 1.0 0.9 1802 604666 A2 A2 962 .519 .113 .519 .075 .250 .044 .380 183 .380 137 096 1.019 0.072 -0.2 1.0 -0.3 1803 604615 A2 A2 963 .393	3.7	3.7	1.2	2 A-	- A-
1800 604610 A2 A2 962 .730 .053 .730 .129 .063 .025 .469 139 .469 296 171 -0.046 0.080 -3.2 0.9 -3.4 1801 604622 A2 A2 962 .629 .049 .159 .629 .107 .056 .358 121 087 .358 200 0.408 0.075 0.4 1.0 0.9 1802 604666 A2 A2 962 .519 .113 .519 .075 .250 .044 .380 188 .380 137 096 1.019 .0072 -0.2 1.0 -0.3 1803 604615 A2 A2 962 .214 .162 .329 .232 .214 .063 .361 119 056 .055 .361 2.645 0.086 -0.4 1.0 -0.1 1804 604553 A2 A2 963	7.2	7.2	1.5	5 A+	+ A+
1801 604622 A2 A2 962 .629 .049 .159 .629 .107 .056 .358 121 087 .358 200 0.408 0.075 0.4 1.0 0.9 1802 604666 A2 A2 962 .519 .113 .519 .075 .250 .044 .380 188 .380 137 096 1.019 0.072 -0.2 1.0 -0.3 1803 604615 A2 A2 962 .214 .162 .329 .232 .214 .063 .361 119 056 055 .361 2.645 0.086 -0.4 1.0 -0.1 1804 604553 A2 A2 963 .393 .172 .283 .142 .393 .010 .423 180 175 .423 1.708 0.072 -2.3 0.9 -2.3 1805 603014 A2 A2 963 .422	-1.4	-1.4	0.9	9 A+	+ A+
1802 604666 A2 A2 962 .519 .113 .519 .075 .250 .044 .380 188 .380 137 096 1.019 0.072 -0.2 1.0 -0.3 1803 604615 A2 A2 962 .214 .162 .329 .232 .214 .063 .361 119 056 055 .361 2.645 0.086 -0.4 1.0 -0.1 1804 604553 A2 A2 963 .393 .172 .283 .142 .393 .010 .423 136 180 175 .423 1.708 0.072 -2.3 0.9 -2.3 1805 603014 A2 A2 963 .415 .271 .171 .415 .095 .048 .422 214 168 .422 063 1.513 0.072 -1.7 1.0 -1.7 1806 603002 A2 A2 963	-3.4	-3.4	0.8	8 A+	+ B-
1803 604615 A2 A2 962 .214 .162 .329 .232 .214 .063 .361 119 056 055 .361 2.645 0.086 -0.4 1.0 -0.1 1804 604553 A2 A2 963 .393 .172 .283 .142 .393 .010 .423 180 175 .423 1.708 0.072 -2.3 0.9 -2.3 1805 603014 A2 A2 963 .415 .271 .171 .415 .095 .048 .422 214 168 .422 063 1.513 0.072 -1.7 1.0 -1.7 1806 603002 A2 A2 963 .422 .157 .160 .234 .422 .028 .480 145 171 212 .480 1.531 0.071 -4.7 0.9 -4.4 1807 604616 A2 A2 963 .603	0.9	0.9	1.1	1 A+	+ B-
1804 604553 A2 A2 963 .393 .172 .283 .142 .393 .010 .423 136 175 .423 1.708 0.072 -2.3 0.9 -2.3 1805 603014 A2 A2 963 .415 .271 .171 .415 .095 .048 .422 214 168 .422 063 1.513 0.072 -1.7 1.0 -1.7 1806 603002 A2 A2 963 .422 .157 .160 .234 .422 .028 .480 145 171 212 .480 1.531 0.071 -4.7 0.9 -4.4 1807 604616 A2 A2 963 .603 .603 .200 .105 .062 .029 .447 .447 190 216 174 0.650 0.072 -3.5 0.9 -2.3 1808 604623 A2 A2 963 .202	-0.3	-0.3	1.0	0 A+	+ A+
1805 603014 A2 A2 963 .415 .271 .171 .415 .095 .048 .422 214 168 .422 063 1.513 0.072 -1.7 1.0 -1.7 1806 603002 A2 A2 963 .422 .157 .160 .234 .422 .028 .480 145 171 212 .480 1.531 0.071 -4.7 0.9 -4.4 1807 604616 A2 A2 963 .603 .603 .200 .105 .062 .029 .447 .447 190 216 174 0.650 0.072 -3.5 0.9 -2.3 1808 604623 A2 A2 963 .903 .035 .903 .038 .014 .009 .267 112 .267 168 113 -1.377 0.117 -0.1 1.0 -1.2 1809 604678 A2 A2 963 .202 .224 .185 .375 .202 .015 .295 144	-0.1	-0.1	1.0	0 A-	- A+
1806 603002 A2 A2 963 .422 .157 .160 .234 .422 .028 .480 145 171 212 .480 1.531 0.071 -4.7 0.9 -4.4 1807 604616 A2 A2 963 .603 .603 .200 .105 .062 .029 .447 .447 190 216 174 0.650 0.072 -3.5 0.9 -2.3 1808 604623 A2 A2 963 .903 .035 .903 .038 .014 .009 .267 112 .267 168 113 -1.377 0.117 -0.1 1.0 -1.2 1809 604678 A2 963 .202 .224 .185 .375 .202 .015 .295 144 169 .047 .295 2.807 0.087 0.7 1.0 1.8	-2.3	-2.3	0.9	9 A+	+
1807 604616 A2 A2 963 .603 .603 .200 .105 .062 .029 .447 .447 190 216 174 0.650 0.072 -3.5 0.9 -2.3 1808 604623 A2 A2 963 .903 .035 .903 .038 .014 .009 .267 112 .267 168 113 -1.377 0.117 -0.1 1.0 -1.2 1809 604678 A2 A2 963 .202 .224 .185 .375 .202 .015 .295 144 169 .047 .295 2.807 0.087 0.7 1.0 1.8	-1.7	-1.7	0.9	9 A+	+
1808 604623 A2 A2 963 .903 .035 .903 .038 .014 .009 .267 112 .267 168 113 -1.377 0.117 -0.1 1.0 -1.2 1809 604678 A2 A2 963 .202 .224 .185 .375 .202 .015 .295 144 169 .047 .295 2.807 0.087 0.7 1.0 1.8	-4.4	-4.4	0.9	9 A+	+
1809 604678 A2 A2 963 .202 .224 .185 .375 .202 .015 .295144169 .047 .295 2.807 0.087 0.7 1.0 1.8	-2.3	-2.3	0.9	9 A-	-
	-1.2	-1.2	0.8	8 A+	+
1810 604576 A2 A2 963 .419 .419 .182 .217 .164 .019 .417 .417 200 192 066 1.566 0.071 -2.6 0.9 -2.1	1.8	1.8	1.1	1 A+	F
	-2.1	-2.1	0.9	9 A-	-
1811 604706 A2 A2 963 .388 .117 .430 .388 .046 .019 .257201047 .257073 1.711 0.072 4.1 1.1 3.9	3.9	3.9	1.2	2 A-	-
1812 604635 A2 A2 963 .216 .216 .090 .586 .087 .021 .307 .307127070125 2.693 0.085 1.2 1.1 1.7	1.7	1.7	1.1	1 A-	-
1813 603015 A2 A2 963 .559 .088 .559 .166 .118 .069 .248026 .248143066 0.734 0.073 2.9 1.1 1.8	1.8	1.8	1.1	1 A+	+
1814 604577 A2 A2 962 .208 .306 .192 .271 .208 .023 .348086136091 .348 2.818 0.087 0.2 1.0 0.1	0.1	0.1	1.0	0 A+	+ A+
1815 603016 A2 A2 962 .398 .208 .398 .243 .107 .044 .444170 .444162131 1.658 0.073 -2.5 0.9 -2.2	-2.2	-2.2	0.9	9 A+	+ A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1816 603031 A2 A2 962 212 0.84 366 290 212 0.48 370 0.72 -116 -0.79 3.70 2.754 0.087 -0.3 1.0 1.7 1.1 A4 A-	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1817 604681 A2 A2 992 377 287 138 172 0.026 338 3.88 -0.02 -1.87 -1.99 1.807 0.073 1.4 1.0 1.5 1.1 A- C-			Grade	Grade															in	in	out	out	/F	/B
1818 604650 A2 A2 962 259 264 259 152 034 290 -174 000 290 -0.39 2.457 0.081 2.4 1.1 3.2 1.2 A- A- 1819 603025 A2 A2 962 569 1.94 569 1.30 0.71 0.36 4.28 -1.21 4.28 -2.41 1.63 0.847 0.072 -2.1 1.0 -1.2 1.0 A+ A- 1820 604624 A2 A2 962 7.28 0.97 0.01 7.28 0.52 0.052 4.33 -2.29 -2.05 4.33 -1.28 -0.156 0.084 -2.5 0.9 -2.5 0.8 A+ A- 1821 604569 A2 A2 963 2.63 2.83 3.46 2.63 0.76 0.33 1.85 1.37 -1.50 1.85 -1.12 2.557 0.081 5.2 1.2 6.2 1.4 A- A- 1821 604569 A2 A2 963 3.78 1.88 3.78 2.77 1.10 0.47 3.56 0.21 3.56 -2.06 -1.22 1.868 0.074 1.5 1.1 1.6 1.1 A+ A- 1823 604697 A2 A2 963 A79 1.18 A79 2.67 0.94 0.04 3.39 1.19 3.93 1.18 0.084 1.367 0.072 -0.1 1.0 0.0 1.0 A- A- 1823 604697 A2 A2 963 A79 1.18 A79 2.67 0.94 0.04 3.367 1.14 3.97 1.15 0.813 0.102 0.4 1.0 1.1 1.1 A- A- 1825 603032 A2 A2 963 A99 1.42 2.96 A09 0.88 0.64 3.23 -0.53 1.15 3.15 3.15 3.10 0.02 0.4 1.0 1.1 1.1 A- A- 1825 60352 A2 A2 963 3.54 2.29 3.54 1.28 2.39 0.51 3.40 1.11 4.30 1.66 -1.17 1.988 0.075 -0.7 1.0																-								
1819 603025 A2	-																							
1820 604624 A2																-							A-	
1821 604569 A2																							A+	_
1822 603026 A2 A2 963 378 1.88 378 2.77 1.10 0.07 3.56 0.21 3.56 0.20 5.356 0.20 5.356 0.20 5.356 0.070 1.5 1.1 1.6 1.1 A+ A+ A+ 1.824 604704 A2 A2 963 A79 1.18 4.79 2.67 0.094 0.43 3.93 -1.19 3.93 -1.88 -0.684 1.367 0.072 -0.1 1.0 0.0 1.0 A+ A+ 1.825 603032 A2 A2 963 A09 1.42 2.96 A09 0.088 0.66 3.23 -0.53 -1.85 3.23 -0.44 1.668 0.073 2.7 1.1 1.9 1.1 A+ A+ 1.825 603032 A2 A2 963 A09 1.42 2.96 A09 0.088 0.66 3.23 -0.53 -1.85 3.23 -0.44 1.668 0.073 2.7 1.1 1.9 1.1 A+ A+ 1.826 604532 A2 A2 963 A29 4.28 3.24 4.29 3.54 1.28 2.29 .051 4.30 -1.11 4.30 -1.66 -1.17 1.988 0.075 0.7 1.0 0.1 1.0 A+ A+ 1.826 604532 A2 A2 964 A.67 0.04 7.67 0.089 0.056 0.39 4.33 -1.353 4.33 -1.215 -1.99 -0.259 0.087 -2.4 0.09 -3.2 0.7 A+ A+ 1.828 604705 A2 A2 964 1.183 1.39 3.80 2.54 1.43 0.84 3.63 -0.05 0.089 -0.33 3.63 3.375 0.102 0.1 1.0 1.5 1.2 A+ B+ 1.829 603033 A2 A2 964 1.143 3.13 3.80 2.54 1.43 0.84 3.63 -0.05 0.089 -0.33 3.63 3.375 0.102 0.1 1.0 1.5 1.2 A+ B+ 1.831 603017 A2 A2 4.83 3.13 3.13 3.13 3.13 3.13 3.35 0.041 3.13 3.34 3.14 2.26 0.77 3.66 0.09 3.66 1.09 0.050 2.124 0.078 1.6 1.1 1.1 1.1 1.1 1.4 1.4 A+ A+ 1.831 603021 A2 A2 961 3.08 4.24 2.26 3.09 4.70 3.66 0.050 0.050 2.124 0.078 1.6 1.1 1.6 1.1 4.1 A+ A+ 1.833 604574 A2 A2 961 3.08 3.33 3.31 3.31 3.31 3.35 3.31 3.31 3.35 3.31 3.35	-												229							0.9		0.8	A+	A-
1823 604697 A2 A2 963 A79 .118 A79 .267 .094 .043 .393 .119 .393 .188 .084 1.367 0.072 -0.1 1.0 0.0 1.0 A. A- 1824 604704 A2 A2 480 .585 .129 .142 .585 .106 .038 .367 .144 .143 .367 .116 0.813 0.102 0.4 1.0 1.1 1.1 A- A- A- 1826 604532 A2 A2 .964 .363 .409 .088 .084 .323 .053 .185 .323 .044 .1668 .0073 2.7 1.1 1.9 1.1 A- A- 1826 604532 A2 A2 .964 .767 .049 .767 .089 .056 .039 .433 .113 .430 .166 .117 .1988 .0075 .07 1.0 .0.1 1.0 A+ A- A- 1826 604532 A2 A2 .964 .767 .049 .767 .089 .056 .039 .433 .135 .333 .433 .215 .199 .0259 .0.87 .2.4 .0.9 .3.2 0.7 A- A- 1828 604705 A2 A2 .964 .183 .108 .183 .253 .395 .061 .264 .129 .246 .119 .086 .3.060 .0.093 .2.6 .1.2 .3.5 1.3 A+ A- 1829 603033 A2 A2 .964 .143 .139 .380 .254 .143 .848 .363 .005 .0.99 .033 .363 .3.375 .0.102 .0.1 .1.0 .1.5 .1.2 A+ B- 1830 6046551 A2 A2 .964 .299 .155 .230 .227 .299 .999 .472 .131 .472 .2191 .0.079 .2.5 .0.9 .2.1 .0.9 A- A- 1831 603017 A2 A2 .964 .331 .143 .313 .375 .073 .101 .339 .082 .339 .041 .114 .2.155 .0.111 .1.6 .1.1 .1.3 .1.1 A+ A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A- A-		604569	A2							.076	.033					-			5.2	1.2	6.2	1.4	A-	A+
1824 604704 A2 A2 480 5.85 1.29 1.42 5.85 1.06 0.38 0.367 -1.44 -1.43 3.67 -1.16 0.813 0.102 0.4 1.0 1.1 1.1 A. A-		603026	A2	A2		.378	.188												1.5	1.1	1.6		A+	A-
1825 603032 A2 A2 963 A409 .142 .296 .409 .088 .064 .323 .053 .185 .323 .044 1.668 0.073 2.7 1.1 1.9 1.1 A+ A+ .1826 604532 A2 A2 963 .354 .229 .354 .128 .239 .051 .430 .111 .430 .166 .117 .1988 .0.075 .0.7 .1.0 .0.1 .1.0 A+ A- .1826 604502 A2 A2 .964 .767 .049 .767 .089 .056 .039 .433 .153 .433 .215 .199 .0.259 .0.887 .24 .0.9 .3.22 .0.7 A- .A- .1828 604705 A2 A2 .964 .431 .108 .183 .253 .395 .061 .246 .129 .246 .119 .0.86 .3.660 .0.093 .2.6 .1.2 .3.5 .1.3 A+ A+ .1829 603033 A2 A2 .964 .99 .155 .230 .227 .299 .089 .472 .0.99 .142 .137 .472 .2.191 .0.79 .2.5 .0.9 .2.1 .0.94 .1.8 .1	1823	604697	A2	A2	963	.479	.118	.479	.267	.094	.043	.393	119	.393	188	084	1.367	0.072	-0.1	1.0	0.0	1.0	A-	A-
1826 604532 A2 A2 963 .354 .229 .354 .128 .239 .051 .430 .111 .430 .166 .117 1.988 0.075 .0.7 1.0 .0.1 1.0 A+ A- 1827 603027 A2 A2 .964 .767 .049 .767 .089 .056 .039 .433 .153 .433 .215 .199 .0.259 0.087 .2.4 0.9 .3.2 0.7 A- A- 1828 6040705 A2 A2 .964 .183 .108 .183 .253 .395 .061 .0.24 .119 .0.86 .3.060 .0.93 .2.6 1.2 .3.5 1.3 A+ A+ 1829 603033 A2 A2 .2.9 .2.9 .2.9 .2.9 .2.9 .2.9 .0.89 .0.87 .3.6 .2.9 .0.8 .3.060 .0.93 .2.6 1.2 .3.5 1.3 A+ A+ 1829 603033 A2 .2.4 .2.9 .2.9 .2.9 .2.9 .2.9 .0.89 .0.81 .3.3 .3.5 .0.05 .0.89 .0.33 .3.63 .3.375 .0.102 .0.1 1.0 .1.5 1.2 .4+ B+ .1830 .0.066 .0.09 .0.05 .0.08 .0.05 .0.08 .0.05 .0.08 .0.05 .0.08 .0.05 .0.08 .0.05 .0.08 .0.05 .0.08 .0.05	1824	604704	A2	A2	480	.585	.129	.142	.585	.106	.038	.367	144	143	.367	116	0.813	0.102	0.4	1.0	1.1	1.1	A-	A-
1827 603027 A2 A2 964 .767 .049 .767 .089 .056 .039 .433 .153 .433 .215 .199 .0.259 0.087 .2.4 0.9 .3.2 0.7 A- A- 1828 604705 A2 A2 964 .183 .108 .183 .253 .395 .061 .246 .119 .086 3.060 0.093 .2.6 .12 3.5 1.3 A+ A- 1829 603033 A2 A2 964 .143 .139 .338 .254 .143 .084 .363 .005 .0089 .033 .337 .0.102 0.01 1.0 1.5 1.2 A+ B- 1830 604651 A2 A2 .2964 .249 .155 .230 .227 .299 .089 .472 .099 .142 .137 .472 .2191 .0.079 .2.5 .0.9 .2.1 .0.9 A+ A- .1831 603017 A2 A2 .483 .313 .139 .313 .375 .073 .101 .339 .082 .339 .041 .114 .2.155 .0.111 .16 .1.1 .1.3 .1.1 A+ A+ .1833 .603021 A2 A2 .961 .408 .408 .267 .164 .115 .046 .468 .468 .228 .171 .0.51 .1.649 .0.078 .1.5 .0.9 .2.6 .0.9 .2. A- .2.4	1825	603032	A2	A2	963	.409	.142	.296	.409	.088	.064	.323	053	185	.323	044	1.668	0.073	2.7	1.1	1.9	1.1	A+	A+
1828 604705 A2 A2 964 .183 .108 .183 .253 .395 .061 .246 .129 .246 .119 .086 3.060 0.093 2.6 1.2 3.5 1.3 A+ A+ B+	1826	604532	A2	A2	963	.354	.229	.354	.128	.239	.051	.430	111	.430	166	117	1.988	0.075	-0.7	1.0	-0.1	1.0	A+	A-
1829 603033 A2 A2 964 .143 .139 .380 .254 .143 .084 .363 .005 .089 .033 .363 3.375 0.102 0.1 1.0 1.5 1.2 A+ B+	1827	603027	A2	A2	964	.767	.049	.767	.089	.056	.039	.433	153	.433	215	199	-0.259	0.087	-2.4	0.9	-3.2	0.7	A-	A-
1830 604651 A2	1828	604705	A2	A2	964	.183	.108	.183	.253	.395	.061	.246	129	.246	119	.086	3.060	0.093	2.6	1.2	3.5	1.3	A+	A+
1831 603017 A2 A2 483 313 .139 .313 .375 .073 .101 .339 .082 .339 .041 114 2.155 0.111 1.6 1.1 1.3 1.1 A+ A+ 1832 604574 A2 A2 964 .313 .143 .313 .241 .226 .077 .366 .009 .366 .190 .050 2.124 .0078 1.6 1.1 1.6 1.1 A+ A+ 1834 604652 A2 A2 961 .353 .333 .154 .353 .332 .031 .320 .059 .177 .320 .047 1.973 .0075 .3.5 0.9 -2.6 0.9 A- 1835 604575 A2 A2 961 .309 .179 .182 .284 .309 .046 .511 .033 3.087 .0134 .08 1.1 .33 1.5 A- </td <td>1829</td> <td>603033</td> <td>A2</td> <td>A2</td> <td>964</td> <td>.143</td> <td>.139</td> <td>.380</td> <td>.254</td> <td>.143</td> <td>.084</td> <td>.363</td> <td>005</td> <td>089</td> <td>033</td> <td>.363</td> <td>3.375</td> <td>0.102</td> <td>0.1</td> <td>1.0</td> <td>1.5</td> <td>1.2</td> <td>A+</td> <td>B+</td>	1829	603033	A2	A2	964	.143	.139	.380	.254	.143	.084	.363	005	089	033	.363	3.375	0.102	0.1	1.0	1.5	1.2	A+	B+
1832 604574 A2	1830	604651	A2	A2	964	.299	.155	.230	.227	.299	.089	.472	099	142	137	.472	2.191	0.079	-2.5	0.9	-2.1	0.9	A+	A-
1833 603021 A2 A2 961 A08 A08 A08 A26 7.164 A.115 A.046 A.68 A.68 A.228 A.717 A.051 A.047 A.047 A.047 A.048 A.04652 A2 A2 961 A.353 A.330 A.54 A.353 A.320 A.031 A.320 A.059 A.77 A.320 A.047 A.047 A.047 A.047 A.047 A.048 A.046 A.048 A.046 A.048 A.048 A.046 A.048 A.048	1831	603017	A2	A2	483	.313	.139	.313	.375	.073	.101	.339	082	.339	041	114	2.155	0.111	1.6	1.1	1.3	1.1	A+	A+
1834 604652 A2 A2 961 .353 .330 .154 .353 .32 .031 .320 .059 .177 .320 .047 1.973 0.075 3.5 1.1 3.3 1.2 A-	1832	604574	A2	A2	964	.313	.143	.313	.241	.226	.077	.366	009	.366	190	050	2.124	0.078	1.6	1.1	1.6	1.1	A+	A-
1835 604575 A2 A2 961 3.09 1.79 1.82 2.84 3.09 0.46 5.51 -0.93 -1.73 -1.74 5.51 2.190 0.077 -3.3 0.9 -2.7 0.9 A- A- 1836 604543 A2 A2 481 1.71 1.71 2.70 2.99 2.14 0.46 3.42 3.42 -0.90 -0.54 -0.33 3.087 0.134 0.8 1.1 3.3 1.5 A- 1.837 604541 A2 A2 961 3.06 3.06 3.51 1.79 1.25 0.40 3.75 3.75 -1.63 -1.12 -0.44 2.208 0.078 1.0 1.0 1.7 1.1 A- A- 1838 604636 A2 A2 961 3.72 1.06 3.72 3.00 1.16 0.48 3.69 -1.54 3.69 -1.11 -0.95 1.843 0.074 0.5 1.0 1.2 1.1 B- B+ 1.839 603006 A2 A2 480 4.40 2.15 4.10 2.44 0.92 0.40 2.70 -0.81 2.70 -0.81 2.70 -1.85 -0.02 1.703 0.103 3.8 1.2 3.0 1.2 A+ B+ 1.841 603079 A2 A2 964 4.91 1.60 4.91 2.69 0.64 0.17 4.45 -1.75 4.45 -2.69 -1.09 1.362 0.071 -2.6 0.9 -2.7 0.9 A- A+ 1.842 603022 A2 A2 480 3.67 3.67 2.06 2.06 1.85 0.35 3.34 3.34 -1.26 -1.26 -1.00 1.932 0.105 1.8 1.1 1.6 1.1 A- A- 1.843 604637 A2 A2 480 5.44 1.58 1.96 5.44 0.92 0.10 3.39 -2.06 -1.44 3.39 -0.79 1.118 0.100 1.1 1.0 0.5 1.0 A- B+ 1.844 603078 A2 A2 480 5.57 2.06 5.70 1.33 0.66 0.26 4.17 -0.80 4.17 -0.80 4.17 -0.81 -0.28 0.928 0.071 -1.8 1.0 -1.0 1.0 A- A- 1.844 604680 A2 A2 480 2.83 2.27 2.88 0.54 0.05 0.05 0.15 0.14 -1.44 2.28 0.092 0.01 0.339 -2.06 -1.44 3.39 -0.79 1.118 0.100 1.1 1.0 0.5 1.0 A- A- 1.845 604680 A2 A2 480 2.83 2.29 2.327 2.88 0.54 0.05	1833	603021	A2	A2	961	.408	.408	.267	.164	.115	.046	.468	.468	228	171	051	1.649	0.073	-3.5	0.9	-2.6	0.9	A-	A-
1836 604543 A2 A2 481 .171 .171 .270 .299 .214 .046 .342 .090 054 033 3.087 0.134 0.8 1.1 3.3 1.5 A- 1837 604541 A2 A2 961 .306 .306 .351 .179 .125 .040 .375 163 112 044 2.208 0.078 1.0 1.0 1.7 1.1 A- A- 1838 604636 A2 A2 961 .372 .166 .372 .300 .116 .048 .369 154 .369 111 095 1.843 0.074 0.5 1.0 1.2 1.1 B- B+ 1839 603006 A2 A2 480 .410 .244 .092 .040 .270 185 002 1.703 0.103 3.8 1.2 3.0 1.2 A+ B+ 1840	1834	604652	A2	A2	961	.353	.330	.154	.353	.132	.031	.320	059	177	.320	047	1.973	0.075	3.5	1.1	3.3	1.2	A-	A-
1837 604541 A2 A2 961 .306 .306 .351 .179 .125 .040 .375 163 112 .044 2.208 0.078 1.0 1.0 1.7 1.1 A- A- 1838 604636 A2 A2 961 .372 .166 .372 .300 .116 .048 .369 154 .369 111 095 1.843 0.074 0.5 1.0 1.2 1.1 B- B+ 1839 603006 A2 A2 480 .410 .215 .410 .244 .092 .040 .270 185 .002 1.703 0.103 3.8 1.2 3.0 1.2 A+ B+ 1840 604613 A2 A2 964 .491 .160 .491 .269 .064 .017 .445 175 .445 269 .109 1.362 0.071 -2.6 0.99 -2.7 0.9 <td>1835</td> <td>604575</td> <td>A2</td> <td>A2</td> <td>961</td> <td>.309</td> <td>.179</td> <td>.182</td> <td>.284</td> <td>.309</td> <td>.046</td> <td>.511</td> <td>093</td> <td>173</td> <td>174</td> <td>.511</td> <td>2.190</td> <td>0.077</td> <td>-3.3</td> <td>0.9</td> <td>-2.7</td> <td>0.9</td> <td>A-</td> <td>A-</td>	1835	604575	A2	A2	961	.309	.179	.182	.284	.309	.046	.511	093	173	174	.511	2.190	0.077	-3.3	0.9	-2.7	0.9	A-	A-
1838 604636 A2 A2 961 .372 .166 .372 .300 .116 .048 .369 154 .369 111 095 1.843 0.074 0.5 1.0 1.2 1.1 B- B+ 1839 603006 A2 A2 480 .410 .244 .092 .040 .270 081 .270 185 002 1.703 0.103 3.8 1.2 3.0 1.2 A+ B+ 1840 604613 A2 A2 964 .491 .160 .491 .269 .064 .017 .445 175 .445 269 109 1.362 0.071 -2.6 0.9 -2.7 0.9 A- A+ 1841 603079 A2 A2 964 .338 .152 .351 .338 .022 .385 110 153 144 .385 2.121 0.075 -0.1 1.0 0.3 1.	1836	604543	A2	A2	481	.171	.171	.270	.299	.214	.046	.342	.342	090	054	033	3.087	0.134	0.8	1.1	3.3	1.5	A-	
1839 603006 A2 A2 480 .410 .244 .092 .040 .270 081 .270 185 002 1.703 0.103 3.8 1.2 3.0 1.2 A+ B+ 1840 604613 A2 A2 964 .491 .160 .491 .269 .064 .017 .445 175 .445 269 109 1.362 0.071 -2.6 0.9 -2.7 0.9 A- A+ 1841 603079 A2 A2 964 .338 .138 .152 .351 .338 .022 .385 110 153 144 .385 2.121 0.075 -0.1 1.0 0.3 1.0 A- A+ 1842 603022 A2 A2 480 .367 .206 .206 .185 .035 .334 .334 126 100 1.932 0.105 1.8 1.1 1.6 1.1 A- </td <td>1837</td> <td>604541</td> <td>A2</td> <td>A2</td> <td>961</td> <td>.306</td> <td>.306</td> <td>.351</td> <td>.179</td> <td>.125</td> <td>.040</td> <td>.375</td> <td>.375</td> <td>163</td> <td>112</td> <td>044</td> <td>2.208</td> <td>0.078</td> <td>1.0</td> <td>1.0</td> <td>1.7</td> <td>1.1</td> <td>A-</td> <td>A-</td>	1837	604541	A2	A2	961	.306	.306	.351	.179	.125	.040	.375	.375	163	112	044	2.208	0.078	1.0	1.0	1.7	1.1	A-	A-
1840 604613 A2 A2 964 .491 .160 .491 .269 .064 .017 .445 175 .445 269 109 1.362 0.071 -2.6 0.9 -2.7 0.9 A- A+ 1841 603079 A2 A2 964 .338 .138 .152 .351 .338 .022 .385 110 153 144 .385 2.121 0.075 -0.1 1.0 0.3 1.0 A- A+ 1842 603022 A2 A2 480 .367 .206 .206 .185 .035 .334 .334 126 120 100 1.932 0.105 1.8 1.1 1.6 1.1 A- A- 1843 604637 A2 A2 480 .544 .158 .196 .544 .092 .010 .339 206 144 .339 079 1.118 0.100 1.0 A	1838	604636	A2	A2	961	.372	.166	.372	.300	.116	.048	.369	154	.369	111	095	1.843	0.074	0.5	1.0	1.2	1.1	B-	B+
1841 603079 A2 A2 964 .338 .138 .152 .351 .338 .022 .385 110 153 144 .385 2.121 0.075 -0.1 1.0 0.3 1.0 A- A+ 1842 603022 A2 A2 480 .367 .206 .206 .185 .035 .334 .344 .126 126 100 1.932 0.105 1.8 1.1 1.6 1.1 A- 1843 604637 A2 A2 480 .544 .158 .196 .544 .092 .010 .339 206 144 .339 079 1.118 0.100 1.1 1.0 0.5 1.0 A- B+ 1844 603078 A2 A2 958 .570 .206 .570 .133 .066 .026 .417 080 .417 208 0.928 0.071 -1.8 1.0 -1.0 A<	1839	603006	A2	A2	480	.410	.215	.410	.244	.092	.040	.270	081	.270	185	002	1.703	0.103	3.8	1.2	3.0	1.2	A+	B+
1842 603022 A2 A2 480 .367 .206 .206 .185 .035 .334 .334 126 126 100 1.932 0.105 1.8 1.1 1.6 1.1 A- A- 1843 604637 A2 A2 480 .544 .158 .196 .544 .092 .010 .339 206 144 .339 079 1.118 0.100 1.1 1.0 0.5 1.0 A- B+ 1844 603078 A2 A2 958 .570 .206 .570 .133 .066 .026 .417 080 .417 261 208 0.928 0.071 -1.8 1.0 -1.0 1.0 A+ A- 1845 604566 A2 A2 480 .263 .204 .277 .242 .263 .015 .434 108 120 147 .434 2.577 0.114 -1.0	1840	604613	A2	A2	964	.491	.160	.491	.269	.064	.017	.445	175	.445	269	109	1.362	0.071	-2.6	0.9	-2.7	0.9	A-	A+
1843 604637 A2 A2 480 .544 .158 .196 .544 .092 .010 .339 206 144 .339 079 1.118 0.100 1.1 1.0 0.5 1.0 A- B+ 1844 603078 A2 A2 958 .570 .206 .570 .133 .066 .026 .417 080 .417 261 208 0.928 0.071 -1.8 1.0 -1.0 1.0 A+ A- 1845 604566 A2 A2 480 .263 .204 .277 .242 .263 .015 .434 108 120 147 .434 2.577 0.114 -1.0 0.9 -0.3 1.0 A- A- 1846 604680 A2 A2 480 .288 .292 .327 .288 .054 .040 .228 033 041 .228 063 2.380 0.112 3.4 1.2 4.1 1.3 A- A+ 1847 604587 <	1841	603079	A2	A2	964	.338	.138	.152	.351	.338	.022	.385	110	153	144	.385	2.121	0.075	-0.1	1.0	0.3	1.0	A-	A+
1844 603078 A2 A2 958 .570 .206 .570 .133 .066 .026 .417 080 .417 261 208 0.928 0.071 -1.8 1.0 -1.0 1.0 A+ A- 1845 604566 A2 A2 480 .263 .204 .277 .242 .263 .015 .434 108 120 147 .434 2.577 0.114 -1.0 0.9 -0.3 1.0 A- A- 1846 604680 A2 A2 480 .288 .292 .327 .288 .054 .040 .228 033 041 .228 063 2.380 0.112 3.4 1.2 4.1 1.3 A- A+ 1847 604587 A2 A2 480 .735 .083 .060 .079 .735 .042 .456 161 221 143 .456 -0.019 0.116 <	1842	603022	A2	A2	480	.367	.367	.206	.206	.185	.035	.334	.334	126	126	100	1.932	0.105	1.8	1.1	1.6	1.1	A-	A-
1845 604566 A2 A2 480 .263 .204 .277 .242 .263 .015 .434 108 120 147 .434 2.577 0.114 -1.0 0.9 -0.3 1.0 A- A- 1846 604680 A2 A2 480 .288 .292 .327 .288 .054 .040 .228 033 041 .228 063 2.380 0.112 3.4 1.2 4.1 1.3 A- A+ 1847 604587 A2 A2 480 .735 .083 .060 .079 .735 .042 .456 161 221 143 .456 -0.019 0.116 -1.8 0.9 -1.8 0.8 A- A- 1848 604611 A2 A2 480 .567 .102 .067 .223 .567 .042 .507 157 197 217 .507 0.916 0.102 -3.7 0.9 -2.8 0.8 B+ A- 1849 604551	1843	604637	A2	A2	480	.544	.158	.196	.544	.092	.010	.339	206	144	.339	079	1.118	0.100	1.1	1.0	0.5	1.0	A-	B+
1846 604680 A2 A2 480 .288 .292 .327 .288 .054 .040 .228 033 041 .228 063 2.380 0.112 3.4 1.2 4.1 1.3 A- A+ 1847 604587 A2 A2 480 .735 .083 .060 .079 .735 .042 .456 161 221 143 .456 -0.019 0.116 -1.8 0.9 -1.8 0.8 A- A- 1848 604611 A2 A2 480 .567 .102 .067 .223 .567 .042 .507 157 197 217 .507 0.916 0.102 -3.7 0.9 -2.8 0.8 B+ A- 1849 604551 A2 A2 964 .387 .198 .167 .213 .387 .035 .405 027 172 193 .405 1.835 0.073 0.2 1.0 0.5 1.0 A+	1844	603078	A2	A2	958	.570	.206	.570	.133	.066	.026	.417	080	.417	261	208	0.928	0.071	-1.8	1.0	-1.0	1.0	A+	A-
1847 604587 A2 A2 480 .735 .083 .060 .079 .735 .042 .456 161 221 143 .456 -0.019 0.116 -1.8 0.9 -1.8 0.8 A- A- 1848 604611 A2 A2 480 .567 .102 .067 .223 .567 .042 .507 157 197 217 .507 0.916 0.102 -3.7 0.9 -2.8 0.8 B+ A- 1849 604551 A2 A2 964 .387 .198 .167 .213 .387 .035 .405 027 172 193 .405 1.835 0.073 0.2 1.0 0.5 1.0 A+ A+	1845	604566	A2	A2	480	.263	.204	.277	.242	.263	.015	.434	108	120	147	.434	2.577	0.114	-1.0	0.9	-0.3	1.0	A-	A-
1847 604587 A2 A2 480 .735 .083 .060 .079 .735 .042 .456 161 221 143 .456 -0.019 0.116 -1.8 0.9 -1.8 0.8 A- A- 1848 604611 A2 A2 480 .567 .102 .067 .223 .567 .042 .507 157 197 217 .507 0.916 0.102 -3.7 0.9 -2.8 0.8 B+ A- 1849 604551 A2 A2 964 .387 .198 .167 .213 .387 .035 .405 027 172 193 .405 1.835 0.073 0.2 1.0 0.5 1.0 A+ A+	1846	604680	A2	A2	480	.288	.292	.327	.288	.054	.040	.228	033	041	.228	063	2.380	0.112	3.4	1.2	4.1	1.3	A-	A+
1848 604611 A2 A2 480 .567 .102 .067 .223 .567 .042 .507 157 197 217 .507 0.916 0.102 -3.7 0.9 -2.8 0.8 B+ A- 1849 604551 A2 A2 964 .387 .198 .167 .213 .387 .035 .405 027 172 193 .405 1.835 0.073 0.2 1.0 0.5 1.0 A+ A+	1847	604587	A2	A2							.042			221		.456		0.116	-1.8	0.9	-1.8			
1849 604551 A2 A2 964 .387 .198 .167 .213 .387 .035 .405027172193 .405 1.835 0.073 0.2 1.0 0.5 1.0 A+ A+	1848	604611	A2	A2	480	.567	.102	.067	.223		.042	.507	157	197	217	.507	0.916	0.102	-3.7	0.9	-2.8	0.8	B+	-
											_												A+	
																								Α-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1851 603012 A2	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1852 603090			Grade	Grade			. ,			. ,										in			/F	/B
1853 604647 A2 A2 966 595 0.99 595 173 1.08 0.035 A15 -119 A15 -211 -158 0.0782 0.072 -2.5 0.9 -2.4 0.9 A+ A- 1855 604642 A2 A2 966 5.05 1.09 5.05 5.25 1.23 0.01 A19 -0.91 A19 -2.32 -1.81 1.288 0.070 -3.2 0.9 -2.9 0.9 A+ A- 1855 604642 A2 A2 966 1.44 5.33 1.63 1.22 0.08 2.13 -0.08 -0.05 -1.60 2.13 3.587 0.106 1.6 1.1 3.4 1.4 A+ A+ A+ 1856 604639 A2 A2 966 1.49 2.06 2.46 3.43 1.49 0.06 2.14 0.01 -0.09 -0.08 2.14 3.80 0.098 1.8 1.1 4.4 1.5 A- A+ 1858 604636 A2 A2 966 2.75 1.66 3.22 2.75 1.78 0.099 3.98 -1.40 -1.019 -0.083 2.14 3.280 0.098 1.8 1.1 4.4 1.5 A- A+ 1.858 604726 A2 A2 966 3.86 1.56 3.86 2.66 3.24 0.05 3.98 -1.04 -1.019 -0.083 2.14 3.280 0.098 1.8 1.1 4.4 1.5 A- A+ 1.859 604538 A2 A2 966 3.86 1.56 3.86 2.66 1.34 0.58 2.24 0.09 -0.07 0.074 1.776 0.073 3.6 1.1 2.7 1.1 A- A- 1.859 604538 A2 A2 966 3.86 1.56 3.86 2.66 1.34 0.58 2.25 0.00 0.06 0.06 1.733 0.073 5.3 1.2 4.3 1.2 A- A- 1.860 604562 A2 A2 966 3.80 2.70 1.82 3.80 1.11 0.57 3.78 -1.46 -1.82 3.78 -0.02 1.771 0.073 0.4 1.0 0.6 1.0 A- A- 1.860 604588 A2 A2 962 5.23 1.16 5.23 2.23 1.01 0.37 A/5 -1.16 4.75 -2.00 -2.26 1.126 0.071 -4.0 0.9 -3.4 0.9 A- 1.860 6.04588 A2 A2 4.22 5.35 5.35 1.76 2.12 0.06 0.01 3.19 3.19 -1.57 -0.098 -1.12 0.073 0.09 0.1 1.1 1.4 A- A- 1.864 6.04588 A2 A2 4.24 4.25 5.35 5.35 1.76 2.12 0.06 0.01 3.19 3.19 -1.57 -0.099 0.2630 0.082 -1.2 1.0 0.4 1.0 A- 1.866 6.04581 A2 A2 9.64 3.84 3.15 3.16 3.88 3.84 3.87 3.18 3.18 3.18 3.18 3.18 3.18 3.18																							A+	A+
1855 604673 A2	_																						A-	A+
1855 604642 A2	1853	604647	A2				.089				.035		119			158	0.782			0.9			A+	A-
1856 604649 A2							.109				.011	.419				181			-3.2	0.9	-2.9	0.9	A+	A+
1857 604564 A2	_	604642	A2	A2		.122							058			.213	3.587		1.6	1.1	3.4		A+	A+
1858 604726 A2	1856	604649	A2	A2	966	.149	.206	.246	.343	.149	.056	.214	.021	019	083	.214	3.280	0.098	1.8	1.1	4.4	1.5	A-	A+
1859 604538 A2 A2 966 3.86 1.56 3.86 2.66 1.34 0.58 2.245 0.05 2.245 -1.69 -0.06 1.733 0.073 5.3 1.2 4.3 1.2 A. A.	1857	604564	A2	A2		.275	.166	.322	.275	.178	.059	.398	140	175	.398	005	2.342	0.079	-0.5	1.0	0.3	1.0	A-	A+
1860 604562 A2	1858	604726	A2	A2	962	.388	.072	.388	.220	.274	.046	.309	127	.309	090	074	1.776	0.073	3.6	1.1	2.7	1.1	A-	A-
1861 604638 A2 A2 962 .523 .116 .523 .223 .101 .037 .475 .136 .475 .200 .226 .1.126 .0.071 .4.0 .0.9 .3.4 .0.9 A+ A- .1862 604588 A2 A2 .484 .310 .310 .229 .324 .085 .052 .394 .394 .0.72 .1.17 .1.57 .2.22 .0.110 .0.9 .1.0 .1.1 .1.1 .1.1 .A- .A- .1863 604688 A2 .A2 .482 .355 .355 .355 .757 .212 .0.66 .010 .319 .319 .1.57 .0.98 .1.92 .1.126 .0.097 .0.1 1.0 .0.5 1.0 .A- .1.864 .604585 A2 .A2 .964 .599 .0.71 .1.56 .1.65 .5.99 .0.10 .4.12 .1.80 .2.07 .1.87 .4.12 .0.833 .0.70 .4.3 .0.9 .3.4 .0.9 .A- .8.65 .6.65 .0.65 .0.65 .0.88 .3.77 .3.77 .1.64 .0.29 .0.099 .2.630 .0.82 .1.2 .1.0 .0.4 .1.0 .A- .8.66 .6.6531 .A2 .A2 .964 .3.29 .3.23 .3.19 .1.64 .2.47 .0.38 .3.77 .3.77 .1.64 .0.29 .0.99 .2.630 .0.82 .1.2 .1.0 .0.4 .1.0 .A- .8.66 .6.6531 .A2 .A2 .964 .3.67 .3.67 .1.78 .2.48 .1.55 .0.52 .2.28 .1.22 .3.89 .3.11 .1.29 .0.070 .2.1 .1.0 .0.4 .1.0 .A- .8.66 .6.6531 .4.10 .4.10 .4.10 .1.95 .6.78 .0.06 .4.60 .0.62 .1.92 .4.60 .2.25 .2.28 .0.123 .1.3 .0.9 .1.1 .0.9 .1.66 .6.65 .3	1859	604538	A2	A2	966	.386	.156	.386	.266	.134	.058	.245	.005	.245	169	006	1.733	0.073	5.3	1.2	4.3	1.2	A-	A-
1862 604588 A2 A2 484 310 310 229 324 0.85 0.52 3.94 3.94 -0.72 -1.17 -1.57 2.222 0.110 0.9 1.0 1.1 1.1 A- A- 1863 604648 A2 A2 482 5.35 5.35 1.76 2.12 0.66 0.10 3.19 3.19 -1.57 0.98 -1.92 1.126 0.097 0.1 1.0 0.05 1.0 A- 1.864 604585 A2 A2 964 5.99 0.71 1.55 1.65 5.95 5.95 0.10 4.12 -1.80 -2.07 -1.87 4.12 0.833 0.070 -4.3 0.9 -3.4 0.9 A- 1.865 603009 A2 A2 964 2.32 2.32 3.19 1.64 2.47 0.38 3.77 3.77 -1.64 -0.29 -0.99 2.630 0.082 -1.2 1.0 -0.4 1.0 A+ 1.866 604531 A2 A2 964 4.81 2.11 1.65 4.81 0.87 0.046 3.89 -1.11 -1.22 3.89 -1.31 1.292 0.070 2.1 1.0 -1.8 0.9 A- 1.866 603035 A2 A2 964 3.67 3.67 1.78 2.28 1.55 0.52 2.28 2.28 -1.60 0.034 -0.52 2.228 0.123 -1.3 0.9 -1.1 0.9 C- 1.866 603035 A2 A2 482 3.54 3.67 3.67 1.78 2.48 1.55 0.52 2.28 2.28 -1.60 0.034 -0.54 1.829 0.073 4.9 1.1 4.7 1.2 A- 1.87 4.80 4.	1860	604562	A2	A2	966	.380	.270	.182	.380	.111	.057	.378	146	182	.378	002	1.771	0.073	0.4	1.0	0.6	1.0	A-	B-
1863 604648 A2 A2 482 .535 .535 .535 .176 .212 .066 .010 .319 .319 .157 .098 .192 1.126 .0.097 .0.1 1.0 .0.5 1.0 A-	1861	604638	A2	A2	962	.523	.116	.523	.223	.101	.037	.475	136	.475	200	226	1.126	0.071	-4.0	0.9	-3.4	0.9	A+	A-
1864 604585 A2 A2 964 5.99 .071 .156 .165 .599 .010 .412 .180 .207 .187 .412 .0.833 0.070 .4.3 0.9 .3.4 0.9 A- 1865 603009 A2 A2 964 .232 .232 .319 .164 .087 .046 .389 .171 .122 .389 .131 .1292 .070 .2.1 .10 .0.4 .10 A+ .10	1862	604588	A2	A2	484	.310	.310	.229	.324	.085	.052	.394	.394	072	117	157	2.222	0.110	0.9	1.0	1.1	1.1	A-	A-
1865 603009 A2 A2 964 .232 .231 .319 .164 .247 .038 .377 .377 .164 029 099 2.630 .0.082 -1.2 1.0 -0.4 1.0 A+ 1867 603034 A2 A2 482 .195 .017 .104 .195 .678 .006 .460 .062 .192 .0070 .21 1.0 -1.8 0.9 A- 1868 603035 A2 A2 964 .367 .367 .178 .248 .155 .052 .228 .228 .160 .034 .054 .1829 .0073 .49 1.1 .47 1.2 A- 1870 603008 A2 A2 482 .353 .255 .139 .353 .183 .071 .268 .050 .071 .168 1.235 .008 2.7 1.1 .47 .18 .284 .353 .255 .139 <td>1863</td> <td>604648</td> <td>A2</td> <td>A2</td> <td>482</td> <td>.535</td> <td>.535</td> <td>.176</td> <td>.212</td> <td>.066</td> <td>.010</td> <td>.319</td> <td>.319</td> <td>157</td> <td>098</td> <td>192</td> <td>1.126</td> <td>0.097</td> <td>0.1</td> <td>1.0</td> <td>-0.5</td> <td>1.0</td> <td>A-</td> <td></td>	1863	604648	A2	A2	482	.535	.535	.176	.212	.066	.010	.319	.319	157	098	192	1.126	0.097	0.1	1.0	-0.5	1.0	A-	
1866 604531 A2 A2 964 .481 .221 .165 .481 .087 .046 .389 171 122 .389 131 1.292 .0.70 -2.1 1.0 -1.8 0.9 A-1 1867 603034 A2 A2 482 .195 .017 .104 .195 .678 .006 .460 .025 .228 .228 .160 .034 .054 .132 .13 .09 -1.1 .09 C- 1869 603109 A2 A2 482 .504 .033 .504 .371 .066 .025 .260 .071 .168 1.235 .0098 2.7 1.1 2.5 1.1 4.7 1.2 A. 1870 603008 A2 A2 482 .353 .255 .139 .353 .183 .071 .206 .057 .139 .208 .093 1.832 .0104 .2.1 1.0 .4 <td>1864</td> <td>604585</td> <td>A2</td> <td>A2</td> <td>964</td> <td>.599</td> <td>.071</td> <td>.156</td> <td>.165</td> <td>.599</td> <td>.010</td> <td>.412</td> <td>180</td> <td>207</td> <td>187</td> <td>.412</td> <td>0.833</td> <td>0.070</td> <td>-4.3</td> <td>0.9</td> <td>-3.4</td> <td>0.9</td> <td>A-</td> <td></td>	1864	604585	A2	A2	964	.599	.071	.156	.165	.599	.010	.412	180	207	187	.412	0.833	0.070	-4.3	0.9	-3.4	0.9	A-	
1867 603034 A2 A2 482 .195 .017 .104 .195 .678 .006 .460 .022 .192 .460 .225 2.928 0.123 -1.3 0.9 -1.1 0.9 C-1 1868 603035 A2 A2 964 .367 .367 .178 .248 .155 .052 .228 .228 .160 .034 .054 1.829 .0073 4.9 1.1 4.7 1.2 A- 1869 603109 A2 A2 482 .353 .554 .371 .066 .025 .260 .077 .168 1.235 .0098 2.7 1.1 4.5 1.1 A+ .12 .4 .02 .028 .057 .139 .208 .031 .183 .0104 .32 1.1 .4 .1 .25 .1.1 A+ .1 .25 .1.2 .254 .024 .049 .886 .0104 .27	1865	603009	A2	A2	964	.232	.232	.319	.164	.247	.038	.377	.377	164	029	099	2.630	0.082	-1.2	1.0	-0.4	1.0	A+	
1868 603035 A2 A2 964 .367 .178 .248 .155 .052 .228 .228 160 .034 054 1.829 0.073 4.9 1.1 4.7 1.2 A-186 1869 603109 A2 A2 482 .504 .033 .504 .371 .066 .025 .260 071 168 1.235 .0098 2.7 1.1 2.5 1.1 A+ 1871 604675 A2 A2 482 .353 .255 .139 .353 .037 .397 .099 010 213 .2066 .0.106 -0.6 1.0 -0.7 1.0 A+ 1872 604565 A2 A2 482 .357 .189 .357 .249 .133 .073 .294 .139 .050 .397 .099 010 213 .2066 .0.106 -0.6 .24 .11 .4 .0 .1 .	1866	604531	A2	A2	964	.481	.221	.165	.481	.087	.046	.389	171	122	.389	131	1.292	0.070	-2.1	1.0	-1.8	0.9	A-	
1869 603109 A2 A2 482 .504 .033 .504 .371 .066 .025 .260 073 .260 071 168 1.235 0.098 2.7 1.1 2.5 1.1 A+ 1870 603008 A2 A2 482 .353 .255 .139 .353 .183 .071 .208 .057 139 .208 093 1.832 0.104 3.2 1.1 4.0 1.2 A+ 1871 604675 A2 A2 482 .322 .322 .145 .216 .268 .050 .397 .099 010 .213 .2066 0.06 06 1.0 07 1.0 1.7 .0 1.0 .0 7 1.1 4.0 1.2 A+ .24 .42 .42 .424 .226 .266 .247 .191 .071 .283 .283 .068 .087 .052 .2549 .0117	1867	603034	A2	A2	482	.195	.017	.104	.195	.678	.006	.460	062	192	.460	225	2.928	0.123	-1.3	0.9	-1.1	0.9	C-	
1870 603008 A2 A2 482 .353 .255 .139 .353 .183 .071 .208 .057 139 .208 093 1.832 0.104 3.2 1.1 4.0 1.2 A+ 1871 604675 A2 A2 482 .322 .322 .145 .216 .268 .050 .397 .397 099 010 213 2.066 0.106 -0.6 1.0 -0.7 1.0 A+ 1872 604565 A2 A2 482 .357 .189 .357 .249 .133 .073 .254 024 .049 1.806 0.104 2.7 1.1 2.1 1.1 A- 1873 604563 A2 A2 482 .226 .266 .247 .191 .071 .283 .283 .088 .087 .052 .2549 0.117 0.7 .10 .1 .1 .4 .1 .4	1868	603035	A2	A2	964	.367	.367	.178	.248	.155	.052	.228	.228	160	.034	054	1.829	0.073	4.9	1.1	4.7	1.2	A-	
1871 604675 A2 A2 482 .322 .322 .145 .216 .268 .050 .397 .099 .010 .213 2.066 0.106 -0.6 1.0 -0.7 1.0 A+ 1872 604565 A2 A2 482 .357 .189 .357 .249 .133 .073 .254 127 .254 049 1.806 0.104 2.7 1.1 2.1 1.1 A- 1873 604563 A2 A2 482 .226 .266 .247 .191 .071 .283 .283 068 087 052 2.549 0.117 0.7 1.0 1.7 1.2 A- 1874 604545 A2 A2 964 .595 .074 .119 .176 .595 .035 .302 088 087 052 2.549 0.117 0.7 1.0 1.1 1.1 A+ 1.1 1.1 A+ <td>1869</td> <td>603109</td> <td>A2</td> <td>A2</td> <td>482</td> <td>.504</td> <td>.033</td> <td>.504</td> <td>.371</td> <td>.066</td> <td>.025</td> <td>.260</td> <td>073</td> <td>.260</td> <td>071</td> <td>168</td> <td>1.235</td> <td>0.098</td> <td>2.7</td> <td>1.1</td> <td>2.5</td> <td>1.1</td> <td>A+</td> <td></td>	1869	603109	A2	A2	482	.504	.033	.504	.371	.066	.025	.260	073	.260	071	168	1.235	0.098	2.7	1.1	2.5	1.1	A+	
1872 604565 A2 A2 482 .357 .189 .357 .249 .133 .073 .254 127 .254 024 049 1.806 0.104 2.7 1.1 2.1 1.1 A- 1873 604563 A2 A2 482 .226 .226 .266 .247 .191 .071 .283 .283 068 087 052 2.549 0.117 0.7 1.0 1.7 1.2 A- 1874 604545 A2 A2 964 .595 .074 .119 .176 .595 .035 .302 098 184 067 .302 0.762 0.071 1.0 1.0 1.4 1.1 A+ 1875 604643 A2 A2 964 .571 .056 .154 .167 .571 .053 .442 131 219 166 .442 .0827 0.072 -4.0 0.9 -2.7 <	1870	603008	A2	A2	482	.353	.255	.139	.353	.183	.071	.208	.057	139	.208	093	1.832	0.104	3.2	1.1	4.0	1.2	A+	
1873 604563 A2 A2 482 .226 .226 .266 .247 .191 .071 .283 .283 068 087 052 2.549 0.117 0.7 1.0 1.7 1.2 A- 1874 604545 A2 A2 964 .595 .074 .119 .176 .595 .035 .302 098 184 067 .302 0.762 0.071 1.0 1.0 1.4 1.1 A+ 1875 604643 A2 A2 964 .571 .056 .154 .167 .571 .053 .442 131 219 166 .442 0.827 0.072 -4.0 0.9 -2.7 0.9 A+ 1876 604594 A2 A2 960 .543 .275 .064 .079 .543 .040 .305 153 100 124 .305 1.007 0.071 2.0 1.1 2.1 <	1871	604675	A2	A2	482	.322	.322	.145	.216	.268	.050	.397	.397	099	010	213	2.066	0.106	-0.6	1.0	-0.7	1.0	A+	
1874 604545 A2 A2 964 .595 .074 .119 .176 .595 .035 .302 098 184 067 .302 0.762 0.071 1.0 1.4 1.1 A+ 1875 604643 A2 A2 964 .571 .056 .154 .167 .571 .053 .442 131 219 166 .442 0.827 0.072 -4.0 0.9 -2.7 0.9 A+ 1876 604594 A2 A2 960 .543 .275 .064 .079 .543 .040 .305 153 100 124 .305 1.007 0.071 2.0 1.1 2.1 1.1 A- 1877 604630 A2 A2 960 .378 .438 .076 .100 .378 .008 .431 272 132 109 .431 1.878 0.072 -2.8 0.9 -2.6 0.9	1872	604565	A2	A2	482	.357	.189	.357	.249	.133	.073	.254	127	.254	024	049	1.806	0.104	2.7	1.1	2.1	1.1	A-	
1875 604643 A2 A2 964 .571 .056 .154 .167 .571 .053 .442 131 219 166 .442 0.827 0.072 -4.0 0.9 -2.7 0.9 A+ 1876 604594 A2 A2 960 .543 .275 .064 .079 .543 .040 .305 153 100 124 .305 1.007 0.071 2.0 1.1 2.1 1.1 A- 1877 604630 A2 A2 960 .378 .438 .076 .100 .378 .008 .431 272 132 109 .431 1.878 0.072 -2.8 0.9 -2.6 0.9 A+ A+ 1878 604533 A2 A2 962 .194 .194 .211 .370 .175 .050 .337 .339 050 075 2.893 0.089 0.5 1.0 1.9 <t< td=""><td>1873</td><td>604563</td><td>A2</td><td>A2</td><td>482</td><td>.226</td><td>.226</td><td>.266</td><td>.247</td><td>.191</td><td>.071</td><td>.283</td><td>.283</td><td>068</td><td>087</td><td>052</td><td>2.549</td><td>0.117</td><td>0.7</td><td>1.0</td><td>1.7</td><td>1.2</td><td>A-</td><td></td></t<>	1873	604563	A2	A2	482	.226	.226	.266	.247	.191	.071	.283	.283	068	087	052	2.549	0.117	0.7	1.0	1.7	1.2	A-	
1876 604594 A2 A2 960 .543 .275 .064 .079 .543 .040 .305 153 100 124 .305 1.007 0.071 2.0 1.1 2.1 1.1 A- 1877 604630 A2 A2 960 .378 .438 .076 .100 .378 .008 .431 272 132 109 .431 1.878 0.072 -2.8 0.9 -2.6 0.9 A+ A+ 1878 604533 A2 A2 962 .194 .194 .211 .370 .175 .050 .337 .337 139 050 075 2.893 0.089 0.5 1.0 1.9 1.2 A+ 1879 604725 A2 A2 482 .467 .278 .467 .145 .093 .017 .366 105 .366 231 090 1.446 <t>0.099 -0.1 1.0 <t< td=""><td>1874</td><td>604545</td><td>A2</td><td>A2</td><td>964</td><td>.595</td><td>.074</td><td>.119</td><td>.176</td><td>.595</td><td>.035</td><td>.302</td><td>098</td><td>184</td><td>067</td><td>.302</td><td>0.762</td><td>0.071</td><td>1.0</td><td>1.0</td><td>1.4</td><td>1.1</td><td>A+</td><td></td></t<></t>	1874	604545	A2	A2	964	.595	.074	.119	.176	.595	.035	.302	098	184	067	.302	0.762	0.071	1.0	1.0	1.4	1.1	A+	
1877 604630 A2 A2 960 .378 .438 .076 .100 .378 .008 .431 272 132 109 .431 1.878 0.072 -2.8 0.9 -2.6 0.9 A+ A+ 1878 604533 A2 A2 962 .194 .194 .211 .370 .175 .050 .337 .337 139 050 075 2.893 0.089 0.5 1.0 1.9 1.2 A+ 1879 604725 A2 A2 482 .467 .278 .467 .145 .093 .017 .366 105 .366 231 090 1.446 0.099 -0.1 1.0 -0.5 1.0 A+ 1880 603028 A2 A2 962 .639 .133 .072 .144 .639 .013 .448 201 166 242 .448 0.597 0.072 -5.1 0.9 -4.0 0.8 A+ 1881 604559 A2 A2 962	1875	604643	A2	A2	964	.571	.056	.154	.167	.571	.053	.442	131	219	166	.442	0.827	0.072	-4.0	0.9	-2.7	0.9	A+	
1878 604533 A2 A2 962 .194 .194 .211 .370 .175 .050 .337 139 050 075 2.893 0.089 0.5 1.0 1.9 1.2 A+ 1879 604725 A2 A2 482 .467 .278 .467 .145 .093 .017 .366 105 .366 231 090 1.446 0.099 -0.1 1.0 -0.5 1.0 A+ 1880 603028 A2 A2 962 .639 .133 .072 .144 .639 .013 .448 201 166 242 .448 0.597 0.072 -5.1 0.9 -4.0 0.8 A+ 1881 604559 A2 A2 962 .405 .096 .273 .405 .156 .070 .224 073 112 .224 .002 1.583 0.073 6.8 1.2 5.7 1.2 A- 1882 604595 A2 A2 962 .296 .148	1876	604594	A2	A2	960	.543	.275	.064	.079	.543	.040	.305	153	100	124	.305	1.007	0.071	2.0	1.1	2.1	1.1	A-	A-
1879 604725 A2 A2 482 .467 .278 .467 .145 .093 .017 .366 105 .366 231 090 1.446 0.099 -0.1 1.0 -0.5 1.0 A+ 1880 603028 A2 A2 962 .639 .133 .072 .144 .639 .013 .448 201 166 242 .448 0.597 0.072 -5.1 0.9 -4.0 0.8 A+ 1881 604559 A2 A2 962 .405 .096 .273 .405 .156 .070 .224 073 112 .224 .002 1.583 0.073 6.8 1.2 5.7 1.2 A- 1882 604595 A2 A2 962 .296 .148 .319 .225 .296 .013 .268 029 193 .268 2.296 0.077 3.5 1.1 3.3 1.2 <t< td=""><td>1877</td><td>604630</td><td>A2</td><td>A2</td><td>960</td><td>.378</td><td>.438</td><td>.076</td><td>.100</td><td>.378</td><td>.008</td><td>.431</td><td>272</td><td>132</td><td>109</td><td>.431</td><td>1.878</td><td>0.072</td><td>-2.8</td><td>0.9</td><td>-2.6</td><td>0.9</td><td>A+</td><td>A+</td></t<>	1877	604630	A2	A2	960	.378	.438	.076	.100	.378	.008	.431	272	132	109	.431	1.878	0.072	-2.8	0.9	-2.6	0.9	A+	A+
1880 603028 A2 A2 962 .639 .133 .072 .144 .639 .013 .448 201 166 242 .448 0.597 0.072 -5.1 0.9 -4.0 0.8 A+ 1881 604559 A2 A2 962 .405 .096 .273 .405 .156 .070 .224 073 112 .224 .002 1.583 0.073 6.8 1.2 5.7 1.2 A- 1882 604595 A2 A2 962 .296 .148 .319 .225 .296 .013 .268 028 029 193 .268 2.296 0.077 3.5 1.1 3.3 1.2 A+ 1883 604645 A2 A2 962 .519 .157 .103 .519 .203 .019 .390 177 225 .390 071 1.168 0.070 -1.2 1.0 -0.6 1.0 A+ 1884 603036 A2 A2 962 .429	1878	604533	A2	A2	962	.194	.194	.211	.370	.175	.050	.337	.337	139	050	075	2.893	0.089	0.5	1.0	1.9	1.2	A+	
1881 604559 A2 A2 962 .405 .096 .273 .405 .156 .070 .224 073 112 .224 .002 1.583 0.073 6.8 1.2 5.7 1.2 A- 1882 604595 A2 A2 962 .296 .148 .319 .225 .296 .013 .268 028 029 193 .268 2.296 0.077 3.5 1.1 3.3 1.2 A+ 1883 604645 A2 A2 962 .519 .157 .103 .519 .203 .019 .390 177 225 .390 071 1.168 0.070 -1.2 1.0 -0.6 1.0 A+ 1884 603036 A2 A2 962 .429 .144 .109 .296 .429 .022 .357 082 153 163 .357 1.579 0.071 0.5 1.0 0.5 1.0 A-	1879	604725	A2	A2	482	.467	.278	.467	.145	.093	.017	.366	105	.366	231	090	1.446	0.099	-0.1	1.0	-0.5	1.0	A+	
1882 604595 A2 A2 962 .296 .148 .319 .225 .296 .013 .268 028 029 193 .268 2.296 0.077 3.5 1.1 3.3 1.2 A+ 1883 604645 A2 A2 962 .519 .157 .103 .519 .203 .019 .390 177 225 .390 071 1.168 0.070 -1.2 1.0 -0.6 1.0 A+ 1884 603036 A2 A2 962 .429 .144 .109 .296 .429 .022 .357 082 153 163 .357 1.579 0.071 0.5 1.0 0.5 1.0 A-	1880	603028	A2	A2	962	.639	.133	.072	.144	.639	.013	.448	201	166	242	.448	0.597	0.072	-5.1	0.9	-4.0	0.8	A+	
1882 604595 A2 A2 962 .296 .148 .319 .225 .296 .013 .268 028 029 193 .268 2.296 0.077 3.5 1.1 3.3 1.2 A+ 1883 604645 A2 A2 962 .519 .157 .103 .519 .203 .019 .390 177 225 .390 071 1.168 0.070 -1.2 1.0 -0.6 1.0 A+ 1884 603036 A2 A2 962 .429 .144 .109 .296 .429 .022 .357 082 153 163 .357 1.579 0.071 0.5 1.0 0.5 1.0 A-	1881	604559	A2	A2	962	.405	.096	.273	.405	.156	.070	.224	073	112	.224	.002	1.583	0.073	6.8	1.2	5.7	1.2	A-	
1884 603036 A2 A2 962 .429 .144 .109 .296 .429 .022 .357082153163 .357 1.579 0.071 0.5 1.0 0.5 1.0 A-	1882	604595	A2	A2	962						.013	.268	028	029					3.5	1.1				\Box
1884 603036 A2 A2 962 .429 .144 .109 .296 .429 .022 .357082153163 .357 1.579 0.071 0.5 1.0 0.5 1.0 A-	1883	604645	A2	A2	962	.519	.157	.103	.519	.203	.019	.390	177	225	.390	071	1.168	0.070	-1.2	1.0	-0.6	1.0	A+	
	1884	603036	A2	A2	962			.109			.022	.357	082			.357	1.579		0.5	1.0	0.5	1.0	A-	
										.338		.296												

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1886 604571 A2	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1887 604586 A2 A2 A2 A2 A2 A2 A2 A			Grade	Grade															in	in	out	out	/F	/B
1888 604601 A2 A2 962 350 350 209 255 123 063 A93 A93 -239 -147 -078 1889 0.075 -3.7 0.9 -3.3 0.9 A																								\vdash
1889 604606 A2	_																							—
1890 604644 A2	-																						A-	<u> </u>
1891 604560																-								
1892 604583 A2 A2 960 .224 .224 .384 .167 .183 .042 .325 .325 .008 .126 172 .2.723 .0.086 .2.1 .1.1 .2.7 .1.2 A+ A+ .1893 604535 A2 A2 480 .215 .083 .331 .350 .215 .021 .344 119 172 .045 .344 .2.769 .0.123 .0.6 1.0 0.8 1.1 A- .18189 604684 A2 A2 .426 .426 .425 .427 .025 .403 101 .437 .0.73 .0.137 .0.6 1.0 0.8 1.1 A- .18189 .426 .426 .2.7 .2.2 .4.2 .4.2 .4.2 .4.2 .4.2 .4.2 .4.2 .4.2 .4.2 .4.3 .4	_																						A+	
1893 604535 A2 A2 A2 A80 .215 .083 .331 .350 .215 .021 .344 .119 .172 .045 .344 2.769 0.123 0.6 1.0 0.8 1.1 A A 8-1895 604722 A2 A2 A2 A2 A2 A2 A2		604560	A2								.021				156					1.1	1.8	1.1	A+	
1894 604684 A2		604583	A2	A2												172			2.1	1.1	2.7	1.2	A+	A+
1895 604722 A2	1893	604535	A2	A2	480	.215	.083	.331	.350	.215	.021	.344	119	172	045	.344	2.769	0.123	0.6	1.0	8.0	1.1	A-	
1896 603007 A2 A2 960 .287 .287 .380 .241 .070 .023 .334 .345 192 .090 .014 .2.369 .0.079 1.8 1.1 .2.7 1.2 A+ A- .1897 603110 A2 A2 .480 .500 .500 .183 .185 .100 .031 .451 .451 .264 .175 .111 .1.17 .0.100 .3.6 .0.9 .2.6 .0.9 A- .1889 60329 A2 .42 .480 .160 .235 .294 .260 .160 .500 .483 .109 .126 .083 .483 .3188 .0.339 .1.2 .0.9 .0.1 1.0 .A- .1899 604597 A2 .42 .480 .154 .075 .342 .388 .154 .042 .404 .119 .0.97 .0.74 .404 .3.248 .0.141 .0.1 1.0 1.2 1.2 .A- .1900 604608 A2 .42 .960 .367 .367 .322 .205 .164 .032 .447 .447 .174 .267 .026 .1893 .0.074 .1.6 1.0 .1.5 .0.9 A- .4- .1902 604557 A2 .42 .960 .453 .453 .201 .181 .100 .065 .488 .488 .240 .2.12 .105 .1357 .0.073 .4.3 .0.9 .3.6 .0.9 .4- A- .1903 604584 A2 .42 .424 .424 .424 .424 .424 .424 .424 .424 .425 .42	1894	604684	A2	A2	960	.380	.103	.380	.245	.247	.025	.403	107	.403	220	100	1.837	0.074	0.6	1.0	0.4	1.0	A-	B-
1897 603110 A2 A2 480 .500 .500 .183 .185 .100 .031 .451 .451 264 .175 .111 1.177 0.100 .3.6 0.9 .2.6 0.9 A-	1895	604722	A2	A2	480	.458	.067	.244	.215	.458	.017	.458	143	173	234	.458	1.422	0.100	-2.8	0.9	-2.3	0.9	A+	
1898 603029 A2 A2 A80 .160 .235 .294 .260 .160 .050 .483 .109 .126 .083 .483 3.188 0.139 .1.2 0.9 0.1 1.0 A-	1896	603007	A2	A2	960	.287	.287	.380	.241	.070	.023	.334	.334	192	090	.014	2.369	0.079	1.8	1.1	2.7	1.2	A+	A-
1899 604597 A2 A2 A80 .154 .075 .342 .388 .154 .042 .404 .119 .0.97 .0.74 .404 3.248 0.141 0.1 1.0 1.2 1.2 A-	1897	603110	A2	A2	480	.500	.500	.183	.185	.100	.031	.451	.451	264	175	111	1.177	0.100	-3.6	0.9	-2.6	0.9	A-	
1900 604608	1898	603029	A2	A2	480	.160	.235	.294	.260	.160	.050	.483	109	126	083	.483	3.188	0.139	-1.2	0.9	-0.1	1.0	A-	
1901 603030 A2 A2 960 2.98 0.92 2.98 3.69 1.19 0.43 4.20 -1.12 4.20 -1.48 -1.63 2.241 0.078 -0.3 1.0 0.3 1.0 A+ A+ 1902 604557 A2 A2 960 4.53 4.53 2.01 1.81 1.00 0.65 4.88 4.88 -2.40 -2.12 -1.05 1.357 0.073 4.3 0.9 3.6 0.9 A+ A- 1903 604584 A2 A2 A2 480 4.08 0.96 3.67 4.08 0.90 0.40 3.36 -1.09 -1.60 3.36 -1.40 1.707 0.104 2.0 1.1 2.2 1.1 A- A- 1904 604618 A2 A2 958 3.14 2.16 1.56 3.14 2.91 0.23 2.74 -1.08 -0.97 2.74 -0.74 2.208 0.076 3.6 1.1 3.7 1.2 A+ A+ 1905 604555 A2 A2 958 8.10 8.10 0.87 0.41 0.56 0.06 4.18 4.18 -2.69 -1.68 -2.00 -0.367 0.087 -2.6 0.9 -3.4 0.7 A+ A- 1906 604554 A2 A2 480 .744 .744 .127 0.90 0.35 0.04 4.37 4.37 -2.58 -2.50 -1.61 0.082 0.112 -2.1 0.9 -2.7 0.7 A+ A- 1907 604724 A2 A2 A2 480 .410 .410 .148 2.02 .213 0.27 3.09 3.09 -0.84 -1.59 -1.21 1.725 0.103 2.5 1.1 2.3 1.1 A+ A+ 1908 604561 A2 A2 480 .619 .142 .619 0.94 1.27 0.19 3.54 -1.03 3.54 -1.42 -2.20 0.0705 0.103 0.5 1.0 1.5 1.1 A+ A- 1910 603091 A2 A2 480 .619 .142 .619 0.94 .127 0.19 3.54 -1.03 3.54 -1.42 -2.20 0.0705 0.103 0.5 1.0 1.5 1.1 A+ A- 1911 604598 A2 A2 480 .581 .581 .581 .581 .581 .581 .581 .581 .581 .581 .581 .581 .581 .046 .695 .333 .074 .085 .062 .333 2.850 0.088 0.98 0.08 0.9 0.0 0.9 A- A- 1913 604567 A2 A2 480 .581 .58	1899	604597	A2	A2	480	.154	.075	.342	.388	.154	.042	.404	119	097	074	.404	3.248	0.141	0.1	1.0	1.2	1.2	A-	<u> </u>
1902 604557 A2	1900	604608	A2	A2	960	.367	.367	.232	.205	.164	.032	.447	.447	174	267	026	1.893	0.074	-1.6	1.0	-1.5	0.9	A+	A-
1903 604584 A2 A2 A80 A08 .096 .367 A08 .090 .040 .336 109 160 .336 140 1.707 0.104 2.0 1.1 2.2 1.1 A- A- 1904 604618 A2 A2 958 .314 .216 .156 .314 .291 .023 .274 108 097 .274 074 2.208 0.076 .3.6 1.1 3.7 1.2 A+ A+ 1905 604555 A2 A2 958 .810 .810 .087 .041 .056 .006 .418 .418 .269 168 200 -0.367 0.087 -2.6 0.9 -3.4 0.7 A+ A- 1906 604554 A2 A2 480 .744 .744 .127 .090 .035 .004 .437 .437 .258 255 161 0.082 0.112 -2.1 0.9 -2.7 0.7 A+ A- 1906 604574 A2 A2 480 .410 .418 .202 .213 .027 .309 .309 .084 159 121 1.725 0.103 .2.5 1.1 2.3 1.1 A+ A- 1910 603091 A2 A2 480 .619 .142 .619 .094 .127 .019 .354 .103 .354 .142 .220 0.705 0.103 0.5 1.0 1.5 1.1 A+ A- 1911 604588 A2 A2 480 .581 .581 .169 .138 .040 .067 .470 .470 .067 .470 .258 .259 .121 .725 .103 .054 .10 .09 .09 .07 .09 .084 .067 .470 .080 .400 .155 .121 .174 .077 0.2 1.0 0.8 .07 A+ A- 1911 .064588 A2 A2 480 .581 .581 .169 .178 .088 .046 .469 .469 .469 .469 .469 .243 .180 .145 .081 .014 .15 .09 .09 .0.9 .0	1901	603030	A2	A2	960	.298	.092	.298	.369	.199	.043	.420	112	.420	148	163	2.241	0.078	-0.3	1.0	0.3	1.0	A+	A+
1904 604618 A2 A2 958 .314 .216 .156 .314 .291 .023 .274 108 097 .274 074 2.208 0.076 3.6 1.1 3.7 1.2 A+ A+ 1905 604555 A2 A2 958 .810 .810 .087 .041 .056 .006 .418 .418 269 168 200 -0.367 0.087 -2.6 0.9 -3.4 0.7 A+ A- 1906 604554 A2 A2 480 .744 .744 .127 .090 .035 .004 .437 .437 -258 .250 161 .0082 0.112 -2.1 0.9 -2.7 0.7 A+ A- 1908 604561 A2 A2 480 .619 .142 .619 .094 .127 .019 .354 .104 0419 .012 .10 .08 .400 .08<	1902	604557	A2	A2	960	.453	.453	.201	.181	.100	.065	.488	.488	240	212	105	1.357	0.073	-4.3	0.9	-3.6	0.9	A+	A-
1905 604555 A2 A2 958 .810 .810 .087 .041 .056 .006 .418 .418 .269 .168 .200 -0.367 .0087 .2.6 .0.9 -3.4 .0.7 A+ A- 1906 604554 A2 A2 .480 .744 .744 .127 .090 .035 .004 .437 .437 .258 .250 .161 .0.082 .0.112 .2.1 .0.9 .2.7 .0.7 A+ A- 1907 604724 A2 A2 .480 .410 .410 .148 .202 .213 .027 .309 .309 .084 .159 .121 .1.725 .0.103 .2.5 .1.1 .2.3 .1.1 A+ A+ 1908 604561 A2 A2 .480 .815 .040 .815 .079 .056 .010 .369 .217 .369 .203 .144 .0.419 .0.126 .1.0 .0.9 .1.9 .0.7 A+ A- 1909 604617 A2 A2 .480 .619 .142 .619 .094 .127 .019 .354 .103 .354 .103 .354 .103 .354 .103 .354 .103 .354 .103 .354 .104 .410 .1077 .0.2 .1.0 .0.8 .1.1 A+ A- 1910 603091 A2 A2 .480 .204 .190 .235 .304 .204 .067 .470 .120 .251 .011 .470 .289 .016 .1.0 .0.9 .0.6 .0.9 A- A- 1912 604612 A2 A2 .480 .581 .581 .169 .117 .088 .046 .469 .469 .469 .243 .180 .145 .0.817 .0.104 .1.5 .0.9 .2.0 .0.9 A- A- 1913 604549 A2 A2 .480 .581 .581 .581 .581 .581 .209 .025 .105 .009 .005 .037 .015 .037 .015 .0.15 .0	1903	604584	A2	A2	480	.408	.096	.367	.408	.090	.040	.336	109	160	.336	140	1.707	0.104	2.0	1.1	2.2	1.1	A-	A-
1906 604554 A2 A2 480 .744 .744 .127 .090 .035 .004 .437 .437 .258 .250 .161 0.082 0.112 .2.1 0.9 .2.7 0.7 A+ A- 1907 604724 A2 A2 480 .410 .410 .148 .202 .213 .027 .309 .309 .084 .159 .121 1.725 0.103 2.5 1.1 2.3 1.1 A+ A+ 1908 604561 A2 A2 480 .815 .040 .815 .079 .056 .010 .369 .217 .369 .203 .144 .0419 0.126 -1.0 0.9 -1.9 0.7 A+ A- 1909 604617 A2 A2 480 .619 .142 .619 .094 .127 .019 .354 .103 .354 .103 .354 .142 .220 0.705 0.103 0.5 1.0 1.5 1.1 A+ A- 1910 603091 A2 A2 958 .311 .096 .311 .336 .208 .049 .400 .080 .400 .155 .121 2.174 0.077 0.2 1.0 0.8 1.0 A+ A- 1911 604598 A2 A2 480 .581 .581 .169 .117 .088 .046 .469 .469 .243 .180 .180 .180 .180 .180 .180 .289 .203 .333 .2850 .088 0.9 1.0 1.9 1.2 A+ B- 1914 604628 A2 A2 478 .359 .391 .157 .218 .209 .025 .105 .009 .105 .037 .015 .371 .016 .111 .29 1.2 A- 1916 604620 A2 A2 480 .654 .660 .654 .106 .654 .107 .125 .017 .377 .138 .377 .181 .186 0.470 0.104 -1.7 0.9 -0.1 1.0 B- 1918 603106 A2 A2 482 .270 .145 .270 .303 .228 .054 .187 .032 .187 .009 .010 .2395 0.112 3.5 1.2 3.8 1.3 A- 1919 603057 A2 A2 A2 A2 A2 A2 A2 .482 .270 .445 .262 .505 .068 .374 .168 .175 .009 .010 .2395 0.112 3.5 1.2 3.8 1.3 A- 1919 .03057 A2 A2 .482 .270 .145 .270 .303 .228 .054 .187 .032 .187 .009 .010 .2395 0.112 3.5 1.2 3.8 1.3 A- 1919 .03057 A2 A2 .482 .270 .445 .270 .303 .228 .054 .187 .032 .187 .009 .010 .2395 0.112 3.5 1.2 3.8 1.3 A- 1919 .03057 A2 .422 .422 .422 .422 .422 .422 .422	1904	604618	A2	A2	958	.314	.216	.156	.314	.291	.023	.274	108	097	.274	074	2.208	0.076	3.6	1.1	3.7	1.2	A+	A+
1907 604724 A2 A2 480 .410 .148 .202 .213 .027 .309 .309 .084 .159 .121 1.725 0.103 2.5 1.1 2.3 1.1 A+ A+ 1908 604561 A2 A2 480 .815 .040 .815 .079 .056 .010 .369 .217 .369 .203 .144 -0.419 0.126 -1.0 0.9 -1.9 0.7 A+ A- 1909 604617 A2 A2 480 .619 .142 .619 .094 .127 .019 .354 103 .354 142 .220 0.705 0.103 0.5 1.0 1.5 1.1 A+ A+ 1910 603091 A2 A2 958 .311 .096 .311 .336 .208 .049 .400 155 .121 2.174 0.077 0.2 1.0 0.8 1.0	1905	604555	A2	A2	958	.810	.810	.087	.041	.056	.006	.418	.418	269	168	200	-0.367	0.087	-2.6	0.9	-3.4	0.7	A+	A-
1908 604561 A2 A2 480 .815 .040 .815 .079 .056 .010 .369 217 .369 203 144 -0.419 0.126 -1.0 0.9 -1.9 0.7 A+ A-1909 1909 604617 A2 A2 480 .619 .142 .619 .094 .127 .019 .354 103 .354 142 220 0.705 0.103 0.5 1.0 1.5 1.1 A+ A-1910 603091 A2 A2 958 .311 .096 .311 .336 .208 .049 .400 080 .400 155 121 2.174 0.077 0.2 1.0 0.8 1.0 A+ A-1911 604598 A2 A2 480 .204 .190 .235 .304 .204 .067 .470 120 251 .011 .470 2.889 0.126 -1.0 0.9 -0.6 0.9 </td <td>1906</td> <td>604554</td> <td>A2</td> <td>A2</td> <td>480</td> <td>.744</td> <td>.744</td> <td>.127</td> <td>.090</td> <td>.035</td> <td>.004</td> <td>.437</td> <td>.437</td> <td>258</td> <td>250</td> <td>161</td> <td>0.082</td> <td>0.112</td> <td>-2.1</td> <td>0.9</td> <td>-2.7</td> <td>0.7</td> <td>A+</td> <td>A-</td>	1906	604554	A2	A2	480	.744	.744	.127	.090	.035	.004	.437	.437	258	250	161	0.082	0.112	-2.1	0.9	-2.7	0.7	A+	A-
1909 604617 A2 A2 480 .619 .142 .619 .094 .127 .019 .354 103 .354 142 220 0.705 0.103 0.5 1.0 1.5 1.1 A+ A- 1910 603091 A2 A2 958 .311 .096 .311 .336 .208 .049 .400 080 .400 155 121 2.174 0.077 0.2 1.0 0.8 1.0 A+ A- 1911 604598 A2 A2 480 .204 .190 .235 .304 .204 .067 .470 120 251 .011 .470 2.889 0.126 -1.0 0.9 -0.6 0.9 A- A- 1912 604612 A2 A2 480 .581 .169 .117 .088 .046 .469 .469 .243 180 145 0.817 0.104 -1.5 0.	1907	604724	A2	A2	480	.410	.410	.148	.202	.213	.027	.309	.309	084	159	121	1.725	0.103	2.5	1.1	2.3	1.1	A+	A+
1910 603091 A2 A2 958 .311 .096 .311 .336 .208 .049 .400 080 .400 155 121 2.174 0.077 0.2 1.0 0.8 1.0 A+ A- 1911 604598 A2 A2 480 .204 .190 .235 .304 .204 .067 .470 120 251 .011 .470 2.889 0.126 -1.0 0.9 -0.6 0.9 A- 1912 604612 A2 A2 480 .581 .581 .169 .117 .088 .046 .469 .469 243 180 145 0.817 0.104 -1.5 0.9 -2.0 0.9 A- 1913 604549 A2 A2 958 .202 .138 .243 .353 .202 .065 .333 074 085 062 .333 2.850 0.088 0.9 1.0 <	1908	604561	A2	A2	480	.815	.040	.815	.079	.056	.010	.369	217	.369	203	144	-0.419	0.126	-1.0	0.9	-1.9	0.7	A+	A-
1911 604598 A2 A2 480 .204 .190 .235 .304 .204 .067 .470 120 251 .011 .470 2.889 0.126 -1.0 0.9 -0.6 0.9 A- A- 1912 604612 A2 A2 480 .581 .581 .169 .117 .088 .046 .469 .469 243 180 145 0.817 0.104 -1.5 0.9 -2.0 0.9 A- 1913 604549 A2 A2 958 .202 .138 .243 .353 .202 .065 .333 074 085 062 .333 2.850 0.088 0.9 1.0 1.9 1.2 A+ B- 1914 604628 A2 A2 478 .157 .391 .157 .218 .209 .025 .105 009 .105 037 015 3.214 0.134 2.2 <t< td=""><td>1909</td><td>604617</td><td>A2</td><td>A2</td><td>480</td><td>.619</td><td>.142</td><td>.619</td><td>.094</td><td>.127</td><td>.019</td><td>.354</td><td>103</td><td>.354</td><td>142</td><td>220</td><td>0.705</td><td>0.103</td><td>0.5</td><td>1.0</td><td>1.5</td><td>1.1</td><td>A+</td><td>A-</td></t<>	1909	604617	A2	A2	480	.619	.142	.619	.094	.127	.019	.354	103	.354	142	220	0.705	0.103	0.5	1.0	1.5	1.1	A+	A-
1912 604612 A2 A2 480 .581 .169 .117 .088 .046 .469 .469 243 180 145 0.817 0.104 -1.5 0.9 -2.0 0.9 A- A- 1913 604549 A2 A2 958 .202 .138 .243 .353 .202 .065 .333 074 085 062 .333 2.850 0.088 0.9 1.0 1.9 1.2 A+ B- 1914 604628 A2 A2 478 .157 .391 .157 .218 .209 .025 .105 009 .105 037 015 3.214 0.134 2.2 1.2 3.0 1.4 A+ 1915 604567 A2 A2 478 .339 .375 .140 .063 .246 159 .246 023 063 1.962 0.106 3.1 1.1 2.9 1.2 A-	1910	603091	A2	A2	958	.311	.096	.311	.336	.208	.049	.400	080	.400	155	121	2.174	0.077	0.2	1.0	0.8	1.0	A+	A-
1913 604549 A2 A2 958 .202 .138 .243 .353 .202 .065 .333 074 085 062 .333 2.850 0.088 0.9 1.0 1.9 1.2 A+ B- 1914 604628 A2 A2 478 .157 .391 .157 .218 .209 .025 .105 009 .105 037 015 3.214 0.134 2.2 1.2 3.0 1.4 A+ 1915 604567 A2 A2 478 .339 .084 .339 .375 .140 .063 .246 159 .246 023 063 1.962 0.106 3.1 1.1 2.9 1.2 A- 1916 604620 A2 A2 478 .425 .195 .193 .119 .425 .069 .480 203 156 130 .480 1.502 0.102 -2.6 0.9 <td< td=""><td>1911</td><td>604598</td><td>A2</td><td>A2</td><td>480</td><td>.204</td><td>.190</td><td>.235</td><td>.304</td><td>.204</td><td>.067</td><td>.470</td><td>120</td><td>251</td><td>.011</td><td>.470</td><td>2.889</td><td>0.126</td><td>-1.0</td><td>0.9</td><td>-0.6</td><td>0.9</td><td>A-</td><td>A-</td></td<>	1911	604598	A2	A2	480	.204	.190	.235	.304	.204	.067	.470	120	251	.011	.470	2.889	0.126	-1.0	0.9	-0.6	0.9	A-	A-
1914 604628 A2 A2 478 .157 .391 .157 .218 .209 .025 .105 009 .105 037 015 3.214 0.134 2.2 1.2 3.0 1.4 A+ 1915 604567 A2 A2 478 .339 .084 .339 .375 .140 .063 .246 159 .246 023 063 1.962 0.106 3.1 1.1 2.9 1.2 A- 1916 604620 A2 A2 478 .425 .193 .119 .425 .069 .480 203 156 130 .480 1.502 0.102 -2.6 0.9 -2.2 0.9 A+ 1917 604634 A2 A2 480 .654 .060 .654 .117 .152 .017 .377 138 .377 181 186 0.470 0.104 -1.7 0.9 -0.1 1.0	1912	604612	A2	A2	480	.581	.581	.169	.117	.088	.046	.469	.469	243	180	145	0.817	0.104	-1.5	0.9	-2.0	0.9	A-	A-
1915 604567 A2 A2 478 .339 .084 .339 .375 .140 .063 .246 159 .246 023 063 1.962 0.106 3.1 1.1 2.9 1.2 A- 1916 604620 A2 A2 478 .425 .195 .193 .119 .425 .069 .480 203 156 130 .480 1.502 0.102 -2.6 0.9 -2.2 0.9 A+ 1917 604634 A2 A2 480 .654 .060 .654 .117 .152 .017 .377 138 .377 181 186 0.470 0.104 -1.7 0.9 -0.1 1.0 B- 1918 603106 A2 A2 963 .505 .085 .081 .262 .505 .068 .374 168 175 070 .374 1.165 0.073 1.0 1.0 1.6	1913	604549	A2	A2	958	.202	.138	.243	.353	.202	.065	.333	074	085	062	.333	2.850	0.088	0.9	1.0	1.9	1.2	A+	B-
1916 604620 A2 A2 478 .425 .195 .193 .119 .425 .069 .480 203 156 130 .480 1.502 0.102 -2.6 0.9 -2.2 0.9 A+ 1917 604634 A2 A2 480 .654 .060 .654 .117 .152 .017 .377 138 .377 181 186 0.470 0.104 -1.7 0.9 -0.1 1.0 B- 1918 603106 A2 A2 963 .505 .081 .262 .505 .068 .374 168 175 070 .374 1.165 0.073 1.0 1.0 1.6 1.1 A- 1919 603057 A2 A2 482 .270 .145 .270 .303 .228 .054 .187 032 .187 009 010 2.395 0.112 3.5 1.2 3.8 1.3	1914	604628	A2	A2	478	.157	.391	.157	.218	.209	.025	.105	009	.105	037	015	3.214	0.134	2.2	1.2	3.0	1.4	A+	
1916 604620 A2 A2 478 .425 .195 .193 .119 .425 .069 .480 203 156 130 .480 1.502 0.102 -2.6 0.9 -2.2 0.9 A+ 1917 604634 A2 A2 480 .654 .060 .654 .117 .152 .017 .377 138 .377 181 186 0.470 0.104 -1.7 0.9 -0.1 1.0 B- 1918 603106 A2 A2 963 .505 .085 .081 .262 .505 .068 .374 168 175 070 .374 1.165 0.073 1.0 1.0 1.6 1.1 A- A+ 1919 603057 A2 A2 482 .270 .145 .270 .303 .228 .054 .187 032 .187 009 010 2.395 0.112 3.5 1.2	1915	604567	A2	A2	478	.339	.084	.339	.375	.140	.063	.246	159	.246	023	063	1.962	0.106	3.1	1.1	2.9	1.2	A-	
1917 604634 A2 A2 480 .654 .060 .654 .117 .152 .017 .377 138 .377 181 186 0.470 0.104 -1.7 0.9 -0.1 1.0 B- 1918 603106 A2 A2 963 .505 .085 .081 .262 .505 .068 .374 168 175 070 .374 1.165 0.073 1.0 1.0 1.6 1.1 A- A+ 1919 603057 A2 A2 482 .270 .145 .270 .303 .228 .054 .187 032 .187 009 010 2.395 0.112 3.5 1.2 3.8 1.3 A-	1916	604620	A2	A2	478	.425	.195		.119	.425	.069	.480	203	156	130	.480	1.502	0.102	-2.6	0.9	-2.2	0.9	A+	
1918 603106 A2 A2 963 .505 .085 .081 .262 .505 .068 .374 168 175 070 .374 1.165 0.073 1.0 1.0 1.6 1.1 A- A+ 1919 603057 A2 A2 482 .270 .145 .270 .303 .228 .054 .187 032 .187 009 010 2.395 0.112 3.5 1.2 3.8 1.3 A-	1917	604634	A2	A2	480	.654	.060	.654	.117	.152	.017	.377	138	.377	181	186	0.470	0.104	-1.7	0.9	-0.1	1.0	B-	
1919 603057 A2 A2 482 .270 .145 .270 .303 .228 .054 .187032 .187009010 2.395 0.112 3.5 1.2 3.8 1.3 A-	1918	603106	A2	A2	963	.505	.085	.081	.262	.505	.068	.374	168	175	070	.374	1.165	0.073	1.0	1.0	1.6	1.1	A-	A+
	1919	603057	A2	A2	482			.270			.054	.187	032		009	010	2.395		3.5	1.2	3.8			
							.071			.485								_				1.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1921 603126 A2 A2 A2 482 A94 1.06 A94 293 .091 .017 .032 .096 .302 .116 .197 1.307 0.099 1.5 1.1 1.2 1.1 8	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
1922 603056 A2 A2 994 193 246 421 193 103 0.077 0.045 0.008 0.044 0.045 -0.009 2.895 0.088 5.2 1.3 6.2 1.5 A-	Itel		Grade	Grade		ı vai	1 (4)	1 (5)		1 (5)	· (-)	i tbis	1 1(//)	11(5)	1 1(0)					in	out	out	/F	/B
1923 603115 A2 A2 964 A65 065 164 284 A65 0.022 390 -1.26 -0.66 -2.68 390 1.369 0.072 -1.6 1.0 -1.1 1.0 A-	1921	603126	A2	A2	482		.106	.494		.091	.017	.302	096	.302	116	197	1.307			1.1	1.2	1.1	B-	——
1925 603124 A2	1922	603056	A2	A2	964	.193	.246	.421	.193	.103	.037	.045	.008	.044	.045	009	2.896		5.2	1.3		1.5	A+	
1925 603080	1923	603115	A2	A2		.465	.065	.164	.284	.465	.022	.390	126	066	268	.390	1.369	0.072	-1.6	1.0	-1.3	1.0	A-	B-
1926 603128 A2 A2 964 A93 1.03 2.66 A93 1.09 0.09 1.01 2.36 -0.048 -1.47 2.36 -0.07 1.176 0.072 6.7 1.2 7.0 1.3 A- A- 1927 605889 A2 A2 962 2.97 1.50 2.97 3.05 2.16 0.32 4.02 -0.082 4.02 -1.38 -1.54 2.262 0.078 -0.6 1.0 0.1 1.0 A- 1929 604690 A2 A2 481 3.02 3.51 3.02 2.25 1.00 0.03 2.65 -0.02 2.65 1.05 -1.43 2.168 0.107 1.6 1.1 2.2 1.2 B- 1929 604690 A2 A2 481 3.12 2.04 1.95 1.2 4.89 0.64 1.21 -0.96 -1.26 1.21 1.21 2.631 0.121 3.3 1.2 3.8 1.4 A- 1931 605891 A2 A2 962 2.64 4.50 2.64 0.87 1.65 0.33 3.51 -1.42 3.51 -0.90 -0.83 2.425 0.080 2.0 1.1 2.4 1.1 A- A- 1932 604692 A2 A2 962 2.64 4.50 2.64 0.87 1.65 0.33 3.51 -1.42 3.51 -0.90 -0.83 2.425 0.080 2.0 1.1 2.4 1.1 A- A- 1933 605891 A2 A2 962 2.64 4.50 2.64 0.87 1.65 0.33 3.51 -1.42 3.51 -0.90 -0.83 2.425 0.080 2.0 1.1 2.4 1.1 A- A- 1934 603123 A2 A2 964 7.44 0.32 1.20 7.44 0.62 0.42 4.77 -1.37 -2.49 4.77 -1.87 -0.07 0.084 3.4 0.9 -3.7 0.7 A- A- 1934 603123 A2 A2 964 7.44 0.32 1.20 7.44 0.62 0.42 4.77 -1.37 -2.49 4.77 -1.87 -0.07 0.084 3.4 0.9 -3.7 0.7 A- A- 1935 605905 A2 A2 964 4.49 2.19 0.69 0.48 3.03 -1.28 3.03 0.017 -1.18 1.474 0.072 4.6 1.1 4.6 1.2 A- A- 1.938 603605 A2 A2 964 5.44 3.13 1.85 1.16 5.24 0.38 3.70 0.06 0.68 1.779 0.073 4.3 1.1 4.6 1.2 A- A- 1.938 603605 A2 A2 964 5.44 3.13 1.85 1.16 5.24 0.38 3.70 0.06 0.68 1.779 0.073 4.3 1.1 4.6 1.2 A- A- 1.938 603605 A2 A2 964 5.44 3.15 6.32 5.66 0.38 3.70 0.20 0.68 1.799 0.795 0.795 0.795 0.795 0.795 0.795 0.795 0	1924	603124	A2	A2		.345	.345	.283	.210	.146	.016	.379	.379	188	094	120	2.003		-0.1	1.0	-0.5	1.0	A+	A-
1927 605889	1925	603080	A2	A2		.428	.083	.114	.352	.428	.023	.237	141	148	027	.237	1.561		4.1	1.1	5.0	1.2	A+	A-
1928 603122	1926	603128	A2	A2	964	.493	.103	.266	.493	.099	.041	.236	048	147	.236	027	1.176	0.072	6.7	1.2	7.0	1.3	A-	A+
1929 604690 A2	1927	605889	A2	A2	962	.168	.600	.168	.061	.137	.033	.236	017	.236	076	070	3.180	0.094	2.4	1.1	1.6	1.2	B-	
1930 605890 A2	1928	603122	A2	A2	962	.297	.150	.297	.305	.216	.032	.402	082	.402	138	154	2.262	0.078	-0.6	1.0	0.1	1.0	A-	
1931 605891 A2 A2 962 .264 .450 .264 .087 .165 .033 .351 .142 .351 .090 .083 2.425 0.080 2.0 1.1 2.4 1.1 A- A+ 1932 604692 A2 A2 962 .458 .112 .215 .458 .177 .037 .380 .096 .162 .380 .154 1.383 0.071 .0.6 1.0 .0.2 1.0 A+ A+ 1932 604692 A2 A2 .963 .243 .243 .484 .572 .073 .028 .390 .390 .143 .156 .071 2.689 .0.83 .0.4 1.0 .0.2 1.0 A+ A+ 1934 603123 A2 A2 .964 .744 .032 .120 .744 .062 .042 .477 .137 .249 .477 .187 .0.107 .0.084 .3.4 .0.9 .3.7 .0.7 A+ A- 1935 605905 A2 A2 .964 .449 .216 .449 .219 .069 .048 .303 .128 .303 .0.17 .118 1.474 .0.072 .4.6 1.1 4.6 1.2 A- A- 1936 603006 A2 A2 .961 .386 .073 .386 .376 .126 .040 .302 .184 .302 .030 .086 .1.79 .0.073 .4.3 1.1 4.6 1.2 A- A- 1938 604688 A2 A2 .964 .524 .137 .185 .116 .524 .038 .370 .020 .169 .224 .370 .1.143 .0.072 .2.1 .1.1 .1.4 .1.5 .1.5	1929	604690	A2	A2	481	.302	.351	.302	.225	.100	.023	.265	022	.265	105	143	2.168	0.107	1.6	1.1	2.2	1.2	B-	
1932 604692 A2 A2 962 .458 .112 .215 .458 .177 .037 .380 .096 162 .380 .154 1.383 0.071 .0.6 1.0 .0.2 1.0 A+ A+ 1933 605904 A2 A2 963 .243 .243 .084 .572 .073 .028 .390 .390 .143 .156 .071 2.689 0.083 0.4 1.0 1.2 1.1 A- A- A- 1936 605905 A2 A2 .964 .744 .032 .120 .744 .062 .042 .477 .137 249 .477 .187 .0.107 0.084 .34 0.9 .37 0.7 A+ A- A- 1936 603060 A2 A2 .964 .449 .16 .449 .219 .069 .048 .303 .128 .303 .017 .118 1.474 .0.072 .4.6 1.1 .4.6 1.2 A- A- 1936 603060 A2 A2 .961 .801 .030 .098 .801 .034 .036 .428 .177 .198 .428 .145 .0.525 .0.092 .2.2 .0.9 .2.6 0.7 B- C- 1937 604688 A2 A2 .964 .524 .337 .185 .116 .524 .038 .370 .020 .169 .224 .370 .1143 .0.072 .0.1 1.1 .2.4 1.1 A+ C- 1939 603061 A2 A2 .964 .546 .089 .156 .182 .546 .028 .449 .152 .189 .194 .449 1.064 0.071 .17 1.0 .1.6 0.9 A- B- 1940 604689 A2 A2 .966 .598 .101 .598 .220 .036 .045 .152 .090 .182 .0.09 .0.165 .0.26 .0.77 .5.2 .1.1 .4.6 .0.07 .2.5 .1.1 .4.6 .0.0 .2.1 .4.6 .1.1 .4.6 .1.2 .4.6 .4.8 .1.4 .1.4 .4.6 .1.1 .4.6	1930	605890	A2	A2	481	.212	.040	.195	.212	.489	.064	.121	096	126	.121	.121	2.631	0.121	3.3	1.2	3.8	1.4	A+	
1933 605904 A2 A2 963 .243 .243 .243 .284 .572 .073 .028 .390 .390 .314 .156 .071 2.689 0.083 0.4 1.0 1.2 1.1 A- A- 1934 603123 A2 A2 964 .744 .032 .120 .744 .062 .042 .477 .137 .249 .477 .187 .0107 0.084 .3.4 0.9 .3.7 0.7 A+ A- 1935 605905 A2 A2 964 .449 .216 .449 .219 .069 .048 .303 .128 .303 .017 .118 1.474 0.072 4.6 1.1 4.6 1.2 A- A- 1936 603060 A2 A2 961 .801 .030 .098 .801 .034 .036 .428 .177 .198 .428 .145 .0525 .0092 .2.2 0.9 2.6 .0.7 B- C- 1937 604687 A2 A2 961 .386 .073 .386 .376 .126 .040 .302 .184 .302 .030 .086 1.779 0.073 .43 1.1 4.6 1.2 A- A- 1938 604688 A2 A2 964 .546 .088 .156 .182 .546 .028 .449 .152 .189 .194 .449 .1064 .0071 1.7 0. 1.6 .0.9 A- 1941 604689 A2 A2 .484 .736 .035 .736 .116 .099 .015 .336 .115 .336 .189 .145 .116 .011 .0.3 1.0 .0.2 1.0 A- B- 1941 604723 A2 A2 .966 .598 .101 .598 .220 .036 .045 .182 .090 .182 .020 .066 .0726 .0072 .5.2 1.1 8.4 1.5 A- A- 1944 .603093 A2 A2 .966 .643 .075 .116 .035 .035 .039 .389 .119 .389 .119 .189 .145 .016 .016 .011 .0.3 .0 .0.2 1.0 A- A- 1944 .603068 A2 A2 .966 .553 .082 .553 .029 .119 .037 .463 .151 .463 .216 .168 .0.968 .0.071 .46 .0.9 .3.9 .0.9 A- .194 .003068 A2 .42 .480 .331 .311 .302 .185 .069 .482 .482 .134 .204 .149 .149 .149 .0108 .2.3 .0.9	1931	605891	A2	A2	962	.264	.450	.264	.087	.165	.033	.351	142	.351	090	083	2.425	0.080	2.0	1.1	2.4	1.1	A-	A+
1934 603123 A2 A2 964 7.74 .032 .120 .744 .062 .042 .477 .137 .249 .477 .187 .0.107 0.084 .34 0.9 .3.7 0.7 A+ A- 1935 605905 A2 A2 964 .449 .216 .449 .219 .069 .048 .303 .128 .303 .017 .118 1.474 .0.072 4.6 1.1 4.6 1.2 A- A- A- 1936 .030306 A2 A2 .24	1932	604692	A2	A2	962	.458	.112	.215	.458	.177	.037	.380	096	162	.380	154	1.383	0.071	-0.6	1.0	-0.2	1.0	A+	A+
1935 605905 A2 A2 964 A49 .216 .449 .219 .069 .048 .303 128 .303 017 118 1.474 0.072 4.6 1.1 4.6 1.2 A- A- A- 1936 603060 A2 A2 961 .801 .030 .098 .801 .034 .036 .428 177 198 .428 145 0.525 0.092 .2.2 0.9 .2.6 0.7 B- C- 1937 604687 A2 A2 964 .524 .137 .185 .116 .524 .038 .370 .020 169 224 .370 .143 .0072 .2.0 1.1 .4.6 1.2 A- A- 1938 604688 A2 A2 964 .524 .137 .185 .116 .524 .038 .370 .020 169 224 .370 .143 .0072 .2.0 .1.1 .2.4 .1.1 A+ C- 1939 603061 A2 A2 .2.4	1933	605904	A2	A2	963	.243	.243	.084	.572	.073	.028	.390	.390	143	156	071	2.689	0.083	0.4	1.0	1.2	1.1	A-	A-
1936 603060 A2 A2 961 801 030 0.98 801 0.34 0.36 4.28 -1.77 -1.98 4.28 -1.45 -0.525 0.092 -2.2 0.9 -2.6 0.7 B- C- 1937 604687 A2 A2 961 3.86 0.73 3.86 3.76 1.12 0.04 3.02 -1.84 3.02 -0.30 -0.86 1.779 0.073 4.3 1.1 4.6 1.2 A- A+ 1938 604688 A2 A2 964 5.24 1.37 1.85 1.16 5.24 0.38 3.70 0.20 -1.69 -2.24 3.70 1.143 0.072 2.0 1.1 2.4 1.1 A+ C- 1938 0.000 0.00	1934	603123	A2	A2	964	.744	.032	.120	.744	.062	.042	.477	137	249	.477	187	-0.107	0.084	-3.4	0.9	-3.7	0.7	A+	A-
1937 604687 A2 A2 961 .386 .073 .386 .376 .126 .040 .302 .184 .302 .030 .086 1.779 0.073 4.3 1.1 4.6 1.2 A- A+ 1938 604688 A2 A2 964 .524 .137 .185 .116 .524 .038 .370 .020 .169 .224 .370 1.143 0.072 2.0 1.1 2.4 1.1 A+ C- 1939 603061 A2 A2 .42 .42 .42 .446 .086 .156 .182 .546 .088 .156 .182 .546 .084 .449 .152 .189 .194 .449 .1064 .0771 .1.7 .1.0 .1.6 0.9 A- B- 1940 .604689 A2 A2 .484 .736 .035 .736 .116 .099 .015 .336 .115 .336 .189 .145 .161 .0111 .0.3 .1.0 .0.2 1.0 A- B- 1941 .604723 A2 A2 .484 .843 .033 .843 .050 .035 .039 .389 .119 .389 .195 .164 .0.867 0.146 .0.9 0.9 .1.6 0.7 A+ C- 1943 .603093 A2 A2 .42 .484 .843 .033 .843 .550 .035 .039 .389 .119 .389 .195 .164 .0.867 0.146 .0.9 0.9 .1.6 0.7 A+ C- 1943 .603093 A2 A2 .42	1935	605905	A2	A2	964	.449	.216	.449	.219	.069	.048	.303	128	.303	017	118	1.474	0.072	4.6	1.1	4.6	1.2	A-	A-
1938 604688 A2 A2 964 .524 .137 .185 .116 .524 .038 .370 .020 .169 .224 .370 1.143 0.072 2.0 1.1 2.4 1.1 A+ C-	1936	603060	A2	A2	961	.801	.030	.098	.801	.034	.036	.428	177	198	.428	145	-0.525	0.092	-2.2	0.9	-2.6	0.7	B-	C-
1939 603061 A2 A2 964 .546 .089 .156 .182 .546 .028 .449 .152 .189 .194 .449 1.064 0.071 -1.7 1.0 -1.6 0.9 A- B- 1940 604689 A2 A2 484 .736 .035 .736 .116 .099 .015 .336 .115 .336 .189 .145 0.116 0.111 -0.3 1.0 -0.2 1.0 A- B- 1941 604723 A2 A2 966 .598 .101 .598 .220 .036 .045 .182 .090 .182 .020 -066 0.726 0.072 5.2 1.1 8.4 1.5 A+ A+ 1942 603092 A2 A2 484 .843 .033 .843 .050 .035 .039 .389 .119 .389 .195 .164 -0.867 0.146 -0.9 0.9 .1.6 0.7 A+ C- 1943 603093 A2 A2 960 .643 .075 .116 .643 .156 .100 .331 .126 .174 .331 .161 0.609 0.072 -0.5 1.0 0.2 1.0 A- 1944 603113 A2 A2 964 .553 .082 .553 .082 .553 .099 .119 .037 .463 .151 .463 .216 .168 0.968 0.071 -4.6 0.9 -3.9 0.9 A- 1946 603068 A2 A2 .480 .321 .331 .131 .325 .022 .391 .067 .219 .106 .391 .2139 0.076 1.2 1.0 0.4 1.0 A- A- 1946 603068 A2 A2 .480 .331 .331 .113 .302 .185 .069 .482 .482 .134 .204 .149 1.942 0.108 -2.3 0.9 -2.0 0.9 A- 1948 603069 A2 A2 .958 .228 .152 .204 .366 .228 .050 .351 .078 .086 .106 .351 .2700 0.085 1.0 1.0 1.3 1.1 A- A- 1949 603108 A2 A2 .958 .161 .120 .311 .161 .372 .037 .043 .079 .096 .043 .111 .322 0.095 6.1 1.4 8.4 2.0 A- 1950 657875 6 6 .162 .463 .179 .204 .154 .463 .000 .000 .004 .006 .004 .000 .0073 0.177 6.4 1.5 5.5 1.7 A- 1951 .1951 .1952 .657877 6 6 .304 .181 .049 .181 .359 .411 .000 .044 .041 .044 .042 .028 .019 .138 .014 .151 .152 .48 A- 1953 .154 .513 .442 .081 .215 .262 .442 .000 .422 .210 .218 .142 .422 .0012 0.169 .07 1.0 .04 1.0 8.	1937	604687	A2	A2	961	.386	.073	.386	.376	.126	.040	.302	184	.302	030	086	1.779	0.073	4.3	1.1	4.6	1.2	A-	A+
1940 604689 A2 A2 484 .736 .035 .736 .116 .099 .015 .336 .115 .336 145 0.116 0.111 -0.2 1.0 A-B-1941 604723 A2 A2 966 .598 .101 .598 .220 .036 .045 .182 090 .182 020 066 0.726 0.072 5.2 1.1 8.4 1.5 A+ A+ 1942 603092 A2 A2 484 .843 .033 .843 .050 .035 .039 .389 119 .389 195 164 0867 0.146 -0.9 .0.9 -1.6 0.7 A+ C- 1943 603093 A2 A2 960 .643 .075 .116 .643 .156 .010 .331 161 .0609 .072 .0.5 1.0 .0 .2 .10 A A .2 .2 .0 <td>1938</td> <td>604688</td> <td>A2</td> <td>A2</td> <td>964</td> <td>.524</td> <td>.137</td> <td>.185</td> <td>.116</td> <td>.524</td> <td>.038</td> <td>.370</td> <td>.020</td> <td>169</td> <td>224</td> <td>.370</td> <td>1.143</td> <td>0.072</td> <td>2.0</td> <td>1.1</td> <td>2.4</td> <td>1.1</td> <td>A+</td> <td>C-</td>	1938	604688	A2	A2	964	.524	.137	.185	.116	.524	.038	.370	.020	169	224	.370	1.143	0.072	2.0	1.1	2.4	1.1	A+	C-
1941 604723 A2 A2 966 .598 .101 .598 .220 .036 .045 .182 090 .182 020 066 0.726 0.072 5.2 1.1 8.4 1.5 A+ A+ 1942 603092 A2 A2 484 .843 .033 .843 .050 .035 .039 .389 119 .389 195 164 -0.867 0.146 -0.9 0.9 -1.6 0.7 A+ C- 1943 603093 A2 A2 960 .643 .075 .116 .643 .156 .010 .331 126 174 .331 161 0.609 0.072 -0.5 1.0 0.2 1.0 A- 1944 603113 A2 A2 960 .325 .020 .293 .341 .325 .022 .391 .067 219 106 .391 2.139 0.076 1.2 <t< td=""><td>1939</td><td>603061</td><td>A2</td><td>A2</td><td>964</td><td>.546</td><td>.089</td><td>.156</td><td>.182</td><td>.546</td><td>.028</td><td>.449</td><td>152</td><td>189</td><td>194</td><td>.449</td><td>1.064</td><td>0.071</td><td>-1.7</td><td>1.0</td><td>-1.6</td><td>0.9</td><td>A-</td><td>B-</td></t<>	1939	603061	A2	A2	964	.546	.089	.156	.182	.546	.028	.449	152	189	194	.449	1.064	0.071	-1.7	1.0	-1.6	0.9	A-	B-
1942 603092 A2 A2 484 .843 .033 .843 .050 .035 .039 .389 119 .389 195 164 -0.867 0.146 -0.9 0.9 -1.6 0.7 A+ C-1943 603093 A2 A2 960 .643 .075 .116 .643 .156 .010 .331 126 174 .331 161 0.609 0.072 -0.5 1.0 0.2 1.0 A- 1944 603113 A2 A2 964 .553 .082 .553 .209 .119 .037 .463 216 .168 0.968 0.071 -4.6 0.9 -3.9 0.9 A- 1945 603107 A2 A2 960 .325 .020 .293 .341 .325 .022 .391 067 219 106 .391 2.139 0.076 1.2 1.0 0.4 1.0 A <	1940	604689	A2	A2	484	.736	.035	.736	.116	.099	.015	.336	115	.336	189	145	0.116	0.111	-0.3	1.0	-0.2	1.0	A-	B-
1943 603093 A2 A2 960 .643 .075 .116 .643 .156 .010 .331 126 174 .331 161 0.609 0.072 -0.5 1.0 0.2 1.0 A- 1944 603113 A2 A2 964 .553 .082 .553 .209 .119 .037 .463 151 .463 216 168 0.968 0.071 -4.6 0.9 -3.9 0.9 A- 1945 603107 A2 A2 960 .325 .020 .293 .341 .325 .022 .391 067 219 106 .391 2.139 0.076 1.2 1.0 0.4 1.0 A- 1946 603068 A2 A2 480 .331 .131 .132 .022 .391 166 .258 045 0.732 0.103 2.9 1.1 3.2 1.3 A- 194	1941	604723	A2	A2	966	.598	.101	.598	.220	.036	.045	.182	090	.182	020	066	0.726	0.072	5.2	1.1	8.4	1.5	A+	A+
1944 603113 A2 A2 964 .553 .082 .553 .209 .119 .037 .463 151 .463 216 168 0.968 0.071 -4.6 0.9 -3.9 0.9 A- 1945 603107 A2 A2 960 .325 .020 .293 .341 .325 .022 .391 067 219 106 .391 2.139 0.076 1.2 1.0 0.4 1.0 A- 1946 603068 A2 A2 480 .581 .073 .154 .581 .144 .048 .258 049 166 .258 045 0.732 0.103 2.9 1.1 3.2 1.3 A- 1947 603054 A2 A2 480 .331 .311 .131 .002 .482 .482 134 204 149 1.942 0.108 -2.3 0.9 -2.0 0.9 A-	1942	603092	A2	A2	484	.843	.033	.843	.050	.035	.039	.389	119	.389	195	164	-0.867	0.146	-0.9	0.9	-1.6	0.7	A+	C-
1945 603107 A2 A2 960 .325 .020 .293 .341 .325 .022 .391 067 219 106 .391 2.139 0.076 1.2 1.0 0.4 1.0 A- A- 1946 603068 A2 A2 480 .581 .073 .154 .581 .144 .048 .258 049 166 .258 045 0.732 0.103 2.9 1.1 3.2 1.3 A- 1947 603054 A2 A2 480 .331 .331 .313 .302 .185 .069 .482 .482 134 204 149 1.942 0.108 -2.3 0.9 -2.0 0.9 A- 1948 603069 A2 A2 958 .228 .152 .204 .366 .228 .050 .351 078 086 106 .351 2.700 0.085 1.0 1.0 <t< td=""><td>1943</td><td>603093</td><td>A2</td><td>A2</td><td>960</td><td>.643</td><td>.075</td><td>.116</td><td>.643</td><td>.156</td><td>.010</td><td>.331</td><td>126</td><td>174</td><td>.331</td><td>161</td><td>0.609</td><td>0.072</td><td>-0.5</td><td>1.0</td><td>0.2</td><td>1.0</td><td>A-</td><td></td></t<>	1943	603093	A2	A2	960	.643	.075	.116	.643	.156	.010	.331	126	174	.331	161	0.609	0.072	-0.5	1.0	0.2	1.0	A-	
1946 603068 A2 A2 480 .581 .073 .154 .581 .144 .048 .258 049 166 .258 045 0.732 0.103 2.9 1.1 3.2 1.3 A- 1947 603054 A2 A2 480 .331 .331 .113 .302 .185 .069 .482 .482 134 204 149 1.942 0.108 -2.3 0.9 -2.0 0.9 A- 1948 603069 A2 A2 958 .228 .152 .204 .366 .228 .050 .351 078 086 106 .351 2.700 0.085 1.0 1.0 1.3 1.1 A- A+ 1949 603108 A2 A2 958 .161 .120 .311 .161 .372 .037 043 .079 096 043 .111 3.226 0.095 6.1 1.4 <t< td=""><td>1944</td><td>603113</td><td>A2</td><td>A2</td><td>964</td><td>.553</td><td>.082</td><td>.553</td><td>.209</td><td>.119</td><td>.037</td><td>.463</td><td>151</td><td>.463</td><td>216</td><td>168</td><td>0.968</td><td>0.071</td><td>-4.6</td><td>0.9</td><td>-3.9</td><td>0.9</td><td>A-</td><td></td></t<>	1944	603113	A2	A2	964	.553	.082	.553	.209	.119	.037	.463	151	.463	216	168	0.968	0.071	-4.6	0.9	-3.9	0.9	A-	
1947 603054 A2 A2 480 .331 .311 .132 .089 .482 .482 134 204 149 1.942 0.108 -2.3 0.9 -2.0 0.9 A- 1948 603069 A2 A2 958 .228 .152 .204 .366 .228 .050 .351 078 086 106 .351 2.700 0.085 1.0 1.0 1.3 1.1 A- A+ 1949 603108 A2 A2 958 .161 .120 .311 .161 .372 .037 043 .079 096 043 .111 3.226 0.095 6.1 1.4 8.4 2.0 A- 1950 657875 6 6 162 .463 .179 .204 .154 .463 .000 .000 .004 061 .064 .000 -0.073 0.177 6.4 1.5 5.5 1.7 A+<	1945	603107	A2	A2	960	.325	.020	.293	.341	.325	.022	.391	067	219	106	.391	2.139	0.076	1.2	1.0	0.4	1.0	A-	A-
1948 603069 A2 A2 958 .228 .152 .204 .366 .228 .050 .351 078 086 106 .351 2.700 0.085 1.0 1.0 1.3 1.1 A- A+ 1949 603108 A2 A2 958 .161 .120 .311 .161 .372 .037 043 .079 096 043 .111 3.226 0.095 6.1 1.4 8.4 2.0 A- 1950 657875 6 6 162 .463 .179 .204 .154 .463 .000 .000 .004 061 .064 .000 -0.073 0.177 6.4 1.5 5.5 1.7 A+ 1951 657876 6 6 298 .245 .101 .245 .138 .517 .000 096 149 096 172 .290 1.338 0.144 4.5 1.3 6.9<	1946	603068	A2	A2	480	.581	.073	.154	.581	.144	.048	.258	049	166	.258	045	0.732	0.103	2.9	1.1	3.2	1.3	A-	
1949 603108 A2 A2 958 .161 .120 .311 .161 .372 .037 043 .079 096 043 .111 3.226 0.095 6.1 1.4 8.4 2.0 A- A- 1950 657875 6 6 162 .463 .179 .204 .154 .463 .000 .000 .004 061 .064 .000 -0.073 0.177 6.4 1.5 5.5 1.7 A+ 1951 657876 6 6 298 .245 .101 .245 .138 .517 .000 096 149 096 172 .290 1.338 0.144 4.5 1.3 6.9 2.2 B- 1952 657877 6 6 304 .181 .049 .181 .359 .411 .000 .044 041 .044 036 .019 1.711 0.158 2.0 1.2 5.1 <td>1947</td> <td>603054</td> <td>A2</td> <td>A2</td> <td>480</td> <td>.331</td> <td>.331</td> <td>.113</td> <td>.302</td> <td>.185</td> <td>.069</td> <td>.482</td> <td>.482</td> <td>134</td> <td>204</td> <td>149</td> <td>1.942</td> <td>0.108</td> <td>-2.3</td> <td>0.9</td> <td>-2.0</td> <td>0.9</td> <td>A-</td> <td> </td>	1947	603054	A2	A2	480	.331	.331	.113	.302	.185	.069	.482	.482	134	204	149	1.942	0.108	-2.3	0.9	-2.0	0.9	A-	
1950 657875 6 6 162 .463 .179 .204 .154 .463 .000 .000 .004 061 .064 .000 -0.073 0.177 6.4 1.5 5.5 1.7 A+ 1951 657876 6 6 298 .245 .101 .245 .138 .517 .000 096 149 096 172 .290 1.338 0.144 4.5 1.3 6.9 2.2 B- 1952 657877 6 6 304 .181 .049 .181 .359 .411 .000 .044 041 .044 036 .019 1.711 0.158 2.0 1.2 5.1 2.2 A- 1953 657878 6 6 306 .049 .098 .775 .078 .000 137 137 318 .380 129 3.389 0.273 0.7 1.1 5.2 4.8 A-	1948	603069	A2	A2	958	.228	.152	.204	.366	.228	.050	.351	078	086	106	.351	2.700	0.085	1.0	1.0	1.3	1.1	A-	A+
1951 657876 6 6 298 .245 .101 .245 .138 .517 .000 096 149 096 172 .290 1.338 0.144 4.5 1.3 6.9 2.2 B- 1952 657877 6 6 304 .181 .049 .181 .359 .411 .000 .044 041 .044 036 .019 1.711 0.158 2.0 1.2 5.1 2.2 A- 1953 657878 6 6 306 .049 .049 .098 .775 .078 .000 137 137 318 .380 129 3.389 0.273 0.7 1.1 5.2 4.8 A- 1954 657879 6 6 172 .442 .081 .215 .262 .442 .000 .422 210 218 142 .422 0.012 0.169 07 1.0 -0.4 1.0 B+	1949	603108	A2	A2	958	.161	.120	.311	.161	.372	.037	043	.079	096	043	.111	3.226	0.095	6.1	1.4	8.4	2.0	A-	A-
1952 657877 6 6 304 .181 .049 .181 .359 .411 .000 .044 041 .044 036 .019 1.711 0.158 2.0 1.2 5.1 2.2 A- 1953 657878 6 6 306 .049 .049 .098 .775 .078 .000 137 137 318 .380 129 3.389 0.273 0.7 1.1 5.2 4.8 A- 1954 657879 6 6 172 .442 .081 .215 .262 .442 .000 .422 210 218 142 .422 0.012 0.169 -0.7 1.0 -0.4 1.0 B+	1950	657875	6	6	162	.463	.179	.204	.154	.463	.000	.000	.004	061	.064	.000	-0.073	0.177	6.4	1.5	5.5	1.7	A+	
1952 657877 6 6 304 .181 .049 .181 .359 .411 .000 .044 041 .044 036 .019 1.711 0.158 2.0 1.2 5.1 2.2 A- 1953 657878 6 6 306 .049 .049 .098 .775 .078 .000 137 137 318 .380 129 3.389 0.273 0.7 1.1 5.2 4.8 A- 1954 657879 6 6 172 .442 .081 .215 .262 .442 .000 .422 210 218 142 .422 0.012 0.169 -0.7 1.0 -0.4 1.0 B+	1951	657876	6	6	298	.245	.101	.245	.138	.517	.000	096	149	096	172	.290	1.338	0.144	4.5	1.3	6.9	2.2	B-	
1953 657878 6 6 306 .049 .049 .098 .775 .078 .000 137 137 318 .380 129 3.389 0.273 0.7 1.1 5.2 4.8 A- 1954 657879 6 6 172 .442 .081 .215 .262 .442 .000 .422 210 218 142 .422 0.012 0.169 -0.7 1.0 -0.4 1.0 B+	1952	657877	6	6	304	.181	.049	.181	.359	.411	.000	.044	041	.044	036	.019	1.711	0.158	2.0	1.2	5.1	2.2	A-	
1954 657879 6 6 172 .442 .081 .215 .262 .442 .000 .422210218142 .422 0.012 0.169 -0.7 1.0 -0.4 1.0 B+	1953	657878	6	6	306	.049	.049	.098	.775	.078	.000	137	137	318	.380	129	3.389	0.273	0.7	1.1	5.2	4.8	A-	
	-	657879	6	6	172	.442	.081	.215	.262	.442	.000	.422	210		142	.422			-0.7	1.0	-0.4	1.0	B+	
				6			.077			.231				_		-						_		

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	ID	Grade	Grade	14	rvai	r(A)	r(b)	r(c)	F(D)	F (-)	FtDIS	FI(A)	F1(D)	r I(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
1956	657881	6	6	326	.442	.138	.163	.258	.442	.000	.167	.025	170	066	.167	0.231	0.123	4.7	1.2	4.9	1.4	A+	
1957	657882	6	6	152	.283	.276	.105	.336	.283	.000	.070	.055	120	041	.070	0.908	0.195	2.6	1.2	3.7	1.7	A+	
1958	657883	6	6	167	.659	.659	.156	.072	.114	.000	.447	.447	353	086	194	-1.078	0.184	-0.2	1.0	-0.5	0.9	A-	
1959	657884	6	6	169	.325	.172	.361	.142	.325	.000	.322	032	142	202	.322	0.592	0.182	1.0	1.1	1.1	1.2	A-	
1960	657885	6	6	286	.217	.364	.294	.126	.217	.000	.158	126	192	.250	.158	1.485	0.153	1.0	1.1	4.9	2.0	A+	A+
1961	657886	6	6	182	.176	.401	.176	.236	.187	.000	.046	072	.046	079	.132	1.608	0.206	1.3	1.2	4.4	2.3	A-	
1962	657887	6	6	182	.418	.236	.154	.418	.192	.000	.131	062	079	.131	026	0.150	0.168	4.4	1.3	4.5	1.6	A+	<u> </u>
1963	657888	6	6	295	.176	.176	.278	.407	.139	.000	.160	.160	040	165	.108	1.687	0.162	0.5	1.1	4.3	2.1	B-	
1964	657899	6	6	284	.873	.873	.035	.053	.039	.000	.368	.368	340	119	171	-2.453	0.194	-0.3	1.0	0.1	1.0	C+	l
1965	657936	6	6	181	.204	.204	.343	.249	.204	.000	.306	191	039	065	.306	1.392	0.198	-0.1	1.0	0.4	1.1	A-	
1966	657937	6	6	183	.404	.208	.404	.219	.169	.000	.292	021	.292	273	059	0.202	0.168	1.5	1.1	2.8	1.3	A-	
1967	657938	6	6	177	.492	.107	.141	.260	.492	.000	.513	196	183	302	.513	-0.038	0.168	-1.8	0.9	-2.0	8.0	A +	
1968	657939	6	6	165	.655	.061	.206	.655	.079	.000	.490	231	266	.490	262	-1.017	0.183	-1.0	0.9	-1.4	8.0	B-	
1969	657940	6	6	318	.478	.031	.399	.478	.091	.000	.385	068	292	.385	130	0.071	0.124	0.1	1.0	0.0	1.0	A-	
1970	657941	6	6	300	.510	.263	.143	.510	.083	.000	.416	205	214	.416	156	-0.169	0.128	-0.5	1.0	-0.3	1.0	A+	
1971	657942	6	6	307	.254	.254	.248	.186	.313	.000	.260	.260	141	.005	118	1.081	0.142	0.3	1.0	5.3	1.9	A-	
1972	657943	6	6	287	.718	.038	.098	.718	.146	.000	.262	185	109	.262	142	-1.224	0.144	1.9	1.1	1.4	1.2	A+	
1973	657944	6	6	276	.605	.094	.605	.199	.101	.000	.264	080	.264	146	157	-0.568	0.135	1.8	1.1	1.5	1.1	A-	
1974	657945	6	6	178	.332	.320	.332	.264	.084	.000	.218	043	.218	113	119	0.527	0.174	1.8	1.1	2.0	1.3	B-	
1975	657946	6	6	177	.401	.401	.322	.203	.073	.000	.098	.098	.014	008	196	0.358	0.169	4.4	1.3	3.7	1.5	A+	
1976	657947	6	6	176	.426	.426	.284	.216	.074	.000	.304	.304	158	220	.042	0.091	0.171	1.7	1.1	2.5	1.3	A+	
1977	657948	6	6	152	.355	.217	.224	.355	.204	.000	.245	150	346	.245	.220	0.276	0.188	1.7	1.1	2.8	1.5	A+	
1978	657949	6	6	166	.139	.139	.217	.530	.115	.000	089	089	.049	.151	204	1.908	0.240	1.7	1.3	5.2	3.5	A+	
1979	657950	6	6	161	.441	.180	.273	.441	.106	.000	.210	097	189	.210	.057	0.054	0.176	2.8	1.2	3.5	1.4	A-	
1980	657976	6	6	306	.556	.232	.095	.556	.118	.000	.351	069	245	.351	229	-0.347	0.129	1.2	1.1	2.2	1.2	A+	
1981	657977	6	6	180	.450	.161	.450	.261	.128	.000	.353	.008	.353	325	107	0.047	0.166	0.6	1.0	1.3	1.1	A-	
1982	657978	6	6	159	.226	.082	.484	.208	.226	.000	.391	111	291	.030	.391	1.177	0.204	-0.8	0.9	-0.8	0.8	A+	
1983	657979	6	6	174	.132	.132	.132	.207	.529	.000	.312	.312	063	206	002	2.034	0.235	-0.5	0.9	-0.2	0.9	A+	
1984	657980	6	6	319	.495	.097	.138	.495	.270	.000	.346	094	169	.346	195	-0.185	0.125	1.3	1.1	1.6	1.1	A+	
1985	657981	6	6	310	.319	.136	.329	.216	.319	.000	.376	191	100	153	.376	0.759	0.135	-0.5	1.0	1.9	1.2	A-	
1986	657982	6	6	340	.382	.382	.391	.153	.074	.000	.384	.384	217	203	030	0.595	0.123	-0.2	1.0	1.4	1.1	A+	
1987	657983	6	6	182	.330	.028	.489	.330	.154	.000	.289	150	129	.289	130	0.624	0.172	1.0	1.1	1.3	1.2	A-	
1988	657984	6	6	177	.429	.102	.322	.147	.429	.000	.392	142	234	117	.392	0.200	0.167	-0.1	1.0	-0.3	1.0	A+	1
1989	657985	6	6	317	.350	.271	.186	.192	.350	.000	.335	.000	238	171	.335	0.550	0.129	0.1	1.0	2.8	1.3	B+	
1990	657986	6	6	312	.401	.157	.282	.401	.160	.000	.214	207	076	.214	.012	0.394	0.127	3.0	1.2	4.0	1.4	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	r(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
1991	657987	6	6	302	.358	.070	.113	.460	.358	.000	.260	150	221	033	.260	0.513	0.133	2.0	1.1	3.8	1.4	A+	<u>l</u>
1992	657988	6	6	180	.122	.122	.233	.206	.439	.000	.215	.215	138	144	.093	1.917	0.240	-0.3	1.0	2.1	1.8	A+	<u>l</u>
1993	657989	6	6	154	.188	.175	.474	.162	.188	.000	.342	228	.010	140	.342	1.510	0.221	-0.4	0.9	0.0	1.0	A-	
1994	657990	6	6	154	.494	.494	.130	.162	.214	.000	.365	.365	173	137	179	-0.243	0.178	0.1	1.0	0.1	1.0	A+	<u>l</u>
1995	657991	6	6	307	.407	.195	.248	.407	.150	.000	.271	144	052	.271	151	0.360	0.127	1.5	1.1	3.2	1.3	A+	<u>l</u>
1996	657992	6	6	155	.477	.477	.348	.084	.090	.000	.341	.341	090	321	134	-0.266	0.181	0.9	1.1	3.1	1.4	A-	<u>l</u>
1997	657993	6	6	288	.663	.663	.146	.115	.076	.000	.430	.430	201	289	152	-0.863	0.138	-0.4	1.0	-0.8	0.9	A-	
1998	657994	6	6	314	.455	.210	.172	.455	.162	.000	.350	083	196	.350	181	0.230	0.126	0.8	1.0	1.6	1.1	A-	<u>l</u>
1999	657995	6	6	326	.896	.028	.896	.068	.009	.000	.386	107	.386	325	197	-2.689	0.194	-0.8	0.9	-1.2	0.7	A+	
2000	657996	6	6	311	.621	.174	.621	.100	.106	.000	.349	180	.349	221	114	-0.777	0.130	1.1	1.1	0.4	1.0	A-	B-
2001	657997	6	6	290	.521	.300	.114	.066	.521	.000	.450	153	213	351	.450	-0.338	0.133	-0.5	1.0	-0.6	1.0	A+	
2002	657998	6	6	295	.268	.563	.102	.268	.068	.000	.056	.249	351	.056	167	1.111	0.142	3.4	1.2	5.5	1.9	A-	
2003	657999	6	6	291	.409	.175	.409	.282	.134	.000	.261	.122	.261	149	316	0.270	0.131	2.4	1.1	2.8	1.3	B-	
2004	658000	6	6	301	.535	.535	.269	.136	.060	.000	.417	.417	290	187	064	-0.398	0.129	-0.5	1.0	0.3	1.0	A-	
2005	658051	6	6	305	.315	.338	.315	.193	.154	.000	.062	114	.062	047	.121	0.786	0.135	4.2	1.3	6.8	1.9	A-	
2006	658052	6	6	281	.644	.164	.644	.146	.046	.000	.345	292	.345	113	081	-1.035	0.140	1.6	1.1	1.2	1.1	A+	
2007	658053	6	6	303	.419	.178	.419	.185	.218	.000	.069	.016	.069	153	.046	0.281	0.128	6.0	1.3	7.3	1.7	A-	
2008	658056	6	6	300	.553	.133	.553	.243	.070	.000	.433	124	.433	324	133	-0.342	0.129	-1.0	1.0	0.5	1.0	A-	
2009	658057	6	6	185	.730	.038	.103	.130	.730	.000	.556	268	329	285	.556	-1.576	0.185	-1.9	0.8	-2.2	0.7	A+	
2010	658058	6	6	167	.287	.216	.353	.144	.287	.000	.300	186	073	068	.300	1.065	0.189	0.3	1.0	5.5	2.3	A+	
2011	658059	6	6	301	.621	.621	.140	.176	.063	.000	.430	.430	304	106	258	-0.611	0.131	-0.9	1.0	-0.7	0.9	A+	
2012	658061	6	6	291	.608	.096	.608	.131	.165	.000	.430	152	.430	238	228	-0.700	0.135	-0.2	1.0	-0.5	1.0	A-	
2013	658062	6	7	174	.207	.362	.293	.138	.207	.000	.407	219	008	163	.407	1.434	0.202	-1.3	0.9	1.2	1.3	A+	
2014	658064	6	6	184	.788	.054	.788	.103	.054	.000	.342	232	.342	251	046	-1.802	0.199	0.4	1.0	0.2	1.0	B+	
2015	658065	6	6	318	.682	.082	.129	.107	.682	.000	.497	179	297	268	.497	-1.037	0.134	-1.7	0.9	-1.9	8.0	B+	
2016	658066	6	6	306	.229	.360	.206	.206	.229	.000	.414	063	267	089	.414	1.429	0.146	-1.5	0.9	-1.2	8.0	A+	
2017	658067	6	6	167	.329	.365	.174	.329	.132	.000	.368	107	303	.368	019	0.662	0.180	-0.4	1.0	0.8	1.1	A-	
2018	658068	6	6	286	.465	.224	.189	.122	.465	.000	.395	173	213	127	.395	0.074	0.132	-0.1	1.0	0.4	1.0	A-	
2019	658069	6	6	298	.440	.440	.208	.302	.050	.000	.189	.189	074	060	165	0.315	0.129	4.1	1.2	4.5	1.4	A-	
2020	658071	6	6	324	.460	.111	.460	.244	.185	.000	.263	181	.263	177	.005	0.085	0.123	2.7	1.1	4.0	1.3	A+	
2021	658119	6	6	169	.462	.462	.231	.201	.107	.000	.362	.362	260	163	019	-0.054	0.174	1.0	1.1	1.9	1.2	A+	
2022	658135	6	6	174	.529	.161	.529	.126	.184	.000	.391	266	.391	185	092	-0.408	0.170	0.3	1.0	1.2	1.1	A-	
2023	658164	6	6	184	.620	.620	.152	.130	.098	.000	.311	.311	184	109	162	-0.718	0.170	1.5	1.1	1.5	1.2	B+	
2024	658176	6	6	168	.417	.089	.250	.244	.417	.000	.300	198	201	011	.300	0.163	0.176	1.3	1.1	3.1	1.4	B+	
2025	658225	6	6	292	.394	.171	.240	.195	.394	.000	.375	100	116	242	.375	0.424	0.133	-0.3	1.0	2.1	1.2	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade			. ,			` '									in	in	out	out	/F	/B
2026	658252	6	6	307	.280	.147	.189	.384	.280	.000	.164	087	.040	120	.164	1.068	0.138	1.9	1.1	4.9	1.7	B-	\vdash
2027	658263	6	6	321	.421	.268	.168	.421	.143	.000	.264	175	100	.264	044	0.356	0.125	2.8	1.1	2.6	1.2	A-	—
2028	658277	6	6	167	.281	.281	.222	.281	.216	.000	.079	.079	157	.052	.016	0.880	0.186	2.2	1.2	5.0	2.1	A+	
2029	658298	6	6	172	.233	.233	.204	.413	.151	.000	.279	.279	105	058	130	1.118	0.198	-0.2	1.0	4.2	2.2	A+	
2030	658299	6	6	278	.619	.119	.619	.119	.144	.000	.478	254	.478	179	263	-0.865	0.139	-0.8	1.0	-1.3	0.9	A-	
2031	658309	6	6	315	.311	.311	.321	.333	.035	.000	.384	.384	232	104	112	0.871	0.132	-0.9	1.0	-0.5	0.9	A-	
2032	658313	6	6	307	.251	.352	.238	.160	.251	.000	.368	158	.001	230	.368	1.239	0.143	-0.8	1.0	0.1	1.0	A-	
2033	658329	6	6	288	.559	.243	.139	.559	.059	.000	.427	104	341	.427	208	-0.308	0.133	0.0	1.0	-0.6	1.0	A-	
2034	658380	6	6	156	.321	.295	.167	.321	.218	.000	.320	111	258	.320	007	0.633	0.190	0.7	1.1	1.8	1.3	A-	
2035	658381	6	6	309	.327	.282	.301	.327	.091	.000	.285	005	182	.285	168	0.737	0.132	1.3	1.1	1.3	1.1	A-	
2036	658392	6	7	294	.422	.248	.174	.422	.157	.000	.383	056	158	.383	290	0.130	0.132	0.5	1.0	1.5	1.1	A-	
2037	658395	6	6	286	.654	.654	.122	.147	.077	.000	.369	.369	164	281	083	-0.971	0.140	0.9	1.1	1.5	1.1	A-	
2038	658411	6	6	179	.553	.235	.553	.145	.067	.000	.016	119	.016	.118	.005	-0.503	0.169	6.2	1.5	6.0	1.7	A+	
2039	658430	6	6	179	.363	.156	.363	.363	.117	.000	.225	205	.225	093	.035	0.475	0.171	2.2	1.2	2.1	1.3	A-	
2040	658466	6	6	311	.788	.080	.788	.090	.042	.000	.393	158	.393	216	279	-1.785	0.152	-0.3	1.0	0.0	1.0	A+	
2041	658467	6	6	314	.481	.131	.481	.319	.070	.000	.260	228	.260	013	184	-0.067	0.126	2.9	1.1	4.1	1.3	A-	
2042	658523	6	6	306	.814	.065	.814	.039	.082	.000	.385	163	.385	090	336	-1.937	0.161	0.0	1.0	-0.8	0.9	A-	
2043	658557	6	6	167	.557	.186	.557	.150	.108	.000	.420	315	.420	119	140	-0.475	0.175	0.1	1.0	0.4	1.0	A+	
2044	658571	6	6	317	.530	.142	.088	.240	.530	.000	.364	211	358	016	.364	-0.315	0.125	1.0	1.1	0.6	1.0	A+	
2045	658572	6	6	166	.398	.169	.319	.398	.115	.000	.378	073	141	.378	290	0.154	0.175	0.1	1.0	0.4	1.0	A+	
2046	658574	6	6	159	.635	.635	.094	.069	.201	.000	.546	.546	290	299	255	-0.960	0.187	-1.6	0.9	-1.7	0.8	A-	
2047	658575	6	6	312	.869	.869	.055	.032	.045	.000	.412	.412	295	215	167	-2.460	0.182	-0.5	0.9	-1.7	0.7	A+	B-
2048	658586	6	6	283	.357	.357	.297	.166	.180	.000	.397	.397	154	118	199	0.681	0.136	-0.9	1.0	0.1	1.0	A-	
2049	658587	6	6	321	.564	.100	.212	.125	.564	.000	.546	165	272	334	.546	-0.409	0.126	-3.0	0.9	-2.6	0.8	A+	
2050	659340	6	6	313	.425	.329	.115	.425	.131	.000	.363	184	213	.363	075	0.222	0.128	1.0	1.1	1.3	1.1	B-	
2051	659341	6	6	298	.681	.060	.681	.235	.024	.000	.283	276	.283	110	129	-0.976	0.139	2.1	1.2	2.3	1.2	A-	
2052	659342	6	6	195	.436	.226	.190	.436	.149	.000	.245	103	028	.245	190	0.354	0.161	2.7	1.2	2.9	1.3	A+	
2053	659344	6	6	307	.599	.599	.042	.124	.235	.000	.492	.492	218	294	237	-0.611	0.130	-1.6	0.9	-2.0	0.9	A-	
2054	659345	6	6	320	.678	.100	.678	.113	.109	.000	.172	089	.172	111	059	-1.074	0.133	3.9	1.3	3.5	1.4	A-	
2055	659346	6	7	170	.177	.241	.177	.406	.177	.000	.346	031	166	113	.346	1.570	0.216	-0.4	1.0	0.2	1.0	A-	
2056	659347	6	6	193	.358	.078	.358	.497	.067	.000	068	056	068	.147	103	0.393	0.166	5.9	1.5	7.2	2.2	A-	
2057	659348	6	6	291	.557	.103	.165	.557	.175	.000	.428	228	210	.428	172	-0.373	0.130	-1.2	0.9	-0.7	1.0	A-	
2058	659349	6	6	298	.732	.091	.111	.732	.067	.000	.412	163	274	.412	199	-1.205	0.145	0.0	1.0	-0.8	0.9	A-	A+
2059	659381	6	6	177	.367	.311	.243	.367	.079	.000	.177	.092	296	.177	002	0.400	0.173	3.5	1.3	2.6	1.3	B-	
2060	659383	6	6	270	.107	.415	.156	.107	.322	.000	106	.052	172	106	.141	2.392	0.173	1.2	1.2	6.6	4.2	A-	
2000	033363	L	U	2/0	.107	.413	.130	.107	.322	.000	100	.033	1/2	100	.141	2.332	0.204	1.2	1.2	0.0	4.2	Α-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref			PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
	ID	Grade	Grade		rvai	F(A)	r (b)	F(C)	F(D)	F (-)	FtDIS	r i(A)	FI(D)	r I(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
2061	659385	6	6	181	.370	.238	.370	.238	.155	.000	.001	033	.001	.023	.011	0.506	0.168	4.6	1.3	5.3	1.7	A+	
2062	659386	6	6	158	.051	.222	.209	.519	.051	.000	.045	348	051	.311	.045	3.255	0.372	0.1	1.0	3.3	3.8	A-	
2063	659387	6	6	307	.332	.147	.332	.355	.166	.000	.220	232	.220	.048	119	0.684	0.134	2.7	1.2	4.3	1.5	A-	
2064	659389	6	6	279	.416	.172	.212	.201	.416	.000	.370	090	123	246	.370	0.330	0.135	-0.2	1.0	2.2	1.2	A-	
2065	660528	6	6	189	.497	.497	.323	.122	.058	.000	.531	.531	162	390	266	-0.299	0.165	-2.2	0.9	-0.6	0.9	A+	
2066	660529	6	6	173	.809	.041	.110	.809	.041	.000	.332	181	202	.332	160	-2.067	0.212	0.4	1.1	-0.2	0.9	A+	
2067	660530	6	6	172	.180	.238	.279	.302	.180	.000	.171	.083	220	005	.171	1.606	0.213	0.7	1.1	3.1	2.1	A-	
2068	660531	6	6	321	.277	.576	.277	.081	.065	.000	.010	.187	.010	290	072	1.077	0.134	3.6	1.2	6.5	1.9	A+	
2069	660562	6	6	184	.250	.250	.179	.342	.228	.000	034	034	013	.169	144	1.098	0.184	3.4	1.3	4.8	2.0	A+	
2070	660563	6	6	167	.413	.275	.198	.413	.114	.000	.249	124	095	.249	093	0.164	0.173	2.4	1.2	1.8	1.2	A-	
2071	662164	6	6	172	.256	.297	.256	.331	.116	.000	.229	.210	.229	279	201	1.066	0.192	1.3	1.1	2.4	1.5	A+	
2072	662165	6	6	304	.543	.171	.095	.191	.543	.000	.488	154	248	286	.488	-0.265	0.128	-1.8	0.9	-1.8	0.9	A+	
2073	662166	6	6	186	.538	.118	.296	.048	.538	.000	.445	290	188	199	.445	-0.385	0.167	0.1	1.0	-0.3	1.0	A+	
2074	662167	6	6	283	.657	.081	.230	.657	.032	.000	.377	149	291	.377	093	-0.992	0.140	0.5	1.0	0.6	1.1	B+	
2075	662168	6	7	169	.391	.231	.172	.391	.207	.000	.319	043	203	.319	150	0.341	0.176	1.3	1.1	1.5	1.2	A-	
2076	662169	6	6	159	.509	.509	.220	.170	.101	.000	.303	.303	.086	246	315	-0.198	0.177	2.1	1.2	1.1	1.1	A+	
2077	662170	6	6	189	.217	.217	.286	.138	.360	.000	017	017	.039	056	.018	1.445	0.190	2.3	1.2	7.1	3.5	B-	
2078	662171	6	6	162	.241	.432	.241	.117	.210	.000	.214	190	.214	019	.020	1.171	0.199	0.7	1.1	3.5	1.9	B-	
2079	662172	6	6	141	.326	.121	.199	.355	.326	.000	.194	191	008	054	.194	0.630	0.198	1.6	1.1	4.7	2.0	A-	
2080	662173	6	6	169	.254	.254	.178	.509	.059	.000	.115	.115	118	.038	104	0.934	0.192	2.0	1.2	4.5	2.0	A+	
2081	662175	6	6	167	.521	.114	.204	.521	.162	.000	.454	043	180	.454	383	-0.402	0.177	-0.2	1.0	0.8	1.1	A+	
2082	662176	6	6	172	.552	.052	.145	.552	.250	.000	.243	008	083	.243	207	-0.518	0.175	3.2	1.3	3.2	1.4	A+	
2083	662204	6	6	165	.424	.424	.182	.182	.212	.000	.125	.125	086	131	.054	0.269	0.174	3.8	1.3	4.9	1.7	A-	
2084	662205	6	6	267	.794	.015	.142	.049	.794	.000	.419	250	271	207	.419	-1.724	0.167	-0.5	1.0	-0.5	0.9	B+	
2085	662207	6	6	297	.306	.199	.306	.391	.104	.000	.008	250	.008	.184	.021	0.912	0.137	5.3	1.3	6.5	2.0	A-	
2086	662208	6	6	303	.861	.020	.861	.050	.069	.000	.410	147	.410	320	205	-2.298	0.181	-0.7	0.9	-0.8	0.8	B-	
2087	662209	6	6	171	.515	.129	.281	.515	.076	.000	.443	275	184	.443	175	-0.311	0.170	-0.8	1.0	-0.3	1.0	B-	
2088	662210	6	6	282	.553	.167	.177	.553	.103	.000	.510	279	189	.510	255	-0.308	0.133	-2.8	0.9	-1.7	0.9	A-	
2089	662211	6	6	198	.288	.222	.253	.237	.288	.000	.332	177	173	004	.332	0.819	0.171	-0.4	1.0	2.1	1.3	A+	
2090	662212	6	6	300	.443	.283	.203	.443	.070	.000	.349	074	170	.349	280	0.200	0.130	1.3	1.1	1.6	1.1	A-	
2091	662214	6	6	167	.569	.084	.287	.569	.060	.000	.402	264	256	.402	043	-0.523	0.175	0.1	1.0	0.0	1.0	B+	
2092	662215	6	6	174	.793	.086	.109	.012	.793	.000	.345	205	212	152	.345	-1.977	0.210	1.1	1.1	-0.1	1.0	A+	
2093	662216	6	6	182	.901	.039	.901	.033	.028	.000	.389	269	.389	067	321	-2.792	0.270	-0.3	0.9	-0.3	0.9	A+	
2094	662241	6	6	166	.127	.187	.530	.157	.127	.000	.249	001	005	220	.249	2.064	0.245	0.1	1.0	-0.2	0.9	A+	A-
2095	662242	6	6	178	.848	.848	.039	.023	.090	.000	.546	.546	240	174	432	-2.425	0.229	-1.7	0.8	-2.1	0.5	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	Grade			. ,			• •									in	in	out	out	/F	/B
2096	662243	6	6	161	.311	.385	.311	.155	.149	.000	.005	.191	.005	259	004	0.827	0.187	4.3	1.4	4.5	1.9	A+	
2097	662244	6	6	157	.459	.159	.459	.147	.236	.000	.032	187	.032	023	.143	0.013	0.179	5.7	1.5	5.6	1.7	A-	ı———
2098	662245	6	6	159	.711	.088	.088	.711	.113	.000	.412	242	186	.412	208	-1.306	0.194	0.0	1.0	-0.3	0.9	B-	ı———
2099	662246	6	6	278	.543	.194	.543	.184	.079	.000	.333	089	.333	161	254	-0.302	0.134	1.3	1.1	1.3	1.1	A+	
2100	662247	6	6	173	.642	.064	.156	.642	.139	.000	.244	004	071	.244	260	-0.882	0.180	2.8	1.3	2.1	1.3	B-	
2101	662248	6	6	304	.500	.112	.500	.362	.026	.000	.156	321	.156	.097	147	-0.201	0.128	5.4	1.3	4.8	1.4	A+	
2102	662249	6	6	291	.491	.491	.151	.217	.141	.000	.485	.485	320	176	160	-0.137	0.131	-2.1	0.9	-0.8	0.9	A+	1
2103	662250	6	6	295	.515	.125	.264	.095	.515	.000	.537	038	390	285	.537	-0.227	0.130	-3.2	0.9	-2.6	8.0	A+	1
2104	662251	6	6	194	.371	.371	.150	.345	.134	.000	.315	.315	214	.047	289	0.377	0.166	1.3	1.1	1.6	1.2	A+	
2105	662252	6	6	290	.348	.166	.348	.255	.231	.000	.099	.033	.099	069	070	0.748	0.136	4.6	1.3	6.6	1.8	A-	
2106	657795	7	7	653	.294	.294	.279	.340	.087	.000	.291	.291	138	105	074	1.227	0.094	1.2	1.1	3.6	1.3	B-	
2107	657797	7	7	661	.239	.239	.362	.235	.165	.000	069	069	.130	116	.044	1.526	0.099	7.4	1.4	9.9	2.6	A-	
2108	657798	7	7	715	.259	.340	.298	.259	.104	.000	.059	020	023	.059	019	1.458	0.092	5.2	1.2	9.9	2.4	A+	
2109	657799	7	7	690	.457	.151	.457	.259	.133	.000	.165	126	.165	.039	159	0.423	0.085	7.0	1.2	8.6	1.5	A+	A-
2110	657801	7	7	758	.416	.410	.416	.119	.055	.000	.237	057	.237	203	101	0.612	0.082	4.3	1.1	7.6	1.5	A+	
2111	657804	7	7	706	.140	.568	.140	.255	.037	.000	183	.259	183	117	073	2.391	0.114	3.4	1.3	9.9	4.7	A-	A+
2112	657805	7	7	661	.581	.581	.272	.077	.070	.000	.471	.471	226	260	247	-0.249	0.088	-1.7	0.9	-1.7	0.9	A+	A+
2113	657807	7	7	699	.385	.385	.270	.157	.187	.000	.148	.148	080	200	.093	0.719	0.086	7.1	1.3	8.8	1.6	A-	
2114	657808	7	7	723	.261	.170	.375	.261	.194	.000	.039	.057	044	.039	043	1.468	0.092	5.7	1.3	9.9	2.2	A+	A+
2115	657809	7	7	696	.316	.122	.300	.262	.316	.000	.144	030	065	062	.144	1.058	0.090	5.7	1.2	8.1	1.8	A+	
2116	657810	7	7	665	.134	.071	.108	.687	.134	.000	.219	244	248	.140	.219	2.394	0.120	-0.4	1.0	4.2	1.8	A+	B+
2117	657811	7	7	720	.631	.044	.631	.118	.207	.000	.384	183	.384	262	155	-0.497	0.087	1.4	1.1	1.2	1.1	A-	A-
2118	657815	7	7	709	.484	.210	.205	.484	.102	.000	.336	215	129	.336	093	0.312	0.084	2.1	1.1	3.3	1.2	A-	A-
2119	657816	7	7	718	.362	.373	.362	.127	.138	.000	.087	.113	.087	260	029	0.814	0.086	8.4	1.3	9.9	1.9	A-	
2120	657819	7	7	705	.184	.562	.200	.184	.054	.000	030	.205	125	030	176	1.988	0.104	4.0	1.3	9.9	3.0	A+	
2121	657820	7	7	749	.768	.039	.081	.112	.768	.000	.494	254	316	232	.494	-1.354	0.098	-1.3	0.9	-1.6	0.9	B+	B-
2122	657821	7	7	675	.453	.287	.169	.453	.090	.000	.365	130	229	.365	129	0.405	0.086	0.1	1.0	4.3	1.3	A-	A-
2123	657822	7	7	687	.272	.080	.234	.413	.272	.000	.265	180	189	.021	.265	1.299	0.093	1.0	1.0	4.1	1.4	A-	A+
2124	657823	7	7	701	.411	.181	.243	.411	.166	.000	.224	050	127	.224	097	0.603	0.085	5.0	1.2	6.0	1.4	A-	A-
2125	657824	7	7	694	.343	.130	.287	.241	.343	.000	.151	109	045	034	.151	0.897	0.089	7.0	1.3	6.7	1.6	A+	
2126	657825	7	7	712	.291	.143	.275	.291	.291	.000	.261	088	063	131	.261	1.212	0.090	2.0	1.1	3.7	1.3	A-	
2127	657826	7	7	708	.482	.041	.482	.356	.122	.000	.207	251	.207	091	030	0.255	0.084	6.4	1.2	6.7	1.4	A+	
2128	657827	7	7	706	.465	.062	.465	.217	.256	.000	.334	188	.334	264	029	0.329	0.084	2.0	1.1	4.4	1.3	A-	A-
2129	657828	7	7	693	.222	.228	.432	.222	.118	.000	.024	006	079	.024	.099	1.711	0.099	4.6	1.3	9.4	2.4	A+	
2130	657829	7	7	724	.699	.113	.699	.087	.101	.000	.300	222	.300	104	126	-0.942	0.092	4.2	1.2	2.5	1.2	A+	
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Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
	10	Grade	Grade	.,	ı vai	' (^,	1 (5)	1 (0)	1 (5)	· (-)	i tbis	11(A)	11(0)	1 1(0)	11(0)	IVICAS	IVISE	in	in	out	out	/F	/B
2131	657830	7	7	713	.467	.140	.467	.286	.107	.000	.235	177	.235	082	061	0.330	0.084	5.8	1.2	7.5	1.5	A+	A+
2132	657831	7	7	721	.609	.108	.609	.207	.076	.000	.341	296	.341	086	149	-0.456	0.086	2.4	1.1	3.0	1.2	A-	
2133	657832	7	7	646	.098	.173	.060	.098	.669	.000	095	135	298	095	.319	2.893	0.138	1.5	1.2	8.2	3.6	C-	
2134	657833	7	7	710	.549	.549	.190	.130	.131	.000	.475	.475	253	267	141	-0.077	0.085	-1.9	0.9	-1.8	0.9	A-	A-
2135	657834	7	7	707	.359	.023	.311	.307	.359	.000	.493	210	282	162	.493	0.970	0.087	-4.2	0.9	-0.6	1.0	A-	A-
2136	657835	7	7	684	.624	.091	.624	.173	.113	.000	.353	199	.353	226	090	-0.421	0.089	2.4	1.1	1.8	1.1	A+	A-
2137	657836	7	7	686	.523	.156	.523	.184	.137	.000	.273	109	.273	188	071	0.086	0.085	4.2	1.1	5.2	1.3	A+	
2138	657837	7	7	672	.274	.429	.167	.131	.274	.000	.430	134	145	213	.430	1.334	0.094	-2.9	0.9	0.3	1.0	A-	B-
2139	657838	7	7	683	.583	.231	.129	.583	.057	.000	.573	348	313	.573	133	-0.222	0.087	-5.2	0.8	-4.9	0.8	A-	A+
2140	657839	7	6	691	.489	.151	.182	.489	.178	.000	.231	114	069	.231	126	0.178	0.085	5.4	1.2	6.8	1.4	A+	
2141	657840	7	7	722	.562	.223	.562	.137	.078	.000	.289	.006	.289	260	210	-0.148	0.084	3.9	1.1	4.1	1.2	A+	A-
2142	657841	7	7	734	.375	.375	.180	.199	.247	.000	.276	.276	161	235	.052	0.754	0.084	3.0	1.1	5.6	1.4	A+	
2143	657842	7	7	738	.472	.472	.305	.113	.111	.000	.093	.093	.016	162	007	0.353	0.082	9.9	1.4	9.5	1.5	A-	A+
2144	657843	7	7	741	.619	.619	.174	.144	.062	.000	.235	.235	056	136	187	-0.435	0.086	6.0	1.3	6.0	1.4	A+	
2145	657844	7	7	722	.231	.298	.380	.231	.091	.000	004	024	.090	004	109	1.610	0.095	5.2	1.3	9.9	3.1	A+	
2146	657845	7	7	724	.192	.160	.413	.235	.192	.000	.169	075	011	079	.169	1.915	0.101	1.7	1.1	5.0	1.7	A-	B-
2147	657846	7	7	722	.247	.114	.314	.326	.247	.000	.097	110	.015	030	.097	1.505	0.093	4.3	1.2	7.7	1.9	A+	
2148	657847	7	7	671	.560	.064	.560	.288	.088	.000	.451	163	.451	257	239	-0.182	0.089	0.1	1.0	0.2	1.0	A-	
2149	657848	7	7	682	.485	.249	.202	.485	.063	.000	.422	202	260	.422	080	0.298	0.085	-1.2	1.0	1.3	1.1	A-	
2150	657849	7	7	676	.681	.118	.681	.120	.081	.000	.344	118	.344	178	236	-0.769	0.093	2.3	1.1	2.0	1.2	A+	
2151	657889	7	7	667	.411	.210	.411	.271	.108	.000	.299	056	.299	095	264	0.618	0.088	2.8	1.1	4.9	1.3	A-	
2152	657890	7	7	722	.622	.127	.105	.145	.622	.000	.521	255	346	174	.521	-0.496	0.087	-2.7	0.9	-2.4	0.9	A-	
2153	657891	7	7	674	.407	.407	.151	.349	.094	.000	.172	.172	104	.073	281	0.612	0.087	5.6	1.2	9.9	1.7	A-	
2154	657892	7	7	696	.263	.263	.430	.158	.149	.000	.176	.176	077	008	102	1.434	0.093	2.5	1.1	6.8	1.8	A+	A-
2155	657893	7	7	665	.265	.241	.168	.326	.265	.000	.349	.037	245	167	.349	1.402	0.096	-0.6	1.0	2.1	1.2	A+	A+
2156	658825	7	7	691	.177	.177	.201	.439	.184	.000	.161	.161	144	.061	088	2.007	0.106	1.7	1.1	3.9	1.6	A-	A-
2157	658828	7	7	687	.176	.176	.236	.435	.153	.000	.161	.161	037	006	119	2.081	0.107	0.7	1.0	8.1	2.5	A+	
2158	658830	7	7	653	.891	.020	.072	.017	.891	.000	.264	067	170	225	.264	-2.341	0.136	0.7	1.1	1.2	1.2	A-	
2159	660526	7	7	673	.213	.400	.224	.163	.213	.000	.276	135	069	048	.276	1.782	0.101	-0.3	1.0	4.8	1.7	A-	
2160	660527	7	7	734	.279	.326	.279	.151	.244	.000	.033	169	.033	.010	.142	1.342	0.090	6.6	1.3	9.9	2.2	A+	A+
2161	660777	7	7	716	.334	.334	.201	.406	.059	.000	.091	.091	289	.179	063	1.070	0.086	6.8	1.3	7.9	1.7	A-	
2162	660778	7	7	704	.553	.263	.046	.139	.553	.000	.415	238	227	158	.415	-0.050	0.085	0.0	1.0	0.3	1.0	A+	
2163	661063	7	7	682	.911	.028	.911	.048	.013	.000	.414	164	.414	322	194	-2.882	0.147	-0.8	0.9	-1.1	0.8	B+	
-	661064	7	7	686	.251	.216	.348	.185	.251	.000	.202	010	062	138	.202	1.478	0.096	2.8	1.1	5.7	1.7	A+	A-
2165	661065	7	7	691	.180	.172	.460	.188	.180	.000	.073	138	.123	095	.073	2.023	0.106	2.6	1.2	7.1	2.3	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
2166	662340	7	7	740	.401	.127	.354	.401	.118	.000	.266	216	030	.266	138	0.625	0.083	3.1	1.1	8.4	1.6	A-	A+
2167	662341	7	7	726	.657	.657	.125	.091	.127	.000	.484	.484	280	243	202	-0.662	0.089	-1.4	0.9	-1.2	0.9	A+	B-
2168	662342	7	7	749	.486	.164	.166	.486	.184	.000	.328	246	293	.328	.094	0.284	0.081	2.0	1.1	4.4	1.2	A-	A-
2169	662343	7	7	668	.537	.192	.537	.142	.129	.000	.401	228	.401	194	128	-0.024	0.087	0.4	1.0	1.2	1.1	A-	
2170	662344	7	7	679	.356	.138	.356	.331	.174	.000	.084	.098	.084	021	169	0.860	0.089	8.8	1.4	8.5	1.7	A+	
2171	662346	7	7	713	.498	.498	.220	.184	.098	.000	.440	.440	160	218	233	0.154	0.084	-1.4	1.0	1.2	1.1	A+	
2172	662347	7	7	679	.390	.390	.253	.199	.158	.000	.169	.169	208	120	.154	0.746	0.088	6.9	1.3	8.0	1.6	A+	A+
2173	662348	7	7	708	.735	.047	.735	.110	.109	.000	.376	097	.376	243	222	-1.109	0.095	1.0	1.1	0.4	1.0	A+	
2174	662349	7	7	702	.739	.148	.073	.739	.040	.000	.447	237	251	.447	239	-1.194	0.097	-0.2	1.0	-1.2	0.9	A+	A-
2175	662350	7	7	655	.415	.415	.194	.308	.082	.000	.363	.363	191	191	055	0.594	0.088	0.6	1.0	2.3	1.1	A-	A+
2176	662352	7	7	730	.785	.785	.080	.099	.037	.000	.464	.464	269	257	219	-1.418	0.100	-1.4	0.9	-2.2	8.0	A+	A+
2177	662353	7	7	666	.476	.476	.165	.237	.122	.000	.436	.436	199	222	151	0.285	0.086	-1.5	1.0	0.5	1.0	A+	
2178	662354	7	7	691	.511	.245	.511	.152	.093	.000	.325	209	.325	153	061	0.053	0.086	3.4	1.1	4.8	1.3	A-	
2179	657850	8	8	160	.288	.144	.275	.288	.294	.000	.092	053	141	.092	.088	1.179	0.188	2.7	1.2	2.4	1.5	A+	
2180	657851	8	8	200	.345	.205	.265	.345	.185	.000	.146	104	074	.146	.013	0.760	0.164	3.4	1.2	2.9	1.4	A-	
2181	657852	8	8	215	.251	.335	.247	.167	.251	.000	.210	044	122	048	.210	1.484	0.173	1.2	1.1	4.7	2.1	A-	A-
2182	657853	8	8	185	.357	.270	.189	.357	.184	.000	.109	.011	058	.109	087	0.586	0.171	4.4	1.3	5.2	1.9	B+	B-
2183	657854	8	8	213	.310	.225	.263	.310	.202	.000	.245	155	.005	.245	126	1.066	0.164	1.9	1.1	2.8	1.4	A-	
2184	657855	8	8	148	.257	.257	.230	.291	.223	.000	.104	.104	168	.008	.052	1.268	0.202	2.3	1.2	2.3	1.6	A+	
2185	657856	8	8	142	.204	.078	.254	.204	.465	.000	.267	244	206	.267	.095	1.592	0.220	-0.3	1.0	0.6	1.1	A+	
2186	657857	8	8	196	.097	.097	.316	.194	.393	.000	.010	.010	.044	030	024	2.738	0.254	0.9	1.2	3.2	2.5	A-	
2187	657858	8	8	200	.200	.035	.080	.200	.685	.000	.235	.053	133	.235	146	1.753	0.192	0.1	1.0	4.2	2.3	B-	
2188	657859	8	8	196	.235	.158	.235	.372	.235	.000	.108	028	.108	.097	195	1.371	0.185	2.0	1.2	5.3	2.6	A+	
2189	657860	8	8	159	.365	.126	.365	.138	.371	.000	.319	174	.319	027	179	0.720	0.184	0.4	1.0	2.9	1.5	A+	
2190	657861	8	8	203	.365	.232	.365	.335	.069	.000	.191	015	.191	106	140	0.731	0.161	2.9	1.2	3.9	1.5	A-	
2191	657862	8	8	176	.205	.415	.205	.108	.273	.000	060	.074	060	159	.083	1.565	0.204	2.9	1.4	5.4	2.8	B-	
2192	657863	8	8	193	.176	.197	.404	.176	.223	.000	110	.012	047	110	.144	1.745	0.203	2.7	1.4	5.2	2.8	A-	
2193	657864	8	8	201	.199	.159	.199	.448	.194	.000	108	.022	108	.065	.007	1.675	0.193	3.7	1.4	5.9	2.8	A+	
2194	657865	8	8	197	.223	.066	.152	.558	.223	.000	.099	223	150	.137	.099	1.622	0.186	2.0	1.2	3.6	1.9	A-	
2195	657866	8	8	184	.495	.125	.332	.495	.049	.000	.294	155	097	.294	234	-0.044	0.165	2.2	1.1	2.3	1.2	A+	
2196	657867	8	8	202	.515	.515	.183	.158	.144	.000	.342	.342	154	300	005	-0.283	0.159	1.4	1.1	1.6	1.2	A+	
2197	657868	8	8	142	.183	.183	.197	.423	.197	.000	.173	.173	243	.133	089	1.900	0.229	0.4	1.1	1.3	1.3	A-	
2198	657869	8	8	154	.221	.279	.201	.299	.221	.000	.188	007	150	032	.188	1.504	0.208	0.6	1.1	2.6	1.6	A-	
2199	657870	8	8	154	.318	.299	.266	.117	.318	.000	.177	043	053	122	.177	1.039	0.188	1.4	1.1	3.5	1.6	B-	
2200	657871	8	8	181	.541	.149	.541	.243	.066	.000	.317	154	.317	251	.018	-0.270	0.171	2.3	1.2	2.5	1.3	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade			. ,		, ,	• •									in	in	out	out	/F	/B
2201	657872	8	8	204	.270	.343	.270	.186	.201	.000	.127	088	.127	138	.098	1.202	0.172	2.7	1.2	3.7	1.8	B-	
2202	657873	8	8	204	.172	.172	.289	.427	.113	.000	.102	.102	.025	.037	215	1.820	0.197	1.4	1.2	3.0	1.9	A+	A-
2203	657874	8	8	147	.333	.048	.333	.442	.177	.000	.307	.025	.307	146	204	0.903	0.192	0.6	1.1	1.7	1.3	A+	
2204	657894	8	8	141	.461	.170	.461	.213	.156	.000	.184	026	.184	189	012	0.266	0.184	2.6	1.2	2.1	1.2	A+	
2205	657895	8	8	188	.293	.293	.330	.133	.245	.000	.329	.329	096	336	.022	1.082	0.177	0.4	1.0	1.3	1.2	A+	
2206	657896	8	8	196	.260	.219	.245	.260	.276	.000	.213	014	193	.213	010	1.383	0.176	0.6	1.1	4.9	2.1	A+	
2207	657897	8	8	190	.347	.211	.347	.190	.253	.000	.098	.009	.098	092	033	0.773	0.169	4.0	1.3	6.0	2.1	A+	
2208	657898	8	8	209	.215	.215	.263	.163	.359	.000	.164	.164	004	143	027	1.456	0.183	0.9	1.1	6.2	3.1	A+	
2209	657900	8	8	202	.455	.203	.455	.238	.104	.000	.237	.077	.237	266	117	0.214	0.157	3.1	1.2	2.4	1.3	A+	
2210	657901	8	8	159	.377	.377	.428	.151	.044	.000	.347	.347	174	088	246	0.573	0.181	0.7	1.1	0.8	1.1	A+	
2211	657902	8	8	140	.536	.107	.236	.536	.121	.000	.359	155	175	.359	173	-0.188	0.189	0.9	1.1	0.5	1.1	A+	
2212	657903	8	8	182	.610	.192	.610	.148	.050	.000	.451	267	.451	212	181	-0.526	0.171	-0.5	1.0	-0.8	0.9	A+	1
2213	657904	8	8	186	.247	.226	.183	.344	.247	.000	.177	077	128	.011	.177	1.306	0.185	1.8	1.2	2.3	1.4	A-	
2214	657905	8	8	209	.191	.191	.325	.292	.191	.000	.031	.031	009	031	.016	1.718	0.190	2.0	1.2	4.5	2.3	A-	
2215	657906	8	8	145	.372	.310	.372	.207	.110	.000	.144	.068	.144	082	216	0.536	0.190	2.8	1.2	4.5	1.7	A-	
2216	657907	8	8	134	.276	.299	.276	.276	.149	.000	.184	129	.184	.013	082	1.124	0.210	1.0	1.1	3.4	1.9	A+	
2217	657908	8	8	133	.218	.150	.399	.233	.218	.000	.245	058	167	.004	.245	1.489	0.225	0.3	1.0	1.3	1.3	A+	
2218	657909	8	8	123	.407	.073	.301	.220	.407	.000	.271	341	021	084	.271	0.468	0.199	0.9	1.1	1.3	1.2	A-	
2219	657910	8	8	137	.256	.256	.329	.270	.146	.000	034	034	110	024	.220	1.257	0.213	3.0	1.3	5.8	2.9	A+	
2220	657911	8	8	160	.456	.119	.206	.456	.219	.000	.161	172	.018	.161	077	0.024	0.176	3.4	1.2	3.7	1.4	A-	
2221	657912	8	8	167	.389	.132	.264	.389	.216	.000	.232	118	159	.232	008	0.549	0.175	2.1	1.1	2.3	1.3	A+	
2222	657913	8	8	206	.660	.660	.087	.136	.117	.000	.203	.203	131	113	064	-0.967	0.166	3.3	1.3	2.8	1.4	A+	
2223	657914	8	8	130	.315	.315	.246	.146	.292	.000	.424	.424	122	266	111	0.945	0.209	-0.8	0.9	0.2	1.0	A+	
2224	657915	8	8	151	.238	.265	.272	.225	.238	.000	.315	134	183	.015	.315	1.308	0.205	-0.3	1.0	1.0	1.2	A+	
2225	657916	8	8	146	.288	.288	.288	.274	.151	.000	.051	053	.051	101	.129	1.029	0.198	2.9	1.3	4.0	1.9	A-	
2226	657917	8	8	143	.378	.112	.420	.378	.091	.000	.222	149	040	.222	143	0.696	0.190	2.0	1.2	2.8	1.5	B+	
2227	657918	8	8	183	.312	.230	.257	.202	.312	.000	.264	.021	153	160	.264	0.862	0.175	1.2	1.1	3.0	1.5	A+	
2228	657919	8	8	153	.248	.248	.386	.301	.065	.000	.012	.012	015	090	.175	1.260	0.202	2.2	1.2	6.7	3.3	A-	
2229	657920	8	8	146	.288	.418	.288	.116	.178	.000	061	.104	061	143	.059	1.117	0.195	3.2	1.3	4.4	1.8	A+	
2230	657921	8	8	135	.415	.415	.363	.141	.082	.000	.357	.357	145	222	105	0.479	0.195	0.8	1.1	0.7	1.1	C+	
2231	657922	8	8	144	.243	.417	.194	.146	.243	.000	.248	.054	171	186	.248	1.354	0.208	0.1	1.0	2.5	1.6	B-	=
2232	657923	8	8	190	.642	.063	.200	.642	.095	.000	.414	176	226	.414	222	-0.681	0.173	0.8	1.1	0.0	1.0	A-	=
2233	657924	8	8	139	.648	.086	.648	.216	.050	.000	.426	036	.426	327	270	-0.758	0.199	-0.1	1.0	-0.4	1.0	A-	$\overline{}$
2234	657951	8	8	139	.525	.194	.525	.201	.079	.000	.348	233	.348	186	026	-0.126	0.193	1.4	1.1	1.6	1.2	B-	$\overline{}$
2235	657952	8	8	151	.517	.185	.185	.517	.113	.000	.339	016	281	.339	171	-0.067	0.183	1.5	1.1	1.4	1.2	A-	
2233	337332	U	U	131	.517	.103	.103	.51,	.113	.000	.555	.010	.201	.555	.1,1	0.007	0.103	1.5	1.1	1.7	1.2	<i>,</i> ,	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	Grade	.,		. (, ,	. (5)	. (0)	. (=)	٠,,	1 (13.13	(, .,	(5)	(0)	(5)	Wicus	11132	in	in	out	out	/F	/B
2236	657953	8	8	182	.291	.269	.291	.319	.121	.000	039	.182	039	120	022	1.001	0.178	4.4	1.4	5.4	2.1	A+	
2237	657954	8	8	149	.490	.161	.490	.269	.081	.000	.310	180	.310	126	122	-0.047	0.186	2.1	1.2	2.0	1.3	A+	
2238	657955	8	8	201	.468	.239	.468	.169	.124	.000	.110	058	.110	077	004	-0.028	0.159	5.4	1.4	4.7	1.5	A-	<u> </u>
2239	657956	8	8	205	.220	.293	.220	.249	.239	.000	134	097	134	.054	.179	1.612	0.183	3.8	1.4	7.2	3.3	A-	
2240	657957	8	8	188	.484	.229	.484	.229	.059	.000	.262	006	.262	259	083	0.167	0.160	1.9	1.1	1.8	1.2	A-	
2241	657958	8	8	214	.463	.084	.463	.215	.238	.000	.167	004	.167	055	139	0.187	0.152	3.6	1.2	5.1	1.5	A-	
2242	657959	8	8	145	.393	.166	.131	.310	.393	.000	.280	116	179	072	.280	0.514	0.188	1.6	1.1	1.3	1.2	A-	A+
2243	657960	8	8	157	.459	.166	.191	.459	.185	.000	.316	348	157	.316	.086	0.246	0.175	0.8	1.1	0.6	1.1	B+	
2244	657961	8	8	137	.292	.168	.292	.409	.131	.000	.165	.020	.165	012	226	1.211	0.204	2.0	1.2	2.7	1.6	A-	
2245	657962	8	8	198	.313	.232	.197	.313	.258	.000	.121	042	026	.121	065	1.079	0.169	3.3	1.3	4.3	1.7	B-	
2246	657963	8	8	130	.454	.092	.108	.454	.346	.000	.235	162	244	.235	.012	0.192	0.198	2.5	1.2	2.3	1.3	A+	
2247	657964	8	8	131	.389	.084	.389	.305	.221	.000	.212	061	.212	176	012	0.525	0.202	2.5	1.2	4.0	1.7	B-	<u> </u>
2248	657965	8	8	159	.365	.270	.239	.365	.126	.000	.111	.276	176	.111	304	0.671	0.180	3.3	1.2	3.9	1.6	B+	
2249	657966	8	8	153	.340	.340	.203	.288	.170	.000	.274	.274	228	038	056	0.790	0.188	1.2	1.1	1.0	1.1	A+	
2250	657967	8	8	167	.611	.611	.174	.144	.072	.000	.493	.493	357	211	121	-0.628	0.177	-1.4	0.9	-1.3	0.9	A+	
2251	657968	8	8	147	.293	.204	.293	.299	.204	.000	.138	.183	.138	262	041	1.073	0.196	2.0	1.2	2.4	1.5	A+	
2252	657969	8	8	138	.449	.123	.449	.225	.203	.000	.266	030	.266	167	132	0.407	0.186	1.1	1.1	2.0	1.2	A-	
2253	657970	8	8	153	.438	.275	.157	.438	.131	.000	.243	230	187	.243	.149	0.391	0.179	1.9	1.1	2.6	1.3	A-	
2254	657971	8	8	189	.497	.169	.497	.249	.085	.000	.207	127	.207	108	034	0.034	0.161	3.3	1.2	2.9	1.3	A-	
2255	657972	8	8	145	.324	.235	.324	.324	.117	.000	.016	025	016	.016	.033	0.725	0.192	3.8	1.3	3.5	1.6	B+	
2256	657973	8	8	140	.400	.371	.400	.150	.079	.000	.211	.047	.211	240	148	0.461	0.191	2.9	1.2	1.9	1.3	A+	
2257	657974	8	8	210	.281	.557	.281	.114	.048	.000	.411	130	.411	277	151	1.058	0.167	-0.6	1.0	-0.9	0.9	A+	
2258	657975	8	8	217	.286	.286	.055	.203	.456	.000	.229	.229	219	.028	130	1.149	0.163	1.3	1.1	2.4	1.4	A+	A-
2259	658001	8	8	145	.283	.283	.207	.166	.345	.000	.176	.176	302	096	.165	1.314	0.200	1.3	1.1	3.6	1.8	A+	
2260	658002	8	8	139	.237	.245	.216	.302	.237	.000	.323	.123	253	187	.323	1.522	0.213	-0.2	1.0	-0.1	1.0	A+	
2261	658003	8	8	154	.240	.318	.292	.149	.240	.000	.196	.095	154	163	.196	1.352	0.205	1.3	1.1	2.0	1.5	B+	
2262	658004	8	8	153	.203	.307	.248	.242	.203	.000	.052	.085	019	121	.052	1.800	0.213	1.6	1.2	2.9	1.8	A-	
2263	658005	8	8	196	.194	.138	.194	.225	.444	.000	042	105	042	269	.332	1.809	0.196	2.9	1.4	6.2	3.5	A+	
2264	658006	8	8	210	.514	.110	.210	.514	.167	.000	.356	170	314	.356	.009	-0.125	0.154	0.8	1.1	1.1	1.1	A-	
2265	658007	8	8	185	.405	.222	.178	.195	.405	.000	.417	183	327	009	.417	0.365	0.165	-1.1	0.9	0.1	1.0	A-	
2266	658008	8	8	197	.269	.178	.198	.355	.269	.000	.346	089	344	.037	.346	1.124	0.175	-0.3	1.0	1.3	1.2	A-	
2267	658009	8	8	195	.456	.200	.456	.226	.118	.000	.380	268	.380	188	010	0.243	0.161	0.6	1.0	1.2	1.1	A-	
2268	658010	8	8	167	.431	.431	.240	.174	.156	.000	.449	.449	290	193	070	0.305	0.175	-0.7	1.0	0.0	1.0	A-	
2269	658011	8	8	125	.688	.688	.160	.120	.032	.000	.351	.351	297	093	134	-0.901	0.217	0.9	1.1	0.7	1.1	A+	
2270	658012	8	8	147	.483	.252	.191	.483	.075	.000	.017	066	.022	.017	.042	0.108	0.185	5.6	1.5	5.8	1.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

2271	ID	Grade		N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
2271		Grade	Grade				1 (5)			1 (-)						ivicas	_	in	in	out	out	/F	/B
	658013	8	8	159	.396	.101	.333	.170	.396	.000	.355	180	198	070	.355	0.640	0.180	-0.2	1.0	3.5	1.5	A-	ļ
2272	658014	8	8	138	.645	.044	.645	.094	.217	.000	.388	263	.388	282	120	-0.677	0.197	0.2	1.0	-0.3	1.0	A+	
2273	658015	8	8	198	.131	.263	.475	.131	.131	.000	005	024	.135	164	005	2.098	0.220	1.1	1.2	3.8	2.5	B+	
2274	658016	8	8	195	.385	.139	.364	.385	.113	.000	.300	222	146	.300	.002	0.541	0.167	1.9	1.1	2.8	1.4	A-	
	658017	8	8	138	.297	.297	.174	.333	.196	.000	.233	.233	329	.062	028	1.057	0.202	0.7	1.1	3.4	1.8	A+	
2276	658018	8	8	149	.362	.175	.362	.309	.154	.000	.046	103	.046	036	.093	0.766	0.187	3.5	1.3	5.9	2.1	A-	
2277	658019	8	8	161	.236	.205	.236	.447	.112	.000	.111	.028	.111	033	133	1.397	0.200	1.9	1.2	2.6	1.6	A+	į.
2278	658020	8	8	203	.177	.187	.330	.305	.177	.000	.169	172	133	.142	.169	1.780	0.195	0.7	1.1	3.4	2.0	A-	A-
2279	658021	8	8	141	.418	.128	.312	.418	.142	.000	.107	093	044	.107	004	0.381	0.190	3.7	1.3	6.2	2.1	A+	
2280	658022	8	8	151	.470	.133	.232	.470	.166	.000	.117	.070	041	.117	175	0.093	0.181	4.1	1.3	4.0	1.5	B+	
2281	658023	8	8	144	.326	.340	.250	.326	.083	.000	.257	.139	391	.257	062	0.937	0.196	1.5	1.1	1.5	1.3	A+	
2282	658024	8	8	147	.170	.122	.415	.170	.293	.000	133	336	.168	133	.170	1.801	0.234	2.5	1.4	4.5	2.9	A-	
2283	658025	8	8	214	.332	.262	.243	.164	.332	.000	.299	012	219	112	.299	0.857	0.159	0.4	1.0	2.3	1.3	A-	
2284	658026	8	8	137	.131	.131	.336	.402	.131	.000	.152	.143	128	080	.152	2.194	0.263	0.3	1.0	2.0	1.8	A-	
2285	658027	8	8	219	.215	.343	.324	.119	.215	.000	012	001	.081	101	012	1.548	0.179	3.1	1.3	5.1	2.5	A+	
2286	658028	8	8	188	.261	.356	.261	.218	.165	.000	051	.276	051	139	141	1.089	0.178	3.2	1.3	5.4	2.1	A-	
2287	658029	8	8	143	.154	.441	.154	.252	.154	.000	.099	.239	.099	276	095	2.068	0.244	0.8	1.1	2.2	1.7	A+	
2288	658030	8	8	146	.349	.123	.274	.253	.349	.000	.289	140	088	120	.289	0.892	0.190	1.2	1.1	0.7	1.1	A+	
2289	658031	8	8	194	.299	.139	.294	.268	.299	.000	.141	.126	133	108	.141	1.000	0.172	3.0	1.3	2.8	1.4	A+	
2290	658032	8	8	150	.193	.193	.353	.353	.100	.000	.141	.141	016	082	030	1.757	0.221	0.8	1.1	3.4	2.1	A+	
2291	658033	8	8	211	.152	.251	.341	.256	.152	.000	.005	.259	202	042	.005	2.211	0.203	1.3	1.2	4.6	2.6	A+	
2292	658034	8	8	117	.222	.120	.513	.145	.222	.000	.045	165	.000	.099	.045	1.517	0.239	1.7	1.2	3.2	2.0	A-	
2293	658035	8	8	152	.375	.079	.336	.375	.211	.000	.168	024	182	.168	.027	0.758	0.185	2.9	1.2	3.7	1.6	B-	
2294	658036	8	8	152	.296	.197	.217	.290	.296	.000	.177	.010	095	101	.177	1.223	0.196	1.9	1.2	4.0	2.0	A+	
2295	658037	8	8	219	.292	.393	.192	.292	.123	.000	023	.070	085	023	.029	1.052	0.163	4.6	1.4	6.4	2.2	A-	
2296	658038	8	8	197	.376	.376	.244	.234	.147	.000	.306	.306	088	190	086	0.596	0.163	1.4	1.1	1.6	1.2	A+	
2297	658039	8	8	154	.546	.546	.221	.130	.104	.000	.271	.271	155	110	110	-0.323	0.181	2.1	1.2	1.9	1.2	A+	
2298	658040	8	8	137	.423	.423	.263	.248	.066	.000	.257	.257	137	151	006	0.336	0.194	2.6	1.2	1.6	1.2	A-	
2299	658041	8	8	172	.209	.209	.361	.273	.157	.000	.188	.188	012	153	008	1.659	0.202	1.0	1.1	2.0	1.5	B-	
2300	658042	8	8	201	.299	.299	.224	.309	.169	.000	.479	.479	149	134	254	1.043	0.171	-1.7	0.9	-1.0	0.9	A+	
2301	658043	8	8	147	.259	.211	.286	.259	.245	.000	098	024	.129	098	014	1.263	0.200	2.6	1.3	6.9	3.0	A-	
2302	658044	8	8	143	.035	.035	.161	.357	.448	.000	080	080	.146	049	031	3.651	0.465	0.4	1.1	2.2	3.1	A+	
2303	658045	8	8	158	.114	.108	.462	.317	.114	.000	.212	126	061	.005	.212	2.484	0.264	-0.4	0.9	3.5	3.1	A-	
2304	658046	8	8	199	.241	.266	.286	.241	.206	.000	.131	075	010	.131	046	1.427	0.179	1.3	1.1	5.8	2.5	A-	
2305	658047	8	8	204	.490	.265	.490	.113	.132	.000	.310	094	.310	201	148	-0.171	0.158	2.1	1.1	2.3	1.2	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Pof	ID	FT	PCS	N	DVal	D/A\	D/D\	D(C)	D/D/	D/ \	D+Dic	DT(A)	DT/D)	DT/C)	DT/D)	Mone	MSE	Z-	MS-	Z-	MS-	М	W
Ref	IU	Grade	Grade	IN	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
2306	658048	8	8	196	.270	.480	.148	.270	.102	.000	.339	149	147	.339	080	1.192	0.176	0.1	1.0	0.7	1.1	A-	
2307	658049	8	8	146	.507	.130	.507	.253	.110	.000	.338	.056	.338	377	077	0.175	0.181	0.4	1.0	0.3	1.0	A+	
2308	658050	8	8	159	.572	.572	.214	.126	.088	.000	.379	.379	265	157	095	-0.400	0.181	0.8	1.1	1.3	1.1	A-	
2309	662217	8	8	207	.440	.440	.203	.271	.087	.000	.307	.307	205	227	.109	0.372	0.154	1.2	1.1	1.3	1.1	A-	A+
2310	662218	8	8	136	.434	.118	.434	.338	.110	.000	.042	.149	.042	150	.006	0.308	0.195	5.3	1.5	5.1	1.9	B-	1
2311	662221	8	8	194	.505	.113	.505	.304	.077	.000	.120	.180	.120	194	104	-0.114	0.159	4.9	1.3	4.3	1.5	A+	
2312	662222	8	8	184	.429	.332	.429	.179	.060	.000	.005	.115	.005	138	013	0.354	0.164	5.9	1.4	6.4	1.9	A-	1
2313	662223	8	8	227	.238	.256	.410	.238	.097	.000	.069	082	.060	.069	079	1.424	0.170	3.0	1.3	5.2	2.3	A-	<u> </u>
2314	662224	8	8	134	.299	.149	.246	.306	.299	.000	.340	042	301	024	.340	1.063	0.205	-0.7	0.9	2.9	1.6	A+	l
2315	662225	8	8	215	.219	.112	.219	.181	.488	.000	.155	294	.155	028	.078	1.485	0.178	1.1	1.1	4.8	2.2	A-	l
2316	662453	8	8	154	.409	.409	.130	.292	.169	.000	.297	.297	131	223	.000	0.473	0.182	1.2	1.1	2.6	1.4	A+	
2317	662454	8	8	209	.407	.297	.177	.407	.120	.000	.225	038	297	.225	.062	0.465	0.156	2.6	1.2	3.7	1.5	A+	l
2318	662455	8	8	216	.662	.056	.028	.255	.662	.000	.379	263	256	177	.379	-0.766	0.163	0.9	1.1	0.8	1.1	A-	
2319	662456	8	8	203	.301	.301	.237	.360	.103	.000	.245	.245	204	.040	147	0.936	0.167	1.7	1.1	0.9	1.1	A-	
2320	662457	8	8	230	.587	.091	.191	.587	.130	.000	.264	241	120	.264	040	-0.425	0.149	2.6	1.2	1.8	1.2	A-	
2321	662458	8	8	209	.632	.110	.177	.081	.632	.000	.414	091	239	292	.414	-0.654	0.161	-0.1	1.0	0.6	1.1	A+	
2322	662459	8	8	210	.262	.310	.262	.281	.148	.000	073	.004	073	.022	.058	1.187	0.170	4.1	1.4	6.6	2.5	B-	
2323	662460	8	8	138	.261	.261	.225	.319	.196	.000	.194	.194	172	.092	142	1.118	0.209	1.1	1.1	2.2	1.5	A+	
2324	662461	8	8	212	.198	.198	.198	.377	.226	.000	.303	.303	205	040	048	1.562	0.185	-0.2	1.0	1.5	1.3	A-	A-
2325	662462	8	8	230	.522	.074	.239	.522	.165	.000	.351	132	122	.351	239	-0.266	0.147	1.0	1.1	1.8	1.2	A+	
2326	662463	8	8	156	.539	.096	.263	.103	.539	.000	.491	035	435	142	.491	-0.293	0.181	-1.1	0.9	-0.9	0.9	A+	
2327	662464	8	8	186	.237	.237	.409	.220	.134	.000	.275	.275	.109	179	281	1.360	0.187	0.3	1.0	2.8	1.6	A-	
2328	662465	8	8	224	.571	.054	.571	.317	.058	.000	.296	007	.296	256	112	-0.500	0.151	2.0	1.1	1.8	1.2	A+	
2329	662466	8	8	145	.614	.110	.186	.614	.090	.000	.466	190	262	.466	229	-0.656	0.194	-0.3	1.0	-0.2	1.0	A-	
2330	662467	8	8	213	.455	.127	.455	.282	.136	.000	.306	221	.306	142	044	0.191	0.155	2.2	1.1	2.5	1.3	A+	
2331	662468	8	8	214	.500	.500	.094	.294	.112	.000	.453	.453	104	273	228	-0.137	0.153	-0.9	1.0	0.1	1.0	A+	
2332	662469	8	8	190	.400	.168	.142	.290	.400	.000	.385	323	155	030	.385	0.380	0.163	-0.3	1.0	0.7	1.1	C+	
2333	662470	8	8	220	.455	.155	.205	.186	.455	.000	.404	176	191	155	.404	0.178	0.152	-0.1	1.0	1.4	1.1	A+	
2334	662778	8	8	206	.243	.194	.408	.243	.155	.000	045	.018	.129	045	141	1.342	0.178	3.9	1.4	5.9	2.3	A+	
2335	662779	8	8	188	.489	.154	.245	.489	.112	.000	.142	161	.016	.142	062	-0.117	0.163	4.2	1.3	4.5	1.5	A-	
2336	672176	K	K	431	.882	.882	.012	.053	.051	.002	.442	.442	084	306	263	-4.194	0.163	-0.3	1.0	-0.2	0.9	C+	B-
2337	670543	K	K	431	.979	.014	.002	.979	.005	.000	.260	232	024	.260	131	-6.252	0.347	-0.1	1.0	-1.2	0.5	A-	A-
2338	678374	K	K	431	.796	.037	.796	.032	.121	.014	.640	274	.640	247	412	-3.393	0.135	-3.3	0.8	-3.1	0.6	A+	A-
2339	675631	K	K	431	.740	.039	.123	.081	.740	.016	.433	246	193	209	.433	-2.988	0.126	1.1	1.1	0.5	1.1	A+	A+
2340	671375	K	K	439	.909	.909	.030	.009	.052	.000	.278	.278	120	071	238	-4.909	0.177	0.4	1.0	0.8	1.2	B-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT Grade	PCS Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2341	678375	K	K	439	.852	.041	.016	.852	.087	.005	.354	287	215	.354	147	-4.263	0.147	0.3	1.0	1.0	1.2	A+	70
2342	675341	K	K	439	.902	.057	.025	.902	.016	.000	.438	224	274	.438	283	-4.817	0.172	-0.9	0.9	0.5	1.1	A+	
2343	675346	K	K	439	.845	.055	.041	.055	.845	.005	.428	315	137	198	.428	-4.199	0.145	-0.3	1.0	-0.7	0.9	A+	
2344	672175	K	K	433	.582	.037	.053	.582	.326	.002	.254	057	070	.254	205	-2.017	0.113	6.3	1.3	6.1	1.5	A+	A+
2345	675633	K	K	433	.850	.850	.028	.032	.081	.009	.582	.582	284	267	366	-3.840	0.149	-2.3	0.8	-2.4	0.6	A+	A-
2346	675630	K	K	433	.755	.755	.053	.115	.067	.009	.618	.618	211	371	341	-3.074	0.127	-2.9	0.8	-3.1	0.7	A+	B-
2347	670541	K	K	433	.871	.065	.037	.871	.007	.021	.391	202	232	.391	139	-4.050	0.157	0.2	1.0	-0.5	0.9	A+	A-
2348	671947	K	K	435	.671	.018	.671	.143	.163	.005	.546	156	.546	195	435	-2.485	0.115	-2.0	0.9	-1.9	0.8	A+	C-
2349	675050	K	K	435	.681	.074	.092	.149	.680	.005	.347	228	183	122	.347	-2.538	0.116	2.4	1.1	2.3	1.2	A-	A-
2350	675632	K	K	435	.563	.317	.563	.060	.055	.005	.270	063	.270	218	165	-1.896	0.110	4.9	1.2	4.6	1.3	A-	A+
2351	671368	K	K	435	.933	.014	.933	.023	.021	.009	.519	180	.519	285	306	-4.787	0.203	-1.5	0.8	-2.2	0.5	A+	A-
2352	678370	K	K	435	.575	.228	.575	.154	.032	.011	.400	271	.400	086	164	-1.957	0.110	1.8	1.1	2.1	1.2	A+	A+
2353	675342	K	K	430	.637	.035	.047	.637	.277	.005	.465	150	061	.465	406	-2.844	0.111	-0.7	1.0	-1.3	0.9	A-	
2354	678371	K	K	430	.754	.209	.028	.753	.009	.000	.444	352	256	.444	060	-3.521	0.123	-0.4	1.0	-1.1	0.9	A+	
2355	671371	K	K	430	.630	.028	.230	.630	.107	.005	.248	065	267	.248	.014	-2.807	0.111	4.2	1.2	3.6	1.3	A-	
2356	675628	K	K	430	.519	.309	.065	.098	.519	.009	.279	104	171	135	.279	-2.238	0.108	3.7	1.2	5.1	1.3	A-	
2357	675049	K	K	448	.875	.875	.022	.096	.007	.000	.339	.339	175	246	170	-3.764	0.154	0.4	1.0	0.4	1.1	A-	A-
2358	677742	K	K	448	.922	.042	.922	.020	.013	.002	.332	268	.332	103	139	-4.362	0.187	-0.1	1.0	-0.5	0.9	B-	A-
2359	675343	K	K	448	.971	.009	.971	.011	.007	.002	.307	190	.307	126	193	-5.499	0.291	-0.2	0.9	-1.5	0.5	A+	B-
2360	677743	K	K	433	.656	.118	.079	.656	.143	.005	.515	189	213	.515	328	-2.376	0.116	-0.5	1.0	-0.4	1.0	B-	B-
2361	675052	K	K	433	.337	.162	.337	.268	.229	.005	.324	141	.324	117	106	-0.611	0.117	1.7	1.1	4.2	1.5	A-	A-
2362	678372	K	K	433	.972	.009	.016	.972	.002	.000	.319	228	253	.319	.027	-5.876	0.304	-0.4	0.9	-0.6	0.7	B+	A-
2363	675053	K	K	433	.552	.268	.037	.552	.132	.012	.233	149	094	.233	050	-1.794	0.112	6.4	1.3	6.3	1.5	B+	B+
2364	671951	K	K	431	.882	.053	.053	.882	.009	.002	.310	117	233	.310	174	-4.531	0.163	0.6	1.1	1.9	1.5	A-	A+
2365	670540	K	K	431	.933	.012	.035	.933	.016	.005	.375	216	232	.375	158	-5.256	0.205	-0.4	0.9	-0.5	0.8	A-	A+
2366	677892	K	K	431	.773	.773	.021	.081	.118	.007	.561	.561	187	446	243	-3.566	0.129	-2.0	0.9	-1.3	0.8	A-	A-
2367	678373	K	K	431	.926	.926	.023	.016	.030	.005	.437	.437	267	219	216	-5.134	0.197	-0.9	0.9	-0.7	0.8	B+	A-
2368	672182	K	K	436	.963	.018	.009	.009	.963	.000	.350	194	206	212	.350	-5.552	0.267	-0.3	0.9	-1.6	0.4	A+	A-
2369	675347	K	K	436	.727	.032	.009	.227	.727	.005	.446	187	099	361	.446	-2.789	0.125	1.3	1.1	-0.4	1.0	A+	C-
2370	670537	K	K	436	.837	.018	.837	.011	.117	.016	.596	259	.596	116	459	-3.646	0.146	-2.3	0.8	-2.8	0.5	A+	B-
2371	675629	K	K	436	.782	.782	.080	.078	.050	.009	.568	.568	291	242	338	-3.185	0.133	-1.6	0.9	-1.8	0.7	B+	A-
2372	675184	K	K	438	.895	.034	.034	.895	.037	.000	.476	183	280	.476	330	-4.187	0.170	-0.9	0.9	-1.3	0.7	B+	
2373	671380	K	K	438	.922	.922	.014	.007	.057	.000	.409	.409	146	246	311	-4.578	0.192	-0.6	0.9	-0.8	0.8	A-	
2374	675183	K	K	438	.690	.098	.689	.180	.032	.000	.480	319	.480	262	149	-2.498	0.118	-0.1	1.0	-1.0	0.9	A+	
2375	671942	K	K	438	.881	.023	.050	.881	.046	.000	.463	286	210	.463	293	-4.021	0.162	-0.8	0.9	-0.9	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	Grade					. (0)		٠,,			(5)		(5)			in	in	out	out	/F	/B
2376	675186	K	K	438	.710	.096	.084	.710	.107	.002	.473	317	301	.473	116	-2.626	0.120	0.2	1.0	-0.5	0.9	A+	
2377	675344	K	K	424	.922	.035	.019	.019	.922	.005	.237	148	133	100	.237	-5.043	0.194	0.8	1.1	1.0	1.3	A+	
2378	677746	K	K	424	.425	.285	.425	.009	.278	.002	.389	279	.389	073	117	-1.546	0.113	1.4	1.1	2.7	1.2	A-	
2379	675185	K	K	424	.910	.910	.019	.028	.042	.000	.427	.427	157	250	293	-4.865	0.183	-0.5	0.9	-1.3	0.7	A+	ldot
2380	671944	K	K	424	.868	.019	.868	.017	.094	.002	.531	232	.531	153	415	-4.348	0.157	-1.5	0.9	-1.6	0.7	A+	
2381	670534	K	K	424	.887	.028	.009	.068	.887	.007	.406	287	038	234	.406	-4.559	0.167	-0.4	1.0	1.5	1.3	A+	
2382	675345	K	K	433	.979	.979	.002	.009	.007	.002	.288	.288	147	243	137	-6.360	0.348	-0.2	0.9	-0.8	0.6	A-	
2383	670535	K	K	433	.903	.055	.903	.018	.023	.000	.442	329	.442	177	213	-4.520	0.179	-0.3	1.0	-0.7	0.8	A-	
2384	671370	K	K	433	.898	.035	.898	.018	.044	.005	.467	207	.467	201	304	-4.457	0.176	-0.7	0.9	-0.8	0.8	A+	
2385	671376	K	K	433	.917	.917	.014	.018	.048	.002	.425	.425	130	249	285	-4.724	0.190	-0.5	0.9	-0.9	0.7	A+	
2386	677747	K	K	433	.492	.492	.074	.111	.319	.005	.454	.454	296	.029	310	-1.550	0.112	0.6	1.0	1.9	1.2	A+	
2387	677738	K	K	439	.975	.975	.016	.005	.002	.002	.276	.276	230	094	133	-5.900	0.312	-0.1	1.0	-1.5	0.4	B+	
2388	670539	K	K	439	.948	.014	.948	.025	.011	.002	.253	074	.253	239	087	-5.088	0.223	0.2	1.0	-0.6	8.0	A-	
2389	672185	K	K	439	.954	.954	.018	.018	.009	.000	.309	.309	262	194	036	-5.246	0.237	-0.2	1.0	-1.1	0.6	A-	
2390	675627	K	K	439	.576	.576	.410	.005	.007	.002	.358	.358	310	137	091	-2.057	0.109	2.3	1.1	1.6	1.1	A-	
2391	672179	K	K	428	.689	.051	.689	.098	.157	.005	.428	166	.428	125	343	-3.014	0.117	0.5	1.0	-0.4	1.0	A-	
2392	671379	K	K	428	.610	.610	.044	.287	.056	.002	.514	.514	207	362	191	-2.570	0.112	-1.6	0.9	-0.9	0.9	A+	
2393	670536	K	K	428	.949	.009	.016	.019	.949	.007	.442	180	262	281	.442	-5.537	0.230	-1.0	0.8	-2.0	0.4	A+	
2394	675051	K	K	428	.935	.935	.016	.026	.021	.002	.456	.456	185	217	335	-5.251	0.207	-1.1	0.8	-1.6	0.6	A+	
2395	671950	K	K	428	.937	.014	.019	.937	.026	.005	.418	159	251	.418	231	-5.294	0.211	-0.8	0.9	-0.8	0.7	A+	
2396	671712	1	1	431	.819	.819	.046	.014	.121	.000	.530	.530	210	179	426	-3.582	0.140	-1.3	0.9	-1.8	0.7	A+	A-
2397	671692	1	1	431	.893	.046	.032	.893	.026	.002	.501	311	245	.501	244	-4.333	0.170	-1.2	0.9	-2.0	0.6	A+	A+
2398	675391	1	1	431	.777	.777	.093	.100	.026	.005	.506	.506	416	209	128	-3.251	0.131	-0.6	1.0	-0.9	0.9	A-	A+
2399	670464	1	1	431	.722	.176	.051	.722	.037	.014	.241	122	.007	.241	207	-2.863	0.123	5.1	1.3	4.9	1.6	B+	A-
2400	673094	1	1	431	.743	.742	.093	.044	.109	.012	.497	.497	178	253	282	-3.003	0.126	-0.2	1.0	-0.5	0.9	A+	A-
2401	675155	1	1	431	.863	.021	.863	.035	.072	.009	.414	234	.414	130	249	-3.992	0.155	-0.2	1.0	0.4	1.1	A+	A-
2402	671693	1	1	439	.925	.925	.009	.039	.025	.002	.406	.406	228	240	246	-5.147	0.192	-0.6	0.9	-1.4	0.6	B-	
2403	675156	1	1	439	.836	.023	.836	.123	.018	.000	.436	133	.436	374	141	-4.117	0.142	-0.3	1.0	-0.3	1.0	A+	
2404	670466	1	1	439	.961	.011	.014	.961	.011	.002	.314	159	200	.314	154	-5.919	0.256	-0.2	1.0	-1.4	0.5	A-	
2405	675054	1	1	439	.834	.073	.834	.068	.021	.005	.384	188	.384	264	114	-4.097	0.141	0.3	1.0	0.5	1.1	A+	
2406	671713	1	1	439	.681	.681	.018	.241	.057	.002	.417	.417	094	332	176	-3.022	0.117	1.5	1.1	1.6	1.2	B-	
2407	675160	1	1	439	.743	.743	.089	.034	.132	.002	.657	.657	182	276	549	-3.409	0.123	-4.3	0.8	-4.0	0.6	A-	
2408	673093	1	1	433	.670	.104	.670	.143	.079	.005	.535	277	.535	265	255	-2.523	0.118	-1.0	1.0	-1.0	0.9	A-	A+
2409	670462	1	1	433	.721	.065	.721	.048	.164	.002	.578	191	.578	160	479	-2.841	0.123	-2.0	0.9	-2.0	0.8	B+	A-
2410	675389	1	1	433	.878	.030	.046	.878	.044	.002	.467	355	157	.467	266	-4.125	0.160	-0.9	0.9	0.1	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Control Cont	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
2413 675154 1			Grade	Grade																			/F	•
2414 671691 1			1	_																			A-	B-
2416 671718 1																							A-	A+
2416 675062 1	2413		1	1							.014									1.1	1.2	1.1	B+	A-
2416 671178 1			1	1			.005				.000					-	_		0.3	1.1	-		A+	A-
2418 675381	-	675062	1	1			.832													0.9	-2.1		A+	A-
2418 675381 1	2416		1	1	435	.395	.483	.076	.395	.046	.000	.399	220	192	.399	164	-1.016	0.112	0.3	1.0	2.8	1.2	A+	A+
2419 675059 1	2417	675395	1	1	435	.738	.738	.083	.057	.117	.005	.326	.326	136	237	109	-2.889	0.122	2.2	1.1	2.4	1.3	A+	A-
2420 671702 1	2418	675381	1	1	435	.782	.080	.782	.108	.025	.005	.530	262	.530	378	110	-3.187	0.129	-1.6	0.9	-2.1	8.0	A+	A+
2421 675384 1 1 430 .772 .772 .086 .037 .102 .002 .548 .548 201 .286 .385 .3.645 .0.126 -2.3 .0.9 -2.2 .0.8 A+ 2422 670456 1 1 430 .938 .021 .303 .009 .01 .00 .313 .313 .248 .098 .172 .5.192 .0.196 .0.1 1.0 .0.5 .0.8 A+ 2424 671661 1 1 430 .802 .065 .049 .802 .079 .005 .526 .298 .224 .526 .297 .3.862 .0.132 -1.8 .0.9 -1.5 .0.8 A+ 2424 671661 1 1 430 .772 .772 .114 .079 .028 .077 .389 .389 .309 .174 .072 .3.862 .0.132 .1.8 .0.9 -1.5 <t< td=""><td>2419</td><td>675059</td><td>1</td><td>1</td><td>435</td><td>.839</td><td>.032</td><td>.839</td><td>.023</td><td>.103</td><td>.002</td><td>.400</td><td>184</td><td>.400</td><td>226</td><td>238</td><td>-3.644</td><td>0.143</td><td>0.0</td><td>1.0</td><td>-0.4</td><td>0.9</td><td>A-</td><td>B-</td></t<>	2419	675059	1	1	435	.839	.032	.839	.023	.103	.002	.400	184	.400	226	238	-3.644	0.143	0.0	1.0	-0.4	0.9	A-	B-
2422 670456 1 1 430 .928 .928 .033 .019 .002 .313 .313 248 .098 .172 -5.192 0.196 -0.1 1.0 -0.5 0.8 A+ 2424 676745 1 1 430 .893 .021 .893 .053 .090 .095 .096 .049 .02 .065 .099 .055 .098 .224 .5766 .298 .224 .5766 .298 .224 .5766 .297 .38562 .0132 -1.8 .09 -1.5 .08 A+ 2425 671658 1 1 430 .772 .772 .114 .079 .028 .007 .389 .389 .309 .174 .072 .3645 .0126 .03 1.0 .01 .01 .01 .01 .01 .01 .01 .031 .01 .01 .01 .01 .01 .01 .01 .01	2420	671702	1	1	430	.807	.044	.807	.009	.137	.002	.428	288	.428	268	229	-3.897	0.133	-0.6	1.0	0.4	1.0	A+	
2423 676745 1 1 430 .893 .021 .893 .030 .002 .496 100 .496 360 318 -4.704 0.166 -1.3 0.9 -2.2 0.6 A+ 2424 671661 1 1 430 .802 .065 .049 .802 .079 .005 .526 .298 224 .526 .297 -3.862 0.126 0.0 1.1 0.0 .1.1 0.0 .772 .114 .079 .028 .007 .389 .399 -1.74 .072 -3.645 0.126 0.0 1.0 .1 .0 .0 .1 .1 .0 .0 .1 .1 .0 .0 .1 .1 .0 .0 .1 .1 .448 .344 .1 .0 .0 .137 .006 .1 .1 .1 .4 .4 .3 .3 .0 .0 .1 .1 .4 .4 <td>2421</td> <td>675384</td> <td>1</td> <td>1</td> <td>430</td> <td>.772</td> <td>.772</td> <td>.086</td> <td>.037</td> <td>.102</td> <td>.002</td> <td>.548</td> <td>.548</td> <td>201</td> <td>286</td> <td>385</td> <td>-3.645</td> <td>0.126</td> <td>-2.3</td> <td>0.9</td> <td>-2.2</td> <td>0.8</td> <td>A+</td> <td></td>	2421	675384	1	1	430	.772	.772	.086	.037	.102	.002	.548	.548	201	286	385	-3.645	0.126	-2.3	0.9	-2.2	0.8	A+	
2424 671661 1 1 430 .802 .065 .049 .802 .079 .005 .526 .298 .224 .526 .297 3.862 0.132 -1.8 0.9 -1.5 0.8 A+ 2425 671658 1 1 430 .772 .114 .079 .028 .007 .389 .389 -309 -1.74 .072 -3.645 0.126 0.3 1.0 0.1 1.0 A+ 2426 675670 1 1 448 .942 .002 .007 .942 .049 .000 .137 .006 -1.10 .137 -1.05 -4.717 .0213 .08 1.1 1.2 1.4 A <	2422	670456	1	1	430	.928	.928	.033	.019	.019	.002	.313	.313	248	098	172	-5.192	0.196	-0.1	1.0	-0.5	0.8	A+	
2425 671658 1 1 430 .772 .712 .114 .079 .028 .007 .389 .389 .309 .174 .072 .3.645 0.126 0.3 1.0 0.1 1.0 A+ 2427 671698 1 1 448 .942 .002 .007 .942 .049 .000 .137 .006 -1.10 .137 .105 -4.717 .0213 .16 .09 -1.1 .09 A+ 2427 671698 1 1 448 .942 .002 .007 .942 .049 .000 .137 .006 -1.10 .137 .105 -4.717 .0213 .8 .1 1.2 .44 .44 .44 .44 .10 .44 .44 .44 .44 .70 .23 .15 .40 .30 .19 -1.56 .000 .010 .01 .1 .40 .4 .4 .24 .30 .31 </td <td>2423</td> <td>676745</td> <td>1</td> <td>1</td> <td>430</td> <td>.893</td> <td>.021</td> <td>.893</td> <td>.053</td> <td>.030</td> <td>.002</td> <td>.496</td> <td>100</td> <td>.496</td> <td>360</td> <td>318</td> <td>-4.704</td> <td>0.166</td> <td>-1.3</td> <td>0.9</td> <td>-2.2</td> <td>0.6</td> <td>A+</td> <td></td>	2423	676745	1	1	430	.893	.021	.893	.053	.030	.002	.496	100	.496	360	318	-4.704	0.166	-1.3	0.9	-2.2	0.6	A+	
2426 675070 1 1 430 .798 .051 .126 .007 .510 .176 .510 .275 .331 -3.827 0.131 -1.6 0.9 -1.1 0.9 A+ 2427 671698 1 1 448 .942 .002 .007 .942 .049 .000 .137 005 -4.717 .0213 .0.8 1.1 1.2 1.4 A- A- 2428 675390 1 1 448 .344 .107 .047 .355 .602 .240 .240 .306 .059 .060 -0.610 .010 .28 1.1 4.0 1.4 A- A- 2429 673088 1 1 .448 .871 .047 .055 .000 .371 .156 .000 .131 .16 .03 .1 .1 .448 .871 .047 .025 .004 .546 .261 .546 .354 <t></t>	2424	671661	1	1	430	.802	.065	.049	.802	.079	.005	.526	298	224	.526	297	-3.862	0.132	-1.8	0.9	-1.5	8.0	A+	
2427 671698 1 1 448 .942 .002 .007 .942 .049 .000 .137 .006 110 .137 105 .4.717 0.213 0.8 1.1 1.2 1.4 A- A- 2428 675390 1 1 448 .344 .344 .170 .328 .156 .002 .240 .240 .308 .059 .060 -0.610 0.110 2.8 1.1 4.0 1.4 A- A+ 2430 671703 1 1 448 .871 .047 .872 .000 .371 .176 .240 .371 .136 .0155 .7.0 1.3 6.7 1.5 A- 2431 676747 1 1 448 .891 .954 .029 .025 .002 .418 .418 .221 .61 .3788 .0155 .2.0 0.8 .2.2 0.6 A+ A- 2432	2425	671658	1	1	430	.772	.772	.114	.079	.028	.007	.389	.389	309	174	072	-3.645	0.126	0.3	1.0	0.1	1.0	A+	
2428 675390 1 1 448 .344 .170 .328 .156 .002 .240 .240 308 .059 060 0610 0.110 2.8 1.1 4.0 1.4 A- A+ 2429 673088 1 1 448 .491 .107 .047 .355 .491 .000 .149 -1.19 -1.62 008 .149 -1.362 0.105 7.0 1.3 6.7 1.5 A- A- 2431 676747 1 1 448 .871 .047 .877 .047 .025 .004 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 261 .546 251 .540 .238 .0155	2426	675070	1	1	430	.798	.019	.798	.051	.126	.007	.510	176	.510	275	331	-3.827	0.131	-1.6	0.9	-1.1	0.9	A+	
2429 673088 1 1 448 .491 .107 .047 .355 .491 .000 .149 119 162 .008 .149 -1.362 0.105 7.0 1.3 6.7 1.5 A- 2430 671703 1 1 448 .871 .045 .058 .871 .027 .000 .371 176 240 .371 198 -3.718 0.152 .01 1.0 -0.3 0.9 B+ A- 2431 676747 1 1 448 .891 .891 .054 .029 .025 .002 .418 .418 219 285 185 -3.939 0.163 -0.7 0.9 -0.5 0.9 A- 2433 675151 1 1 448 .990 .004 .090 .040 .004 .409 241 .225 .409 238 -4.049 0.168 -0.8 0.9 0.1 1.0	2427	671698	1	1	448	.942	.002	.007	.942	.049	.000	.137	006	110	.137	105	-4.717	0.213	0.8	1.1	1.2	1.4	A-	A-
2430 671703 1 1 448 .871 .045 .058 .871 .027 .000 .371 176 240 .371 198 -3.718 0.152 0.1 1.0 -0.3 0.9 B+ A- 2431 676747 1 1 448 .877 .047 .877 .047 .025 .004 .546 354 261 -3.788 0.155 -2.0 0.8 -2.2 0.6 A+ A- 2432 670458 1 1 448 .891 .054 .029 .025 .002 .418 .418 219 285 185 3939 0.163 -0.7 0.9 -0.5 0.9 A- A- 2433 675151 1 1 448 .998 .000 .004 .094 .250 .000 250 .5782 0.328 -0.1 1.0 .4.4 2435 670459 1 1	2428	675390	1	1	448	.344	.344	.170	.328	.156	.002	.240	.240	308	.059	060	-0.610	0.110	2.8	1.1	4.0	1.4	A-	A+
2431 676747 1 1 448 .877 .047 .025 .004 .546 261 .546 354 261 -3.788 0.155 -2.0 0.8 -2.2 0.6 A+ A- 2432 670458 1 1 448 .891 .891 .054 .029 .025 .002 .418 .418 -219 285 185 -3.939 0.163 -0.7 0.9 -0.5 0.9 A- A- 2433 675151 1 1 448 .900 .013 .042 .900 .040 .004 .409 241 225 .409 238 -4.049 0.168 -0.8 0.9 0.1 1.0 A+ A- 2434 675386 1 1 448 .978 .000 .009 .250 .000 .325 -4.291 .0172 .02 1.0 .32 .0 A+ A- 2435	2429	673088	1	1	448	.491	.107	.047	.355	.491	.000	.149	119	162	008	.149	-1.362	0.105	7.0	1.3	6.7	1.5	A-	A-
2432 670458 1 1 448 .891 .891 .054 .029 .025 .002 .418 .418 219 285 185 3939 0.163 -0.7 0.9 -0.5 0.9 A- 2433 675151 1 1 448 .900 .013 .042 .900 .040 .004 .409 241 225 .409 238 -4.049 0.168 -0.8 0.9 0.1 1.0 A+ A- 2434 675386 1 1 448 .978 .000 .099 .004 .978 .009 .250 .000 210 092 .250 -5.782 0.328 -0.1 1.0 -0.4 0.8 A- A- 2435 670459 1 1 433 .996 .053 .028 .000 .508 222 .324 .508 256 -4.547 0.186 -1.3 0.8 -1.9 0.	2430	671703	1	1	448	.871	.045	.058	.871	.027	.000	.371	176	240	.371	198	-3.718	0.152	0.1	1.0	-0.3	0.9	B+	A-
2433 675151 1 1 448 .900 .013 .042 .900 .040 .004 .409 241 225 .409 238 -4.049 0.168 -0.8 0.9 0.1 1.0 A+ A- 2434 675386 1 1 448 .978 .000 .004 .978 .009 .250 .000 210 .092 .250 -5.782 0.328 -0.1 1.0 -0.4 0.8 A- 2435 670459 1 1 433 .896 .055 .023 .025 .896 .000 .325 008 .328 305 .325 -4.291 0.172 0.2 1.0 3.2 2.0 A+ A- 2436 673091 1 1 433 .915 .028 .030 .915 .028 .000 .588 272 324 .508 256 -4.547 0.186 -1.3 0.8 -1.9<	2431	676747	1	1	448	.877	.047	.877	.047	.025	.004	.546	261	.546	354	261	-3.788	0.155	-2.0	0.8	-2.2	0.6	A+	A-
2434 675386 1 1 448 .978 .000 .009 .004 .978 .009 .250 .000 210 202 .250 -5.782 0.328 -0.1 1.0 -0.4 0.8 A- A- 2435 670459 1 1 433 .896 .055 .023 .025 .896 .000 .325 008 328 305 .325 -4.291 0.172 0.2 1.0 3.2 2.0 A+ A- 2436 673091 1 1 433 .915 .028 .003 .915 .028 .000 .508 272 324 .508 256 -4.547 0.186 -1.3 0.8 -1.9 0.5 A+ A- 2437 675382 1 1 433 .748 .171 .748 .058 .023 .000 .388 193 .388 300 173 -2.959 0.126 1.6	2432	670458	1	1	448	.891	.891	.054	.029	.025	.002	.418	.418	219	285	185	-3.939	0.163	-0.7	0.9	-0.5	0.9	A-	A-
2435 670459 1 1 433 .896 .055 .023 .025 .896 .000 .325 008 328 305 .325 -4.291 0.172 0.2 1.0 3.2 2.0 A+ A- 2436 673091 1 1 433 .915 .028 .030 .915 .028 .000 .508 272 324 .508 256 -4.547 0.186 -1.3 0.8 -1.9 0.5 A+ A- 2437 675382 1 1 433 .748 .171 .748 .058 .023 .000 .388 193 .388 300 173 -2.959 0.126 1.6 1.1 2.8 1.4 A- B- 2438 671709 1 1 433 .845 .081 .845 .039 .030 .005 .511 323 .511 247 215 -3.734 0.148 -1.0	2433	675151	1	1	448	.900	.013	.042	.900	.040	.004	.409	241	225	.409	238	-4.049	0.168	-0.8	0.9	0.1	1.0	A+	A-
2436 673091 1 1 433 .915 .028 .030 .915 .028 .000 .508 272 324 .508 256 -4.547 0.186 -1.3 0.8 -1.9 0.5 A+ A- 2437 675382 1 1 433 .748 .171 .748 .058 .023 .000 .388 193 .388 300 173 -2.959 0.126 1.6 1.1 2.8 1.4 A- B- 2438 671709 1 1 433 .970 .012 .007 .970 .009 .002 .415 245 222 .415 206 -5.787 0.293 -0.8 0.8 -2.3 0.2 A+ A- 2439 675387 1 1 433 .845 .081 .845 .039 .030 .005 .511 323 .511 247 215 -3.734 0.148 -1	2434	675386	1	1	448	.978	.000	.009	.004	.978	.009	.250	.000	210	092	.250	-5.782	0.328	-0.1	1.0	-0.4	0.8	A-	A-
2437 675382 1 1 433 .748 .171 .748 .058 .023 .000 .388 300 173 -2.959 0.126 1.6 1.1 2.8 1.4 A- B- 2438 671709 1 1 433 .970 .012 .007 .970 .009 .002 .415 245 222 .415 206 -5.787 0.293 -0.8 0.8 -2.3 0.2 A+ A- 2439 675387 1 1 433 .845 .081 .845 .039 .030 .005 .511 323 .511 247 215 -3.734 0.148 -1.0 0.9 -1.6 0.7 A- B- 2440 676766 1 1 433 .621 .231 .062 .621 .079 .007 .600 413 217 0.114 -3.0 0.9 -2.5 0.8 A- A+	2435	670459	1	1	433	.896	.055	.023	.025	.896	.000	.325	008	328	305	.325	-4.291	0.172	0.2	1.0	3.2	2.0	A+	A-
2438 671709 1 1 433 .970 .012 .007 .970 .009 .002 .415 245 222 .415 206 -5.787 0.293 -0.8 0.8 -2.3 0.2 A+ A- 2439 675387 1 1 433 .845 .081 .845 .039 .030 .005 .511 247 215 -3.734 0.148 -1.0 0.9 -1.6 0.7 A- B- 2440 676766 1 1 433 .621 .231 .062 .621 .079 .007 .600 413 201 .600 198 -2.177 0.114 -3.0 0.9 -2.5 0.8 A- A+ 2441 671659 1 1 433 .704 .072 .704 .145 .069 .009 .581 312 209 -2.671 0.121 -2.2 0.9 -2.7 0.8 A- </td <td>2436</td> <td>673091</td> <td>1</td> <td>1</td> <td>433</td> <td>.915</td> <td>.028</td> <td>.030</td> <td>.915</td> <td>.028</td> <td>.000</td> <td>.508</td> <td>272</td> <td>324</td> <td>.508</td> <td>256</td> <td>-4.547</td> <td>0.186</td> <td>-1.3</td> <td>0.8</td> <td>-1.9</td> <td>0.5</td> <td>A+</td> <td>A-</td>	2436	673091	1	1	433	.915	.028	.030	.915	.028	.000	.508	272	324	.508	256	-4.547	0.186	-1.3	0.8	-1.9	0.5	A+	A-
2439 675387 1 1 433 .845 .081 .845 .039 .030 .005 .511 323 .511 247 215 -3.734 0.148 -1.0 0.9 -1.6 0.7 A- B- 2440 676766 1 1 433 .621 .231 .062 .621 .079 .007 .600 413 201 .600 198 -2.177 0.114 -3.0 0.9 -2.5 0.8 A- A+ 2441 671659 1 1 433 .704 .072 .704 .145 .069 .009 .581 327 .581 312 209 -2.671 0.121 -2.2 0.9 -2.7 0.8 A- A+ 2442 675152 1 1 433 .852 .042 .852 .014 .083 .009 .575 361 .575 226 318 -3.801 0.151 -1.9 0.8 -2.6 0.6 A- 2443 670460 1 <t< td=""><td>2437</td><td>675382</td><td>1</td><td>1</td><td>433</td><td>.748</td><td>.171</td><td>.748</td><td>.058</td><td>.023</td><td>.000</td><td>.388</td><td>193</td><td>.388</td><td>300</td><td>173</td><td>-2.959</td><td>0.126</td><td>1.6</td><td>1.1</td><td>2.8</td><td>1.4</td><td>A-</td><td>B-</td></t<>	2437	675382	1	1	433	.748	.171	.748	.058	.023	.000	.388	193	.388	300	173	-2.959	0.126	1.6	1.1	2.8	1.4	A-	B-
2440 676766 1 1 433 .621 .231 .062 .621 .079 .007 .600 413 201 .600 198 -2.177 0.114 -3.0 0.9 -2.5 0.8 A- A+ 2441 671659 1 1 433 .704 .072 .704 .145 .069 .009 .581 327 .581 312 209 -2.671 0.121 -2.2 0.9 -2.7 0.8 A- A+ 2442 675152 1 1 433 .852 .042 .852 .014 .083 .009 .575 361 .575 226 318 -3.801 0.151 -1.9 0.8 -2.6 0.6 A- A- 2443 670460 1 1 431 .673 .049 .673 .021 .255 .002 .591 169 .591 187 475 -2.919 0.117 -2.8 0.9 -2.4 0.8 B- A+ 2444 676767 <	2438	671709	1	1	433	.970	.012	.007	.970	.009	.002	.415	245	222	.415	206	-5.787	0.293	-0.8	0.8	-2.3	0.2	A+	A-
2441 671659 1 1 433 .704 .072 .704 .145 .069 .009 .581 327 .581 312 209 -2.671 0.121 -2.2 0.9 -2.7 0.8 A- A+ 2442 675152 1 1 433 .852 .042 .852 .014 .083 .009 .575 361 .575 226 318 -3.801 0.151 -1.9 0.8 -2.6 0.6 A- A- 2443 670460 1 1 431 .673 .049 .673 .021 .255 .002 .591 169 .591 187 475 -2.919 0.117 -2.8 0.9 -2.4 0.8 B- A+ 2444 676767 1 1 431 .378 .100 .378 .211 .306 .005 .382 139 .382 075 229 -1.285 0.116 0.8 1.0 3.4 1.4 A- A+	2439	675387	1	1	433	.845	.081	.845	.039	.030	.005	.511	323	.511	247	215	-3.734	0.148	-1.0	0.9	-1.6	0.7	A-	B-
2442 675152 1 1 433 .852 .042 .852 .014 .083 .009 .575 361 .575 226 318 -3.801 0.151 -1.9 0.8 -2.6 0.6 A- A- 2443 670460 1 1 431 .673 .049 .673 .021 .255 .002 .591 169 .591 187 475 -2.919 0.117 -2.8 0.9 -2.4 0.8 B- A+ 2444 676767 1 1 431 .378 .100 .378 .211 .306 .005 .382 139 .382 075 229 -1.285 0.116 0.8 1.0 3.4 1.4 A- A+	2440	676766	1	1	433	.621	.231	.062	.621	.079	.007	.600	413	201	.600	198	-2.177	0.114	-3.0	0.9	-2.5	0.8	A-	A+
2443 670460 1 1 431 .673 .049 .673 .021 .255 .002 .591 169 .591 187 475 -2.919 0.117 -2.8 0.9 -2.4 0.8 B- A+ 2444 676767 1 1 431 .378 .100 .378 .211 .306 .005 .382 139 .382 075 229 -1.285 0.116 0.8 1.0 3.4 1.4 A- A+	2441	671659	1	1	433	.704	.072	.704	.145	.069	.009	.581	327	.581	312	209	-2.671	0.121	-2.2	0.9	-2.7	0.8	A-	A+
2444 676767 1 1 431 .378 .100 .378 .211 .306 .005 .382139 .382075229 -1.285 0.116 0.8 1.0 3.4 1.4 A- A+	2442	675152	1	1	433	.852	.042	.852	.014	.083	.009	.575	361	.575	226	318	-3.801	0.151	-1.9	0.8	-2.6	0.6	A-	A-
2444 676767 1 1 431 .378 .100 .378 .211 .306 .005 .382139 .382075229 -1.285 0.116 0.8 1.0 3.4 1.4 A- A+	2443	670460	1	1	431	.673	.049	.673	.021	.255	.002	.591	169	.591	187	475	-2.919	0.117	-2.8	0.9	-2.4	0.8	B-	A+
	2444	676767	1	1	431	.378		.378			.005		139			229		0.116		1.0	3.4		A-	A+
				1			.053																	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
2446	671710	1	1	431	.933	.042	.933	.016	.007	.002	.344	169	.344	348	020	-5.256	0.205	-0.4	0.9	0.5	1.1	A-	A+
2447	675388	1	1	431	.717	.023	.717	.030	.225	.005	.533	212	.533	168	409	-3.190	0.122	-1.4	0.9	-0.2	1.0	A-	A-
2448	675153	1	1	431	.733	.067	.733	.097	.093	.009	.536	222	.536	218	369	-3.295	0.123	-1.4	0.9	-2.1	0.8	A-	A+
2449	671660	1	1	431	.963	.016	.963	.002	.014	.005	.316	175	.316	076	214	-5.955	0.266	-0.2	0.9	-0.6	0.7	A+	A-
2450	670451	1	4	436	.835	.039	.835	.046	.078	.002	.503	213	.503	326	274	-3.625	0.145	-0.8	0.9	-1.0	8.0	A-	A+
2451	671720	1	1	436	.876	.018	.028	.876	.076	.002	.526	167	236	.526	416	-4.043	0.161	-1.2	0.9	-2.0	0.6	A-	A-
2452	675061	1	1	436	.745	.071	.745	.083	.099	.002	.583	106	.583	370	405	-2.916	0.127	-1.9	0.9	-1.9	0.8	A-	B-
2453	671180	1	1	436	.764	.037	.046	.764	.154	.000	.511	133	128	.511	458	-3.047	0.130	-0.3	1.0	-1.1	0.8	A-	A+
2454	676743	1	1	436	.796	.796	.032	.085	.085	.002	.621	.621	129	357	445	-3.292	0.135	-2.8	0.8	-2.6	0.6	B+	A+
2455	675383	1	1	436	.878	.076	.016	.878	.025	.005	.266	159	091	.266	159	-4.069	0.162	1.5	1.2	1.7	1.5	A+	A-
2456	671699	1	1	436	.927	.018	.011	.034	.927	.009	.444	285	216	208	.444	-4.731	0.198	-0.9	0.9	-1.2	0.6	A-	A-
2457	671694	1	1	438	.897	.055	.027	.016	.897	.005	.373	269	177	174	.373	-4.216	0.172	0.3	1.0	-0.9	8.0	A+	
2458	671714	1	1	438	.685	.219	.068	.685	.025	.002	.409	355	068	.409	126	-2.470	0.118	1.7	1.1	1.1	1.1	A-	
2459	675392	1	1	438	.438	.041	.027	.438	.486	.007	.299	171	225	.299	127	-1.104	0.112	5.0	1.3	4.9	1.4	A+	
2460	675157	1	1	438	.888	.018	.888	.025	.068	.000	.388	208	.388	224	236	-4.102	0.166	0.2	1.0	-0.7	0.8	A-	
2461	670467	1	1	438	.929	.027	.007	.929	.034	.002	.450	221	179	.450	346	-4.693	0.200	-0.8	0.9	-1.8	0.5	A+	
2462	675055	1	1	438	.941	.011	.941	.005	.041	.002	.440	227	.440	114	356	-4.908	0.215	-0.9	0.9	-0.7	0.7	A-	
2463	675057	1	1	424	.953	.033	.005	.953	.007	.002	.426	373	130	.426	142	-5.644	0.240	-0.6	0.9	-1.6	0.5	A+	
2464	671176	1	1	424	.743	.743	.068	.087	.101	.000	.294	.294	174	188	105	-3.328	0.125	2.9	1.2	1.9	1.2	A-	
2465	671715	1	1	424	.901	.028	.019	.901	.050	.002	.426	121	108	.426	392	-4.735	0.176	-0.6	0.9	-0.3	0.9	A-	
2466	675393	1	1	424	.934	.005	.031	.024	.934	.007	.375	088	323	125	.375	-5.245	0.208	-0.4	0.9	-0.2	0.9	A-	
2467	671695	1	1	424	.658	.151	.127	.059	.658	.005	.342	196	204	042	.342	-2.805	0.116	2.9	1.2	2.8	1.2	A+	
2468	675158	1	1	424	.925	.007	.019	.925	.042	.007	.399	155	141	.399	290	-5.081	0.197	-0.3	1.0	-0.9	0.7	A+	
2469	671696	1	1	433	.744	.192	.051	.744	.012	.002	.382	245	190	.382	198	-3.032	0.127	2.3	1.2	1.2	1.1	A-	
2470	675058	1	1	433	.940	.025	.940	.028	.007	.000	.360	196	.360	234	196	-5.137	0.218	-0.1	1.0	0.8	1.3	A+	
2471	671716	1	1	433	.711	.711	.085	.118	.081	.005	.590	.590	207	329	328	-2.815	0.123	-2.2	0.9	-2.0	8.0	B+	
2472	675394	1	1	433	.898	.051	.898	.025	.021	.005	.480	318	.480	206	201	-4.457	0.176	-0.9	0.9	-1.4	0.7	A+	
2473	671177	1	1	433	.831	.028	.072	.062	.831	.007	.457	224	145	347	.457	-3.726	0.145	0.1	1.0	0.0	1.0	A+	
2474	675159	1	1	433	.915	.023	.915	.005	.048	.009	.497	295	.497	056	343	-4.688	0.188	-1.0	0.9	-2.1	0.5	A+	
2475	670452	1	1	439	.877	.027	.877	.018	.077	.000	.380	180	.380	262	226	-4.055	0.155	-0.4	1.0	1.1	1.2	A+	
2476	673087	1	1	439	.918	.918	.023	.009	.050	.000	.275	.275	120	157	195	-4.563	0.183	0.3	1.0	-0.1	1.0	A-	
2477	676744	1	1	439	.745	.144	.745	.080	.030	.002	.349	125	.349	200	312	-3.005	0.121	1.2	1.1	2.2	1.3	B+	
2478	671700	1	1	439	.950	.009	.016	.950	.021	.005	.396	109	248	.396	219	-5.138	0.227	-0.7	0.9	-2.0	0.4	A+	
2479	675385	1	1	439	.731	.731	.034	.048	.180	.007	.413	.413	225	218	217	-2.919	0.119	0.2	1.0	0.6	1.1	A-	
2480	671181	1	1	439	.761	.157	.016	.057	.761	.009	.387	234	129	191	.387	-3.108	0.123	0.4	1.0	0.0	1.0	B+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

2481 671697 1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2483 671719			Grade	Grade															in	in	out	out	/F	/B
2488 67719 1				_																				
2486 675396 1	-			_																				
2486 675060 1	-			-																				
2486 679335 2 2 431 587 587 202 074 137 0.00 434 434 1.45 1.44 -344 -2.033 0.115 1.9 1.1 2.0 1.2 A+ B- 2487 676750 2 2 431 7.29 1.51 0.74 7.29 0.99 0.007 4.14 -2.26 -2.05 4.14 -1.38 -2.990 0.124 1.7 1.1 0.2 1.0 A- A- 44 4.288 675332 2 2 431 7.29 1.51 0.74 7.29 0.99 0.007 4.14 -2.26 -2.05 4.14 -1.38 -2.990 0.124 1.7 1.1 0.2 1.0 A- A- 44 4.289 677765 2 2 431 5.22 6.00 0.90 1.13 0.05 0.05 0.05 0.05 0.06 0.09 0.123 7.22 0.05 0.05 0.05 0.05 0.06 0.09 0.269 -2.863 0.123 4.5 1.3 4.9 1.7 A- A- 44 4.289 6.00 0.269 0.2863 0.123 4.5 1.3 4.9 1.7 A- A- 44 4.289 6.00 0.269 0.2863 0.123 4.5 1.3 4.9 1.7 A- A- 44 4.289 6.00 0.269 0.2863 0.123 4.5 1.3 4.9 1.7 A- A- 44 4.289 6.00 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288 4.18 0.289 0.288				_						_														
2487 676750 2 2 431 .622 .049 .622 .107 .223 .000 .467 .123 .467 .371 .205 .2.253 .0.16 .10 .1.1 0.8 .1.1 B. A- 2488 675332 2 2 431 .729 .151 .074 .729 .039 .007 .414 .226 .205 .414 .138 .2.909 .0.124 .1.7 .1.1 .0.2 .1.0 A. A- A- 2490 675009 2 2 .431 .722 .060 .909 .123 .722 .005 .269 .2.10 .0.76 .1.0 .0.9 .2.69 .2.683 .0.123 .4.5 .1.3 .4.9 .1.7 A. A- 2490 675009 2 2 .431 .732 .722 .005 .005 .005 .005 .008 .308 .364 .1.78 .2.613 .0.120 .2.7 .0.9 .2.9 .0.7 A- A- 2491 677946 2 2 .431 .735 .777 .704 .060 .111 .009 .650 .650 .505 .308 .364 .378 .3.41 .3.25 .3.117 .0.128 .1.6 .0.9 .1.0 .0.9 A- A- 2493 678163 2 2 .431 .739 .021 .056 .759 .153 .0.12 .558 .2.57 .2.33 .558 .345 .3.117 .0.128 .1.6 .0.9 .1.0 .0.9 A- A- 2494 675023 2 2 .431 .578 .0.12 .578 .135 .0.12 .437 .3.11 .1.25 .421 .0.992 .0.117 1.9 .1.1 .3.1 .1.3 A- A- 2496 676738 2 2 .431 .773 .779 .016 .773 .0.19 .014 .616 .4.96 .1.34 .616 .2.36 .3.217 .0.131 .2.8 .8.8 .2.9 .0.7 A- A- 2496 676738 2 2 .439 .663 .2.19 .0.62 .0.55 .663 .0.00 .522 .3.82 .1.93 .1.12 .0.9 .1.0 .0.6 .1.1 A- .2.230 .1.71 .2.25 .4.31 .3.33 .4.75 .3.25 .	_			_																			A-	
2488 675332 2 2 431 7.79 1.51 0.74 7.79 0.39 0.07 4.14 226 205 4.14 183 -2.999 0.124 1.7 1.1 0.2 1.0 A. A+		679235					.587												1.9	1.1		1.2	A+	B-
2489 677765 2 2 431 7.72 0.60 0.90 1.23 7.72 0.05 2.69 2.13 0.76 -1.09 2.69 -2.863 0.123 4.5 1.3 4.9 1.7 A. A.																-							B-	A-
2490 675009 2 2 431 .682 .682 .121 .132 .053 .012 .605 .605 .308 .364 .178 .2.613 0.120 .2.7 0.9 .2.9 0.7 A+ A- .2.613 .777 .777 .072 .060 .111 .009 .650 .650 .261 .309 .410 .3.251 .0.131 .3.6 0.8 .3.6 0.6 A- A- .2.613 .777 .777 .072 .060 .111 .009 .650 .650 .261 .309 .410 .3.251 .0.131 .3.6 0.8 .3.6 0.6 A- A- .2.613 .777 .777 .072 .076 .778 .778 .777 .777 .072 .078 .778		675332	2	2	431	.729	.151									183		0.124		1.1		1.0	A-	A+
2491 677946 2 2 431 .777 .777 .042 .060 .111 .009 .650 .650 .261 .309 .410 .3.251 0.131 .3.6 0.8 .3.6 0.6 A A .2492 677943 2 2 431 .759 .021 .056 .759 .153 .012 .558 .257 .233 .558 .345 .3.117 .0.128 .1.6 0.9 .1.0 0.9 A A .2494 675023 2 2 431 .578 .121 .155 .578 .135 .012 .437 .131 .2.25 .437 .205 .2.001 0.114 .2.1 .1.1	2489	677765	2	2	431	.722	.060	.090	.123	.722	.005	.269	213	076	109	.269	-2.863	0.123	4.5	1.3	4.9	1.7	A-	A-
2492 677943 2 2 431 7.59 0.21 0.56 7.59 1.53 0.12 0.58 -2.57 -2.33 0.58 -3.45 -3.117 0.128 -1.6 0.9 -1.0 0.9 A+ A-	2490	675009	2	2	431	.682	.682	.121	.132	.053	.012	.605	.605	308	364	178	-2.613	0.120	-2.7	0.9	-2.9	0.7	A+	A-
2493 678163 2 2 431 3.99 .081 .401 .109 .399 .009 .421 .230 .171 .125 .421 .0.992 .0.117 1.9 1.1 3.1 1.3 A A A A A A A A A	2491	677946	2	2	431	.777	.777	.042	.060	.111	.009	.650	.650	261	309	410	-3.251	0.131	-3.6	0.8	-3.6	0.6	A-	A-
2494 675023 2 2 431 .578 .121 .155 .578 .135 .012 .437 .131 .225 .437 .205 .2001 0.114 2.1 1.1 1.2 1.1 A- B+	2492	677943	2	2	431	.759	.021	.056	.759	.153	.012	.558	257	233	.558	345	-3.117	0.128	-1.6	0.9	-1.0	0.9	A+	A-
2495 677771 2 2 431 .773 .179 .016 .773 .019 .014 .616 .496 .134 .616 .236 -3.217 .0131 -2.8 0.8 -2.9 0.7 A+ A- 2497 676994 2 2 439 .663 .129 .062 .057 .664 .005 .628 .321 .628 -2.835 .0114 -4.1 .08 -3.2 .08 A- 2499 675333 2 2 439 .663 .219 .062 .057 .663 .000 .522 .382 .193 .182 .522 .2914 .0115 -1.1 .09 -1.6 .09 A+ 2499 675010 2 2 439 .064 .002 .014 .964 .021 .000 .227 .111 .18 .227 .167 -5.987 .026 .02 .02 .439 .613 .048	2493	678163	2	2	431	.399	.081	.401	.109	.399	.009	.421	230	171	125	.421	-0.992	0.117	1.9	1.1	3.1	1.3	A-	A+
2496 676738 2 2 439 .683 .162 .100 .055 .683 .000 .470 154 311 303 .470 -3.036 0.117 0.1 1.0 0.6 1.1 A- 2497 676994 2 2 439 .664 .121 .093 .132 .649 .005 .628 .384 213 .321 .628 2835 0.114 -4.1 0.8 -3.2 0.8 A- 2498 675333 2 2 439 .663 .219 .062 .057 .663 .000 .522 .382 193 .182 .522 2914 0.115 0.11 .09 -1.6 .09 .46 .021 .000 .227 .111 118 .227 .167 -5.987 .0263 .0.2 1.0 .03 1.1 A- 2501 673180 2 2 439 .613 .048 .123 </td <td>2494</td> <td>675023</td> <td>2</td> <td>2</td> <td>431</td> <td>.578</td> <td>.121</td> <td>.155</td> <td>.578</td> <td>.135</td> <td>.012</td> <td>.437</td> <td>131</td> <td>225</td> <td>.437</td> <td>205</td> <td>-2.001</td> <td>0.114</td> <td>2.1</td> <td>1.1</td> <td>1.2</td> <td>1.1</td> <td>A-</td> <td>B+</td>	2494	675023	2	2	431	.578	.121	.155	.578	.135	.012	.437	131	225	.437	205	-2.001	0.114	2.1	1.1	1.2	1.1	A-	B+
2497 676994 2 2 439 .649 .121 .093 .132 .649 .005 .628 .364 .213 .321 .628 -2.835 0.114 -4.1 0.8 -3.2 0.8 A- 2498 675333 2 2 439 .663 .219 .062 .057 .663 .000 .522 .382 193 182 .522 -2.914 0.115 -1.1 0.9 -1.6 0.9 A+ 2499 675010 2 2 439 .718 .075 .043 .718 .159 .005 .668 .276 .211 .468 .239 -3.246 0.120 0.0 .1.1 .4 .4 .0.1 .0 .0 .1.1 .0 9 .1.5 .0 .0 .0 .0 .1.1 .0 .9 .1 .1 .4 .2 .2 .439 .431 .233 .136 .0 .1	2495	677771	2	2	431	.773	.179	.016	.773	.019	.014	.616	496	134	.616	236	-3.217	0.131	-2.8	0.8	-2.9	0.7	A+	A-
2498 675333 2 2 439 .663 .219 .062 .057 .663 .000 .522 382 193 182 .522 -2.914 0.115 -1.1 0.9 -1.6 0.9 A+ 2499 675010 2 2 439 .718 .075 .043 .718 .159 .005 .468 -2.76 -2.11 .468 -2.39 -3.246 0.120 0.0 1.0 -1.1 0.9 B+ 2501 673180 2 2 439 .441 .077 .465 .036 .419 .002 .459 -1.53 -2.65 .256 .459 .131 -0.2 1.0 1.2 1.1 A+ 2503 680213 2 2 439 .633 .137 .533 .153 .169 .009 .394 054 .394 233 .248 -2.193 .0111 2.5 1.1 2.3 1.2 A+ <td>2496</td> <td>676738</td> <td>2</td> <td>2</td> <td>439</td> <td>.683</td> <td>.162</td> <td>.100</td> <td>.055</td> <td>.683</td> <td>.000</td> <td>.470</td> <td>154</td> <td>311</td> <td>303</td> <td>.470</td> <td>-3.036</td> <td>0.117</td> <td>0.1</td> <td>1.0</td> <td>0.6</td> <td>1.1</td> <td>A-</td> <td></td>	2496	676738	2	2	439	.683	.162	.100	.055	.683	.000	.470	154	311	303	.470	-3.036	0.117	0.1	1.0	0.6	1.1	A-	
2499 675010 2 2 439 .718 .075 .043 .718 .159 .005 .468 276 211 .468 239 -3.246 0.120 0.0 1.0 -1.1 0.9 B+ 2500 676995 2 2 439 .964 .002 .014 .964 .021 .000 .227 111 118 .227 167 -5.987 0.263 0.2 1.0 0.3 1.1 A 2501 673180 2 2 439 .419 .077 .465 .036 .419 .002 .459 153 265 .459 -1.573 0.113 -0.2 1.0 1.2 1.1 A+ 2502 679240 2 2 439 .633 .153 .153 .151 111 .474 -2.629 0.113 .1.8 0.9 .04 .007 .551 111 .474 -2.629 0.113	2497	676994	2	2	439	.649	.121	.093	.132	.649	.005	.628	364	213	321	.628	-2.835	0.114	-4.1	0.8	-3.2	0.8	A-	
2500 676995 2 2 439 .964 .002 .014 .964 .021 .000 .227 111 118 .227 167 5.987 0.263 0.2 1.0 0.3 1.1 A- 2501 673180 2 2 439 .419 .077 .465 .036 .419 .002 .459 153 .265 .256 .459 -1.573 0.113 -0.2 1.0 0.2 1.1 A+ 2503 679240 2 2 439 .533 .137 .533 .153 .169 .009 .394 .054 .394 248 2193 0.111 .2.5 1.1 2.3 1.2 A+ 2504 677944 2 2 439 .702 .089 .043 .702 .164 .002 .413 .222 .167 .413 .2245 -5.756 .0224 -0.7 .09 -1.9 0.4 B- <td>2498</td> <td>675333</td> <td>2</td> <td>2</td> <td>439</td> <td>.663</td> <td>.219</td> <td>.062</td> <td>.057</td> <td>.663</td> <td>.000</td> <td>.522</td> <td>382</td> <td>193</td> <td>182</td> <td>.522</td> <td>-2.914</td> <td>0.115</td> <td>-1.1</td> <td>0.9</td> <td>-1.6</td> <td>0.9</td> <td>A+</td> <td></td>	2498	675333	2	2	439	.663	.219	.062	.057	.663	.000	.522	382	193	182	.522	-2.914	0.115	-1.1	0.9	-1.6	0.9	A+	
2501 673180 2 2 439 .419 .077 .465 .036 .419 .002 .459 153 265 .459 -1.573 0.113 -0.2 1.0 1.2 1.1 A+ 2502 679240 2 2 439 .613 .048 .613 .123 .210 .007 .551 111 474 -2.629 0.113 -1.8 0.9 -1.0 0.9 B- 2503 680213 2 2 439 .533 .137 .533 .153 .169 .009 .394 054 .394 233 248 -2.193 0.111 2.5 1.1 2.3 1.2 A+ 2504 677944 2 2 439 .948 .009 .011 .030 .002 .408 .408 161 .179 327 -5.575 0.224 -07 0.9 -1.9 0.4 B- 2505 675074 </td <td>2499</td> <td>675010</td> <td>2</td> <td>2</td> <td>439</td> <td>.718</td> <td>.075</td> <td>.043</td> <td>.718</td> <td>.159</td> <td>.005</td> <td>.468</td> <td>276</td> <td>211</td> <td>.468</td> <td>239</td> <td>-3.246</td> <td>0.120</td> <td>0.0</td> <td>1.0</td> <td>-1.1</td> <td>0.9</td> <td>B+</td> <td></td>	2499	675010	2	2	439	.718	.075	.043	.718	.159	.005	.468	276	211	.468	239	-3.246	0.120	0.0	1.0	-1.1	0.9	B+	
2502 679240 2 2 439 .613 .048 .613 .123 .210 .007 .551 136 .551 111 474 -2.629 0.113 -1.8 0.9 -1.0 0.9 B- 2503 680213 2 2 439 .533 .137 .533 .153 .169 .009 .394 054 .394 233 248 -2.193 0.111 2.5 1.1 2.3 1.2 A+ 2504 677944 2 2 439 .948 .009 .011 .030 .002 .408 .408 161 179 327 -5.575 0.224 -0.7 0.9 -1.9 0.4 B- 2505 675074 2 2 433 .878 .065 .037 .021 .878 .000 .248 171 085 162 .248 -4.125 0.160 1.3 1.1 2.9 1.8	2500	676995	2	2	439	.964	.002	.014	.964	.021	.000	.227	111	118	.227	167	-5.987	0.263	0.2	1.0	0.3	1.1	A-	
2503 680213 2 2 439 .533 .153 .169 .009 .394 054 .394 233 248 -2.193 0.111 2.5 1.1 2.3 1.2 A+ 2504 677944 2 2 439 .948 .009 .011 .030 .002 .408 .408 161 179 327 -5.575 0.224 -0.7 0.9 -1.9 0.4 B- 2505 675074 2 2 439 .702 .089 .043 .702 .164 .002 .413 222 167 .413 248 -4.125 0.160 1.3 1.1 <td< td=""><td>2501</td><td>673180</td><td>2</td><td>2</td><td>439</td><td>.419</td><td>.077</td><td>.465</td><td>.036</td><td>.419</td><td>.002</td><td>.459</td><td>153</td><td>265</td><td>256</td><td>.459</td><td>-1.573</td><td>0.113</td><td>-0.2</td><td>1.0</td><td>1.2</td><td>1.1</td><td>A+</td><td></td></td<>	2501	673180	2	2	439	.419	.077	.465	.036	.419	.002	.459	153	265	256	.459	-1.573	0.113	-0.2	1.0	1.2	1.1	A+	
2504 677944 2 2 439 .948 .948 .009 .011 .030 .002 .408 .408 161 179 327 -5.575 0.224 -0.7 0.9 -1.9 0.4 B- 2505 675074 2 2 439 .702 .089 .043 .702 .164 .002 .413 222 167 .413 245 -3.146 0.118 1.2 1.1 1.1 1.1 1.1 A- 2506 677099 2 2 433 .878 .065 .037 .021 .878 .000 .248 171 085 162 .248 -4.125 0.160 1.3 1.1 2.9 1.8 A+ 2507 675335 2 2 433 .633 .189 .633 .058 .115 .005 .480 264 .480 228 209 -2.305 .0116 .0.4 1.0	2502	679240	2	2	439	.613	.048	.613	.123	.210	.007	.551	136	.551	111	474	-2.629	0.113	-1.8	0.9	-1.0	0.9	B-	
2505 675074 2 2 439 .702 .089 .043 .702 .164 .002 .413 222 167 .413 245 3.146 0.118 1.2 1.1 1.1 1.1 A- 2506 677099 2 2 433 .878 .065 .037 .021 .878 .000 .248 171 085 162 .248 -4.125 0.160 1.3 1.1 2.9 1.8 A+ B- 2507 675335 2 2 433 .633 .189 .633 .058 .115 .005 .480 264 .480 228 209 -2.305 0.116 0.4 1.0 -0.3 1.0 B- A+ 2508 676749 2 2 433 .801 .095 .801 .035 .069 .000 .357 200 .357 108 230 3418 0.136 1.5 1.1	2503	680213	2	2	439	.533	.137	.533	.153	.169	.009	.394	054	.394	233	248	-2.193	0.111	2.5	1.1	2.3	1.2	A+	
2506 677099 2 2 433 .878 .065 .037 .021 .878 .000 .248 171 085 162 .248 -4.125 0.160 1.3 1.1 2.9 1.8 A+ B- 2507 675335 2 2 433 .633 .189 .633 .058 .115 .005 .480 264 .480 228 209 -2.305 0.116 0.4 1.0 -0.3 1.0 B- A+ 2508 676749 2 2 433 .801 .095 .801 .035 .069 .000 .357 220 .357 108 230 -3.418 0.136 1.5 1.1 1.4 1.2 A- A+ 2509 677002 2 2 433 .908 .025 .908 .030 .037 .000 .356 184 .356 133 233 -4.497 0.179 -0.2<	2504	677944	2	2	439	.948	.948	.009	.011	.030	.002	.408	.408	161	179	327	-5.575	0.224	-0.7	0.9	-1.9	0.4	B-	
2507 675335 2 2 433 .633 .189 .633 .058 .115 .005 .480 264 .480 228 209 -2.305 0.116 0.4 1.0 -0.3 1.0 B- A+ 2508 676749 2 2 433 .801 .095 .801 .035 .069 .000 .357 220 .357 108 230 -3.418 0.136 1.5 1.1 1.4 1.2 A- A+ 2509 677002 2 2 433 .908 .025 .908 .030 .037 .000 .356 184 .356 133 273 -4.497 0.179 -0.2 1.0 0.5 1.1 A+ A- 2510 679234 2 2 433 .665 .187 .051 .665 .095 .002 .554 384 208 -2.495 0.118 -1.4 0.9 -2.1 0.8 C- A+ 2511 677945 2 2 433	2505	675074	2	2	439	.702	.089	.043	.702	.164	.002	.413	222	167	.413	245	-3.146	0.118	1.2	1.1	1.1	1.1	A-	
2508 676749 2 2 433 .801 .095 .801 .035 .069 .000 .357 220 .357 108 230 -3.418 0.136 1.5 1.1 1.4 1.2 A- A+ 2509 677002 2 2 433 .908 .025 .908 .030 .037 .000 .356 184 .356 133 273 -4.497 0.179 -0.2 1.0 0.5 1.1 A+ A- 2510 679234 2 2 433 .665 .187 .051 .665 .095 .002 .554 384 209 .554 208 -2.495 0.118 -1.4 0.9 -2.1 0.8 C- A+ 2511 677945 2 2 433 .642 .109 .125 .120 .642 .005 .438 179 246 200 .438 -2.359 0.116 1.4 1.1 0.7 1.1 A- A+ 2512 677103 2<	2506	677099	2	2	433	.878	.065	.037	.021	.878	.000	.248	171	085	162	.248	-4.125	0.160	1.3	1.1	2.9	1.8	A+	B-
2509 677002 2 2 433 .908 .025 .908 .030 .037 .000 .356 184 .356 133 273 -4.497 0.179 -0.2 1.0 0.5 1.1 A+ A- 2510 679234 2 2 433 .665 .187 .051 .665 .095 .002 .554 384 209 .554 208 -2.495 0.118 -1.4 0.9 -2.1 0.8 C- A+ 2511 677945 2 2 433 .642 .109 .125 .120 .642 .005 .438 179 246 200 .438 -2.359 0.116 1.4 1.1 0.7 1.1 A- A+ 2512 677103 2 2 433 .822 .025 .065 .081 .822 .007 .405 251 198 220 .405 -3.589 0.140 0.6 1.0 1.7 1.3 A- A+ 2513 675022 2<	2507	675335	2	2	433	.633	.189	.633	.058	.115	.005	.480	264	.480	228	209	-2.305	0.116	0.4	1.0	-0.3	1.0	B-	A+
2510 679234 2 2 433 .665 .187 .051 .665 .095 .002 .554 384 209 .554 208 -2.495 0.118 -1.4 0.9 -2.1 0.8 C- A+ 2511 677945 2 2 433 .642 .109 .125 .120 .642 .005 .438 179 246 200 .438 -2.359 0.116 1.4 1.1 0.7 1.1 A- A+ 2512 677103 2 2 433 .822 .025 .065 .081 .822 .007 .405 251 198 220 .405 -3.589 0.140 0.6 1.0 1.7 1.3 A- A+ 2513 675022 2 2 433 .788 .788 .060 .088 .051 .014 .501 .501 219 283 231 -3.310 0.133 -0.6 1.0 -1.2 0.8 A+ A+ 2514 678162 2	2508	676749	2	2	433	.801	.095	.801	.035	.069	.000	.357	220	.357	108	230	-3.418	0.136	1.5	1.1	1.4	1.2	A-	A+
2511 677945 2 2 433 .642 .109 .125 .120 .642 .005 .438 179 246 200 .438 -2.359 0.116 1.4 1.1 0.7 1.1 A- A+ 2512 677103 2 2 433 .822 .025 .065 .081 .822 .007 .405 251 198 220 .405 -3.589 0.140 0.6 1.0 1.7 1.3 A- A+ 2513 675022 2 2 433 .788 .060 .088 .051 .014 .501 219 283 231 -3.310 0.133 -0.6 1.0 -1.2 0.8 A+ A+ 2514 678162 2 2 433 .829 .072 .829 .065 .025 .009 .578 374 .578 306 202 -3.649 0.142 -2.3 0.8 -2.2 0.7 A- B-	2509	677002	2	2	433	.908	.025	.908	.030	.037	.000	.356	184	.356	133	273	-4.497	0.179	-0.2	1.0	0.5	1.1	A+	A-
2512 677103 2 2 433 .822 .025 .065 .081 .822 .007 .405 251 198 220 .405 -3.589 0.140 0.6 1.0 1.7 1.3 A- A+ 2513 675022 2 2 433 .788 .060 .088 .051 .014 .501 .501 219 283 231 -3.310 0.133 -0.6 1.0 -1.2 0.8 A+ A+ 2514 678162 2 2 433 .829 .072 .829 .065 .025 .009 .578 374 .578 306 202 -3.649 0.142 -2.3 0.8 -2.2 0.7 A- B-	2510	679234	2	2	433	.665	.187	.051	.665	.095	.002	.554	384	209	.554	208	-2.495	0.118	-1.4	0.9	-2.1	0.8	C-	A+
2513 675022 2 2 433 .788 .788 .060 .088 .051 .014 .501 .501219283231 -3.310 0.133 -0.6 1.0 -1.2 0.8 A+ A+ 2514 678162 2 2 433 .829 .072 .829 .065 .025 .009 .578374 .578306202 -3.649 0.142 -2.3 0.8 -2.2 0.7 A- B-	2511	677945	2	2	433	.642	.109	.125	.120	.642	.005	.438	179	246	200	.438	-2.359	0.116	1.4	1.1	0.7	1.1	A-	A+
2514 678162 2 2 433 .829 .072 .829 .065 .025 .009 .578374 .578306202 -3.649 0.142 -2.3 0.8 -2.2 0.7 A- B-	2512	677103	2	2	433	.822	.025	.065	.081	.822	.007	.405	251	198	220	.405	-3.589	0.140	0.6	1.0	1.7	1.3	A-	A+
	2513	675022	2	2	433	.788	.788	.060	.088	.051	.014	.501	.501	219	283	231	-3.310	0.133	-0.6	1.0	-1.2	0.8	A+	A+
	2514	678162	2	2	433	.829	.072	.829	.065	.025	.009	.578	374	.578	306	202	-3.649	0.142	-2.3	0.8	-2.2	0.7	A-	B-
	2515	677772	2	2	433	.497	.139	.497	.111	.242	.012	.481	027	.481	286	286	-1.548	0.112	0.2	1.0	0.8	1.1	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

2516 (ID			N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2516		Grade	Grade				. (5)			٠,,								in	in	out	out	/F	/B
	677948	2	2	435	.800	.069	.800	.039	.092	.000	.563	328	.563	211	349	-3.323	0.133	-2.1	0.9	-2.6	0.7	A+	A-
2517	676740	2	2	435	.784	.078	.025	.113	.784	.000	.465	338	243	197	.465	-3.203	0.129	-0.5	1.0	-0.8	0.9	A+	A+
2518	675072	2	2	435	.926	.926	.039	.009	.018	.007	.430	.430	255	271	125	-4.668	0.195	-0.7	0.9	-1.9	0.5	A-	A+
	676754	2	2	435	.655	.145	.655	.078	.115	.007	.422	196	.422	241	155	-2.393	0.114	0.8	1.0	0.3	1.0	A-	A-
-	675015	2	2	435	.832	.832	.025	.074	.062	.007	.426	.426	237	146	275	-3.583	0.141	-0.2	1.0	-0.7	0.9	B-	A+
2521	679236	2	2	435	.469	.163	.246	.469	.113	.009	.351	234	102	.351	070	-1.406	0.109	2.5	1.1	2.6	1.2	A-	A-
2522	675018	2	2	435	.623	.184	.623	.124	.055	.014	.433	256	.433	131	192	-2.215	0.112	0.9	1.0	0.7	1.1	B-	A-
2523	678160	2	2	435	.812	.041	.811	.101	.034	.011	.403	107	.403	207	271	-3.412	0.135	0.2	1.0	0.6	1.1	B-	B-
2524	675013	2	2	435	.871	.871	.078	.011	.028	.011	.287	.287	136	156	113	-3.953	0.155	0.8	1.1	0.8	1.1	A-	A+
2525	677107	2	2	430	.337	.337	.056	.505	.098	.005	.406	.406	079	231	182	-1.304	0.114	-1.1	1.0	0.4	1.0	A-	
2526	673579	2	2	430	.891	.026	.044	.891	.040	.000	.382	267	253	.382	127	-4.676	0.165	-0.4	1.0	-0.7	0.9	A-	
2527	680216	2	2	430	.954	.016	.012	.953	.019	.000	.345	235	276	.345	098	-5.703	0.238	-0.4	0.9	-0.7	0.7	B-	
2528	675012	2	2	430	.802	.802	.058	.056	.081	.002	.384	.384	309	071	220	-3.862	0.132	0.1	1.0	0.9	1.1	A+	
2529	676125	2	2	430	.707	.072	.707	.184	.033	.005	.248	268	.248	010	186	-3.234	0.117	3.2	1.2	4.0	1.4	B+	
2530	675008	2	2	430	.786	.121	.786	.049	.040	.005	.478	341	.478	201	184	-3.743	0.129	-1.1	0.9	-1.4	0.8	A+	
2531	677947	2	2	430	.561	.351	.560	.040	.042	.007	.514	387	.514	119	188	-2.447	0.108	-2.9	0.9	-2.2	0.9	B-	
2532	678362	2	2	430	.665	.665	.056	.109	.158	.012	.510	.510	286	165	309	-2.995	0.113	-1.8	0.9	-1.7	0.9	A-	
2533	673585	2	2	430	.588	.112	.074	.216	.588	.009	.279	192	185	057	.279	-2.589	0.109	3.7	1.2	3.7	1.3	A-	
2534	679232	2	2	448	.942	.016	.942	.002	.040	.000	.475	331	.475	150	320	-4.717	0.213	-1.2	0.8	-2.1	0.5	A-	A-
2535	678363	2	2	448	.835	.071	.835	.038	.051	.004	.318	131	.318	105	281	-3.382	0.139	0.9	1.1	0.2	1.0	A-	A-
2536	676043	2	2	448	.507	.217	.063	.212	.507	.002	.300	166	107	134	.300	-1.440	0.105	3.0	1.1	3.9	1.3	A+	A-
2537	676998	2	2	448	.518	.518	.038	.074	.368	.002	.501	.501	192	246	309	-1.495	0.105	-2.6	0.9	-2.3	0.9	A-	A-
2538	675014	2	2	448	.594	.042	.279	.083	.594	.002	.307	142	196	108	.307	-1.875	0.107	2.8	1.1	2.5	1.2	A+	A+
2539	680217	2	2	448	.880	.056	.879	.042	.020	.002	.522	383	.522	188	284	-3.812	0.157	-1.7	0.8	-2.2	0.6	A+	A+
2540	675331	2	2	448	.518	.114	.261	.518	.103	.004	.404	264	091	.404	221	-1.495	0.105	0.6	1.0	0.6	1.0	A+	B+
2541	673575	2	2	448	.614	.123	.614	.165	.094	.004	.540	199	.540	240	334	-1.979	0.108	-2.9	0.9	-2.4	0.8	A-	A-
2542	673586	2	2	448	.607	.103	.203	.607	.080	.007	.434	142	185	.434	306	-1.944	0.107	-0.1	1.0	0.5	1.0	A+	A-
2543	677104	2	2	433	.748	.044	.039	.169	.748	.000	.407	374	128	202	.407	-2.959	0.126	1.4	1.1	1.5	1.2	B+	A-
2544	676044	2	2	433	.529	.529	.145	.164	.159	.002	.501	.501	083	266	317	-1.670	0.111	-0.6	1.0	-0.2	1.0	A+	C-
2545	675064	2	2	433	.905	.025	.905	.035	.023	.012	.437	164	.437	240	232	-4.414	0.179	-0.6	0.9	-0.8	0.8	A+	A-
2546	680845	2	2	433	.587	.210	.099	.587	.097	.007	.497	308	220	.497	129	-1.984	0.113	-0.3	1.0	-0.6	1.0	A-	A+
2547	678164	2	2	433	.734	.053	.734	.150	.055	.007	.488	235	.488	295	184	-2.865	0.124	-0.2	1.0	0.6	1.1	A+	A+
2548	680218	2	2	433	.517	.238	.127	.109	.517	.009	.412	153	205	185	.412	-1.608	0.111	1.6	1.1	3.0	1.2	A+	A-
2549	680231	2	2	433	.813	.813	.085	.062	.025	.014	.361	.361	321	086	081	-3.446	0.139	1.5	1.1	1.1	1.2	A+	A+
2550	679233	2	2	433	.954	.016	.014	.954	.005	.012	.405	208	222	.405	145	-5.297	0.242	-0.6	0.9	-1.8	0.4	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	ם	Grade	Grade		ı vai	1 (4)	1 (5)	. (0)	1 (5)	1 (-)	i tbis	11(A)	11(0)	1 1(0)	11(0)	IVICAS	IVISE	in	in	out	out	/F	/B
2551	677000	2	2	431	.963	.007	.026	.963	.002	.002	.299	151	254	.299	042	-5.955	0.266	0.0	1.0	-1.2	0.5	A+	A-
2552	675065	2	2	431	.336	.555	.067	.037	.336	.005	.404	223	201	131	.404	-1.038	0.119	-1.0	0.9	3.8	1.5	A-	A-
2553	677102	2	2	431	.673	.014	.042	.673	.271	.000	.322	200	087	.322	248	-2.919	0.117	3.7	1.2	3.1	1.3	A+	A-
2554	675334	2	2	431	.643	.643	.100	.174	.081	.002	.515	.515	215	190	378	-2.742	0.115	-0.8	1.0	-0.3	1.0	A-	A-
2555	678155	2	2	431	.515	.209	.121	.515	.151	.005	.407	234	247	.407	053	-2.039	0.112	2.2	1.1	2.6	1.2	C+	A+
2556	680220	2	2	431	.710	.051	.023	.710	.211	.005	.588	160	060	.588	524	-3.146	0.121	-2.7	0.9	-1.8	0.8	A-	A+
2557	677767	2	2	431	.940	.028	.940	.007	.012	.014	.390	282	.390	151	149	-5.388	0.215	-0.6	0.9	-1.3	0.6	B-	A+
2558	677105	2	2	431	.724	.142	.081	.724	.044	.009	.539	414	184	.539	187	-3.234	0.122	-1.5	0.9	-1.4	0.9	A-	A-
2559	677108	2	2	431	.729	.102	.729	.123	.039	.007	.437	126	.437	336	186	-3.264	0.123	0.7	1.0	1.9	1.2	A-	A-
2560	675068	2	2	436	.796	.025	.103	.796	.073	.002	.459	198	300	.459	225	-3.292	0.135	0.4	1.0	-0.3	0.9	A+	A-
2561	676759	2	2	436	.789	.055	.124	.789	.032	.000	.403	282	204	.403	187	-3.238	0.134	1.4	1.1	1.4	1.2	A+	A+
2562	675025	2	2	436	.927	.927	.028	.034	.011	.000	.360	.360	301	147	168	-4.731	0.198	-0.1	1.0	-0.3	0.9	A-	A+
2563	679239	2	2	436	.826	.064	.826	.039	.064	.007	.454	272	.454	197	253	-3.543	0.142	0.2	1.0	-0.5	0.9	B-	A+
2564	676046	2	2	436	.431	.321	.431	.147	.094	.007	.452	220	.452	077	279	-1.046	0.115	-0.2	1.0	3.2	1.3	B-	A-
2565	673181	2	2	436	.512	.511	.073	.200	.202	.014	.520	.520	201	061	416	-1.500	0.114	-0.7	1.0	1.2	1.1	A+	A-
2566	673577	2	2	436	.940	.940	.021	.011	.018	.009	.391	.391	218	159	209	-4.985	0.215	-0.6	0.9	-0.7	0.7	A-	A+
2567	680210	2	2	436	.706	.126	.067	.085	.706	.016	.442	212	271	180	.442	-2.652	0.122	1.7	1.1	0.5	1.1	A-	B+
2568	678360	2	2	436	.252	.681	.048	.252	.009	.009	.349	173	203	.349	115	0.093	0.131	1.1	1.1	2.4	1.4	C-	A-
2569	675066	2	2	438	.970	.970	.005	.007	.016	.002	.365	.365	097	199	258	-5.707	0.293	-0.5	0.9	-1.7	0.4	A+	
2570	680214	2	2	438	.505	.167	.219	.505	.105	.005	.458	209	178	.458	229	-1.462	0.111	0.3	1.0	1.1	1.1	A+	
2571	676996	2	2	438	.911	.041	.911	.023	.025	.000	.351	262	.351	062	248	-4.403	0.182	0.2	1.0	-0.4	0.9	B+	
2572	675069	2	2	438	.804	.030	.804	.030	.135	.002	.615	177	.615	216	519	-3.286	0.135	-2.7	0.8	-3.2	0.6	A+	
2573	675020	2	2	438	.863	.863	.064	.023	.048	.002	.499	.499	387	201	217	-3.822	0.154	-1.0	0.9	-1.8	0.7	A-	
2574	673188	2	2	438	.484	.231	.110	.484	.169	.007	.309	058	162	.309	194	-1.351	0.111	4.5	1.2	4.8	1.4	A-	
2575	676757	2	2	438	.498	.196	.114	.187	.498	.005	.372	149	178	173	.372	-1.425	0.111	2.7	1.1	3.8	1.3	B-	
2576	673587	2	2	438	.895	.027	.895	.041	.034	.002	.466	194	.466	231	349	-4.187	0.170	-0.7	0.9	-1.4	0.7	A-	
2577	678158	2	2	438	.457	.251	.457	.123	.162	.007	.407	225	.407	025	257	-1.203	0.111	1.9	1.1	2.4	1.2	C-	
2578	678359	2	2	424	.818	.040	.083	.057	.818	.002	.415	182	301	183	.415	-3.887	0.140	0.3	1.0	-0.2	1.0	A+	
2579	675067	2	2	424	.606	.139	.014	.606	.241	.000	.449	181	135	.449	329	-2.515	0.114	0.3	1.0	0.9	1.1	A-	
2580	679241	2	2	424	.764	.031	.047	.764	.158	.000	.564	255	283	.564	371	-3.473	0.129	-2.0	0.9	-2.4	0.7	A-	
2581	675021	2	2	424	.715	.189	.715	.052	.040	.005	.463	231	.463	298	194	-3.145	0.122	0.2	1.0	-0.5	1.0	B-	
2582	675026	2	2	424	.807	.057	.042	.807	.090	.005	.535	246	368	.535	230	-3.790	0.137	-1.4	0.9	-1.7	0.8	A+	
2583	678156	2	2	424	.795	.101	.795	.066	.033	.005	.591	433	.591	192	256	-3.698	0.134	-2.4	8.0	-2.6	0.7	A-	
2584	676045	2	2	424	.811	.811	.059	.094	.028	.007	.496	.496	278	295	172	-3.828	0.138	-0.8	0.9	-0.7	0.9	A-	
2585	673189	2	2	424	.693	.097	.693	.142	.064	.005	.394	175	.394	166	236	-3.014	0.119	1.5	1.1	0.9	1.1	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2506	676750	Grade	Grade	42.4	627	050		002			462					2.605	0.445	in	in	out	out	/F	/B
2586	676758	2	2	424	.637	.050	.637	.083	.224	.007	.462	254	.462	199	233	-2.685	0.115	0.1	1.0	0.8	1.1	A-	
2587	676739	2	2	433 433	.961	.021	.961	.009	.009	.000	.318	224	.318	074	238	-5.645	0.261 0.114	-0.1	1.0	-0.5	0.8	Α-	
2588	679238		2	433	.591	.122	.233	.591	.046	.007	.508	325	210	.508	165	-2.095		-0.3	1.0	0.1	1.0	A-	-
2589 2590	677100	2	2	433	.734 .815	.734	.115	.088	.055	.007	.430 .499	.430 .499	227 296	237 304	163 176	-2.969 -3.583	0.126 0.141	1.4	1.1	0.4 -1.1	1.0 0.8	A-	-
	673111	2	2			.815												-0.4	1.0			A-	$\vdash \vdash \vdash$
2591	678157	2		433	.781	.099	.781	.058	.058	.005	.428	174	.428	292	183	-3.302	0.133	1.1	1.1	0.5	1.1	B+	-
2592	675006	2	2	433	.679	.025	.058	.679	.231	.007	.640	089	067	.640	609	-2.609	0.119	-3.6	0.8	-2.4	0.8	A+	\vdash
2593	675071	2	2	433	.963	.023	.963	.005	.005	.005	.370	234	.370	128	176	-5.715	0.269	-0.6	0.9	-0.8	0.6	A+	$\vdash \vdash \vdash$
2594	676748	2	2	433	.423	.111	.356	.106	.423	.005	.332	245	066	135	.332	-1.171	0.113	3.4	1.2	5.3	1.6	A-	
2595	680846	2	2	433	.637	.109	.637	.141	.106	.007	.391	146	.391	238	156	-2.360	0.116	3.0	1.2	2.9	1.3	A-	—
2596	675011	2	2	439	.633	.075	.633	.155	.132	.005	.480	223	.480	262	209	-2.357	0.111	-1.0	1.0	-0.9	0.9	A+	
2597	676736	2	2	439	.128	.014	.128	.036	.820	.002	.217	040	.217	.037	175	0.838	0.165	1.6	1.2	3.4	2.0	A+	\vdash
2598	675007	2	2	439	.663	.198	.087	.048	.663	.005	.424	214	194	240	.424	-2.519	0.113	0.4	1.0	-0.2	1.0	B+	\vdash
2599	673110	2	2	439	.590	.057	.282	.590	.068	.002	.493	219	230	.493	319	-2.128	0.109	-1.1	1.0	-0.9	0.9	A-	—
2600	677106	2	2	439	.640	.171	.640	.089	.096	.005	.456	235	.456	123	276	-2.394	0.111	-0.4	1.0	-0.6	1.0	B+	—
2601	676735	2	2	439	.841	.068	.052	.841	.030	.009	.517	335	186	.517	231	-3.707	0.141	-1.9	0.9	-1.9	0.7	A+	—
2602	675073	2	2	439	.790	.073	.066	.790	.059	.011	.441	109	262	.441	288	-3.312	0.128	-0.7	1.0	0.4	1.1	A-	
2603	680211	2	2	439	.401	.226	.146	.401	.214	.014	.406	222	082	.406	142	-1.148	0.111	0.1	1.0	1.5	1.1	A+	
2604	680215	2	2	439	.588	.185	.588	.182	.034	.011	.396	187	.396	222	105	-2.116	0.109	1.4	1.1	0.5	1.0	A-	<u> </u>
2605	676756	2	2	428	.631	.028	.631	.079	.259	.002	.351	001	.351	100	330	-2.684	0.113	2.6	1.1	3.3	1.3	A-	<u> </u>
2606	675024	2	2	428	.430	.180	.430	.063	.325	.002	.344	182	.344	158	131	-1.637	0.111	2.4	1.1	3.3	1.3	A+	
2607	678161	2	2	428	.234	.301	.262	.201	.234	.002	.318	047	164	084	.318	-0.483	0.129	0.4	1.0	2.1	1.3	A-	
2608	678159	2	2	428	.439	.283	.439	.241	.035	.002	.397	143	.397	192	236	-1.686	0.110	1.0	1.0	2.1	1.2	B-	
2609	677101	2	2	428	.960	.009	.005	.021	.960	.005	.247	125	156	092	.247	-5.834	0.258	0.1	1.0	-0.3	0.8	A+	
2610	678361	2	2	428	.680	.098	.112	.680	.105	.005	.468	121	252	.468	294	-2.959	0.116	-0.3	1.0	-0.3	1.0	A+	
2611	675019	2	2	428	.907	.907	.030	.030	.026	.007	.520	.520	296	252	268	-4.808	0.179	-1.6	0.8	-2.2	0.5	A+	
2612	676999	2	2	428	.752	.752	.035	.051	.154	.007	.535	.535	249	319	287	-3.408	0.125	-1.7	0.9	-2.2	0.8	A-	
2613	677775	2	2	428	.916	.014	.035	.916	.028	.007	.462	198	265	.462	254	-4.941	0.187	-1.0	0.9	-1.7	0.6	A+	<u> </u>
2614	679237	2	2	428	.862	.030	.044	.862	.054	.009	.578	306	317	.578	307	-4.291	0.153	-2.4	0.8	-2.4	0.6	A+	
2615	675017	2	2	428	.460	.203	.110	.213	.460	.014	.468	200	095	263	.468	-1.795	0.110	-1.4	0.9	-0.2	1.0	B-	
2616	661925	3	3	474	.650	.110	.103	.650	.135	.002	.384	200	206	.384	164	-1.584	0.106	0.9	1.0	0.8	1.1	A+	A+
2617	661167	3	3	474	.416	.411	.053	.416	.118	.002	.374	258	052	.374	131	-0.399	0.104	1.7	1.1	1.2	1.1	A-	A-
2618	679468	3	3	474	.517	.517	.177	.198	.108	.000	.426	.426	125	233	233	-0.907	0.102	0.2	1.0	0.6	1.0	A-	A-
2619	679740	3	3	474	.430	.122	.430	.234	.213	.000	.394	155	.394	081	268	-0.474	0.103	1.1	1.0	1.1	1.1	A-	A-
2620	679545	3	3	474	.662	.086	.084	.165	.662	.002	.320	147	116	198	.320	-1.652	0.107	2.3	1.1	1.8	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
2621	661169	3	3	474	.076	.253	.078	.589	.076	.004	.146	103	114	.091	.146	2.158	0.182	0.4	1.1	2.6	1.8	A-	A+
2622	679590	3	3	474	.574	.574	.051	.205	.165	.006	.610	.610	146	296	385	-1.191	0.103	-5.2	0.8	-4.7	0.7	A-	A-
2623	683672	3	3	474	.179	.304	.179	.443	.070	.004	.151	180	.151	.117	095	1.040	0.130	2.8	1.2	4.6	1.8	A-	A+
2624	683678	3	3	474	.850	.011	.850	.036	.097	.006	.434	135	.434	247	271	-2.902	0.138	-1.2	0.9	-1.9	0.7	A+	A-
2625	679735	3	3	474	.502	.093	.293	.502	.105	.006	.414	223	155	.414	194	-0.833	0.102	0.7	1.0	0.5	1.0	A-	A+
2626	661926	3	3	474	.449	.378	.133	.030	.449	.011	.393	353	.056	135	.393	-0.570	0.103	1.2	1.1	0.9	1.1	A+	C+
2627	679469	3	3	474	.418	.418	.133	.253	.181	.015	.343	.343	064	096	203	-0.410	0.104	2.3	1.1	1.6	1.1	A+	A-
2628	683937	3	3	474	.614	.614	.154	.074	.137	.021	.374	.374	202	146	110	-1.396	0.104	1.4	1.1	1.1	1.1	A-	A-
2629	683805	3	3	474	.340	.340	.129	.205	.306	.021	.485	.485	068	202	197	0.003	0.108	-2.0	0.9	-1.1	0.9	A-	A-
2630	679741	3	3	474	.639	.053	.200	.639	.084	.023	.539	217	335	.539	144	-1.528	0.106	-3.0	0.9	-2.7	0.8	A+	A+
2631	677709	3	3	474	.846	.055	.846	.025	.051	.023	.391	194	.391	170	155	-2.864	0.136	-0.6	1.0	-1.2	0.8	A+	A-
2632	662161	3	3	474	.508	.167	.124	.508	.175	.025	.510	160	219	.510	223	-0.865	0.102	-2.1	0.9	-1.9	0.9	A-	A-
2633	683933	3	3	474	.717	.046	.080	.131	.717	.025	.486	188	271	195	.486	-1.962	0.112	-1.8	0.9	-1.7	0.8	A+	B-
2634	661171	3	3	474	.546	.076	.546	.270	.084	.023	.590	303	.590	296	165	-1.054	0.103	-4.6	0.8	-4.0	0.8	A-	A-
2635	684152	3	3	474	.511	.089	.162	.213	.511	.025	.297	166	170	002	.297	-0.875	0.102	4.0	1.2	4.2	1.3	B+	A-
2636	661927	3	3	470	.368	.106	.489	.036	.368	.000	.483	237	297	060	.483	-0.238	0.106	-2.0	0.9	-1.3	0.9	B+	
2637	679394	3	3	470	.202	.043	.423	.202	.328	.004	043	042	104	043	.176	0.776	0.126	5.1	1.4	7.1	2.2	A+	l
2638	679591	3	3	470	.757	.189	.023	.757	.030	.000	.568	503	177	.568	116	-2.304	0.118	-3.4	0.8	-3.2	0.7	A-	1
2639	683679	3	3	470	.883	.049	.883	.038	.030	.000	.220	144	.220	145	070	-3.327	0.152	0.8	1.1	1.9	1.4	A-	
2640	679388	3	3	470	.515	.515	.260	.085	.140	.000	.417	.417	251	139	172	-0.983	0.103	0.6	1.0	-0.1	1.0	A +	1
2641	683938	3	3	469	.682	.079	.085	.149	.682	.004	.554	290	245	304	.554	-1.851	0.109	-3.1	0.9	-2.9	8.0	A+	
2642	679544	3	3	469	.320	.294	.217	.320	.164	.004	.373	073	215	.373	125	0.028	0.110	0.6	1.0	1.0	1.1	B-	
2643	679739	3	3	469	.137	.548	.136	.209	.104	.002	058	.122	058	021	099	1.336	0.145	3.3	1.3	7.8	3.1	B-	
2644	683804	3	3	469	.399	.068	.458	.075	.399	.000	.503	373	290	028	.503	-0.396	0.105	-2.3	0.9	-1.9	0.9	A-	
2645	679540	3	3	469	.832	.060	.832	.070	.038	.000	.302	173	.302	110	229	-2.841	0.133	0.7	1.1	8.0	1.1	B+	
2646	661869	3	3	469	.793	.793	.038	.130	.036	.002	.362	.362	188	195	222	-2.546	0.124	0.2	1.0	0.3	1.0	A+	
2647	662160	3	3	469	.375	.068	.375	.171	.380	.006	.432	.030	.432	196	277	-0.274	0.106	-0.6	1.0	0.1	1.0	A-	
2648	661924	3	3	469	.836	.836	.043	.070	.047	.004	.394	.394	093	329	175	-2.877	0.134	-0.4	1.0	-1.2	8.0	A+	
2649	661170	3	3	469	.092	.648	.128	.092	.128	.004	.292	206	.013	.292	.048	1.854	0.171	-0.7	0.9	2.6	1.7	A-	
2650	661161	3	3	469	.923	.019	.038	.923	.015	.004	.284	164	115	.284	204	-3.842	0.181	-0.2	1.0	0.2	1.0	A+	
2651	683671	3	3	469	.574	.360	.023	.034	.574	.009	.494	435	114	053	.494	-1.275	0.104	-1.5	0.9	-2.1	0.9	A+	
2652	661861	3	3	469	.755	.177	.755	.043	.019	.006	.561	444	.561	205	161	-2.285	0.117	-3.0	0.8	-3.4	0.7	A+	
2653	683932	3	3	469	.761	.062	.761	.085	.083	.009	.503	283	.503	221	277	-2.327	0.118	-1.9	0.9	-2.4	0.8	C-	
2654	677710	3	3	469	.693	.126	.693	.087	.087	.006	.532	232	.532	302	265	-1.911	0.110	-2.6	0.9	-2.5	0.8	A-	
2655	679742	3	3	469	.674	.085	.179	.674	.055	.006	.382	217	208	.382	131	-1.803	0.109	0.9	1.0	0.6	1.1	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

	ID 683680	Grade			PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
	602600	0.440	Grade	N	ı vai	' (^)	1 (5)	· (C)	1 (0)	· (-)		11(A)	11(0)	1 1(0)	11(0)	ivicas		in	in	out	out	/F	/B
2657	003000	3	3	464	.703	.129	.063	.703	.106	.000	.497	235	142	.497	371	-1.945	0.112	-1.6	0.9	-2.0	0.8	A-	
2037	679393	3	3	464	.295	.179	.295	.241	.282	.002	.353	145	.353	086	158	0.221	0.114	1.2	1.1	1.4	1.1	A+	
2658	661929	3	3	464	.612	.142	.612	.099	.147	.000	.450	150	.450	270	244	-1.446	0.106	-0.4	1.0	-1.0	0.9	A-	
2659	679738	3	3	464	.793	.030	.039	.793	.136	.002	.390	172	240	.390	240	-2.530	0.125	0.3	1.0	-0.7	0.9	C-	
2660	677711	3	3	464	.869	.056	.869	.060	.013	.002	.477	327	.477	270	170	-3.169	0.147	-1.6	0.9	-1.8	0.7	A-	
2661	661922	3	3	464	.825	.825	.071	.019	.084	.000	.411	.411	133	.012	445	-2.779	0.133	-0.7	1.0	1.9	1.3	A+	
2662	661868	3	3	464	.851	.851	.030	.084	.032	.002	.344	.344	207	187	186	-3.003	0.141	0.3	1.0	-0.7	0.9	A+	
2663	661870	3	3	464	.819	.136	.819	.030	.011	.004	.444	389	.444	106	087	-2.727	0.131	-1.0	0.9	-1.0	0.8	A-	
2664	679541	3	3	464	.877	.877	.084	.011	.022	.006	.389	.389	256	078	225	-3.259	0.151	-0.8	0.9	-0.3	0.9	B+	
2665	661168	3	3	464	.231	.123	.231	.101	.534	.011	.413	145	.413	067	170	0.641	0.123	-1.8	0.9	1.6	1.2	A-	
2666	683666	3	3	463	.492	.181	.248	.069	.492	.009	.354	191	110	140	.354	-0.837	0.104	2.6	1.1	2.8	1.2	A+	
2667	679387	3	3	463	.659	.052	.659	.048	.233	.009	.346	298	.346	221	073	-1.697	0.109	2.2	1.1	0.8	1.1	A+	
2668	683797	3	3	936	.861	.074	.041	.861	.017	.007	.418	244	229	.418	172	-3.094	0.102	-1.2	0.9	-0.8	0.9	A+	A+
2669	683939	3	3	463	.767	.069	.767	.099	.054	.011	.453	198	.453	254	198	-2.347	0.121	-0.8	1.0	-1.0	0.9	A+	
2670	683670	3	3	463	.270	.270	.443	.175	.102	.011	.420	.420	120	124	193	0.378	0.117	-1.2	0.9	1.5	1.2	B-	
2671	661162	3	3	936	.763	.032	.159	.763	.041	.005	.555	183	464	.555	116	-2.313	0.085	-3.7	0.9	-3.9	0.7	A+	B+
2672	683803	3	3	463	.441	.255	.441	.134	.156	.015	.309	100	.309	219	037	-0.575	0.105	3.7	1.2	3.6	1.3	A+	
2673	679592	3	3	463	.685	.102	.073	.121	.685	.019	.485	283	177	219	.485	-1.842	0.111	-1.3	0.9	-0.3	1.0	B+	
2674	661865	3	3	463	.806	.054	.093	.806	.032	.015	.452	248	218	.452	218	-2.624	0.128	-1.1	0.9	0.9	1.1	C+	
2675	679543	3	3	463	.434	.093	.153	.434	.302	.017	.392	259	219	.392	042	-0.541	0.105	0.8	1.0	1.5	1.1	B-	
2676	661770	3	3	464	.640	.099	.099	.162	.640	.000	.434	179	137	309	.434	-1.484	0.108	0.2	1.0	0.0	1.0	A+	
2677	679588	3	3	464	.597	.159	.597	.147	.097	.000	.359	219	.359	179	112	-1.255	0.106	2.4	1.1	2.2	1.2	A-	
2678	661857	3	3	464	.345	.082	.297	.274	.345	.002	.312	081	144	137	.312	0.070	0.111	3.1	1.2	2.9	1.3	A-	
2679	679744	3	3	464	.627	.627	.248	.034	.091	.000	.386	.386	198	274	179	-1.414	0.107	1.5	1.1	1.2	1.1	A+	
2680	683941	3	3	464	.565	.287	.069	.080	.565	.000	.492	368	161	135	.492	-1.088	0.105	-1.1	1.0	-0.8	0.9	B-	
2681	679477	3	3	464	.431	.336	.431	.147	.084	.002	.391	141	.391	226	162	-0.400	0.106	1.6	1.1	1.9	1.1	A-	
2682	683935	3	3	464	.528	.528	.166	.207	.093	.006	.477	.477	258	134	259	-0.900	0.105	-0.6	1.0	-1.0	0.9	B+	
2683	683808	3	4	464	.153	.431	.054	.353	.153	.009	.297	263	169	.164	.297	1.428	0.144	0.4	1.0	1.9	1.4	A+	
2684	679475	3	3	464	.632	.631	.097	.166	.097	.009	.489	.489	267	205	216	-1.437	0.107	-1.2	1.0	-1.0	0.9	A-	
2685	661859	3	3	464	.679	.679	.088	.069	.155	.009	.360	.360	270	166	088	-1.698	0.110	1.7	1.1	1.0	1.1	A-	
2686	680004	3	3	464	.644	.140	.078	.644	.129	.009	.523	348	223	.523	156	-1.507	0.108	-2.1	0.9	-2.4	0.8	A+	
2687	683677	3	3	464	.519	.084	.519	.280	.108	.009	.472	144	.472	245	221	-0.856	0.105	-0.4	1.0	-0.9	0.9	A-	
2688	679391	3	3	464	.095	.222	.235	.435	.095	.013	.134	225	207	.337	.134	2.101	0.175	1.4	1.2	3.4	2.1	A+	
2689	677713	3	3	464	.373	.095	.119	.373	.397	.017	.231	144	109	.231	016	-0.087	0.109	5.1	1.3	5.1	1.4	A+	
2690	679539	3	3	464	.825	.086	.825	.041	.034	.013	.461	301	.461	244	112	-2.660	0.132	-1.4	0.9	-1.9	0.7	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
Ref		Grade	Grade				, ,	` '										in	in	out	out	/F	/B
2691	683794	3	3	464	.884	.032	.884	.050	.019	.015	.381	201	.381	239	100	-3.201	0.154	-0.6	0.9	-1.4	0.7	A+	
2692	679805	3	3	464	.776	.030	.157	.776	.017	.019	.573	178	443	.573	162	-2.293	0.121	-3.4	0.8	-3.4	0.6	A-	
2693	683684	3	3	464	.716	.078	.157	.716	.032	.017	.580	314	333	.580	177	-1.910	0.113	-3.7	0.8	-3.2	0.7	A+	└
2694	678951	3	3	464	.679	.269	.015	.022	.679	.015	.461	295	176	267	.461	-1.698	0.110	-0.7	1.0	0.6	1.1	A-	
2695	680005	3	3	464	.707	.707	.093	.114	.071	.015	.545	.545	193	236	362	-1.859	0.113	-3.0	0.9	-1.9	0.8	B-	
2696	684220	3	4	458	.550	.057	.550	.066	.328	.000	.299	284	.299	252	044	-1.111	0.106	4.3	1.2	3.8	1.3	A+	
2697	681716	3	3	458	.579	.107	.579	.253	.061	.000	.236	175	.236	042	184	-1.258	0.107	5.5	1.3	5.6	1.4	A+	i
2698	679736	3	3	458	.445	.358	.114	.445	.079	.004	.426	176	292	.426	118	-0.576	0.106	0.5	1.0	1.1	1.1	A+	1
2699	679997	3	3	458	.526	.120	.526	.179	.170	.004	.477	222	.477	110	310	-0.988	0.106	-0.6	1.0	-0.3	1.0	A-	
2700	679650	3	3	458	.417	.328	.417	.148	.103	.004	.270	.008	.270	289	093	-0.429	0.107	4.4	1.2	4.7	1.4	A-	
2701	683798	3	3	458	.625	.098	.624	.118	.155	.004	.488	277	.488	312	117	-1.501	0.109	-0.7	1.0	-1.6	0.9	A-	
2702	683689	3	3	458	.598	.063	.142	.598	.188	.009	.524	240	183	.524	310	-1.361	0.107	-1.9	0.9	-1.4	0.9	A+	1
2703	661932	3	3	458	.649	.648	.098	.162	.085	.007	.497	.497	205	288	193	-1.632	0.110	-1.0	1.0	-1.1	0.9	A+	1
2704	684206	3	3	458	.563	.192	.194	.563	.037	.013	.457	180	273	.457	144	-1.179	0.106	0.1	1.0	0.0	1.0	A-	1
2705	682589	3	3	458	.572	.052	.068	.572	.301	.007	.385	198	079	.385	240	-1.224	0.106	2.0	1.1	1.7	1.1	A-	1
2706	661854	3	3	458	.771	.151	.050	.771	.020	.009	.628	454	241	.628	193	-2.380	0.123	-3.8	0.8	-3.7	0.6	A+	1
2707	677715	3	3	458	.382	.441	.382	.059	.107	.011	.169	.084	.169	123	230	-0.245	0.108	5.8	1.3	6.6	1.6	A+	1
2708	678948	3	3	458	.915	.020	.013	.915	.041	.011	.484	187	201	.484	318	-3.751	0.178	-1.4	0.8	-2.4	0.5	A+	
2709	684154	3	3	458	.535	.153	.124	.172	.535	.015	.525	342	194	118	.525	-1.033	0.106	-1.9	0.9	-1.7	0.9	A+	1
2710	679999	3	3	458	.849	.044	.849	.050	.037	.020	.518	159	.518	338	248	-3.005	0.142	-2.0	0.8	-2.4	0.6	A+	1
2711	678956	3	3	458	.590	.186	.122	.590	.083	.020	.528	101	325	.528	291	-1.315	0.107	-1.9	0.9	-1.8	0.9	A+	
2712	661866	3	3	458	.819	.046	.819	.057	.063	.015	.396	280	.396	185	102	-2.740	0.133	0.1	1.0	-0.1	1.0	A-	
2713	661762	3	3	458	.666	.092	.090	.666	.135	.017	.615	230	265	.615	341	-1.730	0.111	-4.1	0.8	-3.8	0.7	A-	
2714	683683	3	2	458	.836	.050	.048	.046	.836	.020	.507	258	257	220	.507	-2.887	0.138	-1.7	0.9	-2.2	0.7	A+	1
2715	661164	3	3	458	.760	.033	.068	.120	.760	.020	.450	140	186	285	.450	-2.305	0.121	-0.4	1.0	0.3	1.0	A+	1
2716	679743	3	3	474	.553	.553	.042	.241	.165	.000	.375	.375	168	195	187	-1.165	0.101	1.0	1.0	1.1	1.1	A-	
2717	679392	3	3	474	.937	.015	.937	.019	.030	.000	.282	154	.282	117	202	-4.007	0.196	0.1	1.0	-1.3	0.7	B-	
2718	683801	3	3	474	.298	.207	.230	.297	.264	.002	.360	267	185	.360	.058	0.125	0.110	0.1	1.0	0.5	1.0	A-	1
2719	683793	3	3	474	.538	.538	.217	.165	.078	.002	.295	.295	.016	254	216	-1.093	0.101	3.1	1.1	2.8	1.2	A+	1
2720	683942	3	3	474	.848	.848	.146	.002	.004	.000	.345	.345	325	069	090	-2.933	0.136	-0.3	1.0	-0.6	0.9	A+	
2721	684201	3	3	474	.557	.194	.148	.557	.101	.000	.522	332	162	.522	235	-1.185	0.101	-3.2	0.9	-2.8	0.8	A-	
2722	677714	3	3	474	.644	.643	.076	.118	.162	.000	.256	.256	129	011	230	-1.619	0.105	3.3	1.1	2.5	1.2	A+	
2723	679646	3	3	474	.226	.494	.186	.093	.226	.002	.439	396	023	.096	.439	0.567	0.119	-1.5	0.9	-1.1	0.9	B-	
2724	683690	3	3	474	.631	.631	.099	.190	.078	.002	.625	.625	150	463	263	-1.553	0.104	-5.9	0.8	-4.5	0.7	A-	
2725	661849	3	3	474	.500	.500	.080	.027	.386	.006	.473	.473	136	072	358	-0.909	0.101	-1.7	0.9	-1.9	0.9	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade			. ,		, ,					` '	, ,	` '			in	in	out	out	/F	/B
2726	680003	3	3	474	.298	.082	.297	.046	.568	.006	.246	202	.246	200	003	0.125	0.110	2.6	1.1	2.7	1.2	Α-	
2727	683685	3	3	474	.578	.044	.209	.578	.162	.006	.408	211	312	.408	047	-1.289	0.102	0.0	1.0	0.8	1.1	Α-	,——
2728	679589	3	3	474	.272	.344	.209	.272	.165	.011	.155	.050	140	.155	064	0.273	0.112	3.4	1.2	4.9	1.5	A-	
2729	678950	3	3	474	.654	.654	.036	.215	.084	.011	.442	.442	267	216	209	-1.674	0.105	-1.0	1.0	-1.1	0.9	B-	,——
2730	683682	3	3	474	.753	.753	.049	.101	.082	.015	.549	.549	173	273	379	-2.239	0.115	-3.3	0.8	-3.0	0.7	A+	
2731	661769	3	3	474	.352	.082	.074	.352	.477	.015	.217	151	213	.217	.014	-0.175	0.105	3.7	1.2	4.1	1.3	C+	
2732	682587	3	3	474	.760	.095	.759	.080	.051	.015	.454	223	.454	207	270	-2.279	0.116	-1.4	0.9	-1.7	0.8	A-	
2733	683676	3	3	474	.684	.089	.684	.110	.105	.013	.453	220	.453	178	276	-1.833	0.108	-1.2	1.0	-1.5	0.9	A+	
2734	679476	3	3	474	.527	.200	.527	.198	.059	.015	.391	287	.391	129	078	-1.042	0.101	0.7	1.0	-0.2	1.0	A-	
2735	679474	3	3	947	.911	.011	.032	.911	.037	.010	.416	146	232	.416	277	-3.639	0.120	-1.5	0.9	-2.7	0.6	A-	A-
2736	678376	3	3	458	.428	.428	.122	.242	.205	.002	.312	.312	158	167	065	-0.169	0.108	3.5	1.2	4.7	1.4	A-	
2737	661165	3	3	458	.908	.908	.070	.015	.007	.000	.218	.218	152	093	156	-3.368	0.173	0.5	1.1	3.1	2.0	B+	
2738	684215	3	3	458	.710	.129	.090	.070	.710	.002	.500	402	225	102	.500	-1.691	0.115	-1.2	0.9	-1.2	0.9	A+	
2739	683693	3	3	458	.747	.114	.028	.111	.747	.000	.455	302	127	258	.455	-1.926	0.120	-0.3	1.0	-1.2	0.9	A+	<u> </u>
2740	683692	3	3	458	.579	.074	.179	.579	.166	.002	.456	164	331	.456	158	-0.957	0.107	0.6	1.0	0.4	1.0	A-	1
2741	681717	3	3	458	.369	.336	.153	.369	.140	.002	.361	048	218	.361	205	0.152	0.110	2.5	1.1	2.6	1.2	A+	1
2742	679653	3	3	458	.714	.181	.076	.026	.714	.002	.558	398	282	139	.558	-1.718	0.116	-2.6	0.9	-2.1	0.8	A+	1
2743	678377	3	3	458	.686	.229	.015	.686	.068	.002	.547	499	122	.547	106	-1.548	0.113	-2.2	0.9	-2.0	0.8	A-	į
2744	662158	3	3	458	.314	.207	.314	.282	.190	.007	.319	113	.319	175	035	0.467	0.114	2.1	1.1	4.5	1.5	A-	1
2745	679471	3	3	458	.397	.072	.301	.397	.225	.004	.446	203	121	.446	246	-0.005	0.109	0.9	1.0	0.8	1.1	B-	į
2746	683667	3	3	458	.483	.070	.483	.153	.290	.004	.376	331	.376	240	021	-0.456	0.107	2.7	1.1	1.6	1.1	A+	į.
2747	661852	3	3	458	.662	.094	.662	.105	.133	.007	.597	382	.597	283	211	-1.409	0.111	-3.7	0.8	-2.3	8.0	B-	
2748	684157	3	3	458	.400	.400	.310	.129	.153	.009	.190	.190	116	075	007	-0.016	0.109	6.8	1.3	6.3	1.6	A+	
2749	683695	3	3	458	.463	.463	.046	.463	.020	.009	.518	336	297	.518	132	-0.353	0.107	-1.6	0.9	-1.2	0.9	A+	1
2750	679648	3	3	458	.579	.579	.120	.079	.212	.011	.584	.584	152	299	362	-0.957	0.107	-3.5	0.9	-2.9	8.0	A+	
2751	679395	3	3	458	.448	.162	.127	.249	.448	.015	.565	443	168	110	.565	-0.273	0.107	-3.2	0.9	-2.5	8.0	A+	
2752	661764	3	3	458	.699	.699	.124	.096	.066	.015	.447	.447	281	184	177	-1.625	0.114	0.3	1.0	-0.7	0.9	A+	
2753	681710	3	3	458	.793	.103	.055	.035	.793	.015	.520	353	284	169	.520	-2.245	0.127	-2.0	0.9	-1.6	8.0	A-	
2754	680001	3	3	458	.659	.041	.659	.105	.183	.011	.435	232	.435	238	194	-1.397	0.111	0.6	1.0	1.4	1.1	A+	
2755	678954	3	3	458	.873	.055	.031	.873	.026	.015	.379	216	241	.379	125	-2.951	0.152	0.2	1.0	-1.2	0.8	A-	
2756	677712	3	3	460	.513	.070	.280	.513	.137	.000	.354	088	182	.354	212	-0.993	0.104	2.4	1.1	1.6	1.1	A+	
2757	683800	3	3	460	.367	.224	.174	.367	.233	.002	.396	061	180	.396	226	-0.253	0.108	0.6	1.0	1.1	1.1	A-	
2758	679473	3	3	460	.550	.124	.165	.550	.161	.000	.544	242	181	.544	337	-1.178	0.104	-2.9	0.9	-3.1	0.8	A-	
2759	683792	3	3	460	.344	.274	.343	.143	.239	.000	.025	048	.025	.025	.002	-0.124	0.109	8.4	1.4	7.6	1.7	B-	
2760	684153	3	3	460	.311	.148	.370	.311	.167	.004	.152	060	061	.152	051	0.058	0.112	4.9	1.3	5.5	1.6	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade										. ,				-	in	in	out	out	/F	/B
2761	679654	3	3	460	.313	.313	.120	.461	.107	.000	.320	.320	115	070	246	0.046	0.111	1.5	1.1	2.5	1.2	A-	
2762	679470	3	3	460	.520	.272	.096	.520	.113	.000	.454	228	197	.454	212	-1.026	0.104	-0.3	1.0	0.4	1.0	A-	
2763	662159	3	3	460	.361	.491	.096	.361	.052	.000	.418	271	133	.418	118	-0.219	0.108	-0.2	1.0	0.8	1.1	A+	
2764	661851	3	3	460	.657	.657	.246	.063	.035	.000	.460	.460	381	121	137	-1.730	0.109	-0.8	1.0	-0.9	0.9	A-	
2765	684158	3	3	460	.504	.226	.174	.096	.504	.000	.440	168	231	211	.440	-0.950	0.104	0.1	1.0	0.2	1.0	A+	igsquare
2766	681714	3	3	460	.496	.496	.067	.141	.296	.000	.405	.405	143	168	237	-0.907	0.104	1.0	1.0	0.6	1.0	A-	igsquare
2767	683686	3	3	460	.478	.133	.478	.089	.298	.002	.447	033	.447	127	379	-0.820	0.104	-0.2	1.0	-0.4	1.0	A+	
2768	679651	3	3	460	.509	.228	.509	.150	.107	.007	.444	277	.444	205	073	-0.972	0.104	-0.1	1.0	0.4	1.0	A+	
2769	680002	3	3	460	.596	.187	.111	.596	.100	.007	.522	352	170	.522	185	-1.409	0.106	-2.2	0.9	-1.3	0.9	A-	ldot
2770	679647	3	3	460	.707	.122	.085	.080	.707	.007	.559	240	260	346	.559	-2.012	0.113	-3.3	8.0	-2.8	8.0	A+	
2771	679396	3	3	460	.291	.176	.052	.291	.470	.011	.223	242	043	.223	.025	0.172	0.114	3.0	1.2	4.3	1.5	A-	ldot
2772	661863	3	3	460	.657	.109	.657	.080	.139	.015	.613	191	.613	204	465	-1.730	0.109	-4.8	8.0	-3.8	0.7	A+	
2773	683687	3	3	460	.750	.104	.750	.030	.102	.013	.508	262	.508	228	280	-2.277	0.118	-2.1	0.9	-1.9	0.8	A+	
2774	681709	3	3	460	.774	.107	.052	.774	.052	.015	.531	357	253	.531	162	-2.435	0.122	-2.7	0.8	-2.5	0.7	A+	
2775	678955	3	3	460	.767	.074	.767	.037	.107	.015	.529	134	.529	161	449	-2.391	0.121	-2.7	0.8	-2.1	0.8	A-	
2776	679800	3	3	473	.478	.478	.087	.030	.404	.002	.242	.242	166	.014	158	-0.717	0.104	5.9	1.3	5.1	1.4	A-	A+
2777	661862	3	3	473	.679	.023	.076	.679	.222	.000	.498	132	083	.498	459	-1.784	0.110	-1.1	0.9	-1.0	0.9	A+	A-
2778	679807	3	3	936	.834	.075	.834	.046	.033	.012	.457	271	.457	234	177	-2.835	0.095	-1.7	0.9	-2.0	0.8	A-	A+
2779	679389	3	3	473	.355	.347	.355	.063	.233	.002	.246	091	.246	143	084	-0.068	0.108	4.6	1.2	4.8	1.4	A+	A-
2780	679802	3	3	473	.493	.072	.129	.493	.304	.002	.386	163	197	.386	186	-0.793	0.104	1.7	1.1	1.9	1.1	A-	A+
2781	662157	3	3	473	.820	.049	.078	.053	.820	.000	.401	212	256	178	.401	-2.730	0.131	0.0	1.0	-0.5	0.9	B+	A-
2782	683688	3	3	473	.918	.019	.044	.918	.015	.004	.324	085	307	.324	046	-3.756	0.176	-0.3	1.0	-0.6	8.0	C-	A-
2783	679803	3	3	473	.651	.125	.651	.104	.112	.008	.549	220	.549	171	383	-1.628	0.108	-2.4	0.9	-2.0	8.0	A-	A+
2784	679998	3	3	936	.540	.245	.118	.540	.092	.006	.492	267	209	.492	192	-1.071	0.073	-2.1	0.9	-1.9	0.9	A+	A+
2785	683795	3	3	473	.670	.670	.235	.025	.057	.013	.511	.511	330	211	190	-1.735	0.110	-1.4	0.9	-1.0	0.9	A-	A-
2786	661760	3	3	473	.630	.630	.078	.066	.207	.019	.418	.418	270	198	125	-1.512	0.107	1.1	1.1	0.6	1.1	A+	B+
2787	683806	3	3	473	.503	.068	.281	.503	.127	.021	.518	235	208	.518	225	-0.847	0.104	-1.9	0.9	-1.9	0.9	B-	A-
2788	683790	3	3	473	.924	.924	.027	.023	.004	.021	.322	.322	130	153	085	-3.853	0.182	-0.3	1.0	-0.1	1.0	A-	A+
2789	683934	3	3	473	.848	.030	.057	.044	.848	.021	.462	143	240	246	.462	-2.965	0.139	-1.1	0.9	-1.8	0.7	A-	A-
2790	679586	3	3	473	.660	.156	.660	.074	.089	.021	.631	357	.631	236	253	-1.676	0.109	-4.7	8.0	-4.0	0.7	A+	A-
2791	678953	3	3	473	.738	.133	.738	.066	.042	.021	.495	348	.495	125	165	-2.142	0.116	-1.2	0.9	-1.5	0.8	A+	C-
2792	679645	3	3	473	.290	.351	.290	.307	.032	.021	.404	195	.404	083	094	0.312	0.114	-0.6	1.0	1.0	1.1	B-	A-
2793	661864	3	3	462	.509	.067	.509	.193	.232	.000	.410	246	.410	283	076	-0.634	0.105	1.2	1.1	2.0	1.1	A-	
2794	661166	3	3	462	.587	.058	.281	.587	.074	.000	.526	158	369	.526	215	-1.033	0.106	-2.2	0.9	-1.3	0.9	A-	
2795	683681	3	3	462	.870	.032	.017	.080	.870	.000	.293	067	123	260	.293	-2.897	0.148	0.3	1.0	1.2	1.3	C+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
0=00		Grade	Grade			. ,											0.400	in	in	out	out	/F	/B
2796	683674	3	3	462	.178	.121	.177	.262	.439	.000	.194	038	.194	.278	371	1.379	0.138	2.6	1.2	4.0	1.8	Α-	
2797	679737	3	3	462	.868	.061	.868	.041	.028	.002	.421	266	.421	239	189	-2.876	0.147	-1.0	0.9	-1.3	0.8	A+	-
2798	683669	3	3	462	.723	.097	.045	.723	.134	.000	.454	239	176	.454	281	-1.787	0.115	-0.7	1.0	-0.6	0.9	A-	-
2799	678949	3	3	462	.926	.926	.017	.052	.002	.002	.260	.260	123	214	075	-3.603	0.187	0.1	1.0	-0.4	0.9	B+	—
2800	679593	3	3	462	.775	.097	.061	.775	.067	.000	.442	275	223	.442	199	-2.121	0.122	-0.7	1.0	-1.0	0.9	A+	—
2801	679542	3	3	462	.768	.050	.768	.074	.106	.002	.523	231	.523	221	363	-2.077	0.121	-2.2	0.9	-1.9	0.8	A-	—
2802	679584	3	3	462	.422	.422	.472	.035	.071	.000	.396	.396	301	120	090	-0.188	0.107	0.7	1.0	1.9	1.1	A-	—
2803	661931	3	3	462	.390	.180	.390	.156	.271	.004	.305	171	.305	016	158	-0.015	0.108	3.1	1.2	3.5	1.3	A-	—
2804	683940	3	3	462	.844	.013	.117	.019	.844	.006	.358	184	253	100	.358	-2.653	0.138	0.0	1.0	0.4	1.1	B+	
2805	661867	3	3	462	.825	.104	.024	.037	.825	.011	.441	252	227	215	.441	-2.489	0.132	-0.8	0.9	-1.1	0.8	A+	
2806	661921	3	3	462	.794	.794	.050	.076	.067	.013	.445	.445	093	291	248	-2.258	0.125	-0.9	0.9	-0.8	0.9	A+	
2807	661761	3	3	462	.645	.082	.645	.052	.212	.009	.333	229	.333	214	078	-1.342	0.108	2.7	1.1	0.8	1.1	A-	
2808	679799	3	3	462	.286	.584	.052	.286	.067	.011	.286	067	210	.286	114	0.586	0.117	1.5	1.1	4.4	1.5	A+	
2809	679806	3	3	462	.745	.063	.745	.076	.104	.013	.549	219	.549	216	360	-1.921	0.117	-2.8	0.9	-2.5	0.8	A+	
2810	683802	3	3	462	.411	.130	.130	.310	.411	.019	.538	172	282	199	.538	-0.131	0.107	-2.8	0.9	-1.7	0.9	A-	l
2811	683796	3	3	462	.786	.069	.104	.026	.786	.015	.446	200	290	159	.446	-2.196	0.124	-1.1	0.9	0.0	1.0	B+	
2812	661163	3	3	462	.571	.110	.238	.065	.571	.015	.458	111	335	125	.458	-0.955	0.106	-0.5	1.0	0.2	1.0	A-	
2813	683668	3	3	463	.492	.391	.039	.078	.492	.000	.394	286	231	049	.394	-0.803	0.105	1.7	1.1	2.3	1.2	A+	A-
2814	661858	3	3	463	.240	.048	.512	.199	.240	.002	.376	151	228	036	.376	0.610	0.121	0.0	1.0	0.3	1.0	A+	A+
2815	683791	3	3	463	.965	.026	.002	.006	.965	.000	.157	126	011	100	.157	-4.837	0.265	0.3	1.0	0.9	1.4	A-	B-
2816	683807	3	3	463	.708	.086	.045	.708	.160	.000	.472	201	185	.472	327	-1.977	0.115	-0.3	1.0	-0.7	0.9	A-	A-
2817	661856	3	3	463	.454	.266	.454	.179	.102	.000	.444	319	.444	102	136	-0.603	0.106	0.0	1.0	0.8	1.1	A-	A-
2818	683694	3	3	463	.786	.089	.069	.786	.056	.000	.420	199	325	.420	144	-2.495	0.126	0.4	1.0	-0.6	0.9	A+	A-
2819	683799	3	3	463	.492	.492	.151	.171	.184	.002	.339	.339	105	062	264	-0.803	0.105	3.1	1.1	3.6	1.3	A-	A+
2820	679547	3	3	463	.711	.201	.035	.050	.711	.004	.630	533	208	109	.630	-1.990	0.115	-4.1	0.8	-3.8	0.7	A-	A+
2821	661768	3	3	463	.499	.080	.104	.499	.311	.006	.379	173	266	.379	109	-0.836	0.105	2.0	1.1	2.5	1.2	A-	A-
2822	679585	3	3	463	.747	.035	.028	.747	.184	.006	.500	234	138	.500	354	-2.224	0.120	-1.1	0.9	-1.5	0.8	A-	B-
2823	679804	3	3	463	.752	.158	.063	.022	.752	.006	.533	403	164	199	.533	-2.253	0.120	-1.8	0.9	-1.8	0.8	A+	B-
2824	679801	3	3	463	.721	.721	.093	.119	.056	.011	.500	.500	250	187	305	-2.057	0.116	-1.1	0.9	-0.8	0.9	A-	A-
2825	679390	3	3	463	.909	.024	.013	.909	.043	.011	.298	101	035	.298	233	-3.692	0.174	0.0	1.0	1.1	1.3	A-	A+
2826	679548	3	3	463	.691	.216	.032	.052	.691	.009	.608	501	161	124	.608	-1.873	0.113	-3.6	0.8	-3.3	0.7	A-	A-
2827	661771	3	3	463	.555	.099	.166	.166	.555	.013	.422	279	114	178	.422	-1.125	0.106	1.4	1.1	1.2	1.1	A-	A+
2828	678952	3	3	463	.814	.814	.082	.035	.056	.013	.507	.507	288	306	186	-2.711	0.132	-1.5	0.9	-1.6	0.8	A-	A-
2829	683675	3	3	463	.415	.244	.263	.415	.058	.019	.334	187	137	.334	009	-0.401	0.106	2.8	1.1	2.5	1.2	A+	A+
2830	681712	3	3	463	.762	.762	.084	.076	.058	.019	.548	.548	210	300	312	-2.326	0.122	-2.0	0.9	-2.6	0.7	A+	Α-
_550				.00	02	52	.551	.0,0	.555	.010	.5 .0	.5 .0		.500		5_0	J.122		5.5		٥.,		

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
2831	679587	3	3	463	.797	.013	.147	.797	.022	.022	.611	084	542	.611	137	-2.576	0.128	-3.3	0.8	-3.5	0.6	A-	A+
2832	679549	3	3	463	.210	.076	.076	.210	.620	.019	.153	284	206	.153	.184	0.822	0.126	3.1	1.2	5.4	2.0	A+	A+
2833	680006	3	3	463	.696	.695	.190	.054	.060	.000	.397	.397	176	235	254	-1.908	0.110	-0.2	1.0	-0.2	1.0	A+	A+
2834	661933	3	3	463	.566	.052	.160	.566	.222	.000	.431	187	238	.431	204	-1.236	0.103	-0.3	1.0	-0.8	1.0	A-	A-
2835	678378	3	3	463	.676	.238	.676	.032	.054	.000	.328	170	.328	195	207	-1.801	0.108	1.5	1.1	1.2	1.1	A+	A+
2836	678957	3	3	463	.754	.114	.754	.078	.052	.002	.505	269	.505	257	278	-2.252	0.116	-2.3	0.9	-2.7	0.7	A+	A-
2837	679472	3	3	463	.626	.626	.022	.037	.315	.000	.507	.507	192	217	380	-1.539	0.105	-2.5	0.9	-2.2	0.9	A+	B-
2838	683673	3	3	463	.164	.222	.164	.130	.482	.002	.248	.011	.248	.133	282	1.048	0.135	0.6	1.1	2.6	1.4	B-	A-
2839	681718	3	3	463	.657	.067	.086	.657	.186	.004	.420	230	165	.420	222	-1.697	0.107	-0.4	1.0	-0.7	0.9	A+	A-
2840	680000	3	3	463	.888	.028	.888	.041	.039	.004	.389	132	.389	238	230	-3.327	0.154	-1.0	0.9	-1.5	0.7	A+	A-
2841	679798	3	3	463	.909	.043	.015	.909	.028	.004	.197	064	134	.197	108	-3.587	0.169	0.5	1.1	0.9	1.2	C+	A+
2842	679649	3	3	463	.389	.287	.389	.210	.106	.009	.302	089	.302	117	138	-0.360	0.105	2.6	1.1	2.3	1.2	A-	A-
2843	683691	3	3	463	.356	.356	.190	.322	.125	.006	.208	.208	132	.006	108	-0.191	0.107	4.3	1.2	4.4	1.3	A+	A-
2844	683789	3	3	463	.598	.093	.175	.123	.598	.011	.520	236	216	252	.520	-1.397	0.104	-2.9	0.9	-2.2	0.9	A+	A+
2845	661853	3	3	463	.382	.045	.184	.374	.382	.015	.268	142	083	093	.268	-0.327	0.106	3.7	1.2	3.2	1.2	A-	A+
2846	682588	3	3	463	.600	.600	.160	.073	.153	.013	.469	.469	223	159	235	-1.408	0.104	-1.5	0.9	-1.4	0.9	A+	A+
2847	661763	3	3	463	.436	.233	.436	.222	.089	.019	.469	275	.469	151	086	-0.600	0.104	-1.5	0.9	-1.4	0.9	A+	A-
2848	679652	3	3	463	.594	.594	.054	.244	.089	.019	.548	.548	170	342	190	-1.375	0.104	-3.6	0.9	-3.5	8.0	A-	A-
2849	661172	3	3	463	.672	.672	.022	.225	.063	.019	.464	.464	128	270	245	-1.777	0.108	-1.4	0.9	-1.8	0.9	A-	A+
2850	684155	3	3	463	.335	.121	.289	.335	.235	.019	.392	188	126	.392	092	-0.075	0.109	-0.2	1.0	1.2	1.1	A+	A-
2851	682415	4	4	515	.581	.091	.581	.208	.120	.000	.457	164	.457	332	134	-1.285	0.099	-0.8	1.0	-1.5	0.9	A-	
2852	661635	4	4	515	.588	.146	.085	.181	.588	.000	.366	180	178	174	.366	-1.324	0.099	1.6	1.1	1.7	1.1	A+	
2853	678097	4	4	515	.845	.052	.037	.066	.845	.000	.405	180	214	268	.405	-2.897	0.129	-0.9	0.9	-1.8	0.7	A+	
2854	678030	4	4	515	.237	.068	.237	.161	.534	.000	.176	095	.176	.007	107	0.555	0.114	2.6	1.2	5.6	1.7	A-	
2855	661389	4	4	515	.876	.050	.016	.054	.876	.004	.416	222	152	313	.416	-3.186	0.140	-1.2	0.9	-2.2	0.6	A+	
2856	677932	4	4	515	.610	.184	.087	.610	.117	.002	.422	198	345	.422	099	-1.433	0.100	-0.1	1.0	0.2	1.0	A+	
2857	661697	4	4	515	.575	.128	.134	.575	.163	.000	.368	125	140	.368	250	-1.256	0.099	1.6	1.1	1.2	1.1	A+	
2858	682428	4	4	515	.606	.097	.606	.231	.064	.002	.411	254	.411	150	235	-1.413	0.099	0.2	1.0	1.2	1.1	B+	
2859	661147	4	4	515	.590	.250	.087	.590	.070	.002	.445	288	139	.445	194	-1.334	0.099	-0.6	1.0	-0.7	1.0	A-	
2860	683963	4	4	1512	.767	.063	.113	.053	.767	.003	.419	178	242	231	.419	-2.308	0.066	-1.6	1.0	-1.6	0.9	A+	A-
2861	661644	4	4	515	.406	.406	.307	.080	.206	.002	.344	.344	161	198	089	-0.414	0.100	2.2	1.1	2.1	1.1	A-	
2862	681013	4	4	515	.761	.068	.761	.080	.087	.004	.432	098	.432	266	284	-2.284	0.112	-1.1	0.9	-1.3	0.9	A+	
2863	661639	4	4	515	.652	.231	.074	.652	.039	.004	.484	233	320	.484	214	-1.655	0.102	-2.0	0.9	-0.6	1.0	A+	
2864	683651	4	4	1012	.203	.280	.219	.292	.203	.007	.255	077	004	121	.255	0.828	0.087	1.3	1.1	5.4	1.5	A-	
2865	678028	4	4	515	.303	.324	.303	.070	.297	.006	.119	104	.119	.004	.007	0.143	0.106	5.5	1.3	6.8	1.6	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2000	6646=0	Grade	Grade													1 00-	0.000	in	in	out	out	/F	/B
2866	661679	4	4	515	.528	.212	.528	.130	.122	.008	.594	273	.594	249	285	-1.025	0.098	-5.2	0.8	-4.5	8.0	Α-	\vdash
2867	677698	4	4	515	.786	.786	.047	.045	.115	.008	.359	.359	087	169	265	-2.452	0.116	-0.2	1.0	-0.3	1.0	Α-	\vdash
2868	661383	4	4	515	.276	.272	.398	.276	.041	.014	.389	104	170	.389	179	0.306	0.109	-0.2	1.0	1.0	1.1	A-	\vdash
2869	682617	4	4	515	.687	.111	.687	.155	.035	.012	.494	278	.494	278	176	-1.845	0.104	-2.0	0.9	-2.4	0.8	A-	
2870	683944	4	4	515	.687	.037	.204	.060	.687	.012	.574	200	465	135	.574	-1.845	0.104	-4.2	8.0	-3.7	0.7	A+	\sqcup
2871	682443	4	4	512	.354	.256	.129	.258	.354	.004	.323	121	288	020	.323	0.663	0.105	2.2	1.1	5.3	1.5	A-	A+
2872	682292	4	4	512	.965	.002	.012	.021	.965	.000	.261	091	209	149	.261	-4.154	0.251	-0.2	1.0	0.6	1.2	A-	A-
2873	682391	4	4	512	.807	.021	.111	.059	.807	.002	.449	270	253	236	.449	-1.960	0.125	-0.2	1.0	-0.7	0.9	A-	A-
2874	677700	4	4	512	.549	.172	.549	.150	.127	.002	.403	164	.403	083	311	-0.378	0.101	2.2	1.1	2.1	1.2	A+	A+
2875	682848	4	4	512	.775	.031	.127	.063	.775	.004	.454	244	265	199	.454	-1.723	0.119	-0.2	1.0	-0.4	1.0	A-	A+
2876	661158	4	4	512	.791	.053	.139	.791	.016	.002	.569	254	464	.569	097	-1.838	0.122	-2.4	8.0	-2.9	0.7	A-	A-
2877	683980	4	4	512	.381	.092	.342	.381	.186	.000	.420	291	247	.420	007	0.510	0.104	0.3	1.0	1.9	1.2	A+	A+
2878	661388	4	4	512	.418	.418	.066	.084	.430	.002	.433	.433	219	372	103	0.309	0.102	0.8	1.0	1.5	1.1	A-	A+
2879	678022	4	4	512	.848	.848	.055	.041	.055	.002	.529	.529	290	208	343	-2.316	0.136	-2.0	0.8	-2.2	0.7	A+	A-
2880	682844	4	4	512	.500	.289	.139	.500	.064	.008	.320	149	169	.320	095	-0.123	0.101	5.3	1.2	4.3	1.3	A+	A-
2881	677027	4	4	512	.449	.236	.117	.449	.189	.008	.500	267	270	.500	091	0.143	0.101	-1.6	0.9	-0.6	1.0	A-	A+
2882	676954	4	4	512	.549	.549	.146	.076	.221	.008	.469	.469	309	203	138	-0.378	0.101	0.3	1.0	1.0	1.1	A+	A-
2883	682441	4	4	512	.586	.586	.107	.240	.057	.010	.449	.449	212	284	087	-0.576	0.102	0.8	1.0	1.5	1.1	A-	A+
2884	677507	4	4	512	.260	.301	.230	.195	.260	.014	.307	.063	167	200	.307	1.233	0.114	2.7	1.2	3.3	1.4	A-	A-
2885	678104	4	4	512	.682	.682	.023	.123	.160	.012	.469	.469	146	255	268	-1.113	0.108	0.2	1.0	-0.1	1.0	A-	B-
2886	661672	4	4	512	.531	.201	.209	.047	.531	.012	.485	317	145	197	.485	-0.286	0.101	-0.3	1.0	-0.2	1.0	B+	A+
2887	676950	4	4	512	.938	.938	.031	.014	.006	.012	.332	.332	217	202	057	-3.484	0.195	0.0	1.0	-1.2	0.7	A-	A-
2888	661669	4	4	512	.318	.137	.318	.447	.080	.018	.351	.004	.351	222	137	0.867	0.108	1.3	1.1	4.8	1.5	A-	B+
2889	678101	4	4	512	.738	.047	.145	.738	.055	.016	.505	108	330	.505	269	-1.466	0.114	-1.0	0.9	-1.1	0.9	A-	B-
2890	682449	4	4	512	.856	.049	.045	.037	.855	.014	.504	338	227	216	.504	-2.391	0.139	-1.5	0.9	-1.4	0.8	A+	A-
2891	682457	4	4	507	.420	.327	.193	.420	.059	.000	.382	195	164	.382	138	-0.043	0.103	2.6	1.1	2.8	1.2	A+	A+
2892	661643	4	4	507	.533	.296	.533	.144	.028	.000	.338	411	.338	.054	.001	-0.638	0.102	4.2	1.2	3.2	1.2	A-	A+
2893	682851	4	4	507	.864	.073	.864	.047	.016	.000	.337	206	.337	221	120	-2.786	0.140	0.4	1.0	0.4	1.1	A+	B-
2894	678106	4	4	507	.779	.108	.779	.043	.067	.002	.409	199	.409	192	258	-2.080	0.119	0.5	1.0	0.5	1.1	A-	A+
2895	677696	4	4	507	.888	.077	.006	.028	.888	.002	.458	348	166	236	.458	-3.039	0.151	-1.2	0.9	-2.2	0.6	A+	A-
2896	683967	4	4	507	.773	.047	.114	.065	.773	.000	.489	240	322	208	.489	-2.038	0.118	-1.0	0.9	-1.9	0.8	A-	A-
2897	661703	4	4	507	.789	.073	.071	.067	.789	.000	.558	255	344	292	.558	-2.152	0.120	-2.9	0.8	-1.6	0.8	A+	A+
2898	677941	4	4	507	.888	.012	.077	.888	.020	.004	.349	155	208	.349	231	-3.039	0.151	-0.3	1.0	1.1	1.2	A+	B-
2899	661636	4	4	507	.657	.657	.077	.187	.077	.002	.432	.432	231	197	232	-1.311	0.106	1.0	1.1	0.2	1.0	A-	A+
2900	677029	4	4	507	.566	.160	.140	.566	.132	.002	.495	141	253	.495	298	-0.815	0.102	-0.6	1.0	-0.6	1.0	A-	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2001	677022	Grade	Grade	F07	200			107	F0C		400					0.725	0.112	in	in	out	out	/F	/B
2901	677023	4	4	507 507	.324	.008	.286 .124	.107	.596 .108	.004	.408	079	.408	219	210	0.735	0.112 0.109	0.1	1.0	2.0	1.2	A-	A+
2902 2903	677465 682288	4	4	507	.533	.440	.533	.162	.108	.004	.218	.048	234 .280	.218	127 233	0.503 -0.638	0.109	5.5 5.9	1.3	6.1 5.1	1.7	B+	Α+
2903	683972	4	4	507	.333	.146		.205	.371	.004	.473	013	266	116	233 .473	0.229	0.102	-1.3	0.9	0.3		A-	A+
2904	677939	4	4	1015	.969	.011	.221	.001	.008	.008	.218	079	.218	191	076	-4.617	0.105	-0.2	1.0	-0.6	0.8	A- A+	A- A-
2905	678100	4	4	507	.391	.280	.142	.179	.391	.012	.520	083	296	073	.520	0.119	0.104	-0.2	0.9	-1.5	0.8	B-	A- A-
2907		4	4	507	.663		.108		.663		.523		339	218	.523		0.104	-2.1	0.9	-1.7	0.9		_
2907	661638 661149	4	4	507	.809	.089	.809	.132	.012	.008	.409	194 238	.409	218	146	-1.345 -2.301	0.106	0.0	1.0	0.7	1.1	A-	A- A+
2908	683975	4	4	507	.795	.795	.099	.049	.012		.470	.470	290	244	174	-2.301	0.124	-1.1	0.9	-0.7	0.9	A-	
			4	507						.008							_					Α-	Α-
2910 2911	661677 661700	4	4	507	.669 .918	.669 .028	.065	.219	.039	.008	.593	.593	298 079	386 011	172	-1.379 -3.588	0.107 0.167	-3.5 0.7	0.8	-3.1 1.3	0.8 1.3	A+	A+
2911	682439	4	4	509	.918		.976	.000	.014		.090	149	.090	.000	.144 079	-3.588 -4.971	0.167	0.7	1.1	0.3		A-	\vdash
2912	682850	4	4	509	.817	.010	.817	.128	.014	.000	.292	046 228	.090		079	-4.971	0.296	0.2	1.0	0.3	1.1	A-	$\vdash \vdash \vdash$
2913	682289	4	4	509	.817	.029	.817	.163	.356	.006	.314	228	175	160 137	.314	-2.583	0.122	2.2	1.0	2.0	1.1	A- A+	$\vdash \vdash \vdash$
		-	4														0.103						\vdash
2915	677936	4	4	509 509	.540	.269	.100	.540	.088	.002	.428 .475	195	206 258	.428 234	210	-1.010		-0.2	1.0	-0.8	0.9	A-	$\vdash \vdash$
2916	681011	4	4	509	.646	.100	.151	.100		.002		212			.475	-1.542	0.101	-2.0	0.9	-1.6		Α-	\vdash
2917	677940	4	4	509	.808	.045	.807	.094	.049	.004	.353	180	.353	216	160	-2.510	0.120	-0.3 -0.5	1.0	-0.3	1.0	A+	\vdash
2918	677510	4	4	509	.595 .434	.063	.238	.595	.100	.004	.430 .477	237	246	.430	132 274	-1.282	0.099		1.0	0.3 -0.9	1.0	A+	$\vdash \vdash$
2919	677022	4	·			.118	.098	.434		.006		051	266	.477	1	-0.488		-1.4	1.0		1.0	A+	$\vdash \vdash$
2920	661704	4	4	509 509	.474 .371	.473 .151	.196	.189	.136	.006	.433	.433 247	275 227	147 .306	118	-0.683	0.098	-0.5 3.0	1.0	-0.5 3.0	1.0	A+	$\vdash \vdash \vdash$
2921	661379	•	•				.230			.004					.103	-0.165			1.1			Α-	\vdash
2922	661150	4	4	509	.843	.843	.061	.065	.024	.008	.447	.447	228	250	218	-2.787	0.129	-1.5	0.9	-2.1	0.7	A+	\vdash
2923	678099	4	4 4	509 509	.358	.143	.108	.358	.381	.010	.352 .436	285	142	.352	020	-0.092	0.103	1.6	1.1	1.5 0.2	1.1	A-	\vdash
2924	682304	•	•		.383	.477	.383	.081	.049	.010		284	.436	130	091	-0.227	0.101	-0.3	1.0		1.0	Α-	\vdash
2925	677026	4	4	509	.682	.151	.682	.090	.063	.014	.514	284	.514	249	203	-1.731	0.103	-2.9	0.9	-2.7	0.8	A+	\vdash
2926	681003	4	4	509	.745	.086	.124	.745	.028	.018	.354	198	166	.354	129	-2.092	0.110	0.3	1.0	1.0	1.1	Α-	$\vdash \vdash$
2927	661676	4	4	509	.550	.161	.100	.550	.173	.016	.451	202	225	.451	169	-1.058	0.098	-0.9	1.0	-1.1	0.9	A+	$\vdash \vdash$
2928	661642	4		509	.707	.057	.707	.083	.138	.016	.418	189	.418	153	249	-1.873	0.106	-0.9	1.0	-0.3	1.0	A+	$\vdash \vdash \vdash$
2929	661645	4	4	509	.611	.230	.611	.073	.069	.018	.431	270	.431	202	099	-1.361	0.100	-0.6	1.0	-1.1	0.9	A+	
2930	678105	4	4	513	.450	.450	.277	.138	.133	.002	.376	.376	194	091	209	-0.190	0.100	1.9	1.1	2.6	1.2	A+	A-
2931	677937	4	4	513	.714	.058	.135	.090	.713	.004	.541	198	328	288	.541	-1.589	0.109	-2.6	0.9	-1.8	0.8	A+	B+
2932	677702	4	4	513	.499	.082	.127	.499	.292	.000	.420	103	321	.420	166	-0.438	0.099	1.0	1.0	0.2	1.0	A-	A+
2933	663176	4	4	513	.483	.483	.242	.193	.078	.004	.328	.328	156	119	148	-0.359	0.100	3.8	1.2	3.5	1.2	A+	Α-
2934	661634	4	4	513	.415	.339	.090	.154	.415	.002	.442	134	185	266	.442	-0.008	0.101	0.2	1.0	0.2	1.0	A+	A+
2935	661855	4	4	513	.671	.671	.076	.105	.146	.002	.626	.626	187	314	403	-1.339	0.105	-5.1	0.8	-3.2	0.8	A+	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D/A)	D/D\	D(C)	D/D/	D/ \	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Mone	MSE	Z-	MS-	Z-	MS-	М	W
Kei	IU	Grade	Grade	IN	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PI(B)	PI(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
2936	677513	4	4	513	.271	.212	.261	.271	.250	.006	.361	.049	383	.361	015	0.808	0.111	0.5	1.0	2.1	1.2	A-	A-
2937	682614	4	4	513	.222	.411	.187	.222	.177	.002	.402	243	139	.402	.023	1.135	0.118	-1.2	0.9	1.4	1.2	A-	A-
2938	661152	4	4	513	.626	.263	.626	.082	.029	.000	.414	272	.414	138	254	-1.093	0.102	1.0	1.0	1.2	1.1	B-	C-
2939	683961	4	4	513	.704	.704	.070	.127	.094	.006	.389	.389	195	308	045	-1.530	0.108	0.9	1.0	1.5	1.1	A-	B+
2940	678025	4	4	513	.710	.088	.080	.710	.115	.008	.555	247	210	.555	355	-1.565	0.108	-2.8	0.9	-2.9	0.7	A+	A-
2941	683965	4	4	513	.883	.072	.883	.031	.010	.004	.473	333	.473	249	145	-2.914	0.148	-1.4	0.9	-2.4	0.6	A+	C-
2942	677697	4	4	513	.544	.214	.544	.144	.094	.004	.299	123	.299	146	133	-0.666	0.100	4.4	1.2	3.5	1.2	A+	B+
2943	677934	4	4	513	.538	.538	.168	.203	.080	.012	.402	.402	341	117	054	-0.636	0.100	1.7	1.1	0.9	1.1	A+	A-
2944	677938	4	4	513	.778	.076	.778	.023	.119	.004	.408	181	.408	116	296	-2.006	0.117	-0.1	1.0	0.0	1.0	A-	B+
2945	661675	4	4	513	.743	.115	.078	.743	.058	.006	.461	151	348	.461	214	-1.771	0.112	-0.9	1.0	-0.4	1.0	A+	A-
2946	676947	4	4	513	.836	.023	.066	.836	.070	.004	.375	280	160	.375	189	-2.458	0.130	-0.1	1.0	0.6	1.1	A+	B-
2947	661646	4	4	513	.694	.694	.117	.144	.037	.008	.492	.492	282	218	259	-1.473	0.107	-1.3	0.9	-1.3	0.9	A+	B-
2948	682623	4	4	513	.402	.279	.402	.105	.207	.008	.302	.028	.302	194	225	0.063	0.101	3.8	1.2	4.3	1.3	A-	A+
2949	682431	4	4	513	.296	.296	.121	.495	.078	.010	.188	.188	322	.155	176	0.652	0.108	4.3	1.2	6.0	1.7	A+	A+
2950	683950	4	4	508	.303	.490	.303	.144	.063	.000	.386	301	.386	025	074	0.320	0.108	0.6	1.0	1.2	1.1	A-	
2951	661701	4	4	508	.528	.528	.081	.161	.228	.002	.471	.471	036	197	350	-0.865	0.100	-0.6	1.0	-0.1	1.0	A+	
2952	683978	4	4	508	.329	.236	.163	.272	.329	.000	.277	061	253	023	.277	0.173	0.106	3.8	1.2	4.5	1.4	A+	
2953	682287	4	4	508	.472	.189	.185	.472	.154	.000	.485	228	234	.485	173	-0.586	0.100	-1.1	1.0	-0.9	1.0	B+	
2954	677701	4	4	508	.114	.114	.091	.636	.159	.000	.182	.182	200	.214	282	1.778	0.149	0.9	1.1	3.0	1.7	A+	
2955	661156	4	4	508	.813	.055	.813	.045	.085	.002	.480	165	.480	185	379	-2.529	0.123	-1.7	0.9	-2.3	0.7	A+	
2956	682845	4	4	508	.506	.506	.112	.093	.287	.002	.365	.365	130	312	101	-0.755	0.100	2.4	1.1	2.1	1.1	A+	
2957	661387	4	4	508	.671	.087	.671	.081	.156	.006	.511	232	.511	302	226	-1.618	0.105	-1.9	0.9	-2.4	8.0	A-	
2958	682392	4	4	508	.593	.264	.114	.026	.593	.004	.478	218	331	148	.478	-1.196	0.101	-0.9	1.0	-0.6	1.0	A +	
2959	661694	4	4	508	.467	.203	.177	.144	.467	.010	.450	209	213	121	.450	-0.556	0.100	0.0	1.0	0.1	1.0	A+	
2960	677505	4	4	508	.358	.100	.112	.358	.419	.010	.224	167	249	.224	.078	0.009	0.104	4.7	1.2	5.0	1.4	A-	
2961	677025	4	4	508	.695	.195	.073	.695	.030	.008	.575	382	249	.575	199	-1.752	0.107	-3.6	0.8	-3.4	0.7	A-	
2962	681002	4	4	508	.799	.799	.055	.045	.093	.008	.440	.440	225	138	280	-2.425	0.121	-0.9	0.9	-1.5	0.8	B-	
2963	681010	4	4	508	.400	.366	.126	.098	.400	.010	.476	176	197	228	.476	-0.212	0.102	-1.2	1.0	0.3	1.0	A+	
2964	677509	4	4	508	.793	.014	.144	.793	.035	.014	.458	160	331	.458	174	-2.382	0.119	-1.2	0.9	-1.6	0.8	A-	
2965	682284	4	4	508	.445	.126	.343	.445	.073	.014	.492	103	314	.492	164	-0.446	0.100	-1.7	0.9	-0.7	1.0	A-	
2966	661680	4	4	508	.321	.213	.354	.321	.096	.016	.232	106	.064	.232	257	0.217	0.106	4.2	1.2	4.4	1.4	A+	
2967	682413	4	4	508	.811	.053	.043	.811	.075	.018	.442	184	244	.442	235	-2.514	0.123	-1.1	0.9	-1.5	0.8	A-	
2968	661382	4	4	508	.335	.213	.118	.335	.319	.016	.283	324	137	.283	.135	0.139	0.105	3.5	1.2	3.0	1.3	A+	
2969	677474	4	4	507	.556	.136	.235	.556	.071	.002	.266	177	117	.266	076	-1.173	0.100	4.9	1.2	3.1	1.2	A-	
2970	682440	4	4	507	.708	.103	.079	.708	.110	.000	.426	225	235	.426	197	-1.984	0.107	-0.4	1.0	-0.5	1.0	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2074	CC1151	Grade	Grade	1001	0.42			000	000		427					2.004	0.002	in	in	out	out	/F	/B
2971	661154	4	4	1004	.843	.843	.032	.060	.063	.003	.427	.427	162	184	325	-2.891	0.093	-1.7	0.9	-2.1	0.8	Α+	
2972	682450	4	4	1004 507	.914	.038	.032	.914	.016	.000	.336	271 225	164	.336	108	-3.663	0.118	-0.6	1.0	-1.9	0.7	Α+	
2973	682849	4	4		.227	.649	.091	.227	.034	.000	.390		141		085	0.647	0.118	-0.3	1.0	2.1	1.3	A+	
2974 2975	682389 677935	4	4	1004 507	.933 .491	.013	.040	.933	.008	.006	.318 .510	152 265	190 226	.318	142 .510	-3.957 -0.846	0.131	-0.8 -2.2	0.9	1.3 -1.8	1.3 0.9	B+	
		•	4	507			.249			.006									0.9	-1.8		Α-	
2976	683539	4			.740	.081	.071	.740	.107	.002	.427	194	255	.427	210	-2.174	0.111	-0.5	1.0		0.9	A+	
2977	661159	4	4	1004	.617	.617	.069	.078	.235	.002	.527	.527	186	312	286	-1.459	0.072	-3.9	0.9	-3.4	0.8	A-	
2978	676946	4	4	507	.452	.063	.087	.389	.452	.010	.512	136	219	315	.512	-0.648	0.100	-2.1	0.9	-1.4	0.9	B-	
2979	677514	4	4	507	.180	.400	.247	.179	.166	.008	.136	004	102	.136	.021	1.010	0.128	3.0	1.3	4.6	1.8	Α-	
2980	676953	4	4	507	.359	.114	.209	.310	.359	.008	.298	008	157	132	.298	-0.162	0.104	2.9	1.1	3.4	1.3	A-	
2981	661673	4	4	507	.716	.069	.716	.075	.132	.008	.554	225	.554	204	363	-2.030	0.108	-3.3	0.8	-3.2	0.7	Α-	
2982	677468	4	4	507	.819	.024	.128	.024	.819	.006	.313	077	221	141	.313	-2.718	0.124	0.6	1.0	0.3	1.0	A-	
2983	683974	4	4	507	.702	.189	.069	.702	.034	.006	.456	174	326	.456	247	-1.950	0.107	-1.4	0.9	1.0	1.1	B+	
2984	682847	4	4	507	.661	.179	.091	.661	.063	.006	.510	258	305	.510	170	-1.717	0.104	-2.2	0.9	-2.4	0.8	A-	
2985	676949	4	4	507	.566	.566	.083	.071	.274	.006	.376	.376	189	172	172	-1.223	0.100	2.0	1.1	1.1	1.1	A-	
2986	678027	4	4	507	.706	.138	.105	.706	.045	.006	.530	285	339	.530	124	-1.973	0.107	-2.7	0.9	-2.6	0.8	A-	
2987	682442	4	4	507	.225	.243	.225	.335	.187	.010	.142	046	.142	.092	175	0.661	0.119	4.1	1.3	5.3	1.7	A-	
2988	682394	4	4	507	.525	.525	.071	.045	.353	.006	.544	.544	324	247	259	-1.015	0.099	-3.1	0.9	-0.5	1.0	A+	
2989	682846	4	6	491	.654	.090	.132	.124	.654	.000	.396	044	310	214	.396	-1.160	0.105	0.8	1.0	0.7	1.1	A-	A+
2990	682305	4	4	491	.729	.055	.079	.729	.136	.000	.386	172	231	.386	203	-1.591	0.111	0.4	1.0	0.3	1.0	A-	A-
2991	683968	4	4	491	.611	.022	.088	.277	.611	.002	.444	187	076	371	.444	-0.933	0.103	-0.1	1.0	-0.4	1.0	A-	A-
2992	681004	4	4	491	.515	.130	.244	.515	.108	.002	.447	209	120	.447	322	-0.445	0.101	0.1	1.0	0.3	1.0	B+	A-
2993	677467	4	4	491	.583	.238	.582	.081	.096	.002	.440	265	.440	232	139	-0.786	0.102	0.2	1.0	-0.5	1.0	A+	A+
2994	661155	4	4	491	.855	.049	.055	.041	.855	.000	.346	302	095	177	.346	-2.509	0.137	-0.4	1.0	1.5	1.3	A-	B-
2995	661699	4	4	989	.382	.173	.288	.382	.156	.001	.251	090	217	.251	.026	0.223	0.074	7.3	1.3	7.6	1.5	A-	A-
2996	661633	4	4	491	.426	.155	.189	.226	.426	.004	.562	218	236	236	.562	0.012	0.103	-3.5	0.9	-2.7	0.8	B+	B+
2997	682283	4	4	491	.733	.733	.071	.096	.094	.006	.439	.439	228	246	194	-1.616	0.112	-0.7	1.0	-0.7	0.9	A-	B-
2998	661695	4	4	491	.444	.143	.444	.165	.236	.012	.367	167	.367	180	098	-0.083	0.102	2.2	1.1	1.7	1.1	B-	A+
2999	661641	4	4	491	.187	.348	.145	.187	.310	.010	.234	.027	008	.234	184	1.478	0.128	2.0	1.2	3.2	1.5	A+	A+
3000	677506	4	4	491	.593	.057	.593	.293	.045	.012	.374	169	.374	207	151	-0.838	0.103	1.9	1.1	2.8	1.2	A+	A-
3001	682301	4	4	491	.454	.265	.454	.128	.141	.012	.328	041	.328	281	092	-0.135	0.102	3.2	1.1	3.4	1.2	A+	A+
3002	682285	4	4	491	.566	.084	.566	.191	.141	.018	.536	293	.536	215	206	-0.702	0.102	-2.7	0.9	-1.9	0.9	A+	A-
3003	682286	4	4	989	.707	.707	.069	.048	.161	.016	.472	.472	194	198	272	-1.524	0.078	-0.8	1.0	-1.5	0.9	A-	A-
3004	677024	4	4	491	.674	.037	.210	.065	.674	.014	.552	215	381	160	.552	-1.272	0.106	-3.2	0.9	-2.7	0.8	A+	A-
3005	677469	4	4	491	.758	.110	.045	.073	.758	.014	.185	099	100	016	.185	-1.769	0.115	3.1	1.2	4.9	1.7	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2225	664604	Grade	Grade													0.500	0.400	in	in	out	out	/F	/B
3006	661681	4	4	491	.552	.552	.128	.145	.159	.016	.607	.607	255	221	317	-0.630	0.102	-4.9	0.8	-4.4	0.8	C-	A+
3007	683949	4	4	491	.462	.122	.462	.253	.147	.016	.475	195	.475	245	122	-0.176	0.102	-0.6	1.0	-0.4	1.0	Α-	A+
3008	661381	4	4	491	.330	.251	.206	.193	.330	.020	.421	161	093	162	.421	0.531	0.108	0.0	1.0	0.8	1.1	A-	A+
3009	683543	4	4	496	.845	.040	.845	.058	.054	.002	.487	218	.487	287	267	-2.631	0.137	-1.2	0.9	-0.8	0.9	A-	
3010	682427	4	4	496	.811	.081	.087	.810	.022	.000	.470	291	316	.470	108	-2.334	0.128	-0.5	1.0	-1.4	0.8	B-	
3011	661670	4	4	496	.496	.147	.496	.117	.240	.000	.480	112	.480	189	327	-0.412	0.105	-0.1	1.0	0.5	1.0	A-	
3012	678102	4	4	496	.710	.073	.710	.165	.052	.000	.474	159	.474	314	257	-1.623	0.113	0.2	1.0	-0.8	0.9	B-	igsquare
3013	682396	4	4	496	.879	.014	.095	.879	.010	.002	.532	160	487	.532	134	-2.978	0.150	-1.9	0.8	-2.2	0.6	A-	
3014	661157	4	4	496	.825	.109	.030	.036	.825	.000	.571	510	162	162	.571	-2.451	0.131	-2.6	0.8	-1.7	0.8	A-	
3015	682454	4	4	496	.645	.117	.117	.121	.645	.000	.493	225	306	201	.493	-1.236	0.108	-0.3	1.0	-0.1	1.0	A-	
3016	677471	4	4	496	.766	.048	.085	.101	.766	.000	.350	147	241	164	.350	-1.999	0.119	2.2	1.1	1.0	1.1	A+	
3017	682420	4	4	496	.641	.224	.641	.079	.056	.000	.456	232	.456	234	257	-1.213	0.108	1.0	1.0	0.3	1.0	A-	
3018	676948	4	4	496	.752	.034	.147	.067	.752	.000	.389	275	199	191	.389	-1.901	0.117	1.5	1.1	1.3	1.2	C+	
3019	677021	4	4	496	.581	.248	.581	.147	.024	.000	.354	326	.354	051	101	-0.873	0.105	4.1	1.2	4.2	1.3	A-	
3020	683945	4	4	496	.770	.040	.770	.165	.024	.000	.512	203	.512	406	161	-2.028	0.120	-1.0	0.9	-1.9	0.8	A-	
3021	682619	4	4	496	.976	.976	.012	.006	.006	.000	.144	.144	059	073	130	-4.884	0.300	0.3	1.1	0.5	1.2	A+	
3022	661153	4	4	496	.843	.022	.843	.091	.042	.002	.551	147	.551	442	242	-2.612	0.136	-2.2	0.8	-2.2	0.7	B+	
3023	677694	4	4	496	.359	.302	.359	.276	.058	.004	.344	302	.344	008	081	0.362	0.110	3.1	1.2	4.2	1.4	B-	
3024	677512	4	4	496	.575	.190	.097	.575	.133	.006	.403	166	261	.403	153	-0.840	0.105	2.4	1.1	1.8	1.1	A+	
3025	677508	4	4	496	.417	.252	.135	.192	.417	.004	.444	003	159	405	.444	0.021	0.107	1.3	1.1	1.3	1.1	A-	
3026	676951	4	4	496	.639	.024	.639	.198	.131	.008	.451	030	.451	374	153	-1.201	0.108	1.3	1.1	1.4	1.1	A+	
3027	661671	4	4	496	.821	.022	.028	.821	.123	.006	.431	141	207	.431	308	-2.417	0.130	-0.1	1.0	1.2	1.2	A+	
3028	682290	4	4	496	.932	.931	.036	.016	.008	.008	.213	.213	075	158	109	-3.701	0.188	0.8	1.1	0.5	1.1	A+	
3029	676952	4	4	497	.837	.008	.006	.147	.837	.002	.368	090	.009	366	.368	-2.819	0.130	-0.4	1.0	-0.9	0.9	B+	
3030	661380	4	4	985	.354	.142	.175	.354	.328	.001	.257	229	258	.257	.118	-0.115	0.075	6.6	1.2	5.8	1.3	A+	A+
3031	682620	4	4	497	.787	.058	.787	.119	.036	.000	.441	274	.441	304	097	-2.435	0.119	-1.0	0.9	-1.3	0.8	A-	
3032	682455	4	4	497	.419	.419	.280	.123	.175	.004	.385	.385	218	121	135	-0.439	0.102	1.1	1.0	1.5	1.1	A+	
3033	682451	4	4	985	.192	.752	.192	.040	.016	.000	.332	149	.332	230	170	0.949	0.091	0.5	1.0	3.6	1.4	A-	A-
3034	677693	4	4	497	.264	.312	.231	.193	.264	.000	.287	212	020	050	.287	0.434	0.114	2.3	1.1	2.8	1.3	B-	
3035	682458	4	4	497	.425	.189	.101	.425	.276	.010	.331	113	114	.331	145	-0.470	0.101	2.5	1.1	2.5	1.2	A-	
3036	682456	4	4	497	.608	.338	.012	.032	.608	.010	.388	263	142	177	.388	-1.391	0.102	1.2	1.1	0.1	1.0	B-	
3037	682618	4	4	497	.952	.010	.012	.012	.952	.014	.353	111	146	190	.353	-4.300	0.215	-0.7	0.9	-2.1	0.5	A+	
3038	683948	4	4	497	.751	.074	.751	.123	.038	.014	.417	226	.417	211	132	-2.194	0.113	-0.4	1.0	-0.7	0.9	A+	
3039	677028	4	4	497	.543	.149	.163	.543	.131	.014	.566	289	218	.566	214	-1.065	0.100	-4.0	0.9	-3.7	0.8	A+	
3040	681001	4	4	497	.638	.638	.145	.066	.137	.014	.524	.524	177	206	328	-1.548	0.103	-2.8	0.9	-0.7	1.0	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Itel	10	Grade	Grade		ı vai	1 (~)	1 (5)		' (0)	' (-)			11(0)	1 1(0)	` '	IVICUS	IVISE	in	in	out	out	/F	/B
3041	677470	4	4	497	.799	.046	.799	.097	.040	.018	.553	221	.553	391	149	-2.521	0.121	-3.1	0.8	-3.3	0.6	A+	
3042	677030	4	4	497	.543	.163	.543	.109	.165	.020	.303	.035	.303	164	222	-1.065	0.100	3.9	1.2	4.3	1.3	A-	
3043	681000	4	4	497	.660	.169	.660	.089	.066	.016	.473	276	.473	193	160	-1.667	0.104	-1.3	0.9	-1.4	0.9	A+	
3044	677695	4	4	498	.797	.054	.797	.098	.048	.002	.469	284	.469	273	178	-2.214	0.125	-0.4	1.0	-1.4	0.8	A-	A+
3045	682621	4	4	498	.781	.022	.116	.781	.080	.000	.501	179	293	.501	320	-2.093	0.122	-1.1	0.9	-1.1	0.9	A-	A-
3046	661637	4	4	498	.709	.127	.046	.118	.709	.000	.558	304	221	328	.558	-1.605	0.112	-2.1	0.9	-2.1	0.8	A+	A-
3047	677472	4	4	498	.783	.052	.106	.058	.783	.000	.352	256	116	224	.352	-2.108	0.122	1.6	1.1	1.3	1.2	B+	A-
3048	678021	4	4	498	.219	.337	.333	.104	.219	.006	.292	120	025	141	.292	1.234	0.122	1.9	1.1	3.8	1.6	A+	A+
3049	661702	4	4	498	.637	.088	.637	.183	.086	.006	.523	258	.523	359	101	-1.176	0.107	-1.0	1.0	-1.1	0.9	A+	A-
3050	682429	4	4	498	.337	.122	.060	.470	.337	.010	.493	311	206	126	.493	0.460	0.109	-1.3	0.9	-0.6	1.0	A-	B-
3051	661148	4	4	498	.602	.287	.602	.056	.044	.010	.255	.000	.255	243	233	-0.985	0.105	6.3	1.3	7.2	1.7	A-	A-
3052	683979	4	4	498	.619	.618	.052	.088	.233	.008	.356	.356	175	245	112	-1.074	0.106	3.7	1.2	2.7	1.2	A-	B+
3053	681012	4	4	498	.793	.028	.052	.118	.793	.008	.547	211	324	301	.547	-2.183	0.124	-2.2	0.9	-2.4	0.7	A-	A-
3054	678098	4	4	498	.655	.086	.116	.133	.655	.010	.579	260	296	260	.579	-1.280	0.108	-2.6	0.9	-2.3	0.8	A+	A+
3055	682397	4	4	498	.416	.076	.416	.028	.464	.016	.319	294	.319	118	073	0.019	0.105	4.6	1.2	4.4	1.4	A+	A-
3056	682393	4	4	498	.372	.410	.112	.090	.371	.016	.581	289	201	162	.581	0.264	0.107	-4.1	0.8	-2.1	8.0	A-	A+
3057	661384	4	4	498	.643	.076	.219	.643	.050	.012	.478	294	217	.478	181	-1.210	0.107	0.3	1.0	-0.1	1.0	A+	A+
3058	661640	4	4	498	.263	.199	.145	.382	.263	.012	.334	111	111	086	.334	0.923	0.116	1.1	1.1	3.3	1.4	A+	A-
3059	661678	4	4	498	.739	.030	.739	.074	.145	.012	.531	130	.531	284	327	-1.799	0.115	-1.3	0.9	-2.3	0.7	A-	A-
3060	682616	4	4	498	.349	.165	.255	.219	.349	.012	.378	112	105	173	.378	0.390	0.108	1.7	1.1	2.5	1.2	A-	A+
3061	683943	4	4	498	.747	.060	.094	.086	.747	.012	.607	279	314	301	.607	-1.853	0.116	-3.6	0.8	-3.1	0.7	A+	A-
3062	682622	4	4	502	.530	.319	.054	.530	.098	.000	.201	032	174	.201	156	-0.910	0.100	6.9	1.3	5.9	1.4	A-	1
3063	661386	4	4	502	.861	.042	.044	.052	.861	.002	.437	296	224	199	.437	-2.959	0.138	-1.1	0.9	-2.2	0.7	A-	1
3064	683966	4	4	502	.683	.042	.683	.195	.078	.002	.386	102	.386	302	135	-1.715	0.106	1.1	1.1	0.4	1.0	A+	1
3065	677699	4	4	502	.566	.171	.183	.076	.566	.004	.360	237	110	162	.360	-1.091	0.101	2.4	1.1	1.7	1.1	B+	
3066	678026	4	4	502	.793	.112	.034	.793	.054	.008	.287	083	131	.287	246	-2.404	0.120	1.6	1.1	0.8	1.1	A-	1
3067	682291	4	4	502	.618	.161	.108	.112	.618	.002	.475	240	299	150	.475	-1.358	0.102	-1.0	1.0	-0.5	1.0	A-	1
3068	663179	4	4	502	.632	.631	.193	.078	.096	.002	.419	.419	209	214	202	-1.432	0.103	0.5	1.0	-0.3	1.0	A+	1
3069	661390	4	4	502	.610	.026	.080	.279	.610	.006	.527	069	206	393	.527	-1.317	0.102	-2.5	0.9	-2.5	8.0	A+	
3070	661160	4	4	502	.641	.229	.641	.066	.050	.014	.380	202	.380	173	145	-1.485	0.103	1.5	1.1	0.4	1.0	B-	
3071	683981	4	4	502	.379	.378	.341	.189	.082	.010	.492	.492	208	240	095	-0.139	0.103	-1.4	0.9	-1.9	0.9	A+	
3072	682615	4	4	502	.442	.361	.080	.442	.110	.008	.502	318	203	.502	078	-0.469	0.101	-2.2	0.9	-1.5	0.9	A-	
3073	678023	4	4	502	.863	.034	.044	.040	.863	.020	.486	212	262	240	.486	-2.979	0.139	-1.5	0.9	-3.0	0.6	B+	
3074	683650	4	4	502	.173	.476	.209	.173	.125	.016	.101	187	.200	.101	005	1.168	0.129	2.6	1.2	6.3	2.2	A-	
3075	678024	4	4	502	.675	.030	.229	.042	.675	.024	.654	176	459	253	.654	-1.670	0.105	-6.0	0.8	-5.3	0.6	C+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

2076 682400 4	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
3078 677511 4			Grade	Grade															in	in	out	out	/F	/B
3078 667511 4				-																			B-	—
3079 661674																								
3080 682452 4																							B-	
3081 661667 4																-							A+	<u> </u>
3082 677466	3080	682452	4	4							.022				.059		0.874		4.0	1.3			A-	<u> </u>
3084 661151 4 4 488 8.30 8.30 0.03 0.03 0.05 0.00 0.517 0.17 0.225 0.17 0.401 0.2828 0.129 0.27 0.8 0.27 0.6 A+ 0.84 0.61151 4 4 488 8.07 0.66 0.59 0.68 8.07 0.00 0.484 4.84 0.361 0.117 0.245 0.265 0.124 0.25 0.18 0.21 0.7 0.9 0.21 0.8 A+ 0.866 0.888 0.8		661667	4	4	502	.387	.386	.305	.120		.028		.392				-0.181	0.103	0.8	1.0		1.1	A+	
3084 661151	3082	677466	4	4	488			.131			.000	.556	316		.556	-		0.110		0.8			A+	
3085 661698 4	3083	677473	4	4	488	.830	.830	.043	.035	.092	.000	.517	.517	225	177	401	-2.828	0.129	-2.7	0.8	-2.7	0.6	A+	
3086 683969 4	3084	661151	4	4	488	.807	.066	.059	.068	.807	.000	.496	284	291	226	.496	-2.652	0.124	-2.5	0.8	-2.1	0.7	A+	
3087 676945	3085	661698	4	4	488	.750	.750	.150	.041	.059	.000	.484	.484	361	117	245	-2.257	0.114	-1.9	0.9	-2.1	0.8	A-	
3088 661696	3086	683969	4	4	488	.299	.348	.186	.162	.299	.004	.373	055	183	196	.373	0.194	0.113	1.7	1.1	1.4	1.1	A+	
3089 682299 4	3087	676945	4	4	488	.471	.131	.148	.248	.471	.002	.538	226	306	189	.538	-0.753	0.102	-2.7	0.9	-2.2	0.9	B-	
3090 682300 4	3088	661696	4	4	488	.297	.234	.297	.309	.156	.004	.302	153	.302	133	018	0.206	0.113	2.6	1.2	5.0	1.5	A+	
3091 678029 4	3089	682299	4	4	488	.416	.336	.102	.416	.137	.008	.512	288	138	.512	197	-0.466	0.104	-1.6	0.9	-1.5	0.9	A-	
3092 683652 4	3090	682300	4	4	488	.807	.807	.133	.031	.023	.006	.255	.255	173	091	134	-2.652	0.124	1.7	1.1	1.0	1.1	B+	
3093 683653 4 4 4 488 .660 .129 .660 .117 .080 .014 .446 .182 .446 .232 .255 -1.728 0.106 .0.7 1.0 0.6 1.1 A- 3094 678103 4 4 488 .285 .307 .111 .281 .285 .016 .419 .095 .179 .186 .419 0.283 0.114 .0.4 1.0 2.6 1.3 A+ 3095 661668 4 4 488 .639 .080 .166 .639 .096 .018 .318 .120 .282 .318 .014 .1.617 0.105 3.0 1.1 1.9 1.2 A+ 3096 677933 4 4 488 .650 .650 .117 .137 .072 .025 .509 .509 .279 .232 .213 .016 .010 2.2 0.9 .1.9 0.8 A+ 3097 681005 4 4 488 .687 .686 .139 .059 .094 .020 .520 .520 .227 .232 .187 0.108 .2.7 0.9 -1.5 0.9 A+ 3098 682297 4 4 488 .592 .592 .152 .150 .086 .020 .345 .345 .211 .198 .044 .1.370 0.103 2.7 1.1 3.5 1.3 B+ 3099 661111 5 5 5 464 .735 .097 .735 .101 .067 .000 .427 .255 .427 .204 .206 .1.770 0.115 .1.1 0.9 -1.8 0.8 A+ A+ 3100 661112 5 5 5 473 .393 .252 .393 .182 .173 .000 .262 .006 .262 .006 .262 .199 .129 .0.044 0.103 2.2 1.1 3.0 1.2 A- 3101 661655 5 5 5 507 .533 .318 .533 .108 .041 .000 .309 .177 .309 .136 .148 .0714 0.098 2.0 1.1 1.4 1.1 A+ A- 3103 661669 5 5 5 485 .617 .616 .190 .136 .058 .000 .407 .407 .271 .117 .223 .1129 .102 .1.0 1.0 .1.4 0.9 A+ 3104 661661 5 5 5 476 .290 .059 .290 .221 .431 .000 .184 .061 .114 .046 .114 0.445 0.110 3.6 1.2 6.5 1.6 A+ 3105 661662 5 5 5 469 .369 .160 .288 .183 .369 .000 .300 .128 .173 .300 .127 .173 .300 .027 .1.1 1.1 0.9 .1.2 A- 3107 661964 5 5 5 469 .369 .160 .288 .183 .369 .000 .300 .128 .173 .300 .177 .1484 0.110 .1.1 1.1 0.2 1.0 A+ 3108 661663 5 5 5 476 .290 .059 .290 .221 .431 .000 .114 .061 .114 .046 .114 .0445 0.110 3.6 1.2 6.5 1.6 A+ 3105 661663 5 5 5 469 .369 .160 .288 .183 .369 .000 .300 .128 .173 .300 .177 .1848 0.110 .1.1 1.1 0.2 1.0 A+ 3107 661964 5 5 5 459 .649 .649 .192 .113 .046 .000 .391 .391 .395 .252 .194 .1318 0.107 .0.8 1.0 0.3 1.0 A+ 3108 661965 5 5 5 490 .846 .380 .286 .184 .151 .000 .118 .000 .118 .039 .025 .0514 0.108 .38 1.2 4.9 1.5 A+	3091	678029	4	4	488	.381	.320	.186	.381	.111	.002	.498	207	256	.498	137	-0.279	0.106	-1.1	1.0	-0.5	1.0	A-	
3094 678103 4	3092	683652	4	3	488	.621	.066	.156	.621	.145	.012	.543	213	221	.543	354	-1.519	0.104	-3.1	0.9	-1.2	0.9	B+	
3095 661668 4 4 488 6.39 .080 .166 .639 .096 .018 .318 .120 .282 .318 .014 -1.617 0.105 3.0 1.1 1.9 1.2 A+ 3096 677933 4 4 488 .650 .650 .117 .137 .072 .025 .509 .509 .279 232 213 -1.673 0.105 -2.2 0.9 -1.9 0.8 A+ 3097 681005 4 4 488 .687 .686 .139 .059 .094 .020 .520 .520 .297 232 1877 0.108 -2.7 0.9 -1.5 0.9 A+ 3098 682297 4 4 488 .592 .152 .150 .086 .020 .345 .345 211 .198 044 -1.370 0.113 .1 .1 .9 -1.5 0.9 -1.5	3093	683653	4	4	488	.660	.129	.660	.117	.080	.014	.446	182	.446	232	255	-1.728	0.106	-0.7	1.0	0.6	1.1	A-	
3096 677933 4 4 488 .650 .650 .117 .137 .072 .025 .509 .279 232 213 -1.673 0.105 -2.2 0.9 -1.9 0.8 A+ 3097 681005 4 4 488 .687 .686 .139 .059 .094 .020 .520 .297 239 232 -1.877 0.108 -2.7 0.9 -1.5 0.9 A+ 3098 682297 4 4 488 .592 .592 .152 .150 .086 .020 .345 .345 -211 .198 .044 -1.370 0.103 2.7 1.1 3.5 1.3 B+ 3099 661111 5 5 464 .735 .097 .735 .101 .067 .000 .427 255 .427 204 206 -1.770 0.115 -1.1 .09 .4 4 4 4	3094	678103	4	4	488	.285	.307	.111	.281	.285	.016	.419	095	179	186	.419	0.283	0.114	-0.4	1.0	2.6	1.3	A+	
3097 681005 4 4 488 .687 .686 .139 .059 .094 .020 .520 .297 .232 -1.877 0.108 -2.7 0.9 -1.5 0.9 A+ 3098 682297 4 4 488 .592 .592 .152 .150 .086 .020 .345 .345 211 198 .044 -1.370 0.103 2.7 1.1 3.5 1.3 B+ 3099 661111 5 5 464 .735 .097 .735 .101 .067 .000 .427 -255 .427 -204 -206 -1.770 0.115 -1.1 0.9 -1.8 0.8 A+ A+ 3101 661655 5 5 507 .533 .318 .533 .108 .041 .000 .309 177 .309 136 148 -0.714 0.098 2.0 1.1 1.4 1.1 A+	3095	661668	4	4	488	.639	.080	.166	.639	.096	.018	.318	120	282	.318	014	-1.617	0.105	3.0	1.1	1.9	1.2	A+	
3098 682297 4 4 488 .592 .592 .152 .150 .086 .020 .345 .345 211 198 044 -1.370 0.103 2.7 1.1 3.5 1.3 B+ 3099 661111 5 5 464 .735 .097 .735 .101 .067 .000 .427 255 .427 204 206 -1.770 0.115 -1.1 0.9 -1.8 0.8 A+ A+ 3100 661112 5 5 473 .393 .252 .393 .182 .173 .000 .262 006 .262 199 129 044 0.103 2.2 1.1 3.0 1.2 A- 3101 661657 5 5 507 .533 .318 .533 .108 .041 .000 .309 177 .309 148 -0.714 0.098 2.0 1.1 1.4 A- <td>3096</td> <td>677933</td> <td>4</td> <td>4</td> <td>488</td> <td>.650</td> <td>.650</td> <td>.117</td> <td>.137</td> <td>.072</td> <td>.025</td> <td>.509</td> <td>.509</td> <td>279</td> <td>232</td> <td>213</td> <td>-1.673</td> <td>0.105</td> <td>-2.2</td> <td>0.9</td> <td>-1.9</td> <td>0.8</td> <td>A+</td> <td></td>	3096	677933	4	4	488	.650	.650	.117	.137	.072	.025	.509	.509	279	232	213	-1.673	0.105	-2.2	0.9	-1.9	0.8	A+	
3099 661111 5 5 464 .735 .097 .735 .101 .067 .000 .427 255 .427 204 206 -1.770 0.115 -1.1 0.9 -1.8 0.8 A+ A+ 3100 661112 5 5 473 .393 .252 .393 .182 .173 .000 .262 006 .262 199 129 -0.044 0.103 2.2 1.1 3.0 1.2 A- 3101 661655 5 5 507 .533 .318 .533 .108 .041 .000 .309 177 .309 136 148 -0.714 0.098 2.0 1.1 1.4 1.1 A+ A- 3102 661657 5 5 485 .617 .616 .190 .136 .058 .000 .407 .271 117 223 1219 0.102 -1.0 1.4 1.4<	3097	681005	4	4	488	.687	.686	.139	.059	.094	.020	.520	.520	297	239	232	-1.877	0.108	-2.7	0.9	-1.5	0.9	A+	
3100 661112 5 5 473 .393 .252 .393 .182 .173 .000 .262 006 .262 199 129 044 0.103 2.2 1.1 3.0 1.2 A- 3101 661655 5 5 507 .533 .318 .533 .108 .041 .000 .309 177 .309 136 148 -0.714 0.098 2.0 1.1 1.4 1.1 A+ A- 3102 661657 5 5 485 .617 .616 .190 .136 .058 .000 .407 .407 271 117 223 -1.129 0.102 -1.0 1.0 -1.4 0.9 A+ 3103 661659 5 5 515 .550 .173 .550 .194 .083 .000 .283 085 157 -0.778 0.098 2.8 1.1 2.9 1.2 A- <td>3098</td> <td>682297</td> <td>4</td> <td>4</td> <td>488</td> <td>.592</td> <td>.592</td> <td>.152</td> <td>.150</td> <td>.086</td> <td>.020</td> <td>.345</td> <td>.345</td> <td>211</td> <td>198</td> <td>044</td> <td>-1.370</td> <td>0.103</td> <td>2.7</td> <td>1.1</td> <td>3.5</td> <td>1.3</td> <td>B+</td> <td></td>	3098	682297	4	4	488	.592	.592	.152	.150	.086	.020	.345	.345	211	198	044	-1.370	0.103	2.7	1.1	3.5	1.3	B+	
3101 661655 5 5 507 .533 .318 .533 .108 .041 .000 .309 177 .309 136 148 -0.714 0.098 2.0 1.1 1.4 1.1 A+ A- 3102 661657 5 5 485 .617 .616 .190 .136 .058 .000 .407 271 117 223 -1.129 0.102 -1.0 1.0 -1.4 0.9 A+ 3103 661659 5 5 515 .550 .173 .550 .194 .083 .000 .283 085 157 -0.778 0.098 2.8 1.1 2.9 1.2 A- A+ 3104 661661 5 5 476 .290 .059 .290 .221 .431 .000 .114 .046 114 .0445 0.110 3.6 1.2 6.5 1.6 A+ 3105	3099	661111	5	5	464	.735	.097	.735	.101	.067	.000	.427	255	.427	204	206	-1.770	0.115	-1.1	0.9	-1.8	0.8	A+	A+
3102 661657 5 5 485 .617 .616 .190 .136 .058 .000 .407 .407 271 117 223 -1.129 0.102 -1.0 1.0 -1.4 0.9 A+ 3103 661659 5 5 515 .550 .173 .550 .194 .083 .000 .283 169 .283 085 157 -0.778 0.098 2.8 1.1 2.9 1.2 A- A+ 3104 661661 5 5 476 .290 .059 .290 .221 .431 .000 .114 061 .114 .046 114 0.445 0.110 3.6 1.2 6.5 1.6 A+ 3105 661662 5 5 469 .369 .167 .692 .042 .000 .300 128 173 .380 0.027 0.105 -0.6 1.0 0.7 1.0 A+	3100	661112	5	5	473	.393	.252	.393	.182	.173	.000	.262	006	.262	199	129	-0.044	0.103	2.2	1.1	3.0	1.2	A-	
3103 661659 5 5 515 .550 .173 .550 .194 .083 .000 .283 169 .283 085 157 -0.778 0.098 2.8 1.1 2.9 1.2 A- A+ 3104 661661 5 5 476 .290 .059 .290 .221 .431 .000 .114 .046 114 0.445 0.110 3.6 1.2 6.5 1.6 A+ 3105 661662 5 5 469 .369 .160 .288 .183 .369 .000 .380 149 135 175 .380 0.027 0.105 -0.6 1.0 0.7 1.0 A+ 3106 661663 5 5 454 .692 .099 .167 .692 .042 .000 .300 128 173 .300 177 -1.484 0.110 1.1 1.1 0.2 1.0 A+	3101	661655	5	5	507	.533	.318	.533	.108	.041	.000	.309	177	.309	136	148	-0.714	0.098	2.0	1.1	1.4	1.1	A+	A-
3104 661661 5 5 476 .290 .059 .290 .221 .431 .000 .114 061 .114 .046 114 0.445 0.110 3.6 1.2 6.5 1.6 A+ 3105 661662 5 5 469 .369 .160 .288 .183 .369 .000 .380 149 135 175 .380 0.027 0.105 -0.6 1.0 0.7 1.0 A+ 3106 661663 5 5 454 .692 .099 .167 .692 .042 .000 .300 128 173 .300 177 -1.484 0.110 1.1 1.1 0.2 1.0 A+ 3107 661964 5 5 459 .649 .649 .192 .113 .046 .000 .391 .391 189 225 194 -1.318 0.107 -0.8 1.0 -0.3 1.0 A- 3108 661965 5 5 490 .286 .380	3102	661657	5	5	485	.617	.616	.190	.136	.058	.000	.407	.407	271	117	223	-1.129	0.102	-1.0	1.0	-1.4	0.9	A+	
3105 661662 5 5 469 .369 .160 .288 .183 .369 .000 .380 149 135 175 .380 0.027 0.105 -0.6 1.0 0.7 1.0 A+ 3106 661663 5 5 454 .692 .099 .167 .692 .042 .000 .300 128 173 .300 177 -1.484 0.110 1.1 1.1 0.2 1.0 A+ 3107 661964 5 5 459 .649 .192 .113 .046 .000 .391 .391 189 225 194 -1.318 0.107 -0.8 1.0 -0.3 1.0 A- 3108 661965 5 5 490 .286 .380 .286 .184 .151 .000 .118 039 025 0.514 0.108 3.8 1.2 4.9 1.5 A+ 3109 661683 5 5 490 .496 .141 .496 .210 .153	3103	661659	5	5	515	.550	.173	.550	.194	.083	.000	.283	169	.283	085	157	-0.778	0.098	2.8	1.1	2.9	1.2	A-	A+
3105 661662 5 5 469 .369 .160 .288 .183 .369 .000 .380 149 135 175 .380 0.027 0.105 -0.6 1.0 0.7 1.0 A+ 3106 661663 5 5 454 .692 .099 .167 .692 .042 .000 .300 128 173 .300 177 -1.484 0.110 1.1 1.1 0.2 1.0 A+ 3107 661964 5 5 459 .649 .192 .113 .046 .000 .391 .391 189 225 194 -1.318 0.107 -0.8 1.0 -0.3 1.0 A- 3108 661965 5 5 490 .286 .380 .286 .184 .151 .000 .118 039 025 0.514 0.108 3.8 1.2 4.9 1.5 A+ 3109 661683 5 5 490 .496 .141 .496 .210 .153	3104	661661	5	5	476	.290	.059	.290	.221	.431	.000	.114	061	.114	.046	114	0.445	0.110	3.6	1.2	6.5	1.6	A+	
3107 661964 5 5 459 .649 .192 .113 .046 .000 .391 .391 189 225 194 -1.318 0.107 -0.8 1.0 -0.3 1.0 A- 3108 661965 5 5 490 .286 .380 .286 .184 .151 .000 .118 060 .118 039 025 0.514 0.108 3.8 1.2 4.9 1.5 A+ 3109 661683 5 5 490 .496 .141 .496 .210 .153 .000 .095 062 .012 -0.529 0.100 7.6 1.3 6.5 1.4 A- A+	3105	661662	5	5	469	.369	.160	.288	.183	.369	.000	.380	149	135		.380	0.027	0.105	-0.6	1.0	0.7	1.0	A+	
3107 661964 5 5 459 .649 .649 .192 .113 .046 .000 .391 .391 189 225 194 -1.318 0.107 -0.8 1.0 -0.3 1.0 A- 3108 661965 5 5 490 .286 .380 .286 .184 .151 .000 .118 060 .118 039 025 0.514 0.108 3.8 1.2 4.9 1.5 A+ 3109 661683 5 5 490 .496 .141 .496 .210 .153 .000 .095 076 .095 062 .012 -0.529 0.100 7.6 1.3 6.5 1.4 A- A+	3106	661663	5	5	454	.692	.099	.167	.692	.042	.000	.300	128	173	.300	177	-1.484	0.110	1.1	1.1	0.2	1.0	A+	
3108 661965 5 5 490 .286 .380 .286 .184 .151 .000 .118 060 .118 039 025 0.514 0.108 3.8 1.2 4.9 1.5 A+ 3109 661683 5 5 490 .496 .141 .496 .210 .153 .000 .095 076 .095 062 .012 -0.529 0.100 7.6 1.3 6.5 1.4 A- A+		661964	5	5	459	.649		.192		.046	.000			189	225	194	-1.318	0.107	-0.8	1.0	-0.3		A-	
3109 661683 5 5 490 .496 .141 .496 .210 .153 .000 .095076 .095062 .012 -0.529 0.100 7.6 1.3 6.5 1.4 A- A+	3108	661965	5	5	490	.286	.380	.286		.151	.000	.118	060	.118	039	025	0.514	0.108	3.8	1.2	4.9	1.5	A+	
				5																	_			A+
	3110	661684		5		.355	.313	.183	.150	.355	.000	.187	085	044	093	.187	0.128	0.108	4.3	1.2	3.7	1.3	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
itei	15	Grade	Grade	.,	1 741	1 (/-/)	. (5)	. (0)	. (5)	. ()	1 (1)	1 1(///)	(5)	1 1(0)	(5)	ivicus	IVISE	in	in	out	out	/F	/B
3111	661686	5	5	491	.261	.216	.261	.214	.310	.000	.138	.104	.138	070	161	0.580	0.111	2.7	1.2	4.3	1.4	B+	
3112	661688	5	5	476	.473	.103	.208	.473	.216	.000	.398	090	172	.398	248	-0.482	0.101	-1.1	1.0	-0.7	1.0	A+	
3113	661691	5	5	480	.360	.360	.125	.288	.227	.000	.250	.250	156	056	102	0.118	0.103	1.7	1.1	2.9	1.2	A+	
3114	661218	5	5	494	.431	.431	.239	.132	.198	.000	.335	.335	149	152	128	-0.226	0.100	1.4	1.1	1.3	1.1	A-	
3115	661211	5	5	506	.300	.300	.243	.255	.202	.000	.197	.197	018	127	068	0.298	0.105	2.2	1.1	3.6	1.3	A+	
3116	661214	5	5	481	.329	.208	.258	.328	.206	.000	.150	266	050	.150	.147	0.301	0.106	3.6	1.2	6.0	1.5	A+	A+
3117	661215	5	5	482	.403	.151	.299	.402	.147	.000	.440	195	234	.440	110	-0.031	0.102	-2.1	0.9	-1.3	0.9	A+	
3118	661648	5	5	464	.386	.142	.284	.188	.386	.000	.292	171	098	098	.292	-0.024	0.104	1.2	1.1	2.4	1.2	B+	
3119	661650	5	5	450	.556	.038	.342	.064	.556	.000	.303	143	156	202	.303	-0.835	0.104	1.6	1.1	1.4	1.1	A-	
3120	661682	5	5	506	.306	.306	.397	.123	.174	.000	.339	.339	299	138	.094	0.335	0.105	-0.1	1.0	1.8	1.1	B+	A+
3121	661685	5	5	489	.452	.235	.452	.182	.131	.000	.318	127	.318	161	126	-0.420	0.100	1.1	1.0	1.9	1.1	B-	
3122	661687	5	5	472	.318	.083	.566	.318	.034	.000	.281	172	122	.281	126	0.319	0.107	1.2	1.1	1.4	1.1	A+	
3123	661689	5	5	490	.486	.188	.180	.486	.147	.000	.300	187	196	.300	005	-0.527	0.099	2.0	1.1	2.0	1.1	A+	A-
3124	661690	5	5	489	.462	.194	.196	.462	.147	.000	.338	142	204	.338	087	-0.454	0.099	0.7	1.0	1.4	1.1	A+	A-
3125	661692	5	5	439	.574	.574	.257	.109	.059	.000	.459	.459	271	201	193	-0.907	0.106	-2.1	0.9	-2.2	0.9	C-	
3126	661693	5	5	451	.295	.080	.424	.202	.295	.000	.289	166	.126	372	.289	0.427	0.112	0.9	1.0	1.0	1.1	A+	
3127	661664	5	5	464	.472	.216	.162	.151	.472	.000	.424	106	267	195	.424	-0.394	0.103	-0.9	1.0	-0.4	1.0	A-	A-
3128	661113	5	5	474	.477	.162	.283	.477	.078	.000	.323	249	146	.323	013	-0.467	0.101	1.3	1.1	1.9	1.1	B-	
3129	661114	5	5	459	.490	.166	.490	.166	.179	.000	.197	166	.197	097	002	-0.569	0.102	4.3	1.2	4.7	1.3	A+	
3130	661115	5	5	451	.384	.162	.251	.384	.204	.000	.152	080	110	.152	.008	-0.054	0.105	3.8	1.2	5.3	1.4	A+	
3131	661116	5	5	447	.387	.273	.179	.161	.387	.000	.552	079	359	262	.552	-0.088	0.107	-5.0	0.8	-4.0	0.8	B-	
3132	661117	5	5	469	.544	.158	.209	.544	.090	.000	.431	146	354	.431	062	-0.806	0.102	-1.4	1.0	-0.8	1.0	A-	
3133	661118	5	5	472	.587	.108	.239	.066	.587	.000	.490	237	270	212	.490	-0.888	0.102	-3.3	0.9	-3.4	0.8	A-	A-
3134	661119	5	5	471	.845	.028	.051	.845	.076	.000	.433	133	259	.433	294	-2.639	0.135	-1.7	0.9	-2.7	0.7	B-	B-
3135	661120	5	5	443	.246	.246	.187	.153	.413	.000	.298	.298	.077	292	109	0.831	0.119	0.3	1.0	1.3	1.1	A+	
3136	661216	5	5	461	.451	.202	.200	.451	.148	.000	.450	221	215	.450	139	-0.299	0.103	-2.1	0.9	-1.8	0.9	A+	
3137	661649	5	5	494	.822	.073	.822	.079	.026	.000	.365	287	.365	108	225	-2.412	0.127	-1.0	0.9	0.8	1.1	C+	A-
3138	661213	5	5	451	.687	.133	.153	.687	.027	.000	.384	248	198	.384	140	-1.435	0.111	-0.1	1.0	-1.3	0.9	B+	A-
3139	661966	5	5	457	.632	.096	.166	.105	.632	.000	.506	213	283	246	.506	-1.244	0.106	-3.4	0.9	-3.1	0.8	A+	
3140	675131	5	5	449	.314	.339	.314	.252	.096	.000	.037	.154	.037	134	109	0.412	0.110	5.3	1.3	6.6	1.6	A+	
3141	675133	5	5	524	.693	.111	.693	.105	.092	.000	.225	039	.225	219	084	-1.547	0.104	3.1	1.2	2.9	1.3	A-	B+
3142	675134	5	5	481	.223	.353	.262	.222	.162	.000	.217	214	.022	.217	.006	0.879	0.118	0.8	1.1	3.3	1.4	A-	
3143	675135	5	5	465	.348	.146	.348	.312	.194	.000	.188	084	.188	065	075	0.125	0.107	3.8	1.2	5.2	1.4	A+	
3144	675136	5	5	494	.360	.360	.148	.413	.079	.000	.333	.333	110	208	070	0.139	0.103	0.4	1.0	1.7	1.1	A-	
3145	675137	5	5	460	.576	.267	.135	.576	.022	.000	.462	315	195	.462	152	-0.955	0.104	-2.0	0.9	-2.3	0.9	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
3146	675138	5	5	472	.403	.087	.424	.403	.087	.000	.318	092	190	.318	129	-0.125	0.103	1.3	1.1	1.5	1.1	A-	
3147	675139	5	5	481	.782	.782	.098	.058	.062	.000	.350	.350	304	176	054	-2.126	0.119	-0.2	1.0	-0.4	1.0	B+	
3148	675140	5	5	505	.604	.139	.162	.604	.095	.000	.380	175	200	.380	176	-1.097	0.099	-0.6	1.0	-0.8	1.0	A-	
3149	675141	5	5	510	.267	.267	.194	.441	.098	.000	.135	.135	025	058	072	0.565	0.108	3.0	1.2	4.5	1.4	A-	A-
3150	675142	5	5	455	.420	.141	.180	.259	.420	.000	.348	193	196	067	.348	-0.234	0.104	0.1	1.0	0.1	1.0	A+	
3151	675143	5	5	474	.331	.266	.274	.331	.129	.000	.315	118	163	.315	070	0.286	0.107	0.7	1.0	2.3	1.2	A-	B-
3152	675144	5	5	453	.225	.060	.419	.296	.225	.000	.284	162	097	071	.284	0.818	0.120	-0.1	1.0	1.2	1.1	A+	
3153	675145	5	5	496	.688	.159	.688	.125	.028	.000	.365	276	.365	162	087	-1.487	0.105	-0.7	1.0	-0.8	0.9	A-	A-
3154	675146	5	5	465	.407	.222	.129	.243	.406	.000	.212	047	186	051	.212	-0.050	0.103	2.9	1.1	4.4	1.3	A+	
3155	675147	5	5	448	.750	.103	.118	.029	.750	.000	.430	320	200	146	.430	-1.839	0.118	-1.6	0.9	-1.9	0.8	B+	
3156	675148	5	5	489	.380	.176	.176	.268	.380	.000	.452	294	237	039	.452	-0.014	0.102	-2.5	0.9	-1.0	0.9	A+	A-
3157	675149	5	5	476	.639	.250	.076	.639	.036	.000	.351	152	273	.351	165	-1.205	0.104	0.0	1.0	0.6	1.0	A+	A-
3158	675370	5	5	468	.427	.212	.212	.427	.150	.000	.453	136	137	.453	315	-0.191	0.103	-2.7	0.9	-0.6	1.0	A-	
3159	675371	5	5	471	.756	.091	.110	.756	.042	.000	.465	286	238	.465	213	-1.843	0.117	-2.0	0.9	-2.2	8.0	A+	A+
3160	675372	5	5	461	.636	.226	.113	.636	.026	.000	.455	325	147	.455	230	-1.205	0.106	-2.2	0.9	-2.3	0.9	A+	A-
3161	675373	5	5	432	.630	.081	.178	.111	.630	.000	.431	177	245	210	.431	-1.191	0.109	-1.5	0.9	-1.7	0.9	A-	
3162	675374	5	5	456	.362	.362	.175	.274	.189	.000	.225	.225	147	064	060	0.107	0.106	2.0	1.1	4.0	1.3	B-	A-
3163	675375	5	5	476	.342	.137	.456	.342	.065	.000	.284	261	009	.284	165	0.261	0.105	1.2	1.1	1.7	1.1	A-	
3164	675376	5	5	496	.333	.294	.218	.333	.155	.000	.236	.039	238	.236	084	0.246	0.104	2.0	1.1	4.3	1.3	A-	A+
3165	675377	5	5	462	.491	.212	.177	.491	.119	.000	.418	195	189	.418	175	-0.564	0.101	-1.9	0.9	-1.5	0.9	A+	
3166	675378	5	5	444	.651	.651	.216	.083	.050	.000	.356	.356	198	218	129	-1.382	0.109	0.6	1.0	-0.4	1.0	A+	
3167	675379	5	5	482	.425	.114	.301	.425	.160	.000	.164	133	155	.164	.089	-0.267	0.100	4.5	1.2	5.2	1.3	A+	
3168	675772	5	5	469	.589	.162	.126	.124	.588	.000	.365	194	142	186	.365	-1.011	0.103	0.1	1.0	0.1	1.0	A+	
3169	675773	5	5	497	.376	.165	.203	.256	.376	.000	.382	127	320	021	.382	0.025	0.101	-1.0	1.0	-0.2	1.0	A+	
3170	675774	5	5	464	.834	.026	.056	.834	.084	.000	.435	178	233	.435	289	-2.391	0.133	-1.9	0.9	-2.0	0.7	B+	
3171	675775	5	5	468	.769	.034	.135	.769	.062	.000	.511	155	337	.511	300	-2.062	0.119	-2.8	8.0	-3.6	0.7	C+	
3172	675776	5	5	482	.301	.346	.301	.247	.106	.000	.168	026	.168	048	143	0.426	0.108	3.1	1.2	4.1	1.4	A-	
3173	675777	5	5	459	.534	.096	.220	.150	.534	.000	.383	206	196	137	.383	-0.764	0.103	-0.2	1.0	-0.1	1.0	A+	A-
3174	675778	5	5	475	.236	.168	.522	.236	.074	.000	.200	226	.046	.200	090	0.732	0.115	0.6	1.0	3.3	1.4	A-	A-
3175	675779	5	5	498	.125	.556	.187	.124	.133	.000	.084	.132	279	.084	.046	1.764	0.143	1.1	1.1	4.7	2.0	B-	
3176	675780	5	5	501	.369	.024	.248	.359	.369	.000	.172	139	164	.019	.172	0.032	0.101	4.1	1.2	4.1	1.3	A-	A-
3177	675781	5	5	487	.454	.359	.136	.454	.051	.000	.282	245	.031	.282	152	-0.438	0.100	2.7	1.1	2.5	1.1	A+	A+
3178	675782	5	5	470	.470	.074	.245	.211	.470	.000	.421	094	250	191	.421	-0.352	0.101	-1.7	0.9	-1.4	0.9	A-	
3179	675783	5	5	454	.449	.068	.216	.267	.449	.000	.316	213	164	081	.316	-0.372	0.105	1.9	1.1	2.6	1.2	A-	
3180	675784	5	5	464	.724	.060	.067	.149	.724	.000	.473	212	312	234	.473	-1.725	0.113	-2.5	0.9	-1.9	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade	_									. ,					in	in	out	out	/F	/B
3181	675785	5	5	487	.575	.076	.236	.113	.575	.000	.362	164	086	314	.362	-0.901	0.100	0.3	1.0	0.3	1.0	A+	A+
3182	675786	5	5	469	.469	.183	.469	.235	.113	.000	.193	145	.193	006	120	-0.448	0.101	3.9	1.1	4.7	1.2	B+	
3183	675787	5	5	509	.613	.104	.230	.613	.053	.000	.381	244	223	.381	078	-1.068	0.099	-0.7	1.0	-1.0	0.9	A-	
3184	675789	5	5	483	.460	.112	.255	.174	.460	.000	.351	148	174	139	.351	-0.320	0.100	0.1	1.0	0.6	1.0	A+	A-
3185	675790	5	5	417	.796	.029	.796	.094	.082	.000	.216	005	.216	244	055	-2.101	0.130	1.1	1.1	1.3	1.2	A+	
3186	675791	5	5	427	.536	.164	.077	.222	.536	.000	.348	108	168	213	.348	-0.768	0.106	0.4	1.0	0.8	1.0	A-	
3187	676020	5	5	481	.686	.168	.686	.096	.050	.000	.389	190	.389	268	139	-1.602	0.108	-0.5	1.0	-0.3	1.0	A+	A+
3188	676022	5	5	446	.231	.182	.231	.305	.283	.000	.225	101	.225	.042	167	0.825	0.120	0.3	1.0	3.1	1.4	A+	
3189	676023	5	5	461	.462	.193	.462	.152	.193	.000	.389	149	.389	178	180	-0.377	0.102	-0.8	1.0	-0.3	1.0	A+	B-
3190	676024	5	5	494	.472	.095	.089	.472	.344	.000	.344	295	142	.344	094	-0.404	0.099	0.5	1.0	0.9	1.0	A-	A-
3191	676025	5	5	509	.631	.114	.065	.191	.631	.000	.498	342	271	166	.498	-1.284	0.100	-3.4	0.9	-3.6	8.0	A-	
3192	676026	5	5	463	.475	.147	.248	.475	.130	.000	.382	271	141	.382	100	-0.459	0.102	0.0	1.0	-0.2	1.0	A-	
3193	676027	5	5	467	.872	.060	.047	.872	.021	.000	.363	237	206	.363	149	-2.846	0.146	-0.9	0.9	-1.2	0.8	A-	A-
3194	676028	5	5	465	.475	.254	.138	.133	.475	.000	.346	239	106	095	.346	-0.548	0.102	0.6	1.0	1.2	1.1	A+	
3195	676029	5	5	463	.197	.197	.436	.205	.162	.000	.184	.184	.116	236	096	0.930	0.124	1.0	1.1	2.3	1.3	A+	B-
3196	676030	5	5	464	.261	.166	.179	.394	.261	.000	.407	135	100	185	.407	0.655	0.114	-1.9	0.9	-0.1	1.0	A-	A-
3197	676031	5	5	484	.382	.306	.382	.217	.095	.000	.238	.049	.238	211	176	0.033	0.103	2.6	1.1	4.0	1.3	A+	A-
3198	676032	5	5	454	.601	.081	.132	.601	.185	.000	.229	178	197	.229	.008	-1.038	0.105	2.9	1.1	3.6	1.2	A+	
3199	676033	5	5	469	.252	.367	.252	.213	.168	.000	.096	026	.096	063	009	0.737	0.115	3.0	1.2	6.0	1.7	A-	A+
3200	676034	5	5	483	.354	.354	.331	.153	.161	.000	002	002	064	.047	.039	0.145	0.104	7.6	1.4	8.3	1.7	A+	
3201	676036	5	5	474	.485	.070	.146	.485	.300	.000	.293	104	127	.293	164	-0.522	0.101	2.4	1.1	2.6	1.1	A-	A+
3202	676037	5	5	471	.478	.200	.478	.166	.157	.000	.190	026	.190	167	063	-0.499	0.101	4.5	1.2	4.6	1.3	A+	
3203	676038	5	5	481	.393	.148	.114	.345	.393	.000	.472	126	165	281	.472	-0.117	0.103	-2.7	0.9	-1.7	0.9	A-	B+
3204	676039	5	5	491	.468	.136	.468	.200	.196	.000	.348	108	.348	310	032	-0.420	0.100	0.9	1.0	2.9	1.2	B-	A+
3205	676040	5	5	443	.659	.077	.659	.190	.074	.000	.372	125	.372	274	137	-1.434	0.109	0.0	1.0	-0.8	0.9	A+	A+
3206	676041	5	5	427	.621	.066	.126	.187	.621	.000	.425	264	249	149	.425	-1.236	0.110	-1.4	0.9	-0.6	1.0	A+	
3207	676439	5	5	464	.502	.183	.192	.123	.502	.000	.459	302	106	217	.459	-0.597	0.102	-2.5	0.9	-2.0	0.9	A-	
3208	676440	5	5	456	.559	.107	.559	.149	.184	.000	.417	185	.417	354	060	-0.851	0.104	-0.8	1.0	-0.8	1.0	A-	A+
3209	676441	5	5	479	.752	.752	.148	.054	.046	.000	.419	.419	377	206	003	-1.852	0.114	-1.4	0.9	-2.1	0.8	A+	A+
3210	676442	5	5	491	.745	.094	.116	.745	.045	.000	.491	341	262	.491	147	-1.804	0.112	-2.9	0.9	-2.9	0.8	B+	A+
3211	676443	5	5	492	.362	.258	.146	.234	.362	.000	.448	112	193	232	.448	0.074	0.102	-2.7	0.9	-1.6	0.9	A-	
3212	676444	5	5	480	.388	.388	.129	.327	.156	.000	.373	.373	240	118	127	-0.051	0.103	-0.3	1.0	0.7	1.0	A-	
3213	676445	5	5	486	.704	.115	.704	.138	.043	.000	.429	245	.429	287	092	-1.644	0.108	-1.6	0.9	-1.7	0.9	A+	A+
3214	676446	5	5	495	.497	.083	.281	.497	.139	.000	.302	234	086	.302	138	-0.536	0.099	1.7	1.1	2.0	1.1	A-	A-
3215	676447	5	5	468	.410	.141	.173	.276	.410	.000	.378	226	184	084	.378	-0.144	0.103	-0.2	1.0	0.4	1.0	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
	.5	Grade	Grade	.,			. (5)			٠,,	1 (13)	(, .,	(5)				11102	in	in	out	out	/F	/B
3216	676448	5	5	489	.436	.264	.436	.133	.168	.000	.297	177	.297	072	120	-0.252	0.101	2.2	1.1	2.4	1.1	A-	
3217	676721	5	5	438	.432	.263	.164	.142	.432	.000	.490	130	287	227	.490	-0.261	0.106	-3.3	0.9	-2.4	0.9	A-	
3218	676722	5	5	481	.557	.225	.557	.173	.046	.000	.275	175	.275	139	052	-0.847	0.101	2.6	1.1	2.1	1.1	A-	
3219	676723	5	5	491	.752	.098	.049	.102	.752	.000	.419	236	132	274	.419	-1.915	0.113	-1.4	0.9	-2.1	0.8	A-	
3220	676724	5	5	486	.763	.049	.072	.763	.115	.000	.535	230	222	.535	376	-1.942	0.115	-3.5	0.8	-3.9	0.7	A-	A-
3221	676725	5	5	441	.624	.063	.283	.624	.029	.000	.382	310	190	.382	142	-1.191	0.107	-0.3	1.0	-0.8	1.0	A+	
3222	676726	5	5	497	.374	.511	.374	.070	.044	.000	.225	022	.225	245	170	0.018	0.101	2.3	1.1	3.7	1.2	A-	
3223	676727	5	5	496	.484	.196	.194	.127	.484	.000	.463	239	185	191	.463	-0.514	0.099	-2.6	0.9	-1.8	0.9	A+	
3224	676728	5	5	455	.798	.798	.035	.143	.024	.000	.370	.370	136	243	250	-2.157	0.125	-0.8	0.9	-1.4	0.8	B+	
3225	676729	5	5	481	.430	.383	.116	.071	.430	.000	.452	350	106	078	.452	-0.259	0.101	-2.2	0.9	-1.5	0.9	A+	
3226	676730	5	5	500	.592	.316	.592	.064	.028	.000	.338	258	.338	083	156	-1.127	0.100	0.9	1.0	0.3	1.0	A+	
3227	679636	5	5	463	.829	.015	.829	.030	.125	.000	.374	158	.374	211	257	-2.416	0.132	-0.9	0.9	-1.1	0.8	A+	
3228	679639	5	5	497	.588	.187	.145	.588	.080	.000	.364	203	159	.364	161	-1.041	0.100	0.0	1.0	-0.4	1.0	A+	A+
3229	681009	5	5	480	.433	.135	.210	.221	.433	.000	.371	252	187	051	.371	-0.233	0.101	-0.4	1.0	0.6	1.0	A+	
3230	681277	5	5	466	.612	.612	.084	.152	.152	.000	.165	.165	210	061	002	-1.156	0.104	4.3	1.2	3.8	1.2	A+	
3231	681278	5	5	464	.856	.078	.017	.050	.856	.000	.379	299	105	181	.379	-2.675	0.139	-1.1	0.9	-1.6	8.0	A+	
3232	681279	5	5	472	.663	.663	.030	.040	.267	.000	.325	.325	168	170	207	-1.409	0.106	0.5	1.0	0.1	1.0	A+	
3233	681280	5	5	458	.651	.651	.210	.090	.050	.000	.434	.434	241	240	184	-1.377	0.107	-1.6	0.9	-1.5	0.9	A+	A-
3234	681281	5	5	454	.606	.141	.606	.154	.099	.000	.246	243	.246	047	063	-1.116	0.104	2.4	1.1	2.3	1.1	A-	
3235	681282	5	5	481	.424	.173	.214	.424	.189	.000	.245	159	112	.245	038	-0.206	0.101	3.1	1.1	3.8	1.2	A+	B-
3236	681283	5	5	487	.366	.287	.164	.366	.183	.000	.393	344	045	.393	043	0.106	0.103	-1.1	1.0	0.8	1.1	B-	
3237	681284	5	4	464	.448	.205	.448	.248	.099	.000	.167	060	.167	017	172	-0.348	0.103	5.1	1.2	6.0	1.4	A-	
3238	681285	5	5	449	.209	.339	.209	.205	.247	.000	117	.244	117	202	.032	0.967	0.124	4.2	1.3	7.9	2.2	A-	
3239	681286	5	5	484	.643	.186	.643	.120	.052	.000	.396	260	.396	166	158	-1.209	0.103	-0.9	1.0	-1.7	0.9	A+	
3240	681585	5	5	469	.405	.136	.405	.175	.284	.000	.337	028	.337	202	176	-0.161	0.103	0.1	1.0	2.0	1.1	A-	A+
3241	681586	5	5	484	.700	.700	.161	.070	.068	.000	.447	.447	301	127	244	-1.541	0.107	-2.3	0.9	-2.3	0.8	A-	
3242	681587	5	5	478	.462	.165	.184	.462	.188	.000	.226	102	164	.226	029	-0.402	0.100	3.3	1.1	3.8	1.2	A-	A+
3243	681588	5	5	468	.874	.062	.036	.028	.874	.000	.422	324	199	151	.422	-2.869	0.147	-1.5	0.9	-2.3	0.7	A+	A-
3244	681589	5	5	484	.822	.822	.074	.050	.054	.000	.458	.458	253	287	205	-2.398	0.127	-2.1	0.9	-3.1	0.7	A-	
3245	681590	5	5	442	.208	.063	.208	.448	.281	.000	.017	051	.017	.117	117	0.987	0.125	3.0	1.2	6.0	1.9	A-	A-
3246	681591	5	5	500	.444	.218	.208	.444	.130	.000	.180	109	047	.180	076	-0.436	0.098	4.4	1.2	5.1	1.3	B+	A-
3247	681592	5	5	448	.645	.138	.645	.096	.121	.000	.335	238	.335	120	131	-1.292	0.107	0.2	1.0	-0.4	1.0	A+	
3248	681593	5	5	476	.603	.603	.187	.095	.116	.000	.480	.480	326	181	171	-1.122	0.103	-2.8	0.9	-3.0	0.8	A-	
3249	681594	5	5	504	.460	.226	.133	.181	.460	.000	.416	229	119	186	.416	-0.452	0.098	-1.9	0.9	-0.9	1.0	A-	
3250	681779	5	5	459	.211	.216	.427	.146	.211	.000	.332	275	.030	106	.332	0.925	0.122	-0.7	1.0	0.2	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Dof	ID	FT	PCS	N	D\/al	D/A)	D/D)	D/C\	D/D)	D/ \	D+D:a	PT(A)	DT/D)	DT/C)	DT/D)	Mass	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PI(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
3251	681780	5	5	469	.576	.017	.576	.083	.324	.000	.485	068	.485	202	374	-1.006	0.103	-2.6	0.9	-2.2	0.9	A+	
3252	681781	5	5	442	.412	.412	.165	.222	.201	.000	.298	.298	101	212	052	-0.138	0.106	1.4	1.1	2.1	1.1	A+	
3253	681782	5	5	483	.354	.354	.240	.240	.166	.000	.132	.132	044	030	085	0.139	0.103	3.5	1.2	5.3	1.4	A+	
3254	681783	5	5	488	.418	.301	.418	.133	.148	.000	.269	106	.269	082	158	-0.166	0.099	1.3	1.1	2.9	1.2	A+	
3255	681784	5	5	470	.670	.094	.115	.121	.670	.000	.500	163	340	242	.500	-1.375	0.107	-3.3	0.9	-2.4	0.8	A+	
3256	681785	5	5	475	.413	.297	.200	.413	.091	.000	.334	184	139	.334	087	-0.177	0.103	0.8	1.0	2.4	1.2	A+	A-
3257	681786	5	5	492	.482	.268	.175	.482	.075	.000	.454	254	200	.454	145	-0.539	0.099	-2.3	0.9	-2.3	0.9	A-	
3258	681787	5	5	493	.884	.053	.043	.884	.020	.000	.325	198	239	.325	082	-2.990	0.148	-0.5	0.9	-1.3	0.8	B+	A-
3259	681788	5	5	453	.188	.223	.188	.302	.287	.000	.156	028	.156	.015	125	1.104	0.128	0.9	1.1	4.7	1.7	A+	
3260	681920	5	5	477	.717	.069	.088	.717	.126	.000	.274	132	159	.274	135	-1.673	0.111	2.0	1.1	1.1	1.1	A+	
3261	681921	5	5	482	.849	.849	.062	.048	.041	.000	.301	.301	240	201	036	-2.656	0.135	-0.4	1.0	0.0	1.0	B+	A-
3262	681922	5	5	480	.750	.019	.056	.175	.750	.000	.347	164	175	230	.347	-1.862	0.114	0.0	1.0	-0.8	0.9	A-	
3263	681923	5	5	464	.382	.153	.381	.302	.164	.000	.256	012	.256	139	152	-0.053	0.105	2.3	1.1	3.3	1.2	B-	B-
3264	681924	5	5	450	.356	.169	.364	.356	.111	.000	.251	147	.002	.251	210	0.128	0.107	2.3	1.1	2.9	1.2	A-	
3265	681925	5	5	491	.338	.193	.277	.338	.191	.000	.206	069	090	.206	076	0.238	0.103	2.9	1.1	2.7	1.2	A+	A+
3266	681926	5	5	463	.350	.350	.350	.190	.110	.000	.236	.236	094	104	087	0.179	0.106	1.8	1.1	3.4	1.2	A-	
3267	681927	5	5	456	.344	.232	.333	.344	.090	.000	.043	038	.034	.043	071	0.164	0.107	5.8	1.3	6.3	1.5	A+	A-
3268	681928	5	5	512	.326	.326	.381	.219	.074	.000	.389	.389	128	148	226	0.338	0.103	-1.2	1.0	1.0	1.1	A-	A-
3269	681929	5	5	442	.867	.025	.041	.867	.068	.000	.295	179	128	.295	188	-2.700	0.147	-0.3	1.0	-0.6	0.9	A+	A+
3270	682000	5	5	479	.589	.159	.589	.067	.186	.000	.307	082	.307	210	177	-1.030	0.101	1.4	1.1	1.1	1.1	A-	
3271	682001	5	5	495	.424	.424	.317	.176	.083	.000	.279	.279	130	144	083	-0.277	0.100	1.9	1.1	2.3	1.1	A+	l
3272	682002	5	5	470	.328	.204	.296	.172	.328	.000	.361	.024	297	116	.361	0.286	0.107	-0.2	1.0	0.7	1.1	A+	A+
3273	682003	5	5	478	.646	.146	.646	.153	.054	.000	.318	161	.318	145	189	-1.303	0.104	0.7	1.0	0.9	1.1	A+	A+
3274	682004	5	5	476	.435	.116	.305	.145	.435	.000	.329	034	327	005	.329	-0.176	0.102	1.6	1.1	1.7	1.1	A+	
3275	682005	5	5	475	.722	.097	.097	.722	.084	.000	.319	261	119	.319	110	-1.837	0.111	0.7	1.0	-0.2	1.0	A+	
3276	682006	5	5	484	.446	.118	.446	.275	.161	.000	.302	208	.302	117	085	-0.305	0.101	1.9	1.1	2.7	1.2	B-	A+
3277	682007	5	5	468	.464	.156	.126	.254	.464	.000	.348	204	303	.002	.348	-0.370	0.102	0.6	1.0	0.7	1.0	A+	
3278	682008	5	5	462	.662	.662	.104	.039	.195	.000	.219	.219	012	132	187	-1.468	0.107	2.3	1.1	3.4	1.3	A+	
3279	682009	5	5	502	.841	.058	.841	.066	.036	.000	.416	274	.416	259	130	-2.589	0.130	-1.4	0.9	-2.3	0.7	A+	A+
3280	682028	5	5	479	.593	.301	.593	.071	.035	.000	.246	029	.246	253	232	-1.062	0.102	2.9	1.1	3.3	1.2	A-	A-
3281	682029	5	5	504	.772	.772	.107	.079	.042	.000	.470	.470	256	255	247	-2.040	0.114	-2.4	0.9	-2.6	0.8	A+	
3282	682032	5	5	471	.539	.074	.539	.291	.096	.000	.450	193	.450	235	229	-0.788	0.102	-1.8	0.9	-1.9	0.9	A+	A+
3283	682035	5	5	483	.335	.335	.277	.248	.139	.000	.132	.132	098	.027	087	0.138	0.104	3.3	1.2	5.5	1.4	A+	A-
3284	682180	5	5	487	.811	.045	.105	.811	.039	.000	.523	241	374	.523	207	-2.310	0.124	-3.1	0.8	-3.4	0.7	C-	
3285	682181	5	5	459	.612	.612	.211	.133	.044	.000	.436	.436	188	303	162	-1.145	0.105	-1.6	0.9	-1.6	0.9	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade										, ,					in	in	out	out	/F	/B
3286	682182	5	5	463	.551	.551	.261	.112	.076	.000	.372	.372	269	220	.010	-0.813	0.101	-0.5	1.0	-0.9	1.0	Α-	
3287	682183	5	5	493	.700	.700	.225	.063	.012	.000	.401	.401	336	173	012	-1.517	0.107	-0.7	1.0	-1.2	0.9	Α-	A-
3288	682184	5	5	451	.608	.093	.608	.169	.131	.000	.374	089	.374	237	202	-1.079	0.106	0.0	1.0	0.5	1.0	A+	
3289	682185	5	5	434	.279	.279	.320	.115	.286	.000	.286	.286	025	134	163	0.581	0.116	0.7	1.0	1.6	1.2	A-	B-
3290	682186	5	5	489	.777	.106	.777	.086	.031	.000	.418	255	.418	248	151	-2.057	0.117	-1.6	0.9	-1.8	0.8	A+	A+
3291	682187	5	5	481	.568	.568	.214	.156	.062	.000	.420	.420	208	266	109	-0.928	0.101	-1.4	1.0	-2.0	0.9	A+	A-
3292	682188	5	5	494	.591	.158	.178	.591	.073	.000	.317	200	126	.317	134	-1.070	0.100	1.0	1.0	0.9	1.1	A-	A-
3293	682189	5	5	509	.529	.108	.528	.238	.126	.000	.341	216	.341	157	110	-0.783	0.097	0.6	1.0	1.0	1.1	A+	
3294	683533	5	5	464	.782	.782	.099	.080	.039	.000	.418	.418	251	251	153	-2.028	0.121	-1.6	0.9	-1.6	0.8	A-	A-
3295	683535	5	5	460	.472	.472	.196	.102	.230	.000	.386	.386	260	205	065	-0.413	0.103	-0.4	1.0	-0.3	1.0	A-	
3296	683574	5	5	529	.212	.212	.221	.295	.272	.000	.078	.078	113	033	.068	0.978	0.114	2.6	1.2	5.9	1.7	A-	
3297	683575	5	5	439	.617	.617	.214	.089	.080	.000	.361	.361	253	164	092	-1.139	0.108	0.2	1.0	0.1	1.0	A-	
3298	683576	5	5	440	.264	.377	.193	.166	.264	.000	.422	101	293	058	.422	0.593	0.116	-2.1	0.9	-1.5	0.9	A+	
3299	683577	5	5	466	.092	.303	.513	.092	.092	.000	.148	125	.130	175	.148	1.978	0.167	0.0	1.0	2.7	1.6	A-	
3300	684043	5	5	490	.508	.508	.229	.186	.078	.000	.384	.384	218	175	121	-0.555	0.099	-0.2	1.0	0.2	1.0	A-	
3301	684044	5	5	446	.718	.220	.031	.717	.031	.000	.512	395	183	.512	200	-1.585	0.114	-3.4	0.8	-3.4	0.7	A-	A-
3302	684045	5	5	469	.872	.049	.055	.023	.872	.000	.455	229	290	239	.455	-2.795	0.146	-1.8	0.8	-3.0	0.6	A+	B-
3303	684046	5	5	476	.828	.074	.069	.029	.828	.000	.469	313	288	132	.469	-2.404	0.131	-2.0	0.9	-2.6	0.7	A+	C-
3304	684048	5	5	477	.426	.254	.195	.426	.126	.000	.505	284	197	.505	145	-0.302	0.102	-3.6	0.9	-2.6	0.9	B-	
3305	684050	5	5	457	.414	.414	.138	.158	.291	.000	.396	.396	104	270	134	-0.075	0.104	-1.4	0.9	0.5	1.0	A-	B+
3306	684052	5	5	483	.323	.340	.323	.232	.106	.000	.152	.060	.152	208	039	0.314	0.106	3.8	1.2	4.5	1.4	A+	
3307	684054	5	5	449	.450	.450	.216	.249	.085	.000	.208	.208	239	.030	065	-0.434	0.104	3.9	1.2	3.5	1.2	A-	
3308	684055	5	5	467	.617	.056	.289	.039	.617	.000	.318	282	140	139	.318	-1.140	0.104	0.9	1.0	1.1	1.1	A+	
3309	684057	5	5	481	.642	.048	.116	.642	.193	.000	.378	150	103	.378	295	-1.400	0.104	-0.4	1.0	0.0	1.0	A+	
3310	684061	5	5	495	.566	.093	.210	.131	.566	.000	.401	166	115	308	.401	-0.882	0.100	-0.5	1.0	-0.9	1.0	A+	
3311	684063	5	5	481	.405	.264	.405	.119	.212	.000	.568	296	.568	209	198	-0.137	0.101	-6.0	0.8	-4.7	0.8	B-	A-
3312	684064	5	5	501	.731	.086	.731	.122	.062	.000	.366	193	.366	147	251	-1.774	0.109	-0.4	1.0	-0.7	0.9	A+	
3313	684065	5	5	451	.597	.182	.204	.596	.018	.000	.368	211	208	.368	117	-1.031	0.105	0.0	1.0	-0.5	1.0	A+	
3314	684075	5	5	457	.411	.411	.276	.195	.118	.000	.255	.255	096	169	049	-0.232	0.104	2.3	1.1	5.5	1.4	A+	
3315	684076	5	5	492	.126	.455	.319	.100	.126	.000	.176	037	.018	162	.176	1.614	0.143	0.0	1.0	3.5	1.7	A+	
3316	684077	5	5	452	.385	.385	.146	.272	.197	.000	.191	.191	224	.050	091	-0.041	0.106	3.8	1.2	4.4	1.3	A-	
3317	684078	5	5	473	.359	.359	.326	.209	.106	.000	.351	.351	.009	256	222	0.121	0.105	0.4	1.0	0.6	1.0	A-	A-
3318	684079	5	5	552	.265	.266	.409	.264	.060	.000	.204	110	047	.204	076	0.612	0.104	1.9	1.1	4.1	1.4	A-	A+
3319	684081	5	5	460	.363	.222	.363	.274	.141	.000	.079	034	.079	007	059	0.073	0.106	5.7	1.3	6.2	1.5	A-	
3320	715929	6	6	2185	.398	.492	.052	.398	.059	.000	.348	179	210	.348	145	0.350	0.049	1.4	1.0	6.3	1.2	Α-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade										. ,	• •				in	in	out	out	/F	/B
3321	715930	6	6	2379	.866	.066	.866	.045	.023	.000	.333	177	.333	173	227	-2.434	0.065	0.0	1.0	-0.1	1.0	A+	A+
3322	715931	6	6	2149	.529	.153	.179	.139	.529	.000	.446	266	194	153	.446	-0.324	0.049	-2.1	1.0	0.0	1.0	A-	A+
3323	715932	6	6	2193	.730	.179	.031	.730	.060	.000	.342	217	183	.342	156	-1.401	0.054	2.8	1.1	2.5	1.1	A+	A-
3324	715933	6	6	2205	.532	.348	.084	.532	.037	.000	.413	250	232	.413	122	-0.320	0.048	-0.6	1.0	1.2	1.0	A+	A-
3325	715934	6	6	2167	.444	.155	.152	.249	.444	.000	.456	184	236	175	.456	0.092	0.048	-4.0	0.9	0.9	1.0	A+	A+
3326	715935	6	6	2199	.680	.095	.093	.680	.133	.000	.517	300	276	.517	216	-1.064	0.051	-5.7	0.9	-6.1	0.8	A-	A+
3327	715936	6	6	2132	.294	.055	.113	.539	.294	.000	.122	168	050	003	.122	0.948	0.052	9.3	1.2	9.9	1.7	A+	A+
3328	715937	6	6	2248	.764	.087	.764	.090	.059	.000	.382	187	.382	201	221	-1.592	0.055	-0.3	1.0	-0.3	1.0	A+	A-
3329	715938	6	6	2288	.377	.189	.285	.377	.149	.000	005	.021	039	005	.034	0.485	0.048	9.9	1.4	9.9	1.8	A+	A-
3330	715939	6	6	2196	.362	.150	.149	.362	.339	.000	.069	119	018	.069	.034	0.552	0.049	9.9	1.3	9.9	1.9	A-	A+
3331	715940	6	6	2203	.391	.391	.178	.318	.113	.000	.210	.210	174	.015	135	0.392	0.048	9.9	1.2	9.3	1.3	A+	A+
3332	715941	6	6	2202	.417	.225	.142	.216	.417	.000	.423	160	179	192	.423	0.273	0.048	-2.1	1.0	2.2	1.1	A-	A+
3333	715942	6	6	2183	.225	.123	.419	.225	.233	.000	.063	127	060	.063	.107	1.385	0.056	7.7	1.2	9.9	2.3	A-	A+
3334	715943	6	6	2266	.281	.465	.188	.281	.067	.000	.163	.030	128	.163	153	0.997	0.051	6.4	1.2	9.9	1.8	A-	A-
3335	715944	6	6	2303	.204	.496	.165	.204	.134	.000	.068	.126	188	.068	061	1.502	0.056	6.1	1.2	9.9	2.4	A-	A+
3336	715945	6	6	2251	.265	.270	.206	.259	.265	.000	.271	053	111	116	.271	1.113	0.052	1.9	1.1	9.8	1.6	A-	A-
3337	715946	6	6	2174	.338	.338	.195	.402	.066	.000	.388	.388	063	240	164	0.701	0.050	-1.4	1.0	4.4	1.2	A+	A+
3338	715947	6	6	2271	.452	.279	.452	.140	.129	.000	.419	193	.419	255	100	0.071	0.047	-1.5	1.0	2.1	1.1	A+	A-
3339	715948	6	6	2293	.429	.147	.233	.191	.429	.000	.367	166	187	112	.367	0.185	0.047	1.8	1.0	4.9	1.2	A+	A+
3340	715949	6	6	2228	.199	.199	.086	.343	.371	.000	.256	.256	083	213	.046	1.569	0.058	1.3	1.0	9.2	1.7	A+	A-
3341	715950	6	6	2190	.358	.358	.279	.293	.071	.000	.328	.328	214	055	140	0.569	0.049	1.5	1.0	7.4	1.3	A+	A+
3342	715951	6	6	2332	.477	.126	.477	.160	.237	.000	.379	208	.379	200	111	0.004	0.046	1.1	1.0	5.0	1.2	A+	A+
3343	715952	6	6	2156	.364	.226	.307	.364	.103	.000	.075	050	047	.075	.021	0.546	0.050	9.9	1.4	9.9	1.8	A-	A-
3344	715953	6	6	2257	.551	.181	.175	.551	.093	.000	.393	206	164	.393	185	-0.382	0.047	0.8	1.0	2.1	1.1	A-	A-
3345	715954	6	6	2270	.751	.033	.751	.114	.102	.000	.264	169	.264	100	172	-1.532	0.054	5.2	1.2	6.5	1.4	A+	A-
3346	715955	6	6	2224	.416	.495	.037	.053	.415	.000	.454	288	222	170	.454	0.334	0.048	-4.0	0.9	2.8	1.1	A-	C-
3347	715956	6	6	2254	.481	.104	.481	.265	.150	.000	.309	124	.309	087	219	-0.050	0.047	6.2	1.1	5.6	1.2	A-	A-
3348	715957	6	6	2221	.269	.183	.269	.168	.380	.000	.178	087	.178	105	012	1.072	0.053	5.6	1.1	9.9	2.0	A-	A+
3349	715958	6	6	2193	.588	.169	.588	.137	.106	.000	.373	185	.373	124	233	-0.636	0.049	2.5	1.1	3.7	1.1	A+	A-
3350	715959	6	6	2217	.453	.159	.199	.453	.189	.000	.300	146	136	.300	106	0.062	0.048	5.8	1.1	8.3	1.3	A+	A+
3351	715960	6	6	2156	.623	.039	.217	.121	.623	.000	.353	126	151	260	.353	-0.749	0.050	3.0	1.1	3.0	1.1	A+	A-
3352	715961	6	6	2198	.618	.137	.129	.116	.618	.000	.400	182	228	173	.400	-0.709	0.049	1.0	1.0	0.1	1.0	A+	A-
3353	715962	6	6	2184	.447	.196	.234	.447	.122	.000	.189	073	096	.189	073	0.095	0.048	9.9	1.2	9.9	1.5	A-	A-
3354	715963	6	6	2255	.201	.463	.207	.129	.201	.000	.378	200	055	088	.378	1.533	0.057	-3.4	0.9	6.7	1.5	A+	A-
3355	715964	6	6	2214	.300	.200	.336	.300	.164	.000	.189	136	028	.189	051	0.886	0.051	7.1	1.2	9.9	1.6	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

3356 715965 6 6 2260 621 113 183 082 621 000 512 -303 -326 -095 512 -0.779 0.049 -5.6 0.9 4.5 0.9 4.5 4.9 4.8 4.9 3357 716858 6 6 6 2321 526 526 217 167 0.90 000 443 443 -216 -198 -204 -0.270 0.047 -2.2 1.0 0.7 1.0 As As 4.8	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
3358 716858 6 6 2321 526 526 217 167 0.90 0.00 443 443 2.16 518 2.04 5.270 0.047 2.2 1.0 0.7 1.0 A+ A+ A+ 3358 716859 6 6 2225 2.749 0.051 1.25 0.056 7.49 0.00 2.69 2.07 2.80 1.17 2.69 1.048 0.053 3.6 1.1 8.7 1.5 A+ A+ A+ 3359 716850 6 6 2225 3.99 3.76 3.98 0.055 1.61 0.00 2.65 0.014 2.66 0.271 1.54 0.388 0.048 6.8 1.1 7.8 1.3 A+ A+ 3360 716861 6 6 2.221 3.99 3.76 3.98 0.055 1.61 0.00 2.65 0.014 2.66 0.271 1.54 0.388 0.048 6.8 1.1 7.8 1.3 A+ A+ 3362 716863 6 6 2.270 5.84 0.01 2.05 5.84 0.95 0.00 4.08 2.41 1.76 4.08 1.91 0.068 0.049 3.6 0.9 5.0 0.8 A+ A+ 3.362 716865 6 6 2.270 5.84 0.01 2.05 5.84 0.95 0.00 4.08 2.41 1.76 4.08 1.91 0.068 0.048 0.6 1.0 0.7 1.0 A+ A+ 3.364 716865 6 6 2.260 7.21 0.063 0.07 1.58 6.55 0.00 0.00 3.39 2.14 3.39 1.81 1.82 1.332 0.052 1.4 1.0 1.6 1.1 A+ A+ 3.365 716866 6 6 2.260 7.21 0.063 7.21 1.56 0.060 0.00 3.35 3.248 3.35 3.246 3.19 3.052 3.4 3.0 3.1 0.9 2.0 0.8 A+ A+ 3.365 716866 6 6 2.278 5.874 0.056 5.97 0.01 0.00 3.77 1.80 3.77 2.33 2.09 2.516 0.070 1.3 0.9 2.0 0.8 A+ A+ 3.365 716866 6 6 2.233 5.97 0.27 3.66 5.97 0.01 0.00 3.77 1.80 3.77 2.33 2.09 2.516 0.070 1.3 0.9 2.0 0.8 A+ A+ 3.365 716866 6 6 2.233 5.97 0.27 3.66 5.97 0.01 0.00 3.77 1.80 3.77 2.33 0.22 0.661 0.068 0.07 1.3 0.9 2.0 0.8 A+ A+ 3.365 716866 6 6 2.243 5.97 0.27 3.66 5.97 0.00 3.34 3.34 3.34 3.37 3.256 3.09 2.25 0.060 0.0			Grade	Grade																			/F	/B
3359 716860 6 6 2203 273 316 175 416 273 2000 269 207 2280 117 2.69 1.048 0.053 3.6 1.1 8.7 1.5 A. A.																							A+	A-
3359 716860 6 6 2256 7.49 0.61 1.25 0.66 7.49 0.00 4.92 1.51 3.62 2.33 4.92 1.523 0.054 4.12 0.9 3.6 0.8 A+ A- 3360 716861 6 6 2221 3.99 3.76 3.89 0.05 1.61 0.00 2.66 0.014 2.66 2.211 1.154 0.388 0.048 6.8 1.1 7.8 1.3 A+ 3361 716862 6 6 2.221 3.99 3.76 3.89 0.05 0.08 0.08 0.00 0.08 0.0																							A+	A-
3361 716861 6 6 2221 399 376 398 055 161 000 266 0.014 266 -271 -154 0.388 0.048 6.8 1.1 7.8 1.3 A+ A+ A+ A+ A+ A+ A+ A											.000		207							1.1			A-	A-
3362 716862 6				_																0.9	-	0.8	A+	A-
3362 716863 6 6 2270 5.84 .101 .220 .584 .095 .000 .408 .241 176 .408 191 0.608 .0.048 .0.6 .1.0 .0.7 .1.0 A. A4 .3363 716864 6 6 2226 .721 .053 .721 .156 .060 .000 .359 .214 .339 .181 .182 1332 .0.05 .1.4 .1.0 .1.6 .1.1 .A A4 .4365 .716866 6 6 .2161 .767 .057 .767 .119 .057 .000 .353 .148 .353 .226 .179 .1.631 .0.057 .1.7 .1.1 .0.9 .1.1 A. A4 .4366 .716866 6 6 .2143 .767 .057 .767 .119 .057 .000 .353 .148 .353 .226 .1.19 .1.631 .0.057 .1.7 .1.1 .0.9 .1.1 A. A4 .4366 .716866 6 6 .2213 .557 .027 .366 .597 .010 .000 .153 .1.55 .099 .153 .022 .0.661 .0.048 .9.9 .1.3 .9.9 .1.4 A4 .4.4	3360		6	-																1.1			A+	A-
3363 716864 6 6 2283 6555 080 107 158 655 090 477 2.19 -324 -184 4.77 -0.983 0.049 -3.6 0.9 -3.1 0.9 A A A A A A A A A	3361	716862	6	6		.633	.633	.079	.080	.208	.000	.512	.512	244	249	280	-0.825		-5.4	0.9	-5.0	0.8	A+	A+
3364 716865 6 6 6 2260 7.21 0.63 7.21 1.56 0.60 0.00 3.59 -214 3.59 -1.81 -1.82 -1.332 0.052 1.4 1.0 1.6 1.1 A A A A 3367 716866 6 6 2.143 7.67 0.057 7.67 1.19 0.57 0.00 3.53 -1.48 3.53 -2.26 -1.79 -1.631 0.057 1.7 1.1 0.9 1.1 A A A A A A A A A	3362	716863	6	6			.101	.220	.584	.095	.000	.408	241	176	.408	191	-0.608		0.6	1.0	0.7	1.0	A-	A+
3365 716866 6 6 2143 .767 .057 .767 .119 .057 .000 .353 .148 .353 .226 .179 .1.631 0.057 .17 1.1 0.9 1.1 A A A A A A A A A	3363	716864	6	6	2283	.655	.080	.107	.158	.655	.000	.477	219	324	184	.477	-0.983	0.049	-3.6	0.9	-3.1	0.9	A-	A+
3366 716867 6 6 2127 .874 .026 .874 .054 .047 .000 .377 .180 .377 .233 .209 .2.516 0.070 .1.3 0.9 .2.0 0.8 A+ A-	3364	716865	6	6	2260	.721	.063	.721	.156	.060	.000	.359	214	.359	181	182	-1.332	0.052	1.4	1.0	1.6	1.1	A-	A-
3367 718868 6 6 2233 5.97 .027 .366 5.97 .010 .000 .153 .155 .099 .153 .022 .0.661 .0.48 .9.9 .1.3 .9.9 1.4 A+ A+ .4.4 .7.3 .4.4 .4.4 .4.4 .7.3 .4.4 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .4.4 .7.3 .4.4 .7.3 .4.4 .7.3 .4.4 .7.4	3365	716866	6	6	2143	.767	.057	.767	.119	.057	.000	.353	148	.353	226	179	-1.631	0.057	1.7	1.1	0.9	1.1	A-	A-
3368 716869 6 6 2185 840 840 0.26 1.10 0.24 0.00 3.84 3.84 -2.34 -2.32 -2.03 -2.215 0.064 -0.6 1.0 -1.1 0.9 A+ A-	3366	716867	6	6	2127	.874	.026	.874	.054	.047	.000	.377	180	.377	233	209	-2.516	0.070	-1.3	0.9	-2.0	0.8	A+	A-
3369 716870 6 6 2147 596 0.97 1.38 1.69 5.96 0.00 .450 -1.75 -2.46 -2.25 .450 -0.623 0.049 -2.5 1.0 -2.1 0.9 A+ A-	3367	716868	6	6	2233	.597	.027	.366	.597	.010	.000	.153	155	099	.153	022	-0.661	0.048	9.9	1.3	9.9	1.4	A+	A+
3370 716871 6 6 2161 .864 .027 .864 .079 .030 .000 .423 .207 .423 .248 .261 .2.425 .0.69 .1.9 0.9 .3.4 0.7 A A A A A A A A A	3368	716869	6	6	2185	.840	.840	.026	.110	.024	.000	.384	.384	234	232	203	-2.215	0.064	-0.6	1.0	-1.1	0.9	A+	A-
3371 716872 6 6 2347 312 .117 .440 .131 .312 .000 .361 175 048 259 .361 0.842 0.049 0.0 1.0 6.1 1.3 A+ A-	3369	716870	6	6	2147	.596	.097	.138	.169	.596	.000	.450	175	246	225	.450	-0.623	0.049	-2.5	1.0	-2.1	0.9	A+	A-
3372 716873 6 6 2247 .387 .387 .032 .057 .523 .000 .374 .374 .230 214 183 0.463 .0.048 0.5 1.0 5.7 1.2 A-A 3373 716874 6 6 2282 .192 .152 .574 .103 .132 .000 .195 .077 -207 155 1.610 .0588 3.0 1.1 9.9 1.9 A-A 3374 716875 6 6 2229 .479 .249 .141 .131 .479 .000 .438 149 .219 .231 .438 0032 .0047 -2.9 1.0 0.2 1.0 A-A 3375 716876 6 6 2184 .359 .114 .270 .359 .257 .000 .235 178 123 .235 .004 .0580 .050 .67 1.1 .99 1.6 A-A </td <td>3370</td> <td>716871</td> <td>6</td> <td>6</td> <td>2161</td> <td>.864</td> <td>.027</td> <td>.864</td> <td>.079</td> <td>.030</td> <td>.000</td> <td>.423</td> <td>207</td> <td>.423</td> <td>248</td> <td>261</td> <td>-2.425</td> <td>0.069</td> <td>-1.9</td> <td>0.9</td> <td>-3.4</td> <td>0.7</td> <td>A-</td> <td>A+</td>	3370	716871	6	6	2161	.864	.027	.864	.079	.030	.000	.423	207	.423	248	261	-2.425	0.069	-1.9	0.9	-3.4	0.7	A-	A+
3373 716874 6 6 2282 .192 .192 .574 .103 .132 .000 .195 .195 .077 207 155 1.610 0.058 3.0 1.1 9.9 1.9 A- A- 3374 716875 6 6 2229 .479 .249 .141 .131 .479 .000 .438 149 219 .231 .438 -0.032 .0047 -2.9 1.0 0.2 1.0 A- A- 3375 716876 6 6 2199 .384 .205 .000 .289 270 .289 .003 .0439 0.049 4.6 1.1 .75 1.3 A+ 3375 716876 6 6 2184 .359 .114 .270 .359 .257 .000 .235 .178 .123 .235 .004 .0580 .0050 .6 1.1 .7,5 1.3 A+	3371	716872	6	6	2347	.312	.117	.440	.131	.312	.000	.361	175	048	259	.361	0.842	0.049	0.0	1.0	6.1	1.3	A+	A-
3374 716875 6 6 6 2229 .479 .249 .141 .131 .479 .000 .438 .149 .219 .231 .438 .0.032 .0.047 .2.9 1.0 0.2 1.0 A- A- 3375 716876 6 6 6 2199 .384 .205 .384 .152 .260 .000 .289 .270 .289 .092 .003 .0.439 .0.049 .4.6 1.1 7.5 1.3 A+ A- 3376 716877 6 6 6 2184 .359 .114 .270 .359 .257 .000 .235 .178 .123 .235 .0.04 .0.580 .0.050 .6.7 1.1 9.9 1.6 A- A- 3377 716878 6 6 6 2300 .248 .245 .293 .213 .248 .000 .267 .0.02 .0.08 .142 .267 1.203 .0.053 .2.3 1.1 7.1 1.4 A+ A- 3378 716879 6 6 2275 .597 .094 .218 .597 .092 .000 .404 .154 .278 .404 .134 .0.632 .0.048 .0.9 1.0 0.7 1.0 A+ A- 3379 716880 6 6 2126 .796 .062 .104 .796 .038 .000 .436 .194 .249 .436 .277 .1.793 .0.059 .2.2 0.9 3.2 0.8 A+ A- 3381 716882 6 6 2248 .453 .263 .453 .161 .123 .000 .381 .130 .381 .243 .131 .0.077 .0.047 .0.4 1.0 2.9 1.1 A- A- 3381 716882 6 6 6 .2183 .292 .153 .208 .292 .348 .000 .135 .214 .211 .135 .213 .0.931 .0.052 .9.2 1.2 9.9 1.8 A- A- 3383 716884 6 6 .2224 .506 .268 .149 .506 .0.77 .0.00 .398 .231 .198 .398 .0.09 .0.089 .0.048 .0.4 1.0 3.0 1.1 A+ A- 3383 716885 6 6 .2214 .291 .360 .139 .210 .291 .0.00 .0.89 .160 .147 .164 .0.89 .0.928 .0.051 .9.9 1.3 9.9 1.9 A+ A- 3385 716886 6 6 .2214 .291 .360 .139 .210 .291 .0.00 .899 .1.60 .1.47 .1.64 .0.89 .0.928 .0.051 .9.9 1.3 9.9 1.5 A+ A- 3388 716887 6 6 .2221 .498 .498 .0.91 .0.666 .0.79 .0.00 .385 .285 .188 .332 .0.32 .0.10 .0.047 .0.40 .0.48 .9.9 1.3 9.9 1.5 A+ A- 3388 716889 6 6 6 .2218 .498 .909 .0.666 .0.79 .0.00 .285 .285 .188 .332 .0.32 .0.504 .0.040 .0.48 7.4 1.1 4.8 1.1 A+ A- 3388 716889 6 6 6 .2228 .666 .167 .0.89 .666 .0.79 .0.00 .285 .285 .188 .332 .0.32 .0.10 .0.040 .0.48 7.4 1.1 0.8 1.2 A- A- 3388 716889 6 6 6 .2218 .898 .0.666 .167 .0.89 .666 .0.79 .0.00 .421 .1.50 .2.97 .421 .2.16 .0.993 .0.050 .0.3 1.0 .1.1 1.0 A+ A- 3388 716889 6 6 6 .2218 .666 .167 .0.89 .666 .0.79 .0.00 .2.85 .2.85 .3.85 .2.85 .3.88 .2.265 .0.49 .0.140 .0.048 7.4 1.1 4.8 1.1 A+ A- 3388 716889 6 6 6 .2218 .666 .167 .0.89 .666 .0.79 .0.00 .2.75 .0.00 .2.75 .2.74 .4.79 .1.90 .1.442 .0.554 .3.3 0.9 -4.1 0.8 A- A- 338	3372	716873	6	6	2247	.387	.387	.032	.057	.523	.000	.374	.374	230	214	183	0.463	0.048	0.5	1.0	5.7	1.2	A-	A+
3375 716876 6 6 2199 .384 .205 .384 .152 .260 .000 .289 .270 .289 .092 .003 .0.439 .0.04 4.6 1.1 7.5 1.3 A+ A- 3376 716877 6 6 2184 .359 .114 .270 .359 .257 .000 .235 178 123 .235 004 .0.580 .0.050 6.7 1.1 9.9 1.6 A- A+ 3377 716878 6 6 2300 .248 .245 .293 .213 .248 .000 .267 .029 .098 .142 .267 1.203 .0.053 2.3 1.1 7.1 1.4 A+ A+ 3378 716880 6 6 6 .2248 .243 .233 .160 .244 .244 .247 .36 .277 -1.793 .0.052 9.2 .2 0.9	3373	716874	6	6	2282	.192	.192	.574	.103	.132	.000	.195	.195	.077	207	155	1.610	0.058	3.0	1.1	9.9	1.9	A-	A+
3376 716877 6 6 2184 .359 .114 .270 .359 .257 .000 .235 123 .235 004 0.580 0.050 6.7 1.1 9.9 1.6 A-A 3377 716878 6 6 2300 .248 .245 .293 .213 .248 .000 .267 029 098 142 .267 1.203 .0.053 2.3 1.1 7.1 1.4 A+A 3378 716879 6 6 2275 .597 .094 .218 .597 .092 .000 .404 154 278 .404 134 -0.632 .0.048 0.9 1.0 0.7 1.0 A+A 3379 716880 6 6 22126 .796 .062 .104 .796 .038 .000 .381 130 .381 243 131 .0077 .0.047 .0.4 .149 .249 .436	3374	716875	6	6	2229	.479	.249	.141	.131	.479	.000	.438	149	219	231	.438	-0.032	0.047	-2.9	1.0	0.2	1.0	A-	A-
3377 716878 6 6 2300 .248 .245 .293 .213 .248 .000 .267 .029 098 142 .267 1.203 0.053 2.3 1.1 7.1 1.4 A+ A4 3378 716879 6 6 2275 .597 .094 .218 .597 .092 .000 .404 154 278 .404 134 -0.632 0.048 0.9 1.0 0.7 1.0 A+ A- 3379 716880 6 6 2126 .796 .062 .104 .796 .038 .000 .436 194 249 .436 277 -1.793 0.059 22 0.9 -3.2 0.8 A+ A+ 3380 716881 6 6 2248 .453 .263 .453 .161 .123 .000 .381 130 .381 243 131 0.077 .004 .004	3375	716876	6	6	2199	.384	.205	.384	.152	.260	.000	.289	270	.289	092	.003	0.439	0.049	4.6	1.1	7.5	1.3	A+	A-
3378 716879 6 6 2275 .597 .094 .218 .597 .092 .000 .404 154 278 .404 134 -0.632 0.048 0.9 1.0 0.7 1.0 A+ A- 3379 716880 6 6 2126 .796 .062 .104 .796 .038 .000 .436 194 249 .436 277 -1.793 .0.059 -2.2 0.9 -3.2 0.8 A+ A+ 3380 716881 6 6 2248 .453 .263 .453 .161 .123 .000 .381 130 .381 213 .0077 .0.047 0.4 1.0 2.9 1.1 A- 3381 716882 6 6 2183 .292 .348 .000 .135 214 211 .135 .213 .0931 .0.052 9.2 1.2 .99 1.8 A- <tr< td=""><td>3376</td><td>716877</td><td>6</td><td>6</td><td>2184</td><td>.359</td><td>.114</td><td>.270</td><td>.359</td><td>.257</td><td>.000</td><td>.235</td><td>178</td><td>123</td><td>.235</td><td>004</td><td>0.580</td><td>0.050</td><td>6.7</td><td>1.1</td><td>9.9</td><td>1.6</td><td>A-</td><td>A+</td></tr<>	3376	716877	6	6	2184	.359	.114	.270	.359	.257	.000	.235	178	123	.235	004	0.580	0.050	6.7	1.1	9.9	1.6	A-	A+
3379 716880 6 6 2126 .796 .062 .104 .796 .038 .000 .436 194 249 .436 277 -1.793 0.059 -2.2 0.9 -3.2 0.8 A+ A+ 3380 716881 6 6 2248 .453 .263 .453 .161 .123 .000 .381 130 .381 243 131 0.077 0.047 0.4 1.0 2.9 1.1 A- 3381 716882 6 6 2183 .292 .153 .208 .292 .348 .000 .135 214 211 .135 .213 .0931 .0.052 9.2 1.2 9.9 1.8 A- 44 3382 716883 6 6 2214 .442 .079 .442 .447 .033 .000 .401 146 .401 268 150 .0.089 .0.048 -0.4 1.0 <	3377	716878	6	6	2300	.248	.245	.293	.213	.248	.000	.267	029	098	142	.267	1.203	0.053	2.3	1.1	7.1	1.4	A+	A+
3380 716881 6 6 2248 .453 .263 .453 .161 .123 .000 .381 130 .381 243 131 0.077 0.047 0.4 1.0 2.9 1.1 A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-	3378	716879	6	6	2275	.597	.094	.218	.597	.092	.000	.404	154	278	.404	134	-0.632	0.048	0.9	1.0	0.7	1.0	A+	A-
3381 716882 6 6 2183 .292 .153 .208 .292 .348 .000 .135 214 211 .135 .213 0.931 0.052 9.2 1.2 9.9 1.8 A- A+ 3382 716883 6 6 2214 .442 .079 .442 .447 .033 .000 .401 146 .401 268 150 0.089 0.048 -0.4 1.0 3.0 1.1 A+ A- 3383 716884 6 6 2224 .506 .268 .149 .506 .077 .000 .398 231 198 .398 099 -0.203 0.047 0.0 1.0 2.0 1.1 A+ A+ 3384 716885 6 6 2214 .291 .360 .139 .210 .291 .000 .089 .160 147 164 .089 0.928 0.051 9.9 <td>3379</td> <td>716880</td> <td>6</td> <td>6</td> <td>2126</td> <td>.796</td> <td>.062</td> <td>.104</td> <td>.796</td> <td>.038</td> <td>.000</td> <td>.436</td> <td>194</td> <td>249</td> <td>.436</td> <td>277</td> <td>-1.793</td> <td>0.059</td> <td>-2.2</td> <td>0.9</td> <td>-3.2</td> <td>0.8</td> <td>A+</td> <td>A+</td>	3379	716880	6	6	2126	.796	.062	.104	.796	.038	.000	.436	194	249	.436	277	-1.793	0.059	-2.2	0.9	-3.2	0.8	A+	A+
3382 716883 6 6 2214 .442 .079 .442 .447 .033 .000 .401 146 .401 268 150 0.089 0.048 -0.4 1.0 3.0 1.1 A+ A- 3383 716884 6 6 2224 .506 .268 .149 .506 .077 .000 .398 231 198 .398 099 -0.203 0.047 0.0 1.0 2.0 1.1 A+ A- 3384 716885 6 6 2214 .291 .360 .139 .210 .291 .000 .089 .160 147 164 .089 0.928 0.051 9.9 1.3 9.9 1.9 A+ A+ 3385 716886 6 6 2182 .566 .136 .110 .188 .566 .000 .159 082 116 037 .159 -0.471 0.048 9.9<	3380	716881	6	6	2248	.453	.263	.453	.161	.123	.000	.381	130	.381	243	131	0.077	0.047	0.4	1.0	2.9	1.1	A-	A-
3383 716884 6 6 2224 .506 .268 .149 .506 .077 .000 .398 231 198 .398 099 -0.203 0.047 0.0 1.0 2.0 1.1 A+ A- 3384 716885 6 6 2214 .291 .360 .139 .210 .291 .000 .089 .160 147 164 .089 0.928 0.051 9.9 1.3 9.9 1.9 A+ A+ 3385 716886 6 6 2182 .566 .136 .110 .188 .566 .000 .159 082 116 037 .159 -0.471 0.048 9.9 1.3 9.9 1.5 A+ A- 3386 716887 6 6 2267 .500 .122 .171 .500 .207 .000 .332 251 188 .332 032 -0.150 0.047 5.4<	3381	716882	6	6	2183	.292	.153	.208	.292	.348	.000	.135	214	211	.135	.213	0.931	0.052	9.2	1.2	9.9	1.8	A-	A+
3384 716885 6 6 2214 .291 .360 .139 .210 .291 .000 .089 .160 147 164 .089 0.928 0.051 9.9 1.3 9.9 1.9 A+ A+ 3385 716886 6 6 2182 .566 .136 .110 .188 .566 .000 .159 082 116 037 .159 -0.471 0.048 9.9 1.3 9.9 1.5 A+ A+ 3386 716887 6 6 2267 .500 .122 .171 .500 .207 .000 .332 251 188 .332 032 -0.150 0.047 5.4 1.1 4.8 1.1 A+ A- 3387 716888 6 6 2211 .498 .498 .091 .064 .348 .000 .285 .285 188 265 049 -0.140 0.048 7.4 1.1 8.0 1.2 A- 3388 716890 6 6 <td>3382</td> <td>716883</td> <td>6</td> <td>6</td> <td>2214</td> <td>.442</td> <td>.079</td> <td>.442</td> <td>.447</td> <td>.033</td> <td>.000</td> <td>.401</td> <td>146</td> <td>.401</td> <td>268</td> <td>150</td> <td>0.089</td> <td>0.048</td> <td>-0.4</td> <td>1.0</td> <td>3.0</td> <td>1.1</td> <td>A+</td> <td>A-</td>	3382	716883	6	6	2214	.442	.079	.442	.447	.033	.000	.401	146	.401	268	150	0.089	0.048	-0.4	1.0	3.0	1.1	A+	A-
3385 716886 6 6 2182 .566 .136 .110 .188 .566 .000 .159 082 116 037 .159 -0.471 0.048 9.9 1.3 9.9 1.5 A+ A- 3386 716887 6 6 2267 .500 .122 .171 .500 .207 .000 .332 251 188 .332 032 -0.150 0.047 5.4 1.1 4.8 1.1 A+ A- 3387 716888 6 6 2211 .498 .498 .091 .064 .348 .000 .285 .285 188 265 049 -0.140 0.048 7.4 1.1 8.0 1.2 A- 3388 716899 6 6 2228 .666 .167 .089 .666 .079 .000 .421 150 297 .421 216 -0.993 0.050 -0.3 1.0 -1.1 1.0 A+ A+ 3389 716890 6	3383	716884	6	6	2224	.506	.268	.149	.506	.077	.000	.398	231	198	.398	099	-0.203	0.047	0.0	1.0	2.0	1.1	A+	A-
3386 716887 6 6 2267 .500 .122 .171 .500 .207 .000 .332 251 188 .332 032 -0.150 0.047 5.4 1.1 4.8 1.1 A+ A- 3387 716888 6 6 2211 .498 .498 .091 .064 .348 .000 .285 .285 188 265 049 -0.140 0.048 7.4 1.1 8.0 1.2 A- A- 3388 716890 6 6 2228 .666 .167 .089 .666 .079 .000 .421 150 297 .421 216 -0.993 0.050 -0.3 1.0 -1.1 1.0 A+ A+ 3389 716890 6 6 2186 .732 .065 .105 .732 .098 .000 .479 291 274 .479 190 -1.442 0.054 -3.3 0.9 -4.1 0.8 A-	3384	716885	6	6	2214	.291	.360	.139	.210	.291	.000	.089	.160	147	164	.089	0.928	0.051	9.9	1.3	9.9	1.9	A+	A+
3387 716888 6 6 2211 .498 .498 .091 .064 .348 .000 .285 .285 188 265 049 -0.140 0.048 7.4 1.1 8.0 1.2 A- A- 3388 716889 6 6 2228 .666 .167 .089 .666 .079 .000 .421 150 297 .421 216 -0.993 0.050 -0.3 1.0 -1.1 1.0 A+ A+ 3389 716890 6 6 2186 .732 .065 .105 .732 .098 .000 .479 291 274 .479 190 -1.442 0.054 -3.3 0.9 -4.1 0.8 A-	3385	716886	6	6	2182	.566	.136	.110	.188	.566	.000	.159	082	116	037	.159	-0.471	0.048	9.9	1.3	9.9	1.5	A+	A-
3388 716889 6 6 6 2228 .666 .167 .089 .666 .079 .000 .421150297 .421216 -0.993 0.050 -0.3 1.0 -1.1 1.0 A+ A+ 3389 716890 6 6 2186 .732 .065 .105 .732 .098 .000 .479291274 .479190 -1.442 0.054 -3.3 0.9 -4.1 0.8 A- A-	3386	716887	6	6	2267	.500	.122	.171	.500	.207	.000	.332	251	188	.332	032	-0.150	0.047	5.4	1.1	4.8	1.1	A+	A-
3389 716890 6 6 2186 .732 .065 .105 .732 .098 .000 .479291274 .479190 -1.442 0.054 -3.3 0.9 -4.1 0.8 A- A-	3387	716888	6	6	2211	.498	.498	.091	.064	.348	.000	.285	.285	188	265	049	-0.140	0.048	7.4	1.1	8.0	1.2	A-	A-
3389 716890 6 6 2186 .732 .065 .105 .732 .098 .000 .479291274 .479190 -1.442 0.054 -3.3 0.9 -4.1 0.8 A- A-	3388	716889	6	6	2228	.666	.167	.089	.666	.079	.000	.421	150	297	.421	216	-0.993	0.050	-0.3	1.0	-1.1	1.0	A+	A+
	3389	716890	6	6		.732			.732	.098	.000		291			190	-1.442	0.054	-3.3	0.9	-4.1		A-	A-
3390 /16891 6 6 2163 .822 .131 .039 .822 .008 .000 .468 307 324 .468 144 -2.014 0.062 -2.8 0.9 -4.5 0.7 A+ A-	3390	716891	6	6	2163	.822	.131	.039	.822	.008	.000	.468	307	324	.468	144	-2.014	0.062	-2.8	0.9	-4.5	0.7	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

3391 716892 6 6 2175 271 215 217 296 271 000 211 -090 0.85 -048 211 1.044 0.053 5.1 1.1 9.5 1.5 A-	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
3393 716893 6			Grade	Grade						` '										in			/F	/B
3394 716894 6																							A+	A+
3394 716895 6 6 2182 2289 224 2289 229 226 0.00 1.80 0.21 1.80 -1.32 -0.85 0.991 0.052 7.3 1.2 9.9 1.6 A+ A+ A+ A+ A+ A+ A+ A	-																						A-	A-
3396 716896 6 6 2315 774 774 705 718 705 718 705 718 705 718 705 718 705 718 705 718 705 718 705 718 705 718			_					.155			.000		073	045						1.3		1.6	A-	A-
3397 716897 66 6 2324 3.31 .064 .367 .313 .255 .000 .082 .070 .013 .082 .063 .0.797 .0.049 .9.9 1.3 .9.9 1.9 A. A.				_							.000									1.2	9.9	1.6	A+	A+
3398 719215 6 6 22153 650 0.984 650 0.561 0.105 0.000 3.18 1.123 3.18 1.190 1.155 0.932 0.051 4.9 1.1 4.7 1.2 A+ B-	-	716896	6	-			.774													1.1	4.4		A+	B-
3398 719215 6 6 6 2205 429 231 429 183 1.56 0.00 1.72 1.72 -0.64 1.159 0.29 0.567 0.049 9.9 1.2 9.9 1.6 A+ A+ A+ A+ A+ A+ A+ A	3396	716897	6	6	2324	.313	.064	.367	.313	.255	.000	.082	070	.013	.082	063	0.797	0.049	9.9	1.3	9.9	1.9	A-	A-
3399 719216 6 6 6 2205 429 231 429 1.83 1.56 0.00 2.57 -1.39 2.57 -0.84 -1.00 0.228 0.048 7.5 1.1 9.3 1.3 A+ A-	3397	719213	6	6		.650	.084	.650	.161	.105	.000	.318	123	.318	190	155	-0.932	0.051	4.9	1.1	4.7	1.2	A+	B-
3400 719217 6 6 6 2267 .431 .095 .298 .431 .176 .000 .305 .209 .172 .305 .029 0.177 0.047 .4.5 1.1 9.1 1.3 A A+ A+ A+ A+ A+ A+ A+	3398	719215	6	6	2208	.351	.351	.259	.216	.174	.000	.172	.172	064	159	.029	0.567	0.049	9.9	1.2	9.9	1.6	A+	A-
3401 719219 6 6 2190 .442 .442 .245 .151 .162 .000 .406 .406 .103 .221 .212 .212 .0.122 .0.48 .0.2 .1.0 .0.9 1.0 A+ A+ .0.2 A+ .0.3 .	3399	719216	6	6	2205	.429	.231	.429	.183	.156	.000	.257	139	.257	084	100	0.228	0.048	7.5	1.1	9.3	1.3	A+	A-
3402 734645 6 6 2184 4.43 2.07 2.36 2.44 3.114 0.00 2.55 -0.72 -0.69 2.55 -2.16 0.120 0.048 7.5 1.1 9.9 1.3 A A A A A A A A A	3400	719217	6	6	2267	.431	.095	.298	.431	.176	.000	.305	209	172	.305	029	0.177	0.047	4.5	1.1	9.1	1.3	A-	A+
3403 734646 6 6 2187 .429 .063 .416 .429 .092 .000 .280 .206 .061 .280 .203 .0248 .0.048 5.0 1.1 9.8 1.3 A. A. 3404 734647 6 6 2246 .486 .203 .115 .197 .000 .399 .196 .196 .146 .0.093 .004 .0.24 .0.088 .117 .138 .0.048 9.9 1.2 .9.5 1.3 A+ A- 3405 734649 6 6 2131 .383 .406 .383 .120 .091 .000 .251 .015 .251 .231 .189 .0.44 .0.048 9.9 1.2 9.9 2.4 A- A 3407 734650 6 6 2213 .183 .263 .078 .000 .360 .188 .061 .12 .9.9 2.4 A- A <td>3401</td> <td>719219</td> <td>6</td> <td>6</td> <td>2190</td> <td>.442</td> <td>.442</td> <td>.245</td> <td>.151</td> <td>.162</td> <td>.000</td> <td>.406</td> <td>.406</td> <td>103</td> <td>221</td> <td>212</td> <td>0.122</td> <td>0.048</td> <td>-0.2</td> <td>1.0</td> <td>0.9</td> <td>1.0</td> <td>A+</td> <td>A-</td>	3401	719219	6	6	2190	.442	.442	.245	.151	.162	.000	.406	.406	103	221	212	0.122	0.048	-0.2	1.0	0.9	1.0	A+	A-
3404 734647 6 6 2246 .486 .486 .203 .115 .197 .000 .399 .399 .196 .146 .106 .146 .0.093 .0.047 .0.8 .1.0 2.6 .1.1 A+ A- 3405 734648 6 6 2131 .383 .406 .383 .120 .091 .000 .251 .015 .251 .231 .189 .0.424 .0.049 6.0 .1.1 .99 .1.4 A- 3406 734650 6 6 2123 .183 .476 .183 .263 .078 .000 .611 .188 .061 .162 .172 .1.653 .0.061 .5.9 .1.2 .9.9 .2.4 A- 3408 734651 6 6 2251 .752 .752 .089 .101 .058 .000 .360 .360 .360 .360 .377 .132 .1.560 .0.054 .1.1 .0.0 .0.7 .1.0 A+ 3408 734651 6 6 2231 .383 .362 .204 .131 .302 .362 .000 .306 .360 .36	3402	734645	6	6	2184	.443	.207	.236	.443	.114	.000	.255	072	069	.255	216	0.120	0.048	7.5	1.1	9.9	1.3	A-	A-
3405 734648 6 6 2166 .566 .566 .276 .105 .053 .000 .214 .214 .088 117 138 -0.544 .0.048 9.9 1.2 9.5 1.3 A+ A- 3406 734690 6 6 2121 .383 .406 .383 .120 .091 .000 .251 .231 .189 0.424 .0.049 6.0 1.1 .99 1.4 A- A+ 3408 734651 6 6 22251 .752 .089 .101 .058 .000 .360 .360 .360 .187 .237 .132 .1.560 .061 .12 .10 .07 .10 A+ A+ 3409 734652 6 6 2213 .380 .032 <t194< td=""> .380 .092 .024 .038 .160 .142 .216 .0.546 .0.048 .82 1.2 .99 1.6 A+</t194<>	3403	734646	6	6	2187	.429	.063	.416	.429	.092	.000	.280	206	061	.280	203	0.248	0.048	5.0	1.1	9.8	1.3	A-	A-
3406 734649 6 6 2131 383 .406 .383 .120 .091 .000 .251 .251 231 189 0.424 0.049 6.0 1.1 9.9 1.4 A. A. 3407 734650 6 6 2123 .183 .476 .183 .263 .078 .000 .061 .188 .061 .162 .172 1.653 0.061 5.9 1.2 9.9 2.4 A. A. 3409 734651 6 6 2251 .752 .752 .089 .101 .058 .000 .360 .188 .160 .142 .160 .0546 .0.048 8.2 1.2 .99 2.4 A. A. 3410 734653 6 6 2213 .380 .032 .194 .380 .394 .000 .064 .122 .10 .0 .0 .12 .10 .048 .9 .1.1 .5	3404	734647	6	6	2246	.486	.486	.203	.115	.197	.000	.399	.399	196	196	146	-0.093	0.047	-0.8	1.0	2.6	1.1	A+	A-
3407 734650 6 6 2123 .183 .476 .183 .263 .078 .000 .061 .188 .061 162 172 1.653 .0061 5.9 1.2 9.9 2.4 A- A4 3408 734651 6 6 2251 .752 .089 .101 .058 .000 .360 .187 -237 132 -1.560 .054 1.2 1.0 .07 1.0 A+ A4 3410 734652 6 6 2214 .380 .302 .94 .380 .394 .000 .464 121 .0.466 0.048 8.2 1.2 9.9 1.6 A+ A+ 3411 734655 6 6 2275 .601 .092 .112 .601 .195 .000 .223 .158 .302 .074 -0.672 .0.48 8.2 1.1 .56 1.2 A+ A 341	3405	734648	6	6	2166	.566	.566	.276	.105	.053	.000	.214	.214	088	117	138	-0.544	0.048	9.9	1.2	9.5	1.3	A+	A-
3408 734651 6 6 2251 .752 .752 .089 .101 .058 .000 .360 .360 .187 237 132 -1.560 0.054 1.2 1.0 0.7 1.0 A+ A+ 3409 734652 6 6 2314 .362 .204 .131 .302 .362 .000 .216 .038 .160 142 .216 0.546 0.048 8.2 1.2 9.9 1.6 A+ A- 3410 734653 6 6 2213 .380 .032 .194 .380 .900 .062 .464 .121 0.466 0.049 -5.3 0.9 0.3 1.0 A+ A+ 3411 734654 6 6 2276 .495 .135 .143 .495 .27 .000 .322 .238 .158 .001 .066 .0247 .99 1.3 .44 A+ A 3	3406	734649	6	6	2131	.383	.406	.383	.120	.091	.000	.251	.015	.251	231	189	0.424	0.049	6.0	1.1	9.9	1.4	A-	A+
3409 734652 6 6 2314 .362 .204 .131 .302 .362 .000 .216 .038 .1.60 142 .216 .0.546 .0.048 8.2 1.2 9.9 1.6 A+ A- 3410 734653 6 6 2213 .380 .032 .194 .380 .394 .000 .464 128 362 .464 121 .0.466 .0.049 -5.3 0.9 0.3 1.0 A+ A+ 3411 734655 6 6 2276 .495 .135 .143 .495 .227 .000 .125 .098 .069 .125 .011 -0.125 .0047 9.9 1.3 9.9 1.5 A+ A- 3413 734656 6 6 2273 .535 .231 .151 .535 .084 .000 .405 .260 .162 .405 .126 .0.362 .0.047 .0.0<	3407	734650	6	6	2123	.183	.476	.183	.263	.078	.000	.061	.188	.061	162	172	1.653	0.061	5.9	1.2	9.9	2.4	A-	A+
3410 734653 6 6 2213 .380 .32 .194 .380 .394 .000 .464 128 362 .464 121 .0.466 0.049 -5.3 0.9 0.3 1.0 A+ A4 3411 734654 6 6 2250 .601 .092 .112 .601 .195 .000 .302 -238 158 .302 074 -0.672 .0.048 5.9 1.1 5.6 1.2 A+ A+ 3412 734655 6 6 2276 .495 .135 .143 .495 .227 .000 .125 .098 069 .125 .011 -0.125 .0.047 .9.9 1.3 9.9 1.5 A+ A+ 3413 734655 6 6 6 2275 .517 .203 .174 .106 .517 .000 .475 .264 216 .160 .475 .0226 .0.047 <td>3408</td> <td>734651</td> <td>6</td> <td>6</td> <td>2251</td> <td>.752</td> <td>.752</td> <td>.089</td> <td>.101</td> <td>.058</td> <td>.000</td> <td>.360</td> <td>.360</td> <td>187</td> <td>237</td> <td>132</td> <td>-1.560</td> <td>0.054</td> <td>1.2</td> <td>1.0</td> <td>0.7</td> <td>1.0</td> <td>A+</td> <td>A+</td>	3408	734651	6	6	2251	.752	.752	.089	.101	.058	.000	.360	.360	187	237	132	-1.560	0.054	1.2	1.0	0.7	1.0	A+	A+
3411 734654 6 6 2250 .601 .092 .112 .601 .195 .000 .302 238 158 .302 074 0672 0.048 5.9 1.1 5.6 1.2 A+ A+ 3412 734655 6 6 2276 .495 .135 .143 .495 .227 .000 .125 098 069 .125 011 -0.125 0.047 9.9 1.3 9.9 1.5 A+ A- 3413 734656 6 6 2273 .535 .231 .151 .535 .084 .000 .405 260 162 .405 126 -0.362 0.047 -0.0 1.0 1.0 A- A- 3414 734657 6 6 2254 .432 .121 .432 .375 .072 .000 .358 141 .358 222 .092 .0213 0.047 1.6 1.0 6	3409	734652	6	6	2314	.362	.204	.131	.302	.362	.000	.216	.038	160	142	.216	0.546	0.048	8.2	1.2	9.9	1.6	A+	A-
3412 734655 6 6 2276 .495 .135 .143 .495 .227 .000 .125 098 069 .125 011 0.125 0.047 9.9 1.3 9.9 1.5 A+ A- 3413 734656 6 6 2273 .535 .231 .151 .535 .084 .000 .405 260 162 .405 126 -0.362 0.047 0.0 1.0 1.0 A- A- 3414 734657 6 6 2275 .517 .203 .174 .106 .517 .000 .475 264 216 160 .475 -0.226 0.047 43 0.9 -1.2 1.0 A- A- 3415 734658 6 6 2254 .432 .121 .432 .375 .072 .000 .358 141 .358 222 .092 0.213 0.047 1.0 1.0 <td< td=""><td>3410</td><td>734653</td><td>6</td><td>6</td><td>2213</td><td>.380</td><td>.032</td><td>.194</td><td>.380</td><td>.394</td><td>.000</td><td>.464</td><td>128</td><td>362</td><td>.464</td><td>121</td><td>0.466</td><td>0.049</td><td>-5.3</td><td>0.9</td><td>0.3</td><td>1.0</td><td>A+</td><td>A+</td></td<>	3410	734653	6	6	2213	.380	.032	.194	.380	.394	.000	.464	128	362	.464	121	0.466	0.049	-5.3	0.9	0.3	1.0	A+	A+
3413 734656 6 6 2273 .535 .231 .151 .535 .084 .000 .405 260 162 .405 126 -0.362 0.047 0.0 1.0 1.0 1.0 A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-	3411	734654	6	6	2250	.601	.092	.112	.601	.195	.000	.302	238	158	.302	074	-0.672	0.048	5.9	1.1	5.6	1.2	A+	A+
3414 734657 6 6 2275 .517 .203 .174 .106 .517 .000 .475 264 216 160 .475 -0.226 0.047 -4.3 0.9 -1.2 1.0 A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-	3412	734655	6	6	2276	.495	.135	.143	.495	.227	.000	.125	098	069	.125	011	-0.125	0.047	9.9	1.3	9.9	1.5	A+	A-
3415 734658 6 6 2254 .432 .121 .432 .375 .072 .000 .358 141 .358 222 092 0.213 0.047 1.6 1.0 6.0 1.2 A+ A- 3416 734659 6 6 2218 .371 .207 .371 .198 .223 .000 .304 184 119 0.499 0.049 3.9 1.1 7.1 1.3 A- C- 3417 734660 6 6 2283 .326 .180 .362 .326 .131 .000 .178 086 101 .178 005 0.709 0.049 8.5 1.2 9.9 1.6 A- A+ 3418 734661 6 6 2194 .400 .175 .088 .338 .400 .000 .402 234 239 085 .402 0.386 0.049 -0.9 1.0 1.6	3413	734656	6	6	2273	.535	.231	.151	.535	.084	.000	.405	260	162	.405	126	-0.362	0.047	0.0	1.0	1.0	1.0	A-	A-
3416 734659 6 6 2218 .371 .207 .371 .198 .223 .000 .304 059 .304 184 119 0.499 0.049 3.9 1.1 7.1 1.3 A- C- 3417 734660 6 6 2283 .326 .180 .362 .326 .131 .000 .178 086 101 .178 005 0.709 0.049 8.5 1.2 9.9 1.6 A- A+ 3418 734661 6 6 2153 .148 .523 .184 .145 .148 .000 .229 .008 096 137 .229 1.990 0.065 0.3 1.0 7.8 1.8 A+ A+ 3419 734662 6 6 2194 .400 .175 .088 .338 .400 .000 .402 234 239 .085 .402 0.386 0.049 -0.9 <td>3414</td> <td>734657</td> <td>6</td> <td>6</td> <td>2275</td> <td>.517</td> <td>.203</td> <td>.174</td> <td>.106</td> <td>.517</td> <td>.000</td> <td>.475</td> <td>264</td> <td>216</td> <td>160</td> <td>.475</td> <td>-0.226</td> <td>0.047</td> <td>-4.3</td> <td>0.9</td> <td>-1.2</td> <td>1.0</td> <td>A-</td> <td>A+</td>	3414	734657	6	6	2275	.517	.203	.174	.106	.517	.000	.475	264	216	160	.475	-0.226	0.047	-4.3	0.9	-1.2	1.0	A-	A+
3417 734660 6 2283 .326 .180 .362 .326 .131 .000 .178 086 101 .178 005 0.709 0.049 8.5 1.2 9.9 1.6 A- A+ 3418 734661 6 6 2153 .148 .523 .184 .145 .148 .000 .229 .008 096 137 .229 1.990 0.065 0.3 1.0 7.8 1.8 A+ A+ 3419 734662 6 6 2194 .400 .175 .088 .338 .400 .000 .402 234 239 085 .402 0.386 0.049 -0.9 1.0 1.6 1.1 A- A+ 3420 734663 6 6 2299 .316 .118 .133 .433 .316 .000 .215 088 116 065 .215 0.793 0.049 7.6 1.2<	3415	734658	6	6	2254	.432	.121	.432	.375	.072	.000	.358	141	.358	222	092	0.213	0.047	1.6	1.0	6.0	1.2	A+	A-
3418 734661 6 6 2153 .148 .523 .184 .145 .148 .000 .229 .008 096 137 .229 1.990 0.065 0.3 1.0 7.8 1.8 A+ A+ 3419 734662 6 6 2194 .400 .175 .088 .338 .400 .000 .402 234 239 085 .402 0.386 0.049 -0.9 1.0 1.6 1.1 A- A+ 3420 734663 6 6 2299 .316 .118 .133 .433 .316 .000 .215 088 116 065 .215 0.793 0.049 7.6 1.2 9.8 1.5 A+ A+ 3421 734664 6 6 2217 .528 .211 .161 .528 .100 .000 .313 156 .313 062 -0.329 0.048 6.2 1.1 <td>3416</td> <td>734659</td> <td>6</td> <td>6</td> <td>2218</td> <td>.371</td> <td>.207</td> <td>.371</td> <td>.198</td> <td>.223</td> <td>.000</td> <td>.304</td> <td>059</td> <td>.304</td> <td>184</td> <td>119</td> <td>0.499</td> <td>0.049</td> <td>3.9</td> <td>1.1</td> <td>7.1</td> <td>1.3</td> <td>A-</td> <td>C-</td>	3416	734659	6	6	2218	.371	.207	.371	.198	.223	.000	.304	059	.304	184	119	0.499	0.049	3.9	1.1	7.1	1.3	A-	C-
3419 734662 6 6 2194 .400 .175 .088 .338 .400 .000 .402 234 239 085 .402 0.386 0.049 -0.9 1.0 1.6 1.1 A- A+ 3420 734663 6 6 2299 .316 .118 .133 .433 .316 .000 .215 088 116 065 .215 0.793 0.049 7.6 1.2 9.8 1.5 A+ A+ 3421 734664 6 6 2217 .528 .211 .161 .528 .100 .000 .313 156 .313 062 -0.329 0.048 6.2 1.1 5.9 1.2 A+ A- 3422 734665 6 6 2234 .248 .216 .244 .292 .248 .000 .243 115 .012 .243 1.155 0.053 2.7 1.1 7.9	3417	734660	6	6	2283	.326	.180	.362	.326	.131	.000	.178	086	101	.178	005	0.709	0.049	8.5	1.2	9.9	1.6	A-	A+
3420 734663 6 6 2299 .316 .118 .133 .433 .316 .000 .215 088 116 065 .215 0.793 0.049 7.6 1.2 9.8 1.5 A+ A+ 3421 734664 6 6 2217 .528 .211 .161 .528 .100 .000 .313 198 156 .313 062 -0.329 0.048 6.2 1.1 5.9 1.2 A+ A- 3422 734665 6 6 2234 .248 .216 .244 .292 .248 .000 .243 148 115 .012 .243 1.155 0.053 2.7 1.1 7.9 1.5 A+ A- 3423 734666 6 6 6 2272 .765 .048 .087 .101 .765 .000 .455 267 220 247 .455 -1.613 0.055 -2.4 0.9 -2.7 0.9 A+ B- 3424 734667<	3418	734661	6	6	2153	.148	.523	.184	.145	.148	.000	.229	.008	096	137	.229	1.990	0.065	0.3	1.0	7.8	1.8	A+	A+
3421 734664 6 6 2217 .528 .211 .161 .528 .100 .000 .313 156 .313 062 -0.329 0.048 6.2 1.1 5.9 1.2 A+ A- 3422 734665 6 6 2234 .248 .216 .244 .292 .248 .000 .243 115 .012 .243 1.155 0.053 2.7 1.1 7.9 1.5 A+ A- 3423 734666 6 6 2272 .765 .048 .087 .101 .765 .000 .455 267 220 247 .455 -1.613 0.055 -2.4 0.9 -2.7 0.9 A+ B- 3424 734667 6 6 2234 .803 .803 .041 .070 .086 .000 .441 .441 255 265 205 -1.891 0.059 -2.2 0.9 -2.6 0.9 A+ A-	3419	734662	6	6	2194	.400	.175	.088	.338	.400	.000	.402	234	239	085	.402	0.386	0.049	-0.9	1.0	1.6	1.1	A-	A+
3422 734665 6 6 2234 .248 .216 .244 .292 .248 .000 .243 148 115 .012 .243 1.155 0.053 2.7 1.1 7.9 1.5 A+ A- 3423 734666 6 6 2272 .765 .048 .087 .101 .765 .000 .455 267 220 247 .455 -1.613 0.055 -2.4 0.9 -2.7 0.9 A+ B- 3424 734667 6 6 2234 .803 .803 .041 .070 .086 .000 .441 .441 255 265 205 -1.891 0.059 -2.2 0.9 -2.6 0.9 A+ A-	3420	734663	6	6	2299	.316	.118	.133	.433	.316	.000	.215	088	116	065	.215	0.793	0.049	7.6	1.2	9.8	1.5	A+	A+
3423 734666 6 6 2272 .765 .048 .087 .101 .765 .000 .455 267 220 247 .455 -1.613 0.055 -2.4 0.9 -2.7 0.9 A+ B- 3424 734667 6 6 2234 .803 .803 .041 .070 .086 .000 .441 .441 255 265 205 -1.891 0.059 -2.2 0.9 -2.6 0.9 A+ A-	3421	734664	6	6	2217	.528	.211	.161	.528	.100	.000	.313	198	156	.313	062	-0.329	0.048	6.2	1.1	5.9	1.2	A+	A-
3424 734667 6 6 2234 .803 .803 .041 .070 .086 .000 .441 .441255265205 -1.891 0.059 -2.2 0.9 -2.6 0.9 A+ A-	3422	734665	6	6	2234	.248	.216	.244	.292	.248	.000	.243	148	115	.012	.243	1.155	0.053	2.7	1.1	7.9	1.5	A+	A-
3424 734667 6 6 2234 .803 .803 .041 .070 .086 .000 .441 .441255265205 -1.891 0.059 -2.2 0.9 -2.6 0.9 A+ A-	3423	734666	6	6	2272	.765	.048	.087	.101	.765	.000	.455	267	220	247	.455	-1.613	0.055	-2.4	0.9	-2.7	0.9	A+	B-
	3424	734667	6	6	2234	.803	.803	.041	.070	.086	.000	.441	.441	255	265	205	-1.891	0.059	-2.2	0.9	-2.6	0.9	A+	A-
ן 34עס ן ס ן ס א א א א א א א א א א א א א א א	3425	734668	6	6	2273	.350	.134	.152	.364	.350	.000	.079	095	170	.116	.079	0.591	0.049	9.9	1.3	9.9	1.8	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade						` '									in	in	out	out	/F	/B
3426	734669	6	6	2234	.500	.119	.115	.500	.265	.000	.454	172	248	.454	208	-0.188	0.048	-2.3	1.0	-0.9	1.0	A-	A-
3427	734670	6	6	2241	.476	.232	.075	.476	.216	.000	.434	274	163	.434	141	-0.053	0.047	-2.0	1.0	-0.3	1.0	A+	A+
3428	734671	6	6	2229	.465	.122	.465	.342	.072	.000	.295	226	.295	074	149	0.062	0.047	6.2	1.1	8.3	1.3	A+	A-
3429	734672	6	6	2228	.725	.071	.171	.032	.725	.000	.255	201	110	117	.255	-1.335	0.053	6.0	1.2	4.0	1.2	A+	A-
3430	734673	6	6	2214	.373	.104	.371	.373	.152	.000	.209	085	168	.209	.016	0.488	0.049	8.6	1.2	9.9	1.5	A+	A-
3431	734674	6	6	2317	.170	.207	.075	.170	.549	.000	.264	136	128	.264	021	1.772	0.060	-0.2	1.0	8.6	1.7	A-	A-
3432	734675	6	6	2242	.380	.119	.257	.245	.380	.000	.222	058	090	116	.222	0.464	0.049	9.2	1.2	9.9	1.5	A+	A+
3433	734676	6	6	2302	.275	.275	.276	.337	.112	.000	.244	.244	058	083	140	1.023	0.051	3.7	1.1	9.9	1.7	A+	A-
3434	734677	6	6	2246	.368	.203	.368	.293	.136	.000	.065	.002	.065	.003	098	0.486	0.048	9.9	1.4	9.9	1.6	A+	A+
3435	734678	6	6	2353	.469	.322	.469	.122	.088	.000	018	.114	018	101	040	0.039	0.046	9.9	1.5	9.9	1.8	A-	A-
3436	734679	6	6	2230	.487	.119	.224	.487	.170	.000	.189	088	102	.189	062	-0.096	0.047	9.9	1.2	9.9	1.4	A+	A-
3437	734680	6	6	2186	.467	.157	.467	.182	.194	.000	.211	093	.211	162	023	0.038	0.048	9.9	1.2	9.9	1.4	A-	A+
3438	734681	6	6	2254	.307	.126	.205	.361	.307	.000	.257	062	109	112	.257	0.874	0.050	4.4	1.1	9.9	1.5	A+	A-
3439	734682	6	6	2192	.350	.228	.185	.349	.237	.000	.015	.103	121	.015	008	0.578	0.049	9.9	1.4	9.9	1.8	A-	A+
3440	734683	6	6	2288	.513	.513	.227	.113	.147	.000	.411	.411	103	260	226	-0.250	0.047	0.2	1.0	1.0	1.0	A+	A-
3441	734684	6	6	2268	.167	.167	.201	.181	.451	.000	.053	.053	109	163	.174	1.805	0.060	5.1	1.2	9.9	2.2	A+	A-
3442	730180	7	7	1156	.235	.306	.235	.343	.116	.000	.214	140	.214	.004	088	1.485	0.075	1.4	1.1	8.9	1.9	A+	A+
3443	730181	7	7	1285	.286	.286	.198	.165	.351	.000	.274	.274	175	170	.020	1.226	0.068	1.6	1.1	6.1	1.5	A-	A-
3444	730182	7	7	1224	.677	.677	.184	.055	.084	.000	.484	.484	315	241	178	-0.868	0.069	-2.4	0.9	-3.1	0.9	A+	A-
3445	730183	7	7	1203	.589	.589	.201	.111	.098	.000	.396	.396	185	173	222	-0.299	0.066	0.9	1.0	1.6	1.1	A-	A-
3446	730184	7	7	1181	.562	.179	.562	.104	.155	.000	.319	117	.319	187	155	-0.244	0.066	4.8	1.1	4.9	1.2	A+	A+
3447	730185	7	7	1193	.450	.450	.296	.160	.094	.000	.360	.360	064	271	172	0.351	0.065	1.5	1.0	3.8	1.2	A-	A-
3448	730186	7	7	1194	.449	.260	.449	.174	.117	.000	.261	099	.261	111	138	0.365	0.065	5.4	1.1	8.3	1.4	A-	A+
3449	730187	7	7	1232	.537	.537	.215	.160	.088	.000	.448	.448	247	198	174	-0.067	0.064	-1.8	1.0	0.2	1.0	A-	A-
3450	730188	7	7	1135	.495	.155	.495	.208	.142	.000	.427	189	.427	201	182	0.142	0.066	-1.4	1.0	1.6	1.1	A-	A-
3451	730189	7	7	1178	.526	.131	.225	.119	.525	.000	.322	189	184	063	.322	-0.007	0.066	4.6	1.1	4.3	1.2	A+	A-
3452	730190	7	7	1178	.806	.043	.806	.048	.104	.000	.357	213	.357	178	198	-1.652	0.081	0.4	1.0	0.4	1.0	A+	A-
3453	730191	7	7	1208	.564	.564	.163	.094	.179	.000	.449	.449	277	254	120	-0.225	0.066	-1.2	1.0	0.6	1.0	A+	A-
3454	730192	7	7	1182	.615	.615	.119	.118	.147	.000	.432	.432	143	277	209	-0.483	0.067	0.1	1.0	-0.8	1.0	B+	A-
3455	730193	7	7	1180	.542	.171	.138	.149	.542	.000	.461	252	230	155	.461	-0.072	0.065	-3.3	0.9	-1.9	0.9	A-	C-
3456	730194	7	7	1161	.608	.608	.144	.109	.140	.000	.382	.382	132	301	135	-0.424	0.067	1.2	1.0	1.0	1.0	A-	B-
3457	730195	7	7	1239	.544	.166	.544	.159	.131	.000	.386	178	.386	186	171	-0.144	0.064	1.1	1.0	1.9	1.1	A-	A+
3458	730196	7	7	1235	.478	.147	.478	.236	.138	.000	.343	012	.343	245	182	0.193	0.064	2.7	1.1	4.1	1.2	A+	A-
3459	730197	7	7	1227	.412	.412	.262	.216	.110	.000	.411	.411	082	259	192	0.534	0.065	-1.4	1.0	1.2	1.1	A+	A-
3460	730198	7	7	1186	.571	.120	.197	.571	.112	.000	.378	157	253	.378	113	-0.236	0.066	1.8	1.1	1.5	1.1	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

3462 7	730199	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-		W
3462 7						. (, ,	. (5)			٠,,	1 (13)						_	in	in	out	out	/F	/B
	720200	7	7	1174	.812	.812	.033	.117	.038	.000	.415	.415	219	241	238	-1.705	0.083	-0.6	1.0	-0.6	1.0	C+	A+
2462 -	730200	7	7	1119	.296	.103	.519	.082	.296	.000	.326	263	.006	260	.326	1.209	0.072	0.7	1.0	4.4	1.3	A-	A+
	730201	7	7	1213	.275	.436	.210	.275	.079	.000	.116	.002	014	.116	173	1.282	0.070	5.8	1.2	9.9	1.8	A-	A-
	736037	7	7	1181	.441	.042	.289	.228	.441	.000	.386	168	111	257	.386	0.426	0.066	0.2	1.0	4.3	1.2	A-	A-
	736038	7	7	1159	.185	.098	.469	.185	.248	.000	.117	090	.060	.117	113	1.913	0.081	2.6	1.1	9.9	2.8	A-	A+
3466 7	736039	7	7	1225	.480	.282	.480	.153	.084	.000	.392	242	.392	202	051	0.197	0.064	0.1	1.0	3.1	1.1	A-	A-
3467 7	736040	7	7	1163	.362	.308	.195	.362	.135	.000	.189	082	152	.189	.022	0.795	0.067	7.0	1.2	9.3	1.6	A+	A+
3468 7	736041	7	7	1159	.469	.288	.085	.469	.158	.000	.222	193	111	.222	.022	0.234	0.065	7.4	1.2	7.9	1.4	C-	A-
3469 7	736042	7	7	1250	.450	.097	.134	.319	.450	.000	.255	121	271	.002	.255	0.296	0.064	6.7	1.2	7.5	1.3	A-	A+
3470 7	736043	7	7	1256	.292	.270	.292	.166	.272	.000	.243	132	.243	208	.057	1.177	0.068	4.0	1.1	5.3	1.4	A-	A-
3471 7	736044	7	7	1184	.249	.413	.249	.197	.141	.000	.054	.058	.054	048	095	1.397	0.073	5.9	1.2	9.9	2.5	A+	A-
3472 7	736045	7	7	1107	.599	.184	.132	.085	.599	.000	.193	039	112	148	.193	-0.413	0.069	8.4	1.3	7.7	1.4	A+	A-
3473 7	736047	7	7	1170	.372	.403	.164	.372	.061	.000	.409	298	114	.409	038	0.793	0.067	-2.6	0.9	3.0	1.2	A+	A+
3474 7	736048	7	7	1210	.481	.481	.308	.135	.076	.000	.055	.055	.031	034	114	0.227	0.064	9.9	1.4	9.9	1.7	A-	A+
3475 7	736049	7	7	1252	.459	.459	.291	.190	.060	.000	.013	.013	.034	.006	102	0.349	0.063	9.9	1.4	9.9	1.7	A+	A-
3476	736050	7	7	1175	.433	.154	.433	.152	.260	.000	.397	243	.397	154	122	0.421	0.065	-1.0	1.0	1.9	1.1	A-	A+
3477 7	736051	7	7	1249	.409	.259	.195	.409	.137	.000	.239	150	107	.239	028	0.556	0.064	5.7	1.1	8.5	1.4	A-	A-
3478 7	736053	7	7	1189	.314	.209	.314	.435	.042	.000	.052	020	.052	.018	124	1.097	0.068	9.3	1.3	9.9	1.9	A+	A-
3479 7	736054	7	7	1248	.152	.634	.152	.157	.057	.000	.099	.089	.099	097	186	2.158	0.084	2.0	1.1	9.9	2.8	A-	A-
3480 7	736055	7	7	1155	.569	.063	.083	.569	.285	.000	.300	269	262	.300	024	-0.294	0.067	5.0	1.1	4.2	1.2	A+	A-
3481 7	736056	7	7	1247	.609	.046	.081	.265	.609	.000	.378	175	175	227	.378	-0.474	0.066	2.5	1.1	3.3	1.2	A+	B-
3482 7	736057	7	7	1214	.503	.351	.116	.502	.030	.000	.172	012	185	.172	123	0.079	0.064	9.9	1.3	9.3	1.4	A+	A-
3483 7	736058	7	7	1270	.576	.202	.167	.576	.056	.000	.427	220	228	.427	166	-0.304	0.064	0.3	1.0	0.7	1.0	A+	C-
3484 7	736059	7	7	1231	.431	.108	.340	.431	.122	.000	.106	.018	.045	.106	243	0.438	0.064	9.9	1.3	9.9	1.7	A-	A+
3485 7	736060	7	7	1175	.386	.221	.386	.228	.164	.000	.115	132	.115	065	.070	0.681	0.066	9.6	1.3	9.9	1.8	A-	A-
3486 7	736061	7	7	1161	.248	.248	.397	.170	.185	.000	.157	.157	.081	146	136	1.441	0.074	4.3	1.2	9.5	1.9	A-	A-
3487 7	736062	7	7	1155	.206	.293	.271	.230	.206	.000	.234	080	109	024	.234	1.768	0.079	1.7	1.1	4.7	1.5	A-	A-
3488 7	736063	7	7	1255	.818	.065	.818	.076	.040	.000	.412	264	.412	189	223	-1.771	0.081	-0.3	1.0	-1.7	0.9	A-	C-
3489 7	736064	7	7	1129	.580	.580	.238	.150	.032	.000	.413	.413	129	310	216	-0.226	0.067	0.0	1.0	-0.1	1.0	A-	A-
3490 7	736065	7	7	1176	.134	.134	.533	.307	.026	.000	.116	.116	.135	181	147	2.353	0.091	1.0	1.1	9.6	2.7	B-	A+
3491 7	736066	7	7	1166	.634	.105	.130	.130	.634	.000	.534	219	256	308	.534	-0.601	0.068	-4.6	0.9	-4.6	0.8	A+	A-
3492 7	736067	7	7	1196	.689	.135	.117	.689	.059	.000	.439	232	245	.439	192	-0.835	0.070	-0.9	1.0	-0.5	1.0	A+	A+
3493 7	736068	7	7	1193	.521	.136	.200	.142	.521	.000	.452	151	251	212	.452	-0.008	0.065	-2.8	0.9	1.1	1.0	A+	A-
3494 7	736069	7	7	1181	.487	.187	.487	.143	.183	.000	.351	.003	.351	215	261	0.167	0.065	2.1	1.1	5.6	1.3	A+	A+
3495 7	736070	7	7	1229	.167	.248	.516	.069	.167	.000	.351	058	136	149	.351	2.058	0.082	-2.3	0.9	3.9	1.5	B-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

3497 73 3498 73	736071 736072	Grade 7	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
3497 73 3498 73	-	7																in	in	out	out	/F	/B
3498 73	736072		7	1182	.374	.091	.374	.409	.126	.000	.070	.061	.070	.022	188	0.765	0.067	9.9	1.3	9.9	1.9	A+	A+
		7	7	1196	.537	.140	.162	.537	.161	.000	.248	106	150	.248	085	-0.070	0.065	7.4	1.2	7.0	1.3	A-	B-
3499 73	736073	7	7	1197	.274	.249	.277	.200	.274	.000	.317	215	008	112	.317	1.291	0.071	-0.5	1.0	6.3	1.5	A-	A+
	736074	7	7	1205	.549	.144	.549	.265	.042	.000	.401	136	.401	264	175	-0.197	0.065	0.5	1.0	0.7	1.0	A+	A-
3500 73	736075	7	7	1209	.359	.359	.300	.158	.183	.000	.093	.093	055	091	.035	0.860	0.066	9.9	1.3	9.9	1.8	A+	A+
3501 73	736685	7	7	1177	.516	.516	.269	.127	.088	.000	.335	.335	203	186	053	0.008	0.065	3.9	1.1	3.7	1.2	A-	A-
3502 73	736686	7	7	1213	.466	.234	.220	.466	.080	.000	.225	088	110	.225	108	0.232	0.065	8.3	1.2	8.9	1.4	A+	A+
3503 73	736687	7	7	1162	.365	.213	.365	.288	.133	.000	.094	049	.094	045	014	0.767	0.067	9.9	1.3	9.9	1.8	A+	A+
3504 73	736688	7	7	1163	.458	.187	.138	.458	.217	.000	.279	119	240	.279	024	0.307	0.066	4.9	1.1	6.8	1.3	A-	A-
3505 73	736689	7	7	1190	.409	.108	.254	.409	.229	.000	.171	168	.020	.171	096	0.569	0.065	8.0	1.2	9.9	1.6	A-	A-
3506 73	736690	7	7	1219	.448	.194	.139	.218	.448	.000	.401	202	206	116	.401	0.329	0.064	-0.5	1.0	2.4	1.1	A+	A-
3507 73	736691	7	7	1183	.544	.114	.544	.175	.167	.000	.316	209	.316	087	156	-0.107	0.066	4.8	1.1	4.9	1.2	A+	A+
3508 73	736692	7	7	1154	.722	.075	.115	.722	.088	.000	.549	241	303	.549	303	-1.099	0.074	-3.9	0.9	-4.7	0.7	A+	B-
3509 73	736693	7	7	1179	.724	.061	.114	.724	.101	.000	.483	202	270	.483	271	-1.149	0.074	-1.2	1.0	-2.8	0.8	A+	A-
3510 73	736694	7	7	1172	.511	.078	.111	.511	.299	.000	.360	157	213	.360	154	0.036	0.065	2.0	1.1	3.5	1.1	A-	A-
3511 73	736695	7	7	1209	.449	.149	.283	.449	.119	.000	.387	150	239	.387	097	0.386	0.064	-0.4	1.0	3.2	1.1	A-	A-
3512 73	736696	7	7	1176	.202	.270	.253	.202	.275	.000	.038	054	161	.038	.176	1.747	0.079	5.2	1.2	9.9	2.5	A-	A+
3513 73	736697	7	7	1157	.445	.148	.207	.201	.445	.000	.289	085	076	206	.289	0.410	0.066	4.7	1.1	7.8	1.4	A+	A-
3514 73	736698	7	7	1193	.448	.199	.448	.242	.111	.000	.352	013	.352	231	226	0.381	0.065	1.7	1.0	3.0	1.1	A+	A-
3515 73	736699	7	7	1247	.593	.239	.593	.108	.059	.000	.373	157	.373	190	242	-0.365	0.065	1.3	1.0	3.3	1.1	A+	A-
3516 73	736700	7	7	1223	.290	.241	.201	.268	.289	.000	.300	015	172	138	.300	1.218	0.069	0.5	1.0	9.6	1.8	A-	A-
3517 73	736701	7	7	1222	.176	.338	.318	.176	.169	.000	.023	144	.067	.023	.075	1.960	0.080	4.1	1.2	9.9	2.8	A-	A+
3518 73	736702	7	7	1212	.288	.288	.389	.183	.140	.000	.054	.054	020	077	.044	1.249	0.069	8.8	1.3	9.9	2.0	A-	A+
3519 73	736703	7	7	1197	.345	.088	.247	.345	.320	.000	062	113	.089	062	.049	0.915	0.067	9.9	1.5	9.9	2.2	A+	A+
3520 73	736704	7	7	1248	.353	.247	.353	.165	.235	.000	.062	.147	.062	054	173	0.836	0.065	9.9	1.3	9.9	1.6	A+	A-
3521 73	736922	7	7	1176	.299	.139	.224	.298	.338	.000	.004	036	200	.004	.199	1.179	0.069	9.9	1.4	9.9	2.1	A-	A-
3522 73	736923	7	7	1198	.359	.374	.359	.129	.139	.000	.092	.055	.092	139	070	0.778	0.067	9.9	1.3	9.9	1.8	A-	A+
3523 73	736924	7	7	1155	.588	.076	.177	.158	.588	.000	.275	169	150	090	.275	-0.282	0.067	5.3	1.2	6.5	1.3	A-	A+
3524 73	736925	7	7	1199	.566	.054	.348	.565	.033	.000	.185	063	112	.185	136	-0.241	0.066	9.9	1.3	9.9	1.5	A-	A-
3525 73	736926	7	7	1144	.348	.348	.143	.269	.240	.000	.169	.169	141	082	.012	0.902	0.069	7.0	1.2	9.9	1.8	A-	A-
3526 73	736927	7	7	1178	.409	.244	.409	.272	.076	.000	.262	031	.262	157	173	0.526	0.066	5.2	1.1	7.5	1.4	A+	A-
3527 73	736928	7	7	1232	.219	.219	.180	.196	.404	.000	.236	.236	092	158	.001	1.655	0.074	0.6	1.0	8.1	1.8	A+	B-
3528 73	736929	7	7	1213	.211	.200	.264	.325	.211	.000	.174	090	029	047	.174	1.656	0.076	2.3	1.1	9.8	2.1	A-	A-
3529 73	736930	7	7	1252	.355	.355	.152	.260	.232	.000	.245	.245	222	165	.082	0.851	0.065	4.9	1.1	7.1	1.4	A+	A-
3530 73	736931	7	7	1179	.552	.081	.170	.552	.197	.000	.322	133	073	.322	242	-0.129	0.066	4.2	1.1	4.5	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Same	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
18532 36993			Grade	Grade										. ,					in	in	out		/F	/B
1533 736914 7			,																				A-	_
3534 736935 7 7 1155 .441 .178 .224 .441 .157 .000 .229 .133 .060 .229 .103 .0374 .066 .6.8 .12 .9.1 .1.5 .4.			•	,																			A-	
1955 736936 7				,																			A+	A-
Sign 1969 7	3534	736935	•	,							.000					103				1.2			A-	A-
3537 736938 7 7 1172 111 131 1.09 7.11 0.49 0.00 0.426 -3.05 -2.03 0.426 -1.25 -1.021 0.072 0.2 1.0 -1.0 0.9 0.9 A+ B+ 3538 736939 7 7 1133 3.94 3.02 3.94 2.13 0.92 0.00 0.839 0.089 0.	3535	736936	7	7			.331	.310	.291		.000	.242	.242	120	033	171	0.975			1.1	8.3		A+	A-
3538 736939 7	3536	736937	7	7	1238	.217	.144	.507	.217	.132	.000	.138	051	121	.138	.064	1.714	0.074	3.6	1.2	9.7	2.1	A-	B-
3539 736940 7 7 1192 2.54 2.54 3.06 3.06 3.04 3.00 0.89 0.89 0.04 -1.69 0.45 1.433 0.072 6.2 1.2 9.9 2.1 A A A A 3540 737144 7 7 7 1203 466 1.29 2.29 1.76 466 0.00 3.50 -1.96 0.085 -1.92 3.50 0.065 0.065 0.065 2.4 1.1 5.5 1.3 A A A A 3541 737145 7 7 1119 6.56 0.82 1.63 6.56 0.99 0.00 3.90 -2.55 -2.27 3.90 -1.06 0.070 0.071 1.0 1.0 0.6 1.0 A A A 3542 37146 7 7 1222 6.98 1.72 0.94 6.98 0.36 0.00 3.22 -1.62 -2.04 3.22 1.16 -1.046 0.070 3.5 1.1 3.4 1.2 B A A 3543 37147 7 7 7 1.211 7.39 0.88 7.39 0.88 0.06 0.00	3537	736938	7	7	1172	.711	.131	.109	.711	.049	.000	.426	305	203	.426	125	-1.021	0.072	-0.2	1.0	-1.0	0.9	A+	B+
3540 737144 7 7 1203 .466 .129 .229 .176 .466 .000 .350 .192 .350 .0.65 .0.62 .0.4 1.1 .5.5 1.3 A+ A- 3541 737146 7 7 1119 .656 .082 .163 .656 .099 .000 .325 .227 .390 .106 .0701 0.071 1.0 .06 .10 A+ C- 3542 737146 7 7 1211 .739 .088 .739 .088 .066 .000 .400 .225 .400 .144 .0146 .000 .3 .11 .10 .00 .11 .68 .8 .4 .4 .22 .400 .149 .250 .1214 .0073 .03 .11 .6 .4 .4 .4 .252 .4 .125 .0023 .00 .2 .2 .2 .2 .125 .2	3538	736939	7	7	1133	.394	.302	.394	.213	.092	.000	.237	.022	.237	240	096	0.621	0.067	5.8	1.2	5.9	1.3	A-	A+
3541 737145 7	3539	736940	7	7	1192	.254	.254	.306	.136	.304	.000	.089	.089	004	169	.045	1.433	0.072	6.2	1.2	9.9	2.1	A+	A-
3542 737146 7 7 1222 .698 .172 .094 .698 .036 .000 .322 .146 .124 .1246 .00 .1 .34 .1 .34 .1 .2 BH A- 3543 737148 7 7 1211 .739 .088 .086 .000 .400 .225 .400 .121 .023 .000 .1 .0 .0 .1 .0 .0 .1 .0 .0 .0 .0 .2 .1 .0 .0 .1 .0	3540	737144	7	7	1203	.466	.129	.229	.176	.466	.000	.350	196	085	192	.350	0.265	0.065	2.4	1.1	5.5	1.3	A+	A-
3543 737147 7 1211 .739 .088 .086 .000 .400 .225 .400 .149 .250 -1.214 .0.073 .0.3 1.0 .00 .10 A+ A+ 3544 737148 7 7 1202 .475 .374 .475 .057 .094 .000 .329 .144 .329 .252 .125 .005 .31 .11 .59 1.3 A A+ 3545 737149 7 1266 .903 .021 .93 .054 .022 .022 .122 .110 .061 .268 .010 .1 .1 .5 A A 3546 737151 7 7 1197 .298 .155 .186 .000 .021 .911 .041 .041 .041 .041 .041 .041 .041 .041 .041 .041 .041 .041 .041 .041 .042 .041 <td< td=""><td>3541</td><td>737145</td><td>7</td><td>7</td><td>1119</td><td>.656</td><td>.082</td><td>.163</td><td>.656</td><td>.099</td><td>.000</td><td>.390</td><td>255</td><td>227</td><td>.390</td><td>106</td><td>-0.701</td><td>0.071</td><td>1.0</td><td>1.0</td><td>0.6</td><td>1.0</td><td>A+</td><td>C-</td></td<>	3541	737145	7	7	1119	.656	.082	.163	.656	.099	.000	.390	255	227	.390	106	-0.701	0.071	1.0	1.0	0.6	1.0	A+	C-
3544 737148 7 1 202 .475 .374 .475 .057 .094 .000 .329 .144 .329 .252 .125 .005 .31 .1.1 .5.9 1.3 A- A+ 3545 737150 7 1 256 .903 .021 .13 .086 .132 .009 .1.143 .0068 3.0 .1.1 .6.8 .1.5 A- B- 3545 737151 7 7 1208 .601 .601 .122 .118 .159 .000 .501 .501 .234 .363 .414 .0418 .066 .3.3 .09 .2.4 .0.9 A+ A- 3549 737153 7 7 1127 .506 .506 .161 .220 .113 .000 .606 .237 .186 .008 .0081 .005 .2.0 .1.0 .0.2 .1.0 .0.2 .1.0 .2.2 .1.1 .0.9 .1.2 </td <td>3542</td> <td>737146</td> <td>7</td> <td>7</td> <td>1222</td> <td>.698</td> <td>.172</td> <td>.094</td> <td>.698</td> <td>.036</td> <td>.000</td> <td>.322</td> <td>162</td> <td>204</td> <td>.322</td> <td>146</td> <td>-1.046</td> <td>0.070</td> <td>3.5</td> <td>1.1</td> <td>3.4</td> <td>1.2</td> <td>B+</td> <td>A-</td>	3542	737146	7	7	1222	.698	.172	.094	.698	.036	.000	.322	162	204	.322	146	-1.046	0.070	3.5	1.1	3.4	1.2	B+	A-
3545 737149 7 7 1252 .30 .30 .31 .211 .158 .000 .264 .264 065 132 099 .1.43 .0068 .30 .1.1 6.8 1.5 A- 8- 3546 737150 7 1208 .001 .903 .024 .193 .000 .222 224 .222 110 .061 2.688 .0103 .13 .1.1 .3.0 .1.5 B-A 3548 737152 7 7 1197 .298 .361 .298 .155 .186 .000 .022 .071 .023 .1.128 .0.66 .9.9 .1.4 .9.9 .2.2 .8 .4 3550 737153 7 7 .1184 .486 .696 .139 .106 .000 .022 .091 .2.02 .0.01 .2.03 .0.11 .5.0 .0.0 .2.0 .1.0 .2.0 .1.0 .2.0	3543	737147	7	7	1211	.739	.088	.739	.088	.086	.000	.400	225	.400	149	250	-1.214	0.073	0.3	1.0	0.0	1.0	A+	A+
3546 737150 7 1266 .903 .021 .903 .024 .023 .000 .222 .224 .222 .110 .061 -2.688 0.103 1.3 1.1 3.0 1.5 B+ A- 3547 737151 7 7 1120 .601 .601 .122 .118 .159 .000 .501 .501 .234 .363 .141 -0.418 0.066 .33 0.9 -2.4 0.9 A+ A- 3549 737153 7 7 1121 .506 .506 .161 .202 .113 .000 .460 .237 .186 .208 0.081 .065 .24 .1.1 .57 .13 B- A- 3551 737155 7 7 1184 .486 .269 .139 .100 .000 .401 .229 .195 .401 .132 .014 .006 .1.1 .10 .1.1 .1.1	3544	737148	7	7	1202	.475	.374	.475	.057	.094	.000	.329	144	.329	252	125	0.273	0.065	3.1	1.1	5.9	1.3	A-	A+
3547 737151 7 1208 .601 .601 .122 .118 .159 .000 .501 .501 .234 .363 .141 .0.418 0.066 -3.3 0.9 -2.4 0.9 A.4 A.5 3548 737152 7 7 1197 .298 .361 .298 .155 .186 .000 .022 .013 .023 1.128 .0.069 9.9 1.4 9.9 2.2 8+ A+ 3549 737153 7 7 1121 .506 .506 .161 .220 .113 .000 .460 .460 .237 .186 .0.08 .0.166 .0.66 .0.66 .0.06 .00 .40 .40 .221 .238 .0.08 .0.166 .0.06 .0.0 .0.34 .341 .0.54 .2.13 .2.08 .0.166 .0.066 .1.1 .1.0 .0.7 .1.1 .4 .2.1 .3.3 .0.06 .0.66 .1.1<	3545	737149	7	7	1252	.300	.300	.331	.211	.158	.000	.264	.264	065	132	099	1.143	0.068	3.0	1.1	6.8	1.5	A-	B-
3548 737152 7 71 1197 .298 .361 .298 .155 .186 .000 .022 .091 .022 .172 .023 1.128 0.069 9.9 1.4 9.9 2.2 8+ A+ 3559 737153 7 7 1121 .506 .506 .161 .220 .113 .000 .460 .237 -1.86 .208 .0.81 .0.05 .2.0 .10 .02 .10 .8- A- 3550 737154 7 7 1179 .542 .191 .542 .053 .000 .401 .229 .195 .401 .132 -0.144 .0.066 .1.1 .10 .17 .18 .48 .48 .0.06 .48 .0.9 .0.2 .1.0 .4 .4 .4 .4 .4 .4 .1 .0.06 .0.66 .4.8 .0.9 .0.0 .0 .4 .2 .0 .0 .4 </td <td>3546</td> <td>737150</td> <td>7</td> <td>7</td> <td>1266</td> <td>.903</td> <td>.021</td> <td>.903</td> <td>.054</td> <td>.023</td> <td>.000</td> <td>.222</td> <td>224</td> <td>.222</td> <td>110</td> <td>061</td> <td>-2.688</td> <td>0.103</td> <td>1.3</td> <td>1.1</td> <td>3.0</td> <td>1.5</td> <td>B+</td> <td>A-</td>	3546	737150	7	7	1266	.903	.021	.903	.054	.023	.000	.222	224	.222	110	061	-2.688	0.103	1.3	1.1	3.0	1.5	B+	A-
3549 737153 7 7 1221 .506 .506 .161 .220 .113 .000 .460 .237 186 208 .0.081 .0.065 -2.0 1.0 0.2 1.0 B A- 3550 737154 7 7 1184 .486 .269 .139 .106 .000 .341 .341 054 .213 236 .0.166 0.065 2.4 1.1 .5.7 1.3 B-A 3551 737155 7 7 1179 .542 .214 .191 .542 .053 .000 .401 .229 .195 .401 .132 -0.144 0.066 1.1 1.0 1.7 1.1 A- A- 3552 737156 7 7 1180 .309 .362 .185 .149 .100 .000 .475 .197 .183 .208 .475 .0626 .0.066 .48 .09 .09 .0 <td>3547</td> <td>737151</td> <td>7</td> <td>7</td> <td>1208</td> <td>.601</td> <td>.601</td> <td>.122</td> <td>.118</td> <td>.159</td> <td>.000</td> <td>.501</td> <td>.501</td> <td>234</td> <td>363</td> <td>141</td> <td>-0.418</td> <td>0.066</td> <td>-3.3</td> <td>0.9</td> <td>-2.4</td> <td>0.9</td> <td>A+</td> <td>A-</td>	3547	737151	7	7	1208	.601	.601	.122	.118	.159	.000	.501	.501	234	363	141	-0.418	0.066	-3.3	0.9	-2.4	0.9	A+	A-
3550 737154 7 1184 .486 .486 .269 .139 .106 .000 .341 .341 .054 .213 .236 0.166 0.065 2.4 1.1 5.7 1.3 B- A- 3551 737155 7 7 1179 .542 .214 .191 .542 .053 .000 .401 .229 .195 .401 .132 .0144 .006 1.1 1.0 1.7 1.1 A- A- 3552 737156 7 7 1187 .402 .267 .157 .174 .402 .000 .475 .183 .208 .475 .0626 .066 .48 0.9 .09 1.0 A- 3554 737158 7 7 1186 .402 .267 .174 .402 .000 .48 .295 1.202 0.070 1.8 1.1 .5 1.0 .4 .2 .2 .046 .256<	3548	737152	7	7	1197	.298	.361	.298	.155	.186	.000	.022	.091	.022	172	.023	1.128	0.069	9.9	1.4	9.9	2.2	B+	A+
3551 737155 7 7 1179 .542 .191 .542 .053 .000 .401 .229 .195 .401 .132 .044 0.066 1.1 1.0 1.7 1.1 A- A- 3552 737156 7 7 1180 .309 .362 .308 .185 .145 .000 .073 .080 .073 .036 .026 1.033 0.069 8.9 1.3 9.9 1.9 A- A+ 3553 737157 7 1187 .402 .267 .174 .402 .000 .475 .183 .208 .475 0.626 0.066 -4.8 0.9 -0.9 1.0 .404 .254 .046 .295 1.202 0.070 1.8 1.1 5.9 1.5 A+ A- 3555 737159 7 7 1189 .714 .124 .714 .061 .010 .000 .360 .201	3549	737153	7	7	1221	.506	.506	.161	.220	.113	.000	.460	.460	237	186	208	0.081	0.065	-2.0	1.0	0.2	1.0	B-	A-
3552 737156 7 1180 .309 .362 .308 .185 .145 .000 .073 .080 .026 1.033 0.069 8.9 1.3 9.9 1.9 A A+ 3553 737157 7 1187 .402 .267 .157 .174 .402 .000 .475 197 183 .208 .475 0.626 0.066 -4.8 0.9 -0.9 1.0 A A 3554 737158 7 7 1166 .563 .149 .179 .387 .285 .000 .295 164 254 .046 .295 1.202 0.070 1.8 1.1 5.9 1.5 A+ A- 3555 737159 7 7 1166 .563 .173 .166 .563 .099 .000 .301 .017 270 .301 186 -0.266 0.066 4.9 1.1 5.0 1.2 A+	3550	737154	7	7	1184	.486	.486	.269	.139	.106	.000	.341	.341	054	213	236	0.166	0.065	2.4	1.1	5.7	1.3	B-	A-
3553 737155 7 7 7 1187 .402 .267 .157 .174 .402 .000 .475 .197 .183 .208 .475 .0.66 .0.66 .4.8 .0.9 .0.9 .1.0 .AA	3551	737155	7	7	1179	.542	.214	.191	.542	.053	.000	.401	229	195	.401	132	-0.144	0.066	1.1	1.0	1.7	1.1	A-	A-
354 737158 7 1203 .285 .149 .179 .387 .285 .000 .295 164 254 .046 .295 1.202 .000 1.8 1.1 5.9 1.5 A+ A- 3555 737159 7 7 1166 .563 .173 .166 .563 .099 .000 .301 .017 270 .301 186 -0.266 0.066 4.9 1.1 5.0 1.2 A+ A- 3556 737160 7 7 1189 .621 .621 .137 .168 .074 .000 .445 .445 306 191 149 0577 0.067 -1.2 1.0 06 1.0 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .4 .2 .2 .2 1.0 .4 .4 .4 .4 .4 <td< td=""><td>3552</td><td>737156</td><td>7</td><td>7</td><td>1180</td><td>.309</td><td>.362</td><td>.308</td><td>.185</td><td>.145</td><td>.000</td><td>.073</td><td>080</td><td>.073</td><td>.036</td><td>026</td><td>1.033</td><td>0.069</td><td>8.9</td><td>1.3</td><td>9.9</td><td>1.9</td><td>A-</td><td>A+</td></td<>	3552	737156	7	7	1180	.309	.362	.308	.185	.145	.000	.073	080	.073	.036	026	1.033	0.069	8.9	1.3	9.9	1.9	A-	A+
3555 737159 7 1166 .563 .173 .166 .563 .099 .000 .301 .017 270 .301 186 -0.266 0.066 4.9 1.1 5.0 1.2 A+ A- 3556 737160 7 7 1189 .714 .124 .714 .061 .101 .000 .360 201 .360 142 207 -1.066 0.072 2.3 1.1 1.3 1.1 A+ A- 3557 737161 7 1198 .621 .621 .137 .168 .074 .000 .445 .445 306 191 149 -0.577 0.067 -1.2 1.0 -0.6 1.0 A- A- 3558 737162 7 7 1183 .183 .194 .078 .545 .183 .000 .307 289 238 .119 .307 1.843 0.081 -1.0 1.0 <t< td=""><td>3553</td><td>737157</td><td>7</td><td>7</td><td>1187</td><td>.402</td><td>.267</td><td>.157</td><td>.174</td><td>.402</td><td>.000</td><td>.475</td><td>197</td><td>183</td><td>208</td><td>.475</td><td>0.626</td><td>0.066</td><td>-4.8</td><td>0.9</td><td>-0.9</td><td>1.0</td><td>A-</td><td>A-</td></t<>	3553	737157	7	7	1187	.402	.267	.157	.174	.402	.000	.475	197	183	208	.475	0.626	0.066	-4.8	0.9	-0.9	1.0	A-	A-
3556 737160 7 1189 .714 .124 .714 .061 .101 .000 .360 201 .360 142 207 -1.066 0.072 2.3 1.1 1.3 1.1 A+ A- 3557 737161 7 7 1198 .621 .621 .137 .168 .074 .000 .445 .445 306 191 149 -0.577 0.067 -1.2 1.0 -0.6 1.0 A- A- 3558 737162 7 7 1157 .619 .244 .619 .079 .059 .000 .423 179 .423 331 167 -0.476 0.068 -0.7 1.0 0.2 1.0 A+ A+ 3559 737163 7 7 1183 .184 .094 .059 .000 .408 228 .193 .019 .01 .64 1.8 A+ A- 3560	3554	737158	7	7	1203	.285	.149	.179	.387	.285	.000	.295	164	254	.046	.295	1.202	0.070	1.8	1.1	5.9	1.5	A+	A-
3556 737160 7 1189 .714 .124 .714 .061 .101 .000 .360 201 .360 142 207 -1.066 0.072 2.3 1.1 1.3 1.1 A+ A- 3557 737161 7 7 1198 .621 .621 .137 .168 .074 .000 .445 .445 306 191 149 -0.577 0.067 -1.2 1.0 -0.6 1.0 A- A- 3558 737162 7 7 1183 .184 .619 .079 .059 .000 .423 179 .423 331 167 -0.476 0.068 -0.7 1.0 0.2 1.0 A+ A+ 3559 737163 7 7 1183 .184 .078 .183 .000 .307 289 238 .119 .307 1.843 .081 -1.0 0.0 .4 .4 .4 </td <td>3555</td> <td>737159</td> <td>7</td> <td>7</td> <td>1166</td> <td>.563</td> <td>.173</td> <td>.166</td> <td>.563</td> <td>.099</td> <td>.000</td> <td>.301</td> <td>.017</td> <td>270</td> <td>.301</td> <td>186</td> <td>-0.266</td> <td>0.066</td> <td>4.9</td> <td>1.1</td> <td>5.0</td> <td>1.2</td> <td>A+</td> <td>A-</td>	3555	737159	7	7	1166	.563	.173	.166	.563	.099	.000	.301	.017	270	.301	186	-0.266	0.066	4.9	1.1	5.0	1.2	A+	A-
3558 737162 7 7 1157 6.619 .244 .619 .079 .059 .000 .423179 .423331167 -0.476 0.068 -0.7 1.0 0.2 1.0 A+	3556	737160	7	7	1189	.714	.124	.714	.061	.101	.000	.360	201	.360	142	207	-1.066	0.072	2.3	1.1	1.3	1.1	A+	A-
3559 737163 7 1183 .184 .078 .545 .183 .000 .307 289 238 .119 .307 1.843 0.081 -1.0 1.0 6.4 1.8 A+ A- 3560 737164 7 1242 .853 .052 .853 .046 .050 .000 .408 286 .408 283 163 -2.069 0.088 -1.2 0.9 -0.9 0.9 C+ A- 3561 737165 7 7 1237 .568 .186 .093 .153 .568 .000 .453 036 273 364 .453 -0.294 0.065 -0.8 1.0 0.0 1.0 A- A+ 3562 737166 7 7 1250 .282 .090 .282 .554 .074 .000 .010 149 .010 .210 254 1.283 0.069 9.5 1.3 9.9 <td< td=""><td>3557</td><td>737161</td><td>7</td><td>7</td><td>1198</td><td>.621</td><td>.621</td><td>.137</td><td>.168</td><td>.074</td><td>.000</td><td>.445</td><td>.445</td><td>306</td><td>191</td><td>149</td><td>-0.577</td><td>0.067</td><td>-1.2</td><td>1.0</td><td>-0.6</td><td>1.0</td><td>A-</td><td>A-</td></td<>	3557	737161	7	7	1198	.621	.621	.137	.168	.074	.000	.445	.445	306	191	149	-0.577	0.067	-1.2	1.0	-0.6	1.0	A-	A-
3560 737164 7 7 1242 .853 .052 .853 .046 .050 .000 .408 226 .408 283 163 -2.069 0.088 -1.2 0.9 -0.9 0.9 C+ A- 3561 737165 7 1237 .568 .186 .093 .153 .568 .000 .453 036 273 364 .453 -0.294 0.065 -0.8 1.0 0.0 1.0 A- A+ 3562 737166 7 7 1250 .282 .090 .282 .554 .074 .000 .010 149 .010 .210 254 1.283 0.069 9.5 1.3 9.9 2.1 A- A- 3563 737167 7 1229 .733 .068 .141 .058 .733 .000 .433 211 240 236 .433 -1.161 0.072 -0.8 1.0	3558	737162	7	7	1157	.619	.244	.619	.079	.059	.000	.423	179	.423	331	167	-0.476	0.068	-0.7	1.0	0.2	1.0	A+	A+
3561 737165 7 7 1237 .568 .186 .093 .153 .568 .000 .453 .036 .273 .364 .453 .024 0.065 .08 1.0 0.0 0.0 1.0 A-	3559	737163	7	7	1183	.183	.194	.078	.545	.183	.000	.307	289	238	.119	.307	1.843	0.081	-1.0	1.0	6.4	1.8	A+	A-
3561 737165 7 7 1237 .568 .186 .093 .153 .568 .000 .453 .036 .273 .364 .453 .000 .210 .254 .000 .000 .000 .210 .254 .000 .210 .254 .000 .000 .210 .254 .000 .000 .210 .254 .000 .000 .210 .254 .000 .000 .210 .254 .000 .000 .210 .254 .000 .000 .000 .210 .254 .000 .000 .210 .254 .000 .000 .000 .000 .000 .000 .000 .0	3560	737164	7	7	1242	.853	.052	.853	.046	.050	.000	.408	226		283	163	-2.069	0.088	-1.2	0.9	-0.9		C+	A-
3562 737166 7 7 1250 .282 .090 .282 .554 .074 .000 .010149 .010 .210254 1.283 0.069 9.5 1.3 9.9 2.1 A- A- A- 3563 737167 7 1229 .733 .068 .141 .058 .733 .000 .433211240236 .433 -1.161 0.072 -0.8 1.0 -1.1 0.9 A+ A- 3564 737168 7 7 1183 .473 .159 .473 .158 .210 .000 .261068 .261068 .261064202 0.262 0.065 6.7 1.2 7.7 1.4 A+ A+			7	7																				
3563 737167 7 7 1229 .733 .068 .141 .058 .733 .000 .433211240236 .433 -1.161 0.072 -0.8 1.0 -1.1 0.9 A+ A- 3564 737168 7 7 1183 .473 .159 .473 .158 .210 .000 .261068 .261064202 0.262 0.065 6.7 1.2 7.7 1.4 A+ A+	-		7	7																				-
3564 737168 7 7 1183 .473 .159 .473 .158 .210 .000 .261068 .261064202 0.262 0.065 6.7 1.2 7.7 1.4 A+ A+	-		7	7												1 1								
	-		7	7																				_
	3565	737169			1235	.148	.534	.148	.056	.262	.000	.184	092	.184	253	.088	2.204	0.085	0.3	1.0	8.3	2.2	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
25.00	727170	Grade 7	Grade 7	1100	FOF	070	020	ГОГ	205	000	051	210	204	051	102	0.412	0.007	in	in	out	out	/F	/B
3566	737170	7	7	1169	.595	.070	.039	.595	.295	.000	.051	210	304	.051	.192	-0.412	0.067	9.9	1.4	9.9	1.6	B+	A+
3567 3568	737171 737172	7	7	1177 1222	.664 .623	.155	.143	.664	.037	.000	.480	234 217	290 254	.480 076	214 .336	-0.811 -0.514	0.070 0.066	-1.3	1.0	-2.5 3.4	0.9	Α+	Α-
		7	7	1227	.535	.047		.196	.023		.350			.350	254	-0.514	0.064	2.8	1.1	3.4	1.2	A+	Α-
3569 3570	737173 737174	7	7	1227	.686	.124	.269	.535	.686	.000	.330	219 256	083 234	277	.477	-0.025	0.064	-1.3	1.1	-1.7	0.9	A- C+	Α-
	_	7	7		.545	.042	.179		.545	.000	.335		234	069	-			3.9	1.0				Α-
3571	737175	7	7	1196		.050	.081	.324		.000		224			.335	-0.157	0.065		1.1	4.0	1.2	A+	Α-
3572	737176	7	7	1135	.560 .558	.286	.559	.073	.081	.000	.375	256	.375	170	096	-0.197	0.067	1.4	1.0	3.1	1.1	A+	A+ B-
3573	737177	7	7	1153		.197	.126	.558	.120	.000	.363	114	240	.363	170	-0.128	0.066	1.8	1.1	3.1	1.1	Α-	
3574	737178	7	7	1217	.508	.508	.055	.204	.233	.000	.381	.381	244	203	126	0.054	0.064	0.6	1.0	4.3	1.2	A+	B-
3575	737179	7	7	1225	.345 .563	.193	.193	.270	.344	.000	.315	079	156	128	.315	0.864	0.067	2.2	1.1	6.1	1.4	Α-	Α-
3576	737180		7	1230		.070	.276	.563	.091	.000	.326	141	202	.326	123	-0.237	0.065	4.5	1.1	4.4	1.2	A+	Α-
3577	737181	7	7	1189	.382	.382	.227	.220	.171	.000	.361	.361	177	141	114	0.674	0.066	-0.1	1.0	5.7	1.3	Α-	Α-
3578	737182	7	7	1091	.489	.489	.182	.192	.137	.000	.332	.332	186	189	056	0.132	0.068	3.4	1.1	5.5	1.3	A+	A+
3579	737183			1232	.234	.266	.298	.202	.234	.000	.231	.044	117	159	.231	1.589	0.073	2.2	1.1	7.1	1.7	Α-	A+
3580	737184	7	7	1174	.426	.177	.229	.168	.426	.000	.462	223	197	162	.462	0.454	0.066	-2.7	0.9	0.4	1.0	A+	A-
3581	737185	7	7	1144	.528	.045	.040	.387	.528	.000	.383	182	268	207	.383	-0.020	0.066	0.6	1.0	1.1	1.0	C-	B-
3582	737186	7	7	1225	.727	.727	.138	.109	.025	.000	.434	.434	206	323	137	-1.098	0.072	-0.7	1.0	-1.0	0.9	Α-	Α-
3583	737187	7	7	1219	.745	.183	.039	.745	.033	.000	.366	192	274	.366	178	-1.251	0.074	1.6	1.1	0.8	1.1	Α-	Α-
3584	737188	7	7	1248	.728	.032	.038	.201	.728	.000	.425	186	267	263	.425	-1.161	0.071	-0.7	1.0	-1.8	0.9	B-	A-
3585	737207	7	7	1225	.150	.284	.357	.209	.150	.000	.081	015	018	034	.081	2.193	0.085	2.7	1.2	9.9	2.6	A-	A-
3586	737209	7	7	1198	.240	.409	.240	.260	.090	.000	063	.228	063	088	162	1.500	0.073	9.6	1.4	9.9	2.5	A-	A-
3587	737210	7	7	1223	.257	.310	.324	.257	.110	.000	.135	014	062	.135	074	1.393	0.072	5.4	1.2	9.9	1.9	A+	B-
3588	737211	7	7	1180	.361	.252	.197	.191	.361	.000	.292	042	246	062	.292	0.830	0.067	2.5	1.1	6.7	1.4	A+	A-
3589	737212	7	7	1190	.422	.214	.250	.422	.113	.000	.296	177	051	.296	162	0.536	0.065	3.0	1.1	8.3	1.4	A-	A-
3590	737213	7	7	1227	.148	.148	.230	.382	.240	.000	.262	.262	106	046	061	2.179	0.086	-0.3	1.0	5.7	1.8	B-	B-
3591	737214	7	7	1208	.267	.185	.255	.294	.267	.000	.258	.038	111	177	.258	1.363	0.071	1.1	1.0	7.5	1.6	A-	A-
3592	737215	7	7	1225	.256	.180	.256	.317	.247	.000	015	031	015	.012	.030	1.354	0.071	9.1	1.3	9.9	2.3	A+	A+
3593	737216	7	7	1235	.181	.125	.181	.399	.295	.000	075	166	075	.132	.042	1.912	0.079	5.9	1.3	9.9	3.4	A-	A-
3594	737217	7	7	1166	.222	.105	.234	.439	.222	.000	.342	165	124	079	.342	1.664	0.076	-1.1	1.0	2.0	1.2	A-	A+
3595	737218	7	7	1219	.177	.177	.143	.441	.240	.000	.094	.094	209	.057	.022	1.987	0.081	3.1	1.2	9.9	2.5	A-	A+
3596	737219	7	7	1197	.447	.183	.447	.241	.129	.000	.195	.026	.195	190	078	0.310	0.065	8.9	1.2	8.8	1.4	A+	A-
3597	737220	7	7	1275	.348	.347	.187	.313	.153	.000	.199	.199	164	050	021	0.941	0.065	6.5	1.2	7.4	1.4	A+	A-
3598	737221	7	7	1220	.343	.248	.246	.343	.164	.000	.070	.003	.023	.070	119	0.855	0.066	9.9	1.3	9.9	1.9	A-	A+
3599	737222	7	7	1187	.298	.206	.259	.237	.298	.000	.303	151	159	018	.303	1.165	0.070	0.7	1.0	7.2	1.6	A+	A-
3600	737223	7	7	1229	.430	.132	.283	.430	.155	.000	058	.039	.195	058	201	0.463	0.064	9.9	1.5	9.9	1.9	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref ID Grade Grade 3601 737224 7 7 3602 737225 7 7 3603 737226 7 7 3604 737227 7 7 3605 737584 7 7 3606 737585 7 7 3607 737586 7 7 3608 737587 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3614 737593 7 7 3615 737594 7 7	1144 1181 1186 1278 1195	.233 .556 .714	.233 .049	.325 .370	.290	P(D) .151	.000	PtBis .095	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
3602 737225 7 7 3603 737226 7 7 3604 737227 7 7 3605 737584 7 7 3606 737585 7 7 3607 737586 7 7 3608 737587 7 7 3609 737588 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3613 737592 7 7 3614 737593 7 7	1181 1186 1278 1195	.556 .714	.049			.151	.000	095	005	000										/ 0
3603 737226 7 7 3604 737227 7 7 3605 737584 7 7 3606 737585 7 7 3607 737586 7 7 3608 737587 7 7 3609 737588 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3613 737592 7 7 3614 737593 7 7	1186 1278 1195	.714		.370			.000		.095	.026	106	012	1.548	0.076	5.0	1.2	9.9	2.2	A-	
3604 737227 7 7 3605 737584 7 7 3606 737585 7 7 3607 737586 7 7 3608 737587 7 7 3609 737588 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3613 737592 7 7 3614 737593 7 7	1278 1195	-	.200		.556	.025	.000	.345	252	164	.345	246	-0.139	0.065	2.7	1.1	3.3	1.1	B-	A-
3605 737584 7 7 3606 737585 7 7 3607 737586 7 7 3608 737587 7 7 3609 737588 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3613 737592 7 7 3614 737593 7 7	1195	.586	.200	.714	.045	.041	.000	.301	129	.301	287	126	-1.075	0.072	3.9	1.2	1.8	1.1	A-	A-
3606 737585 7 3607 737586 7 3608 737587 7 3609 737588 7 3610 737589 7 3611 737590 7 3612 737591 7 3613 737592 7 3614 737593 7			.059	.223	.131	.586	.000	.494	251	326	143	.494	-0.279	0.064	-3.0	0.9	-2.7	0.9	B-	B-
3607 737586 7 3608 737587 7 3609 737588 7 3610 737589 7 3611 737590 7 3612 737591 7 3613 737592 7 3614 737593 7	4400	.353	.036	.218	.392	.353	.000	.376	190	302	040	.376	0.844	0.066	-1.4	1.0	1.8	1.1	B-	C-
3608 737587 7 3609 737588 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3613 737592 7 7 3614 737593 7 7	1182	.192	.156	.625	.192	.027	.000	.152	219	.099	.152	173	1.812	0.080	2.3	1.1	9.9	2.4	C-	
3609 737588 7 7 3610 737589 7 7 3611 737590 7 7 3612 737591 7 7 3613 737592 7 7 3614 737593 7 7	1182	.655	.655	.095	.133	.118	.000	.518	.518	211	274	285	-0.723	0.069	-3.4	0.9	-4.0	0.8	A+	C-
3610 737589 7 3611 737590 7 3612 737591 7 3613 737592 7 3614 737593 7	1184	.560	.177	.129	.560	.134	.000	.350	196	201	.350	093	-0.214	0.066	3.2	1.1	3.3	1.1	A+	A-
3611 737590 7 3612 737591 7 3613 737592 7 3614 737593 7	1259	.582	.078	.582	.131	.209	.000	.449	155	.449	203	274	-0.392	0.065	-0.5	1.0	0.2	1.0	A-	A-
3612 737591 7 3613 737592 7 3614 737593 7	1181	.730	.053	.730	.148	.069	.000	.400	212	.400	207	225	-1.126	0.073	0.6	1.0	-0.4	1.0	A+	A-
3613 737592 7 7 3614 737593 7 7	1205	.656	.146	.164	.656	.033	.000	.552	313	296	.552	235	-0.628	0.068	-5.3	0.8	-5.3	8.0	A-	B-
3614 737593 7 7	1215	.481	.481	.224	.159	.137	.000	.391	.391	241	169	097	0.196	0.064	0.3	1.0	3.6	1.2	A+	A-
3014 737333 7 7	1189	.408	.295	.408	.271	.026	.000	.315	352	.315	.074	169	0.552	0.066	3.1	1.1	6.6	1.4	A-	
3615 737594 7 7	1186	.614	.107	.218	.061	.614	.000	.527	230	305	247	.527	-0.465	0.067	-4.0	0.9	-4.0	0.8	A-	A-
	1174	.377	.377	.234	.316	.072	.000	.305	.305	132	122	136	0.690	0.067	3.3	1.1	6.3	1.4	A-	A+
3616 737595 7 7	1180	.519	.169	.519	.253	.058	.000	.288	.009	.288	235	191	0.026	0.065	4.4	1.1	8.6	1.4	A+	A-
3617 737596 7 7	1142	.554	.052	.216	.554	.178	.000	.399	245	218	.399	142	-0.178	0.067	0.5	1.0	1.4	1.1	A-	B-
3618 734776 8 8	728	.457	.376	.457	.099	.067	.000	.391	360	.391	083	.017	0.360	0.083	-0.3	1.0	2.9	1.2	A-	A+
3619 734777 8 8	755	.589	.589	.164	.095	.151	.000	.345	.345	175	237	097	-0.309	0.083	2.5	1.1	2.6	1.1	B+	B-
3620 734778 8 8	728	.449	.209	.261	.449	.081	.000	.331	207	124	.331	095	0.411	0.084	2.1	1.1	4.7	1.3	A-	
3621 734779 8 8	718	.352	.167	.223	.258	.352	.000	.430	155	100	243	.430	0.855	0.087	-2.5	0.9	2.4	1.2	A+	A+
3622 734780 8 8	759	.386	.386	.277	.258	.079	.000	.258	.258	137	061	139	0.692	0.082	4.0	1.1	4.2	1.3	A-	
3623 734781 8 8	740	.245	.245	.245	.234	.277	.000	.190	.190	009	080	098	1.543	0.093	2.3	1.1	6.6	1.8	A-	B-
3624 734782 8 8	797	.315	.315	.292	.312	.080	.000	.289	.289	042	174	126	1.074	0.083	0.8	1.0	4.7	1.4	A+	
3625 734783 8 8	712	.365	.270	.365	.257	.108	.000	.115	.058	.115	062	174	0.807	0.087	8.0	1.3	8.5	1.7	A+	A+
3626 734784 8 8	726	.461	.208	.165	.165	.461	.000	.350	208	143	101	.350	0.302	0.083	1.0	1.0	5.6	1.3	B+	A+
3627 734785 8 8	735	.671	.215	.671	.073	.041	.000	.266	102	.266	212	141	-0.756	0.089	5.1	1.2	3.5	1.3	A-	A+
3628 734786 8 8	728	.295	.173	.295	.339	.192	.000	.038	108	.038	001	.060	1.113	0.089	6.8	1.3	9.9	2.6	A-	A+
3629 734787 8 8	663	.489	.157	.176	.489	.178	.000	.373	213	192	.373	095	0.183	0.087	1.2	1.0	1.9	1.1	A+	
3630 735477 8 8	755	.362	.054	.285	.299	.362	.000	.132	052	.077	190	.132	0.865	0.084	7.9	1.3	9.6	1.9	A+	
3631 735478 8 8	755	.360	.360	.313	.212	.115	.000	.202	.202	111	066	057	0.809	0.084	5.0	1.2	8.4	1.7	A+	A-
3632 735479 8 8	749	.577	.101	.577	.175	.147	.000	.235	101	.235	128	105	-0.188	0.082	4.7	1.2	5.8	1.3	A+	B+
3633 735480 8 8	690	.420	.319	.171	.420	.090	.000	.144	017	052	.144	152	0.464	0.085	6.7	1.2	8.6	1.5	A+	B-
3634 735481 8 8						.137	.000													B+
3635 735482 8 8	737	.468	.149	.246	.468	.13/	.000	.332	117	115	.332	217	0.249	0.083	3.0	1.1	3.4	1.2	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	ID.	Grade	Grade		ı vai	' (^,	1 (5)	1 (0)	1 (5)	· (-)	i tbis	11(//)	11(0)	1 1(0)	11(0)	IVICAS	IVISE	in	in	out	out	/F	/B
3636	735483	8	8	753	.594	.024	.594	.201	.182	.000	.372	167	.372	256	142	-0.351	0.083	1.4	1.1	2.7	1.2	A-	A+
3637	735484	8	8	706	.476	.084	.476	.246	.194	.000	.362	164	.362	212	111	0.227	0.084	0.9	1.0	4.5	1.3	A+	
3638	735485	8	8	726	.594	.594	.092	.262	.052	.000	.331	.331	165	158	206	-0.352	0.084	2.2	1.1	3.1	1.2	A+	C-
3639	735486	8	8	716	.525	.525	.208	.113	.154	.000	.207	.207	154	068	053	-0.021	0.084	6.7	1.2	6.4	1.4	A-	A-
3640	735890	8	8	677	.253	.253	.171	.431	.145	.000	.172	.172	090	.012	133	1.426	0.096	3.0	1.1	5.7	1.7	A-	A+
3641	735891	8	8	719	.586	.074	.586	.213	.128	.000	.418	091	.418	271	213	-0.291	0.085	-0.1	1.0	0.3	1.0	C-	C-
3642	735892	8	8	717	.617	.089	.173	.616	.121	.000	.355	148	181	.355	190	-0.404	0.086	2.1	1.1	1.0	1.1	A-	A+
3643	735893	8	8	761	.422	.117	.290	.422	.171	.000	.230	167	129	.230	003	0.523	0.081	4.6	1.2	8.0	1.5	B-	
3644	735894	8	8	721	.628	.055	.628	.182	.135	.000	.328	185	.328	171	146	-0.570	0.086	2.3	1.1	2.1	1.1	A-	A-
3645	735895	8	8	753	.509	.124	.165	.203	.509	.000	.373	028	221	237	.373	0.039	0.081	0.7	1.0	3.6	1.2	A+	A-
3646	735896	8	8	701	.288	.288	.310	.153	.250	.000	.362	.362	107	154	136	1.245	0.092	-0.6	1.0	3.3	1.3	A-	
3647	735897	8	8	756	.300	.193	.316	.190	.300	.000	.347	113	224	027	.347	1.190	0.087	-0.2	1.0	2.9	1.3	A+	
3648	735898	8	8	715	.352	.196	.270	.352	.182	.000	.020	118	.047	.020	.042	0.870	0.086	9.7	1.4	9.9	1.9	A-	
3649	735899	8	8	738	.382	.382	.259	.171	.188	.000	.205	.205	003	137	119	0.805	0.084	5.3	1.2	7.4	1.5	A-	A-
3650	736026	8	8	734	.360	.360	.233	.308	.099	.000	.343	.343	096	130	214	0.863	0.085	0.9	1.0	2.8	1.2	A+	B-
3651	736027	8	8	733	.413	.254	.413	.254	.079	.000	.285	018	.285	154	243	0.582	0.083	2.9	1.1	6.3	1.4	A+	A-
3652	736028	8	8	747	.469	.252	.181	.469	.099	.000	.231	032	199	.231	083	0.273	0.081	5.6	1.2	6.6	1.4	A+	B-
3653	736029	8	8	723	.488	.250	.488	.163	.098	.000	.257	022	.257	202	149	0.157	0.083	4.5	1.1	5.9	1.3	A+	
3654	736030	8	8	753	.461	.133	.461	.283	.124	.000	.211	089	.211	155	016	0.352	0.081	6.4	1.2	6.0	1.4	A+	A-
3655	736031	8	8	751	.527	.527	.261	.129	.083	.000	.436	.436	164	227	252	-0.014	0.082	-1.2	1.0	1.2	1.1	A+	B-
3656	736032	8	8	716	.356	.209	.356	.330	.105	.000	.125	087	.125	.001	081	0.938	0.086	6.4	1.2	8.9	1.7	A+	A-
3657	736033	8	8	734	.248	.195	.512	.248	.045	.000	.185	205	.038	.185	085	1.455	0.093	2.8	1.1	7.2	2.0	A+	
3658	736034	8	8	683	.168	.168	.432	.234	.165	.000	.000	.000	.099	017	114	1.971	0.109	3.3	1.2	9.0	3.0	C+	
3659	736035	8	8	787	.492	.492	.163	.212	.133	.000	.463	.463	185	290	132	0.194	0.080	-2.7	0.9	-0.1	1.0	A+	A-
3660	736649	8	8	742	.216	.387	.216	.310	.088	.000	.120	114	.120	.071	094	1.744	0.097	2.8	1.2	8.0	2.3	A+	A+
3661	736650	8	8	696	.664	.664	.158	.119	.059	.000	.407	.407	075	310	275	-0.735	0.090	0.3	1.0	0.8	1.1	B+	A-
3662	736651	8	8	716	.221	.208	.370	.201	.221	.000	.086	014	.109	206	.086	1.673	0.097	3.7	1.2	8.2	2.2	A+	A+
3663	736652	8	8	751	.337	.241	.298	.124	.337	.000	.160	001	100	090	.160	0.945	0.085	5.7	1.2	8.5	1.8	A+	A+
3664	736653	8	8	719	.309	.309	.295	.179	.217	.000	.155	.155	.010	012	174	1.075	0.088	4.8	1.2	7.5	1.7	A+	A+
3665	736654	8	8	776	.280	.287	.280	.285	.148	.000	.092	.040	.092	097	043	1.260	0.087	4.7	1.2	9.9	2.1	A-	A-
3666	736655	8	8	792	.450	.299	.449	.138	.114	.000	.251	014	.251	160	199	0.387	0.079	4.9	1.2	7.2	1.4	A+	
3667	736656	8	8	707	.505	.300	.088	.505	.107	.000	139	.236	113	139	022	0.124	0.084	9.9	1.6	9.9	1.9	A+	
3668	736657	8	8	728	.334	.243	.334	.249	.174	.000	022	047	022	.017	.060	1.011	0.087	9.9	1.4	9.9	2.2	A+	A+
3669	736658	8	8	734	.237	.666	.045	.052	.237	.000	.188	.026	221	209	.188	1.605	0.094	1.8	1.1	7.8	2.1	A-	
3670	736659	8	8	719	.337	.249	.228	.337	.186	.000	027	.012	.009	027	.011	0.933	0.086	9.9	1.4	9.4	1.9	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
0.071		Grade	Grade	500	252						200		• • •	` '		2 222	0.000	in	in	out	out	/F	/B
3671	737024	8	8	692	.369	.169	.368	.275	.188	.000	.206	.037	.206	214	044	0.806	0.088	5.6	1.2	6.6	1.6	A-	Α-
3672	737025	8	8	711	.203	.097	.430	.203	.270	.000	.140	168	122	.140	.121	1.787	0.100	2.1	1.1	6.3	1.9	Α-	A+
3673	737026	8	8	769	.403	.051	.122	.403	.424	.000	.347	103	069	.347	253	0.619	0.082	0.9	1.0	5.6	1.4	Α-	Α-
3674	737027	8	8	735	.234	.476	.234	.125	.165	.000	.035	.093	.035	107	069	1.583	0.094	4.3	1.2	9.6	2.4	Α-	A+
3675	737028	8	8	703	.206	.088	.121	.206	.585	.000	.078	161	210	.078	.167	1.744	0.099	2.2	1.1	8.4	2.2	A-	A+
3676	737029	8	8	722	.236	.235	.360	.312	.093	.000	008	008	.003	.015	017	1.595	0.095	5.3	1.3	9.9	2.5	A-	A-
3677	737030	8	8	762	.412	.262	.277	.412	.049	.000	.231	229	011	.231	038	0.610	0.082	5.4	1.2	7.6	1.5	A-	A+
3678	737031	8	8	730	.215	.499	.215	.173	.114	.000	.172	078	.172	107	.029	1.665	0.097	1.1	1.1	8.7	2.2	A-	B+
3679	737032	8	8	750	.276	.255	.388	.276	.081	.000	.069	.015	014	.069	114	1.263	0.089	5.4	1.2	9.9	2.2	A+	A+
3680	737033	8	8	731	.510	.275	.510	.152	.063	.000	.246	181	.246	013	153	0.171	0.083	5.5	1.2	6.7	1.4	A-	A-
3681	737034	8	8	746	.160	.209	.393	.160	.239	.000	.051	045	024	.051	.027	2.094	0.107	3.4	1.2	6.3	2.2	A-	A+
3682	737035	8	8	713	.431	.160	.198	.431	.212	.000	.191	106	161	.191	.021	0.452	0.084	6.8	1.2	7.7	1.5	A-	A-
3683	737036	8	8	677	.269	.134	.357	.239	.269	.000	.146	087	.066	156	.146	1.286	0.094	3.1	1.1	8.7	2.1	A-	
3684	737037	8	8	807	.180	.149	.180	.419	.253	.000	.000	092	.000	.014	.060	2.031	0.099	4.3	1.3	9.9	3.2	A-	A+
3685	737038	8	8	705	.261	.146	.261	.261	.332	.000	017	037	096	017	.133	1.441	0.094	7.0	1.4	9.9	2.8	A+	A-
3686	737529	8	8	751	.388	.372	.387	.072	.169	.000	.004	.044	.004	016	051	0.722	0.083	9.9	1.4	9.9	2.2	A-	B+
3687	737530	8	8	751	.293	.145	.443	.293	.119	.000	.267	227	018	.267	102	1.248	0.089	2.6	1.1	4.4	1.4	A+	A+
3688	737531	8	8	710	.369	.235	.272	.369	.124	.000	.150	047	050	.150	091	0.764	0.086	7.4	1.3	8.7	1.8	A-	A-
3689	737532	8	8	787	.247	.104	.501	.247	.149	.000	.066	063	009	.066	013	1.498	0.090	5.1	1.2	9.9	2.4	A-	A+
3690	737533	8	8	738	.554	.554	.145	.127	.173	.000	.397	.397	227	165	165	-0.176	0.083	0.7	1.0	2.2	1.1	A+	A-
3691	737534	8	8	725	.429	.166	.196	.210	.429	.000	.289	104	149	110	.289	0.474	0.084	3.3	1.1	7.4	1.5	A+	A+
3692	737535	8	8	687	.536	.176	.536	.131	.157	.000	.284	173	.284	062	151	-0.121	0.086	4.7	1.2	4.8	1.3	A+	
3693	737536	8	8	700	.631	.631	.047	.289	.033	.000	.526	.526	235	329	307	-0.501	0.089	-3.0	0.9	-2.7	8.0	C-	C-
3694	737537	8	8	733	.412	.334	.412	.180	.074	.000	.262	035	.262	191	150	0.541	0.084	3.5	1.1	6.6	1.5	A-	A-
3695	737538	8	8	740	.232	.232	.362	.188	.218	.000	.240	.240	.001	119	135	1.661	0.095	0.9	1.0	7.0	1.9	A-	A+
3696	737539	8	8	770	.233	.274	.352	.232	.142	.000	.190	187	.009	.190	004	1.565	0.092	2.0	1.1	6.6	1.8	A+	A+
3697	737540	8	8	715	.225	.450	.245	.225	.080	.000	.132	.003	033	.132	155	1.680	0.097	2.4	1.1	9.4	2.5	B-	A-
3698	737541	8	8	756	.323	.177	.384	.323	.116	.000	.182	110	007	.182	123	1.002	0.086	3.9	1.2	9.9	2.1	A-	
3699	737542	8	8	727	.691	.129	.085	.095	.691	.000	.455	201	298	203	.455	-0.870	0.090	-1.2	1.0	-1.5	0.9	A+	A-
3700	737556	8	8	766	.398	.398	.281	.133	.188	.000	.242	.242	.052	306	096	0.643	0.082	4.5	1.1	5.0	1.3	A-	A-
3701	737557	8	8	734	.343	.159	.237	.260	.343	.000	.355	231	195	003	.355	0.934	0.085	-0.1	1.0	1.8	1.1	A+	A-
3702	737558	8	8	771	.619	.619	.148	.145	.088	.000	.381	.381	269	195	073	-0.485	0.084	1.6	1.1	1.8	1.1	A+	A-
3703	737559	8	8	759	.322	.153	.062	.321	.464	.000	.186	131	150	.186	007	1.108	0.085	3.4	1.1	8.0	1.7	A+	A-
3704	737560	8	8	677	.468	.196	.468	.232	.103	.000	.384	149	.384	222	128	0.355	0.086	0.6	1.0	3.3	1.2	A-	A+
3705	737561	8	8	743	.466	.215	.132	.187	.466	.000	.291	190	092	093	.291	0.310	0.082	3.5	1.1	5.0	1.3	A-	B+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
	.5	Grade	Grade	.,		. (, ,				٠,,	1 (515	(, .,	(5)			ivicus	11102	in	in	out	out	/F	/B
3706	737562	8	8	757	.437	.240	.437	.198	.124	.000	.291	140	.291	077	163	0.427	0.081	2.8	1.1	6.0	1.4	A-	A-
3707	737563	8	8	701	.511	.511	.150	.039	.301	.000	.528	.528	139	100	425	0.067	0.084	-5.1	0.9	-3.7	0.8	A+	B-
3708	737564	8	8	755	.477	.106	.477	.085	.332	.000	.408	121	.408	083	304	0.301	0.081	-0.8	1.0	2.0	1.1	A+	
3709	737565	8	8	753	.700	.048	.082	.700	.170	.000	.424	192	118	.424	322	-0.935	0.089	-0.1	1.0	-0.9	0.9	B-	A-
3710	737566	8	8	733	.312	.188	.299	.201	.312	.000	.234	049	186	011	.234	1.078	0.087	2.2	1.1	7.5	1.7	A-	A+
3711	737567	8	8	729	.391	.388	.391	.099	.122	.000	.352	194	.352	177	074	0.610	0.084	0.0	1.0	4.0	1.3	A-	A+
3712	737568	8	8	723	.407	.107	.407	.318	.169	.000	.380	050	.380	284	104	0.544	0.084	-0.4	1.0	3.0	1.2	A+	A+
3713	737569	8	8	734	.312	.134	.240	.315	.312	.000	.312	163	114	087	.312	1.105	0.087	0.9	1.0	3.5	1.3	A-	A-
3714	737570	8	8	706	.309	.262	.331	.309	.098	.000	.212	024	073	.212	180	1.106	0.089	2.1	1.1	9.9	2.1	A-	A+
3715	737571	8	8	733	.585	.149	.585	.156	.111	.000	.421	168	.421	261	169	-0.325	0.085	0.0	1.0	0.5	1.0	B+	A+
3716	737572	8	8	718	.276	.276	.266	.192	.266	.000	.284	.284	146	151	007	1.292	0.092	1.6	1.1	4.1	1.4	A-	A+
3717	737573	8	8	737	.578	.080	.111	.231	.578	.000	.368	139	218	179	.368	-0.214	0.083	1.3	1.0	1.5	1.1	A+	A+
3718	737574	8	8	726	.368	.222	.348	.368	.062	.000	.291	275	.040	.291	187	0.792	0.085	2.7	1.1	4.7	1.4	A+	
3719	737575	8	8	719	.348	.153	.256	.243	.348	.000	.103	062	.009	072	.103	0.901	0.086	7.2	1.3	9.9	2.1	A+	B+
3720	737576	8	8	734	.461	.207	.460	.219	.113	.000	.231	086	.231	090	137	0.319	0.083	6.8	1.2	6.9	1.5	A+	A+
3721	737577	8	8	756	.411	.116	.242	.411	.230	.000	.234	166	116	.234	029	0.597	0.082	4.6	1.2	6.6	1.4	A-	A-
3722	737578	8	8	704	.446	.197	.244	.446	.112	.000	.130	119	.048	.130	121	0.399	0.084	8.8	1.3	9.3	1.6	A+	A+
3723	737579	8	8	732	.264	.264	.314	.225	.197	.000	.058	.058	.031	119	.024	1.347	0.091	5.1	1.2	9.9	2.4	A-	
3724	737580	8	8	732	.242	.347	.204	.242	.208	.000	.031	.062	151	.031	.045	1.507	0.093	5.6	1.3	9.2	2.3	A-	A-
3725	737581	8	8	750	.515	.101	.236	.148	.515	.000	.417	200	170	214	.417	0.039	0.081	-1.0	1.0	0.5	1.0	A+	A-
3726	737582	8	8	681	.764	.131	.764	.062	.044	.000	.411	245	.411	192	222	-1.353	0.101	0.6	1.0	-1.3	0.9	A+	A-
3727	737583	8	8	735	.438	.210	.438	.216	.136	.000	.295	035	.295	159	195	0.394	0.082	2.3	1.1	5.9	1.4	A-	A+
3728	739463	8	8	694	.452	.143	.173	.452	.232	.000	.183	086	214	.183	.046	0.338	0.085	7.1	1.3	9.3	1.7	A+	A+
3729	739464	8	8	765	.455	.150	.318	.455	.077	.000	.254	125	092	.254	147	0.332	0.082	5.5	1.2	7.2	1.5	A-	A-
3730	739465	8	8	700	.386	.243	.386	.109	.263	.000	.011	055	.011	202	.184	0.721	0.086	9.9	1.4	9.9	2.0	A-	A-
3731	739466	8	8	716	.265	.271	.265	.223	.240	.000	.109	039	.109	088	.014	1.363	0.092	3.5	1.2	9.9	2.7	A-	A-
3732	739467	8	8	726	.295	.397	.295	.174	.135	.000	.075	.094	.075	156	062	1.240	0.089	6.0	1.3	8.5	1.9	A-	A+
3733	739468	8	8	741	.224	.534	.206	.035	.224	.000	.150	.061	101	282	.150	1.606	0.095	2.7	1.1	6.4	1.9	A-	
3734	739469	8	8	716	.175	.137	.450	.239	.175	.000	.241	093	034	099	.241	1.990	0.106	0.3	1.0	3.8	1.6	A-	A+
3735	739470	8	8	748	.313	.313	.386	.211	.090	.000	.310	.310	011	203	196	1.129	0.086	0.5	1.0	4.3	1.4	A+	A-
3736	739471	8	8	731	.376	.111	.086	.376	.427	.000	.264	061	101	.264	162	0.758	0.084	2.6	1.1	6.8	1.5	A-	A-
3737	739472	8	8	753	.499	.259	.162	.499	.080	.000	.343	192	149	.343	120	0.087	0.082	2.2	1.1	3.8	1.2	A-	A-
3738	739595	8	8	723	.548	.183	.108	.162	.548	.000	.431	200	141	253	.431	-0.117	0.083	-1.6	1.0	0.0	1.0	A+	A-
3739	739596	8	8	692	.695	.695	.104	.134	.066	.000	.358	.358	229	166	155	-0.928	0.093	1.9	1.1	1.0	1.1	A-	B-
3740	739597	8	8	740	.251	.188	.266	.295	.251	.000	.110	023	028	057	.110	1.428	0.092	4.2	1.2	9.9	2.8	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
ite.		Grade	Grade	.,						٠,,	1 (515			(0)				in	in	out	out	/F	/B
3741	739598	8	8	784	.485	.092	.296	.485	.128	.000	.343	198	115	.343	185	0.134	0.080	2.5	1.1	3.5	1.2	A-	A+
3742	739599	8	8	737	.299	.174	.299	.284	.244	.000	.111	057	.111	028	039	1.170	0.087	4.4	1.2	9.9	2.2	A+	A+
3743	739600	8	8	702	.453	.085	.453	.239	.222	.000	.316	034	.316	126	227	0.330	0.084	2.7	1.1	3.9	1.2	A+	A+
3744	739601	8	8	771	.617	.083	.617	.259	.040	.000	.335	154	.335	169	235	-0.510	0.084	3.1	1.1	3.1	1.2	A+	A-
3745	739602	8	8	733	.300	.300	.104	.538	.059	.000	.250	.250	182	011	228	1.233	0.088	1.7	1.1	7.2	1.7	A-	A-
3746	739603	8	8	715	.206	.497	.206	.206	.092	.000	089	.183	089	055	116	1.860	0.099	5.4	1.3	9.9	3.3	A+	A+
3747	739604	8	8	696	.267	.154	.261	.318	.267	.000	.132	001	074	056	.132	1.372	0.094	3.9	1.2	7.9	1.9	A-	A-
3748	740101	8	8	710	.492	.154	.492	.206	.149	.000	.326	084	.326	208	136	0.211	0.084	2.9	1.1	3.4	1.2	A+	A-
3749	740102	8	8	711	.352	.169	.352	.335	.145	.000	.033	048	.033	.046	055	0.935	0.086	9.0	1.3	8.8	1.8	A-	A+
3750	740103	8	8	780	.390	.390	.285	.142	.183	.000	.048	.048	109	077	.136	0.737	0.081	9.9	1.4	9.9	1.7	A-	A-
3751	740104	8	8	721	.380	.270	.232	.380	.118	.000	.211	106	174	.211	.057	0.757	0.085	4.5	1.2	8.4	1.7	A-	B-
3752	740105	8	8	701	.318	.318	.250	.241	.191	.000	.095	.095	130	072	.109	1.083	0.089	6.1	1.2	9.0	1.9	A+	A-
3753	740107	8	8	739	.261	.081	.254	.261	.403	.000	.092	012	.134	.092	195	1.433	0.091	4.3	1.2	9.6	2.2	A-	
3754	740108	8	8	730	.282	.121	.282	.255	.342	.000	.121	114	.121	048	.008	1.214	0.090	4.5	1.2	9.0	2.1	A-	A-
3755	740109	8	8	759	.192	.206	.204	.398	.192	.000	.185	.078	.018	228	.185	1.844	0.099	1.8	1.1	4.8	1.7	A-	A-
3756	740110	8	8	788	.411	.411	.225	.279	.085	.000	.256	.256	122	114	086	0.560	0.080	3.6	1.1	7.5	1.5	A-	
3757	740111	8	8	716	.507	.507	.219	.105	.169	.000	.369	.369	193	256	069	0.052	0.085	2.2	1.1	3.1	1.2	A+	A-
3758	740112	8	8	681	.300	.134	.408	.159	.300	.000	.106	029	095	.021	.106	1.219	0.091	4.8	1.2	9.9	2.4	A-	A+
3759	740113	8	8	684	.412	.136	.215	.237	.412	.000	.346	120	079	228	.346	0.571	0.087	1.6	1.1	3.6	1.3	A-	A-
3760	740114	8	8	747	.391	.268	.391	.262	.079	.000	.171	.106	.171	187	178	0.699	0.083	6.4	1.2	8.5	1.6	A-	A-
3761	740115	8	8	783	.456	.165	.456	.142	.238	.000	.377	114	.377	188	188	0.406	0.079	0.1	1.0	1.7	1.1	A+	A-
3762	740116	8	8	723	.364	.166	.210	.364	.260	.000	.000	077	064	.000	.125	0.698	0.085	9.9	1.4	9.9	1.9	B-	A+
3763	740117	8	8	695	.236	.173	.239	.353	.236	.000	.102	097	.104	106	.102	1.598	0.097	3.7	1.2	9.7	2.5	A+	A-
3764	740118	8	8	724	.605	.043	.605	.211	.141	.000	.307	197	.307	168	120	-0.296	0.084	3.0	1.1	2.4	1.1	A-	A+
3765	740119	8	8	723	.432	.432	.308	.129	.131	.000	.345	.345	084	207	187	0.493	0.084	1.4	1.0	4.3	1.3	A-	A-
3766	740120	8	8	755	.385	.310	.385	.226	.078	.000	.284	037	.284	217	112	0.735	0.083	2.6	1.1	6.0	1.5	A-	B-
3767	740121	8	8	708	.496	.496	.194	.184	.127	.000	.471	.471	215	249	162	0.100	0.085	-1.9	0.9	-0.8	1.0	A-	B-
3768	715332	A1	A1	3817	.274	.133	.274	.138	.456	.000	.046	137	.046	212	.198	1.566	0.039	9.9	1.2	9.9	2.1	A-	A-
3769	715333	A1	A1	3818	.322	.322	.321	.243	.114	.000	.263	.263	069	131	108	1.326	0.038	2.6	1.0	9.9	1.4	A-	A-
3770	715334	A1	A1	3766	.479	.479	.081	.332	.108	.000	.313	.313	157	193	073	0.514	0.036	4.3	1.1	8.7	1.2	A+	A-
3771	715335	A1	A1	3936	.432	.083	.432	.420	.065	.000	.252	147	.252	128	086	0.735	0.035	8.2	1.1	9.9	1.4	A+	A+
3772	715336	A1	A1	3991	.373	.082	.373	.311	.234	.000	.164	068	.164	139	.009	1.015	0.036	9.9	1.2	9.9	1.5	A-	A-
3773	715337	A1	A1	3921	.308	.452	.118	.308	.122	.000	.045	.126	156	.045	100	1.412	0.037	9.9	1.3	9.9	1.9	A-	A+
3774	715338	A1	A1	3896	.318	.341	.227	.318	.114	.000	.153	092	044	.153	029	1.334	0.037	8.8	1.1	9.9	1.7	A+	A-
3775	715339	A1	A1	3807	.553	.127	.553	.241	.079	.000	.321	175	.321	172	103	0.151	0.036	4.5	1.1	5.6	1.1	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	טו	Grade	Grade	14	rvai	F(A)	F(D)	r(c)	F(D)	F (-)	FtDIS	r i(A)	F I(D)	r i(c)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
3776	715340	A1	A1	3740	.337	.337	.252	.262	.149	.000	.228	.228	103	114	036	1.212	0.037	5.4	1.1	9.9	1.4	A+	A-
3777	715341	A1	A1	3804	.587	.100	.156	.587	.157	.000	.299	149	189	.299	094	-0.021	0.037	6.4	1.1	8.7	1.2	A+	A-
3778	715885	A1	A1	3903	.206	.334	.193	.267	.206	.000	.226	012	137	072	.226	2.000	0.042	0.4	1.0	8.7	1.5	A+	A+
3779	715886	A1	A1	3803	.304	.175	.298	.223	.304	.000	.173	139	.041	109	.173	1.392	0.038	8.2	1.1	9.9	1.5	A+	A-
3780	715888	A1	A1	3841	.294	.215	.211	.294	.280	.000	.194	063	.014	.194	152	1.447	0.038	4.8	1.1	9.9	1.7	A-	A-
3781	715889	A1	A1	3785	.332	.332	.276	.257	.135	.000	.203	.203	066	127	031	1.269	0.037	6.5	1.1	9.9	1.5	A+	A+
3782	715890	A1	A1	3893	.193	.193	.195	.357	.256	.000	.015	.015	165	.132	009	2.091	0.043	7.6	1.2	9.9	2.4	A+	A-
3783	715891	A1	A1	3806	.386	.136	.187	.386	.291	.000	.138	132	139	.138	.071	0.990	0.036	9.9	1.2	9.9	1.6	A+	A-
3784	715893	A1	A1	3854	.495	.495	.205	.145	.155	.000	.380	.380	220	258	028	0.417	0.036	-0.3	1.0	3.3	1.1	A-	A-
3785	715926	A1	A1	3793	.263	.329	.202	.263	.206	.000	.021	.031	048	.021	012	1.623	0.039	9.9	1.2	9.9	2.3	A-	A+
3786	715927	A1	A1	3783	.404	.137	.331	.404	.128	.000	.172	114	021	.172	105	0.901	0.036	9.9	1.2	9.9	1.5	A-	A+
3787	715928	A1	A1	3841	.415	.109	.414	.234	.242	.000	.131	087	.131	175	.086	0.830	0.036	9.9	1.2	9.9	1.5	A-	A-
3788	719089	A1	A1	3805	.482	.211	.158	.482	.148	.000	.265	053	178	.265	129	0.515	0.036	8.2	1.1	9.9	1.2	A+	A+
3789	719090	A1	A1	3789	.262	.262	.298	.265	.175	.000	.133	.133	125	.021	028	1.638	0.040	7.2	1.1	9.9	1.8	A-	A-
3790	719091	A1	A1	3803	.397	.130	.148	.325	.397	.000	.262	185	137	037	.262	0.938	0.036	6.4	1.1	9.9	1.3	A-	A-
3791	719117	A1	A1	3786	.623	.172	.623	.133	.072	.000	.383	169	.383	270	117	-0.211	0.037	1.7	1.0	0.9	1.0	A+	A-
3792	719118	A1	A1	3793	.733	.044	.074	.733	.148	.000	.363	217	259	.363	134	-0.826	0.041	2.3	1.1	1.6	1.1	A-	A-
3793	719119	A1	A1	3854	.491	.133	.491	.226	.150	.000	.317	093	.317	210	109	0.453	0.036	4.5	1.1	8.4	1.2	A+	A+
3794	719120	A1	A1	3852	.323	.386	.140	.151	.323	.000	.300	102	175	084	.300	1.294	0.037	0.3	1.0	6.8	1.2	A+	A+
3795	719122	A1	A1	3953	.373	.185	.373	.227	.215	.000	.250	091	.250	172	033	1.041	0.036	5.9	1.1	9.9	1.4	A+	A+
3796	719123	A1	A1	3779	.358	.186	.188	.268	.358	.000	.216	030	056	158	.216	1.120	0.037	8.3	1.1	9.9	1.4	A+	A-
3797	719124	A1	A1	3904	.270	.270	.162	.403	.165	.000	.186	.186	133	.012	106	1.601	0.039	5.0	1.1	9.9	1.7	A+	A-
3798	724103	A1	A1	3848	.763	.763	.071	.100	.066	.000	.509	.509	276	276	253	-1.012	0.042	-5.4	0.9	-6.9	8.0	A+	A-
3799	724104	A1	A1	3876	.207	.207	.245	.151	.396	.000	.233	.233	122	194	.056	1.990	0.042	0.4	1.0	9.9	1.6	B-	A-
3800	724105	A1	A1	3918	.568	.118	.229	.568	.085	.000	.284	113	168	.284	121	0.075	0.036	8.5	1.1	9.9	1.3	A-	A-
3801	724106	A1	A1	3862	.698	.100	.131	.698	.071	.000	.431	239	250	.431	163	-0.625	0.039	-1.3	1.0	-2.4	0.9	A-	A-
3802	724107	A1	A1	3741	.263	.161	.292	.284	.262	.000	.219	073	074	079	.219	1.641	0.040	3.0	1.1	9.9	1.6	A+	A-
3803	724108	A1	A1	3785	.448	.448	.180	.294	.078	.000	.339	.339	136	121	227	0.687	0.036	1.0	1.0	6.7	1.2	A-	A-
3804	724109	A1	A1	3826	.324	.069	.324	.416	.191	.000	.212	112	.212	107	046	1.291	0.037	5.1	1.1	9.9	1.6	A+	A+
3805	724110	A1	A1	3920	.605	.167	.147	.605	.081	.000	.317	122	213	.317	124	-0.084	0.036	5.7	1.1	5.5	1.1	A+	A-
3806	724111	A1	A1	3761	.391	.200	.391	.222	.186	.000	.072	.066	.072	064	090	0.954	0.036	9.9	1.3	9.9	1.7	A+	A+
3807	724112	A1	A1	3747	.726	.104	.086	.084	.726	.000	.373	174	244	162	.373	-0.771	0.041	1.4	1.0	1.1	1.0	A+	A-
3808	734479	A1	A1	3930	.406	.146	.322	.406	.126	.000	.068	093	.026	.068	037	0.859	0.035	9.9	1.3	9.9	1.6	A+	A-
3809	734480	A1	A1	3803	.303	.240	.303	.376	.081	.000	.113	094	.113	.078	182	1.396	0.038	9.8	1.2	9.9	1.8	A-	A+
3810	734481	A1	A1	3885	.419	.282	.419	.208	.091	.000	.196	.023	.196	208	079	0.830	0.035	9.9	1.1	9.9	1.4	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade										. ,	(0)				in	in	out	out	/F	/B
3811	734482	A1	A1	3928	.472	.334	.103	.471	.092	.000	.149	013	128	.149	102	0.540	0.035	9.9	1.2	9.9	1.5	A-	A-
3812	734483	A1	A1	3707	.227	.227	.253	.247	.273	.000	.129	.129	076	115	.064	1.890	0.042	4.2	1.1	9.9	2.0	A-	A-
3813	734484	A1	A1	3718	.621	.048	.120	.210	.621	.000	.424	172	216	242	.424	-0.200	0.038	-1.4	1.0	-1.0	1.0	A+	A+
3814	734485	A1	A1	3884	.148	.179	.283	.390	.148	.000	.099	169	.019	.043	.099	2.426	0.047	2.2	1.1	9.9	2.2	A-	A+
3815	734486	A1	A1	3929	.258	.081	.170	.491	.258	.000	.191	203	192	.088	.191	1.687	0.039	3.4	1.1	9.9	1.8	A+	A+
3816	734487	A1	A1	3777	.295	.295	.321	.192	.191	.000	.181	.181	027	139	039	1.414	0.039	6.3	1.1	9.9	1.7	A-	B-
3817	734488	A1	A1	3895	.429	.429	.260	.223	.088	.000	.222	.222	073	107	117	0.768	0.035	9.9	1.1	9.9	1.4	A+	A-
3818	735035	A1	A1	3730	.285	.236	.284	.152	.328	.000	.134	070	.134	087	.001	1.501	0.039	7.7	1.1	9.9	1.7	A+	A-
3819	735036	A1	A1	3958	.157	.157	.202	.429	.212	.000	.115	.115	055	028	014	2.344	0.046	2.6	1.1	9.9	2.2	A-	A+
3820	735037	A1	A1	3817	.619	.129	.131	.122	.619	.000	.492	194	294	229	.492	-0.185	0.037	-6.5	0.9	-5.4	0.9	A+	A-
3821	735038	A1	A1	3810	.526	.525	.147	.163	.165	.000	.366	.366	207	122	174	0.287	0.036	1.0	1.0	4.1	1.1	A+	A+
3822	735039	A1	A1	3860	.489	.489	.118	.278	.115	.000	.370	.370	093	268	109	0.485	0.036	-0.1	1.0	4.8	1.1	A+	A+
3823	735040	A1	A1	3788	.526	.133	.249	.526	.092	.000	.273	229	104	.273	047	0.288	0.036	9.2	1.1	9.9	1.2	A+	A+
3824	735041	A1	A1	3823	.421	.088	.421	.261	.230	.000	.233	066	.233	151	072	0.792	0.036	8.4	1.1	9.9	1.4	A+	A-
3825	735042	A1	A1	3888	.274	.165	.267	.293	.274	.000	.048	026	.136	158	.048	1.560	0.039	9.9	1.2	9.9	2.1	A+	A-
3826	735043	A1	A1	3865	.126	.123	.450	.301	.126	.000	.054	074	.030	018	.054	2.652	0.051	2.4	1.1	9.9	2.5	A+	A-
3827	735044	A1	A1	3815	.476	.097	.476	.168	.259	.000	.252	153	.252	099	099	0.571	0.036	8.9	1.1	9.9	1.3	A-	A-
3828	735045	A1	A1	3814	.353	.075	.211	.362	.353	.000	.163	072	130	013	.163	1.139	0.037	9.9	1.2	9.9	1.5	A-	A+
3829	735046	A1	A1	3781	.502	.044	.359	.501	.096	.000	.295	221	163	.295	082	0.382	0.036	6.3	1.1	9.9	1.2	A+	A-
3830	735047	A1	A1	3801	.767	.091	.045	.097	.767	.000	.503	236	299	280	.503	-1.037	0.043	-4.9	0.9	-4.8	8.0	A+	B-
3831	735048	A1	A1	3796	.482	.482	.237	.246	.035	.000	.342	.342	191	120	208	0.506	0.036	2.6	1.0	7.2	1.2	A-	A-
3832	735049	A1	A1	3808	.275	.411	.265	.275	.049	.000	.151	015	107	.151	059	1.575	0.039	6.5	1.1	9.9	1.8	A+	A+
3833	735050	A1	A1	3790	.466	.164	.466	.246	.123	.000	.251	149	.251	090	095	0.574	0.036	9.9	1.1	9.9	1.3	A+	A+
3834	735051	A1	A1	3886	.162	.243	.321	.274	.162	.000	.119	042	042	014	.119	2.338	0.046	1.1	1.0	9.9	2.5	A-	A-
3835	735052	A1	A1	3882	.407	.158	.255	.407	.180	.000	.182	066	114	.182	040	0.844	0.036	9.9	1.2	9.9	1.4	A+	A-
3836	735053	A1	A1	3780	.255	.150	.255	.372	.223	.000	013	039	013	.026	.017	1.673	0.040	9.9	1.3	9.9	2.1	A-	A-
3837	735054	A1	A1	3936	.223	.349	.242	.186	.223	.000	.229	.005	132	107	.229	1.863	0.041	0.8	1.0	9.9	1.6	A+	A+
3838	735143	A1	A1	3891	.297	.096	.171	.435	.297	.000	.212	143	124	017	.212	1.424	0.038	5.3	1.1	9.9	1.5	A+	A-
3839	735144	A1	A1	3834	.347	.183	.347	.149	.320	.000	.083	.039	.083	170	.013	1.182	0.037	9.9	1.2	9.9	1.8	A-	A-
3840	735145	A1	A1	3803	.579	.578	.145	.108	.168	.000	.366	.366	241	205	085	0.036	0.036	1.9	1.0	3.3	1.1	A-	A+
3841	735146	A1	A1	3858	.166	.166	.187	.378	.269	.000	.052	.052	103	058	.110	2.284	0.046	4.2	1.1	9.9	2.7	A-	A+
3842	735147	A1	A1	3853	.294	.092	.294	.508	.106	.000	.072	266	.072	.182	152	1.447	0.038	9.9	1.2	9.9	2.0	A-	A-
3843	735148	A1	A1	3786	.806	.063	.806	.083	.049	.000	.454	252	.454	263	213	-1.367	0.046	-2.3	0.9	-4.6	0.8	A+	A-
3844	735149	A1	A1	3865	.357	.122	.179	.343	.357	.000	.283	129	220	019	.283	1.112	0.037	2.7	1.0	9.9	1.3	A+	A-
3845	735150	A1	A1	3818	.098	.126	.595	.181	.098	.000	.151	128	.036	052	.151	2.957	0.057	-0.4	1.0	9.9	2.3	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Section Sect	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
3847 735152			Grade																				•	-
3848 735153 A1																				0.9			B+	Α-
3849 735154 A1	3847	735152	A1	A1		.597	.186	.074		.597	.000	.391	157	218		.391	-0.043			1.0	1.5	1.0	A+	A-
3850 735155 A1	3848			A1	3778						.000	.251								1.1	-		A-	A-
3851 735156 A1			A1	A1	3758		.648							184						0.9			A+	A+
3852 735157 A1	3850	735155	A1	A1			.080	.710		.088	.000	.414	219	.414	254	161	-0.691		-0.9	1.0	-2.4	0.9	A+	A-
3855 735158	3851	735156	A1	A1	3789	.508	.280	.137	.508	.074	.000	.339	062	258	.339	202	0.358	0.036	2.5	1.0	8.7	1.2	A+	A+
3854 735159 A1	3852	735157	A1	A1	3860	.426	.122	.426	.289	.163	.000	.205	141	.205	045	094	0.763	0.036	9.9	1.1	9.9	1.5	A-	A-
3855 735160	3853	735158	A1	A1	3888	.645	.645	.206	.090	.059	.000	.437	.437	169	313	219	-0.326	0.037	-2.2	1.0	-2.6	0.9	A+	A-
3856 735161 A1	3854	735159	A1	A1	3782	.654	.127	.654	.138	.080	.000	.446	142	.446	314	207	-0.350	0.038	-3.1	1.0	-3.5	0.9	A+	A-
3857 735162 A1	3855	735160	A1	A1	3751	.553	.071	.260	.553	.117	.000	.251	113	122	.251	131	0.140	0.036	9.9	1.2	9.9	1.2	A+	A-
3858 735648 A1 A1 3826 .481 .198 .182 .481 .139 .000 .272 .057 .215 .272 .086 .0520 .0.36 .7.6 1.1 9.9 1.3 A- A- 3859 735649 A1 A1 3876 .397 .213 .288 .397 .101 .000 .117 .1217 .127 .0898 .036 .9.9 1.2 .9.9 1.6 A+ A- 3860 735651 A1 A1 .3879 .129 .179 .234 .429 .157 .000 .099 .076 .101 .099 .098 .078 .036 9.9 1.3 .9.9 1.6 A+ A- 3863 735651 A1 A1 3803 .466 .145 .268 .466 .120 .000 .119 .088 .0569 .036 .99 1.3 .99 1.4 A+ A-	3856	735161	A1	A1	3781	.272	.263	.219	.246	.272	.000	.128	.192	203	135	.128	1.555	0.039	8.4	1.2	9.9	1.9	A+	A-
3859 735649	3857	735162	A1	A1	3885	.385	.242	.385	.160	.213	.000	.181	018	.181	241	.020	0.955	0.036	9.9	1.2	9.9	1.5	A-	A-
3860 735650 A1	3858	735648	A1	A1	3826	.481	.198	.182	.481	.139	.000	.272	057	215	.272	086	0.520	0.036	7.6	1.1	9.9	1.3	A-	A-
3861 735651 A1 A1 377 429 1.79 2.34 429 1.15 0.00 .099 .076 -1.01 .099 -0.98 0.758 0.036 9.9 1.3 9.9 1.6 A+ A- 3862 735652 A1 A1 3803 .466 .145 .268 .466 .120 .000 .119 .058 .0569 0.036 9.9 1.3 9.9 1.5 A- A- 3863 735653 A1 A1 3813 .565 .159 .188 .565 .088 .000 .167 .187 .010 .0036 .9.9 1.3 9.9 1.4 A- A- 3864 7356554 A1 A1 3839 .589 .589 .206 .158 .047 .000 .333 .333 .222 .185 .147 -0.010 .0337 .07 1.0 .3.3 1.1 A+ A- <	3859	735649	A1	A1	3876	.397	.213	.288	.397	.101	.000	.117	044	002	.117	127	0.898	0.036	9.9	1.2	9.9	1.6	A+	A-
3862 735652 A1 A1 3803 .466 .145 .268 .466 .120 .000 .119 058 026 .119 085 0.569 0.036 9.9 1.3 9.9 1.5 A- A- 3863 735653 A1 A1 3813 .565 .159 .188 .565 .088 .000 .167 008 .069 .167 187 0.110 0.036 9.9 1.3 9.9 1.4 A- A- 3865 735655 A1 A1 3839 .589 .589 .589 .580 .188 .047 .000 .383 .383 .222 .185 .147 -0010 .036 7.7 1.1 9.9 1.4 A- A- 3866 735655 A1 A1 3887 .322 .312 .322 .235 .131 .000 .122 .016 .122 .015 .144 1.122 0.037 </td <td>3860</td> <td>735650</td> <td>A1</td> <td>A1</td> <td>3847</td> <td>.274</td> <td>.274</td> <td>.282</td> <td>.281</td> <td>.163</td> <td>.000</td> <td>.262</td> <td>.262</td> <td>024</td> <td>153</td> <td>102</td> <td>1.574</td> <td>0.039</td> <td>1.0</td> <td>1.0</td> <td>8.9</td> <td>1.4</td> <td>A-</td> <td>A+</td>	3860	735650	A1	A1	3847	.274	.274	.282	.281	.163	.000	.262	.262	024	153	102	1.574	0.039	1.0	1.0	8.9	1.4	A-	A+
3863 735653 A1 A1 3813 .565 .159 .188 .565 .088 .000 .167 .008 .069 .167 187 0.110 0.036 9.9 1.3 9.9 1.4 A- A- 3864 735654 A1 A1 3904 .420 .420 .281 .190 .109 .000 .255 .255 163 103 .038 0.796 0.036 7.1 1.1 9.9 1.4 A+ A- 3865 735655 A1 A1 3838 .282 .206 .158 .047 .000 .333 .322 .135 .11 .000 .137 .077 .137 144 .122 .0037 .90 1.1 .99 1.7 A- A+ 3866 735657 A1 A1 3826 .354 .157 .354 .377 .112 .000 .122 .016 .122 .015 .144	3861	735651	A1	A1	3797	.429	.179	.234	.429	.157	.000	.099	.076	101	.099	098	0.758	0.036	9.9	1.3	9.9	1.6	A+	A-
3864 735654 A1	3862	735652	A1	A1	3803	.466	.145	.268	.466	.120	.000	.119	058	026	.119	085	0.569	0.036	9.9	1.3	9.9	1.5	A-	A-
3865 735655 A1 A1 3839 .589 .206 .158 .047 .000 .383 .383 222 .185 147 -0.010 0.037 0.7 1.0 3.3 1.1 A+ A- 3866 735656 A1 A1 3878 .322 .312 .322 .235 .131 .000 .137 116 149 1.283 0.037 9.0 1.1 9.9 1.9 A- A+ 3867 735657 A1 A1 3826 .354 .157 .354 .377 .112 .000 .122 015 144 1.122 0.037 9.9 1.2 9.9 1.7 A- A+ 3868 735658 A1 A1 3850 .461 .238 .461 .156 .000 .245 017 234 .245 091 .0596 .033 9.9 1.2 9.9 1.3 A+ A+	3863	735653	A1	A1	3813	.565	.159	.188	.565	.088	.000	.167	008	069	.167	187	0.110	0.036	9.9	1.3	9.9	1.4	A-	A-
3866 735656 A1 A1 3878 .322 .312 .322 .235 .131 .000 .137 116 149 1.283 0.037 9.0 1.1 9.9 1.9 A- A+ 3867 735657 A1 A1 3826 .354 .157 .354 .377 .112 .000 .122 016 .122 015 144 1.122 0.037 9.9 1.2 9.9 1.7 A- A+ 3868 735658 A1 A1 3850 .461 .238 .145 .461 .156 .000 .245 017 234 .245 091 0.596 0.036 9.2 1.1 9.9 1.3 A+ A+ 3870 735660 A1 A1 383 .465 .079 .263 .193 .465 .000 .251 .251 .252 .002 .0575 0.035 9.9 1.1 9.9 1.3 <td>3864</td> <td>735654</td> <td>A1</td> <td>A1</td> <td>3904</td> <td>.420</td> <td>.420</td> <td>.281</td> <td>.190</td> <td>.109</td> <td>.000</td> <td>.255</td> <td>.255</td> <td>163</td> <td>103</td> <td>038</td> <td>0.796</td> <td>0.036</td> <td>7.1</td> <td>1.1</td> <td>9.9</td> <td>1.4</td> <td>A+</td> <td>A-</td>	3864	735654	A1	A1	3904	.420	.420	.281	.190	.109	.000	.255	.255	163	103	038	0.796	0.036	7.1	1.1	9.9	1.4	A+	A-
3867 735657 A1 A1 3826 .354 .157 .354 .377 .112 .000 .122 016 .122 015 144 1.122 0.037 9.9 1.2 9.9 1.7 A- A+ 3868 735658 A1 A1 3850 .461 .238 .145 .461 .156 .000 .245 017 234 .245 091 0.596 0.036 9.2 1.1 9.9 1.3 A+ A+ 3869 735659 A1 A1 3956 .490 .128 .139 .490 .243 .000 .239 084 191 .239 060 0.459 0.035 9.9 1.2 9.9 1.3 A+ A- 3870 735660 A1 A1 3883 .465 .079 .263 .193 .465 .000 .251 .251 .252 .002 .093 .0941 .036 6.	3865	735655	A1	A1	3839	.589	.589	.206	.158	.047	.000	.383	.383	222	185	147	-0.010	0.037	0.7	1.0	3.3	1.1	A+	A-
3868 735658 A1 A1 3850 .461 .238 .145 .461 .156 .000 .245 017 234 .245 091 0.596 0.036 9.2 1.1 9.9 1.3 A+ A+ 3869 735659 A1 A1 3956 .490 .128 .139 .490 .243 .000 .239 084 191 .239 060 0.459 0.035 9.9 1.2 9.9 1.3 A+ A- 3870 735660 A1 A1 3883 .465 .079 .263 .193 .465 .000 .250 131 069 149 .250 0.575 0.035 9.9 1.1 9.9 1.3 A+ A+ 3871 735661 A1 A1 3910 .392 .126 .130 .000 .385 176 171 .385 234 -0.461 0.038 1.3 1.0 <td< td=""><td>3866</td><td>735656</td><td>A1</td><td>A1</td><td>3878</td><td>.322</td><td>.312</td><td>.322</td><td>.235</td><td>.131</td><td>.000</td><td>.137</td><td>.077</td><td>.137</td><td>116</td><td>149</td><td>1.283</td><td>0.037</td><td>9.0</td><td>1.1</td><td>9.9</td><td>1.9</td><td>A-</td><td>A+</td></td<>	3866	735656	A1	A1	3878	.322	.312	.322	.235	.131	.000	.137	.077	.137	116	149	1.283	0.037	9.0	1.1	9.9	1.9	A-	A+
3869 735659 A1 A1 3956 .490 .128 .139 .490 .243 .000 .239 084 191 .239 060 0.459 0.035 9.9 1.2 9.9 1.3 A+ A- 3870 735660 A1 A1 3883 .465 .079 .263 .193 .465 .000 .250 131 069 149 .250 0.575 0.035 9.9 1.1 9.9 1.3 A+ A+ 3871 735661 A1 A1 3910 .392 .166 .343 .099 .000 .251 .251 .252 002 093 0.941 0.036 6.8 1.1 9.9 1.3 A+ A- 3872 735662 A1 A1 3903 .672 .070 .128 .672 .130 .000 .385 176 171 .385 234 -0.461 .0038 1.3 <td< td=""><td>3867</td><td>735657</td><td>A1</td><td>A1</td><td>3826</td><td>.354</td><td>.157</td><td>.354</td><td>.377</td><td>.112</td><td>.000</td><td>.122</td><td>016</td><td>.122</td><td>015</td><td>144</td><td>1.122</td><td>0.037</td><td>9.9</td><td>1.2</td><td>9.9</td><td>1.7</td><td>A-</td><td>A+</td></td<>	3867	735657	A1	A1	3826	.354	.157	.354	.377	.112	.000	.122	016	.122	015	144	1.122	0.037	9.9	1.2	9.9	1.7	A-	A+
3870 735660 A1 A1 3883 .465 .079 .263 .193 .465 .000 .250 131 069 149 .250 0.575 0.035 9.9 1.1 9.9 1.3 A+ A+ 3871 735661 A1 A1 3910 .392 .392 .166 .343 .099 .000 .251 .251 252 002 093 0.941 0.036 6.8 1.1 9.9 1.3 A+ A- 3872 735662 A1 A1 3903 .672 .070 .128 .672 .130 .000 .385 176 171 .385 234 -0.461 0.038 1.3 1.0 -0.5 1.0 A+ A+ 3873 735662 A1 A1 3923 .446 .194 .250 .446 .110 .000 .201 056 107 .201 101 0.685 0.035	3868	735658	A1	A1	3850	.461	.238	.145	.461	.156	.000	.245	017	234	.245	091	0.596	0.036	9.2	1.1	9.9	1.3	A+	A+
3871 735661 A1 A1 3910 .392 .392 .166 .343 .099 .000 .251 .252 002 093 0.941 0.036 6.8 1.1 9.9 1.3 A- A- 3872 735662 A1 A1 3903 .672 .070 .128 .672 .130 .000 .385 176 171 .385 234 -0.461 0.038 1.3 1.0 -0.5 1.0 A+ A- 3873 735663 A1 A1 3923 .446 .194 .250 .446 .110 .000 .201 056 107 .201 101 0.685 0.035 9.9 1.2 9.9 1.4 A+ A+ 3874 735664 A1 A1 3737 .563 .164 .562 .184 .090 .000 .329 257 118 0.106 0.037 4.6 1.1 4.8 1	3869	735659	A1	A1	3956	.490	.128	.139	.490	.243	.000	.239	084	191	.239	060	0.459	0.035	9.9	1.2	9.9	1.3	A+	A-
3872 735662 A1 A1 3903 .672 .070 .128 .672 .130 .000 .385 176 171 .385 234 -0.461 0.038 1.3 1.0 -0.5 1.0 A+ A- 3873 735663 A1 A1 3923 .446 .194 .250 .446 .110 .000 .201 056 107 .201 101 0.685 0.035 9.9 1.2 9.9 1.4 A+ A+ 3874 735664 A1 A1 3737 .563 .164 .562 .184 .090 .000 .329 081 .329 257 118 0.106 0.037 4.6 1.1 4.8 1.1 A+ A- 3875 735665 A1 A1 3767 .404 .235 .404 .237 .124 .000 .133 .076 .133 172 074 0.863 0.036 <	3870	735660	A1	A1	3883	.465	.079	.263	.193	.465	.000	.250	131	069	149	.250	0.575	0.035	9.9	1.1	9.9	1.3	A+	A+
3873 735663 A1 A1 3923 .446 .194 .250 .446 .110 .000 .201 056 107 .201 101 0.685 0.035 9.9 1.2 9.9 1.4 A+ A+ 3874 735664 A1 A1 3737 .563 .164 .562 .184 .090 .000 .329 081 .329 257 118 0.106 0.037 4.6 1.1 4.8 1.1 A+ A- 3875 735665 A1 A1 3767 .404 .235 .404 .237 .124 .000 .133 172 074 0.863 0.036 9.9 1.2 9.9 1.5 A+ A+ 3876 735666 A1 A1 3821 .299 .127 .314 .261 .299 .000 .231 095 115 048 .231 1.456 0.038 3.3 1.1 9	3871	735661	A1	A1	3910	.392	.392	.166	.343	.099	.000	.251	.251	252	002	093	0.941	0.036	6.8	1.1	9.9	1.3	A-	A-
3874 735664 A1 A1 3737 .563 .164 .562 .184 .090 .000 .329 081 .329 257 118 0.106 0.037 4.6 1.1 4.8 1.1 A+ A- 3875 735665 A1 A1 3767 .404 .235 .404 .237 .124 .000 .133 172 074 0.863 0.036 9.9 1.2 9.9 1.5 A+ A+ 3876 735666 A1 A1 3821 .299 .127 .314 .261 .299 .000 .231 095 115 048 .231 1.456 0.038 3.3 1.1 9.9 1.4 A- A- 3877 735667 A1 A1 3814 .502 .059 .269 .170 .502 .000 .396 229 201 146 .396 0.428 0.036 -1.5 1.0 1.4 1.0 A- 3878 735985 A1 A1 A1 3	3872	735662	A1	A1	3903	.672	.070	.128	.672	.130	.000	.385	176	171	.385	234	-0.461	0.038	1.3	1.0	-0.5	1.0	A+	A-
3875 735665 A1 A1 3767 .404 .235 .404 .237 .124 .000 .133 172 074 0.863 0.036 9.9 1.2 9.9 1.5 A+ A+ 3876 735666 A1 A1 3821 .299 .127 .314 .261 .299 .000 .231 095 115 048 .231 1.456 0.038 3.3 1.1 9.9 1.4 A- A- 3877 735667 A1 A1 3814 .502 .059 .269 .170 .502 .000 .396 229 201 146 .396 0.428 0.036 -1.5 1.0 1.4 1.0 A- 3878 735984 A1 A1 3823 .416 .185 .416 .214 .186 .000 .228 025 .228 174 081 0.823 0.036 9.6 1.1 9.9 <td< td=""><td>3873</td><td>735663</td><td>A1</td><td>A1</td><td>3923</td><td>.446</td><td>.194</td><td>.250</td><td>.446</td><td>.110</td><td>.000</td><td>.201</td><td>056</td><td>107</td><td>.201</td><td>101</td><td>0.685</td><td>0.035</td><td>9.9</td><td>1.2</td><td>9.9</td><td>1.4</td><td>A+</td><td>A+</td></td<>	3873	735663	A1	A1	3923	.446	.194	.250	.446	.110	.000	.201	056	107	.201	101	0.685	0.035	9.9	1.2	9.9	1.4	A+	A+
3876 735666 A1 A1 3821 .299 .127 .314 .261 .299 .000 .231 095 115 048 .231 1.456 0.038 3.3 1.1 9.9 1.4 A- A- 3877 735667 A1 A1 3814 .502 .059 .269 .170 .502 .000 .396 229 201 146 .396 0.428 0.036 -1.5 1.0 1.4 1.0 A- A- 3878 735984 A1 A1 3732 .247 .148 .429 .176 .000 .160 .160 181 .097 138 1.750 0.041 4.4 1.1 9.9 1.8 A+ A- 3879 735985 A1 A1 3823 .416 .185 .416 .214 .186 .000 .228 025 .228 174 081 0.823 0.036 9.6 1.1 9.9 1.4 A+ A-	3874	735664	A1	A1	3737	.563	.164	.562	.184	.090	.000	.329	081	.329	257	118	0.106	0.037	4.6	1.1	4.8	1.1	A+	A-
3877 735667 A1 A1 3814 .502 .059 .269 .170 .502 .000 .396 229 201 146 .396 0.428 0.036 -1.5 1.0 1.4 1.0 A- A- 3878 735984 A1 A1 3732 .247 .247 .148 .429 .176 .000 .160 .160 181 .097 138 1.750 0.041 4.4 1.1 9.9 1.8 A+ A- 3879 735985 A1 A1 3823 .416 .185 .416 .214 .186 .000 .228 025 .228 174 081 0.823 0.036 9.6 1.1 9.9 1.4 A+	3875	735665	A1	A1	3767	.404	.235	.404	.237	.124	.000	.133	.076	.133	172	074	0.863	0.036	9.9	1.2	9.9	1.5	A+	A+
3877 735667 A1 A1 3814 .502 .059 .269 .170 .502 .000 .396 229 201 146 .396 0.428 0.036 -1.5 1.0 1.4 1.0 A- A- 3878 735984 A1 A1 3732 .247 .247 .148 .429 .176 .000 .160 .160 181 .097 138 1.750 0.041 4.4 1.1 9.9 1.8 A+ A- 3879 735985 A1 A1 3823 .416 .185 .416 .214 .186 .000 .228 025 .228 174 081 0.823 0.036 9.6 1.1 9.9 1.4 A+	3876	735666	A1	A1	3821	.299	.127	.314	.261	.299	.000	.231	095	115	048	.231	1.456	0.038	3.3	1.1	9.9	1.4	A-	A-
3878 735984 A1 A1 3732 .247 .247 .148 .429 .176 .000 .160 .160 181 .097 138 1.750 0.041 4.4 1.1 9.9 1.8 A+ A- 3879 735985 A1 A1 3823 .416 .185 .416 .214 .186 .000 .228 025 .228 174 081 0.823 0.036 9.6 1.1 9.9 1.4 A+ A-		735667	A1	A1			.059				.000								-1.5	1.0	1.4			
3879 735985 A1 A1 3823 .416 .185 .416 .214 .186 .000 .228025 .228174081 0.823 0.036 9.6 1.1 9.9 1.4 A+ A-	3878	735984	A1	A1	3732		.247	.148		.176	.000	.160			.097	138	1.750		4.4	1.1	9.9	1.8	A+	-
	3879	735985	A1	A1			.185	.416		.186	.000	.228	025			081	0.823	0.036	9.6	1.1	9.9		A+	-
							.147																	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

1881 735987 A1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
3882 735988			Grade	Grade																in			/F	/B
3883 735989																						1.3	A+	Α-
3884 735991 A1	-																				-		A-	A+
3885 735992 A1			A1								.000									0.9		0.7	A-	A-
386 735992			A1				.214									-				1.2			A+	A-
3888 735994 A1	-	735991	A1	A1	3885															1.1	9.3		A-	A+
3888 735995 A1	3886	735992	A1	A1	_		.269	.200	.211	.321	.000	.238	072	079	117	-	1.317		3.3	1.1	9.9	1.5	A-	A-
3889 735995 A1	3887	735993	A1	A1		.552	.148	.193	.552	.106	.000	.297	129	153	.297	135	0.125		7.6	1.1	9.1	1.2	A+	A+
3890 735997 A1	3888	735994	A1	A1	3880	.469	.223	.469	.213	.094	.000	.301	108	.301	178	111	0.548	0.035	4.5	1.1	9.8	1.2	A+	A-
3891 735998 A1	3889	735995	A1	A1	3770	.366	.144	.366	.309	.181	.000	.095	106	.095	037	.022	1.055	0.037	9.9	1.3	9.9	1.7	A+	A-
3892 735999 A1	3890	735997	A1	A1	3894	.147	.595	.123	.135	.147	.000	.079	.142	134	156	.079	2.484	0.048	1.7	1.1	9.9	3.0	A-	A+
3893 736000	3891	735998	A1	A1	3828	.634	.037	.634	.211	.118	.000	.413	188	.413	226	221	-0.273	0.037	-0.4	1.0	-1.2	1.0	A-	A-
3894 736001 A1	3892	735999	A1	A1	3743	.075	.075	.593	.099	.232	.000	018	018	.302	292	133	3.264	0.064	1.9	1.1	9.9	3.5	A-	A+
3895 736002 A1	3893	736000	A1	A1	3861	.368	.368	.254	.248	.130	.000	.348	.348	089	177	156	1.042	0.036	-1.7	1.0	7.5	1.2	A-	A-
3896 736003 A1 A1 3855 .415 .186 .415 .265 .134 .000 .165 .066 .165 .119 .008 0.814 .0036 9.9 1.2 9.9 1.5 A+ A+ 3897 736472 A1 A1 3759 1.38 .285 .206 .371 .138 .000 .082 .187 .050 .158 .082 .2564 .0.50 1.9 1.1 9.9 3.0 A- 3899 736473 A1 A1 3373 .250 .125 .520 .155 .200 .000 .046 .030 .005 .186 .146 2.068 .0.043 1.8 1.0 9.9 1.2 9.9 1.0 A+ 3900 736475 A1 A1 3851 .377 .186 .377 .247 .190 .000 .146 .122 .177 .146 .166 0.777 .0.035 .99 <td>3894</td> <td>736001</td> <td>A1</td> <td>A1</td> <td>3880</td> <td>.322</td> <td>.109</td> <td>.399</td> <td>.170</td> <td>.322</td> <td>.000</td> <td>.221</td> <td>115</td> <td>.016</td> <td>201</td> <td>.221</td> <td>1.297</td> <td>0.037</td> <td>5.4</td> <td>1.1</td> <td>9.9</td> <td>1.5</td> <td>A-</td> <td>A+</td>	3894	736001	A1	A1	3880	.322	.109	.399	.170	.322	.000	.221	115	.016	201	.221	1.297	0.037	5.4	1.1	9.9	1.5	A-	A+
3897 736472 A1 A1 3759 .138 .285 .206 .371 .138 .000 .082 187 050 .158 .082 2.564 0.050 1.9 1.1 9.9 3.0 A- A- 3898 736473 A1 A1 3730 .250 .150 .250 .405 .195 .000 .080 .029 .080 .003 .005 .1731 0.040 8.6 1.2 9.9 2.0 A+ A- 3899 736475 A1 A1 3881 .377 .186 .377 .247 .190 .000 .073 .098 .066 1.035 .036 .99 1.2 .99 1.5 A+ A- 3901 736476 A1 A1 3878 .428 .257 .160 .428 .156 .000 .146 .122 .177 .146 .166 .0777 .0035 .99 1.2 .99	3895	736002	A1	A1	3798	.274	.343	.274	.176	.207	.000	.016	.113	.016	161	.001	1.595	0.039	9.9	1.2	9.9	2.1	A-	A+
3898 736473 A1 A1 3730 .250 .150 .250 .495 .195 .000 .080 .029 .080 .003 .065 1.731 0.040 8.6 1.2 9.9 2.0 A+ A- 3899 736474 A1 A1 3867 .200 .125 .520 .155 .200 .000 .146 .030 002 186 .146 2.068 .0.043 1.8 1.0 9.9 2.2 A+ A- 3900 736475 A1 A1 3851 .377 .186 .377 .247 .190 .000 .073 .005 .073 .098 .066 1.035 .0336 9.9 1.2 .99 1.5 A+ A- 3901 736476 A1 A1 3784 .519 .187 .048 .000 .353 .198 .135 .331 .000 .041 .029 .025 .047 .066	3896	736003	A1	A1	3855	.415	.186	.415	.265	.134	.000	.165	066	.165	119	008	0.814	0.036	9.9	1.2	9.9	1.5	A+	A+
3899 736474 A1 A1 3867 .200 .155 .200 .000 .146 .030 002 186 .146 2.068 0.043 1.8 1.0 9.9 2.2 A+ A- 3900 736475 A1 A1 3851 .377 .186 .377 .247 .190 .000 .073 050 .073 098 .066 1.035 0.036 9.9 1.3 9.9 1.6 A- A- 3901 736476 A1 A1 3878 .428 .257 .160 .428 .155 .000 .146 .122 177 .146 166 0.777 0.035 9.9 1.2 9.9 1.5 A+ A- 3902 736477 A1 A1 3748 .519 .187 .247 .519 .048 .000 .353 .353 .198 135 .353 .003 .99 1.2 9.9 1.5	3897	736472	A1	A1	3759	.138	.285	.206	.371	.138	.000	.082	187	050	.158	.082	2.564	0.050	1.9	1.1	9.9	3.0	A-	A-
3900 736475 A1	3898	736473	A1	A1	3730	.250	.150	.250	.405	.195	.000	.080	029	.080	.003	065	1.731	0.040	8.6	1.2	9.9	2.0	A+	A-
3901 736476 A1	3899	736474	A1	A1	3867	.200	.125	.520	.155	.200	.000	.146	.030	002	186	.146	2.068	0.043	1.8	1.0	9.9	2.2	A+	A-
3902 736477 A1 A1 3784 .519 .187 .247 .519 .048 .000 .353 195 135 .353 194 0.319 0.036 2.1 1.0 6.8 1.2 A+ A+ 3903 736478 A1 A1 3746 .313 .267 .315 .313 .105 .000 .047 029 .025 .047 066 1.351 .0038 9.9 1.2 9.9 1.9 A- A+ 3904 736479 A1 A1 3766 .356 .356 .287 .264 .094 .000 .353 .353 .007 218 .261 1.142 .0037 -1.7 1.0 4.4 1.1 A- A- 3905 736480 A1 A1 3915 .281 .281 .284 .259 .176 .000 .280 .280 .081 .147 .066 1.533 .0038 0.2	3900	736475	A1	A1	3851	.377	.186	.377	.247	.190	.000	.073	050	.073	098	.066	1.035	0.036	9.9	1.3	9.9	1.6	A-	A-
3903 736478 A1 A1 3746 .313 .267 .315 .313 .105 .000 .047 029 .025 .047 066 1.351 0.038 9.9 1.2 9.9 1.9 A- A+ 3904 736479 A1 A1 3792 .546 .161 .546 .247 .046 .000 .317 112 .317 175 195 0.168 0.036 5.5 1.1 7.8 1.2 A+ A- 3905 736480 A1 A1 3766 .356 .287 .264 .094 .000 .353 .353 .007 218 261 1.142 0.037 -1.7 1.0 4.4 1.1 A- 3906 736481 A1 A1 3859 .557 .241 .104 .098 .557 .000 .337 086 235 198 .337 0.121 0.036 4.8 1.1 <td< td=""><td>3901</td><td>736476</td><td>A1</td><td>A1</td><td>3878</td><td>.428</td><td>.257</td><td>.160</td><td>.428</td><td>.156</td><td>.000</td><td>.146</td><td>.122</td><td>177</td><td>.146</td><td>166</td><td>0.777</td><td>0.035</td><td>9.9</td><td>1.2</td><td>9.9</td><td>1.5</td><td>A+</td><td>A-</td></td<>	3901	736476	A1	A1	3878	.428	.257	.160	.428	.156	.000	.146	.122	177	.146	166	0.777	0.035	9.9	1.2	9.9	1.5	A+	A-
3904 736479 A1 A1 3792 .546 .161 .546 .247 .046 .000 .317 112 .317 175 195 0.168 0.036 5.5 1.1 7.8 1.2 A+ A- 3905 736480 A1 A1 3766 .356 .356 .287 .264 .094 .000 .353 .353 .007 218 261 1.142 0.037 -1.7 1.0 4.4 1.1 A- 3906 736481 A1 A1 3915 .281 .284 .259 .176 .000 .280 .280 081 147 066 1.533 0.038 0.2 1.0 9.9 1.4 A+ A- 3907 736482 A1 A1 3734 .324 .378 .324 .157 .140 .000 .114 139 031 1.310 .038 9.9 1.2 9.9 1.6 A-	3902	736477	A1	A1	3784	.519	.187	.247	.519	.048	.000	.353	198	135	.353	194	0.319	0.036	2.1	1.0	6.8	1.2	A+	A+
3905 736480 A1 A1 3766 .356 .287 .264 .094 .000 .353 .353 .007 218 261 1.142 0.037 -1.7 1.0 4.4 1.1 A- A- 3906 736481 A1 A1 3915 .281 .284 .259 .176 .000 .280 .280 081 147 066 1.533 0.038 0.2 1.0 9.9 1.4 A+ A- 3907 736482 A1 A1 3859 .557 .241 .104 .098 .557 .000 .337 086 235 198 .337 0.121 0.036 4.8 1.1 5.3 1.1 A- A- 3908 736483 A1 A1 3777 .628 .131 .163 .628 .078 .000 .347 212 125 .347 187 -0.209 0.037 3.9 1.1 <td< td=""><td>3903</td><td>736478</td><td>A1</td><td>A1</td><td>3746</td><td>.313</td><td>.267</td><td>.315</td><td>.313</td><td>.105</td><td>.000</td><td>.047</td><td>029</td><td>.025</td><td>.047</td><td>066</td><td>1.351</td><td>0.038</td><td>9.9</td><td>1.2</td><td>9.9</td><td>1.9</td><td>A-</td><td>A+</td></td<>	3903	736478	A1	A1	3746	.313	.267	.315	.313	.105	.000	.047	029	.025	.047	066	1.351	0.038	9.9	1.2	9.9	1.9	A-	A+
3906 736481 A1 A1 3915 .281 .284 .259 .176 .000 .280 .280 081 147 066 1.533 0.038 0.2 1.0 9.9 1.4 A+ A- 3907 736482 A1 A1 3859 .557 .241 .104 .098 .557 .000 .337 086 235 198 .337 0.121 0.036 4.8 1.1 5.3 1.1 A- A- 3908 736483 A1 A1 3734 .324 .378 .324 .157 .140 .000 .114 .016 .114 139 031 1.310 0.038 9.9 1.2 9.9 1.6 A- 3909 736484 A1 A1 3876 .628 .131 .163 .628 .078 .000 .347 212 125 .347 187 -0.209 0.037 3.9 1.1 <t< td=""><td>3904</td><td>736479</td><td>A1</td><td>A1</td><td>3792</td><td>.546</td><td>.161</td><td>.546</td><td>.247</td><td>.046</td><td>.000</td><td>.317</td><td>112</td><td>.317</td><td>175</td><td>195</td><td>0.168</td><td>0.036</td><td>5.5</td><td>1.1</td><td>7.8</td><td>1.2</td><td>A+</td><td>A-</td></t<>	3904	736479	A1	A1	3792	.546	.161	.546	.247	.046	.000	.317	112	.317	175	195	0.168	0.036	5.5	1.1	7.8	1.2	A+	A-
3907 736482 A1 A1 3859 .557 .241 .104 .098 .557 .000 .337 086 235 198 .337 0.121 0.036 4.8 1.1 5.3 1.1 A- A- 3908 736483 A1 A1 3734 .324 .378 .324 .157 .140 .000 .114 .016 .114 139 031 1.310 0.038 9.9 1.2 9.9 1.6 A- A- 3909 736484 A1 A1 3777 .628 .131 .163 .628 .078 .000 .347 212 125 .347 187 -0.209 0.037 3.9 1.1 2.9 1.1 A- A+ 3910 736485 A1 A1 3826 .646 .028 .211 .646 .115 .000 .367 206 247 .367 129 -0.321 0.038 <	3905	736480	A1	A1	3766	.356	.356	.287	.264	.094	.000	.353	.353	.007	218	261	1.142	0.037	-1.7	1.0	4.4	1.1	A-	A-
3908 736483 A1 A1 3734 .324 .378 .324 .157 .140 .000 .114 .016 .114 139 031 1.310 0.038 9.9 1.2 9.9 1.6 A- A- 3909 736484 A1 A1 3777 .628 .131 .163 .628 .078 .000 .347 212 125 .347 187 -0.209 0.037 3.9 1.1 2.9 1.1 A- A+ 3910 736485 A1 A1 3826 .646 .028 .211 .646 .115 .000 .367 206 247 .367 129 -0.321 0.038 2.7 1.1 2.4 1.1 A+ 3911 736486 A1 A1 375 .333 .147 .344 .333 .176 .000 .076 020 019 .076 052 1.246 0.037 9.9 <	3906	736481	A1	A1	3915	.281	.281	.284	.259	.176	.000	.280	.280	081	147	066	1.533	0.038	0.2	1.0	9.9	1.4	A+	A-
3909 736484 A1 A1 3777 .628 .131 .163 .628 .078 .000 .347 212 125 .347 187 -0.209 0.037 3.9 1.1 2.9 1.1 A- A+ 3910 736485 A1 A1 3826 .646 .028 .211 .646 .115 .000 .367 206 247 .367 129 -0.321 0.038 2.7 1.1 2.4 1.1 A+ 3911 736486 A1 A1 3775 .333 .147 .344 .333 .176 .000 .076 020 019 .076 052 1.246 0.037 9.9 1.2 9.9 1.8 A- 3912 736487 A1 A1 3872 .350 .215 .350 .353 .082 .000 .059 .007 .059 .020 148 1.169 0.037 9.9 1.3	3907	736482	A1	A1	3859	.557	.241	.104	.098	.557	.000	.337	086	235	198	.337	0.121	0.036	4.8	1.1	5.3	1.1	A-	A-
3910 736485 A1 A1 3826 .646 .028 .211 .646 .115 .000 .367 206 247 .367 129 -0.321 0.038 2.7 1.1 2.4 1.1 A+ A- 3911 736486 A1 A1 3775 .333 .147 .344 .333 .176 .000 .076 020 019 .076 052 1.246 0.037 9.9 1.2 9.9 1.8 A- 3912 736487 A1 A1 3872 .350 .215 .350 .353 .082 .000 .059 .007 .059 .020 148 1.169 0.037 9.9 1.3 9.9 1.7 A+ A+ 3913 736488 A1 A1 3824 .552 .069 .227 .552 .151 .000 .223 098 058 .223 172 0.132 0.036 9.9 <t< td=""><td>3908</td><td>736483</td><td>A1</td><td>A1</td><td>3734</td><td>.324</td><td>.378</td><td>.324</td><td>.157</td><td>.140</td><td>.000</td><td>.114</td><td>.016</td><td>.114</td><td>139</td><td>031</td><td>1.310</td><td>0.038</td><td>9.9</td><td>1.2</td><td>9.9</td><td>1.6</td><td>A-</td><td>A-</td></t<>	3908	736483	A1	A1	3734	.324	.378	.324	.157	.140	.000	.114	.016	.114	139	031	1.310	0.038	9.9	1.2	9.9	1.6	A-	A-
3911 736486 A1 A1 3775 .333 .147 .344 .333 .176 .000 .076 020 019 .076 052 1.246 0.037 9.9 1.2 9.9 1.8 A- A- 3912 736487 A1 A1 3872 .350 .215 .350 .353 .082 .000 .059 .007 .059 .020 148 1.169 0.037 9.9 1.3 9.9 1.7 A+ A+ 3913 736488 A1 A1 3824 .552 .069 .227 .552 .151 .000 .223 098 058 .223 172 0.132 0.036 9.9 1.2 9.9 1.3 A- 3914 736489 A1 A1 3868 .535 .071 .242 .152 .535 .000 .384 129 195 209 .384 0.257 0.036 -0.2 1.0 3.2 1.1 A-	3909	736484	A1	A1	3777	.628	.131	.163	.628	.078	.000	.347	212	125	.347	187	-0.209	0.037	3.9	1.1	2.9	1.1	A-	A+
3912 736487 A1 A1 3872 .350 .215 .350 .353 .082 .000 .059 .007 .059 .020 148 1.169 0.037 9.9 1.3 9.9 1.7 A+ A+ 3913 736488 A1 A1 3824 .552 .069 .227 .552 .151 .000 .223 098 058 .223 172 0.132 0.036 9.9 1.2 9.9 1.3 A- 3914 736489 A1 A1 3868 .535 .071 .242 .152 .535 .000 .384 129 195 209 .384 0.257 0.036 -0.2 1.0 3.2 1.1 A-	3910	736485	A1	A1	3826	.646	.028	.211	.646	.115	.000	.367	206	247	.367	129	-0.321	0.038	2.7	1.1	2.4	1.1	A+	A-
3913 736488 A1 A1 3824 .552 .069 .227 .552 .151 .000 .223098058 .223172 0.132 0.036 9.9 1.2 9.9 1.3 A- A- 3914 736489 A1 A1 3868 .535 .071 .242 .152 .535 .000 .384129195209 .384 0.257 0.036 -0.2 1.0 3.2 1.1 A- B-	3911	736486	A1	A1	3775	.333	.147	.344	.333	.176	.000	.076	020	019	.076	052	1.246	0.037	9.9	1.2	9.9	1.8	A-	A-
3914 736489 A1 A1 3868 .535 .071 .242 .152 .535 .000 .384129195209 .384 0.257 0.036 -0.2 1.0 3.2 1.1 A- B-	3912	736487	A1	A1	3872	.350	.215	.350	.353	.082	.000	.059	.007	.059	.020	148	1.169	0.037	9.9	1.3	9.9	1.7	A+	A+
3914 736489 A1 A1 3868 .535 .071 .242 .152 .535 .000 .384129195209 .384 0.257 0.036 -0.2 1.0 3.2 1.1 A- B-	3913	736488	A1	A1	3824	.552	.069	.227	.552	.151	.000	.223	098	058	.223	172	0.132	0.036	9.9	1.2	9.9	1.3	A-	A-
	3914	736489	A1	A1	3868	.535	.071	.242		.535	.000	.384	129	195	209	.384	0.257	0.036	-0.2	1.0	3.2	1.1	A-	B-
3313 730 330 711 711 3030 1130 1111 1130 1110 1010 1010 1011 1011 1011 1011 1110 1111 111	3915	736490	A1	A1	3830	.150	.222	.150	.220	.408	.000	.013	201	.013	104	.248	2.423	0.048	3.3	1.1	9.9	3.2	A-	A-

Table B-2 (continued). Mathematics Multiple-Choice Item Statistics

Ref	ID	FT Grade	PCS Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
3916	736491	A1	A1	3871	.223	.223	.333	.262	.182	.000	.082	.082	.078	116	051	1.876	0.041	6.8	1.2	9.9	2.0	A+	A+

Items with reference line numbers 1-1949 were field tested during the stand-alone field test administered in spring 2010. Items with reference line numbers 1950-2335 were field tested during the embedded field test administered in spring 2013. Items with reference line numbers 2336-3319 were field tested during field test administered in fall 2013. Items with reference line numbers 3320-3916 were field tested during the embedded field test administered during the 2015-2016 school year.

READING/LITERATURE MULTIPLE-CHOICE ITEMS

Table B-3. Reading/Literature Multiple-Choice Item Statistics

Table B-3. Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade			. ,												in	in	out	out	/F	/B
1	613600	3	3	765	.378	.346	.133	.141	.378	.001	.459	140	243	208	.459	0.282	0.086	-1.6	0.9	-0.5	1.0	A+	A+
2	613567	3	N/A	760	.446	.254	.446	.138	.159	.003	.377	186	.377	135	131	-0.213	0.081	1.8	1.1	2.7	1.1	A-	A-
3	613576	3	N/A	760	.571	.125	.076	.217	.571	.011	.449	164	262	166	.449	-0.876	0.082	0.3	1.0	0.2	1.0	A-	A+
4	613575	3	N/A	760	.425	.100	.425	.257	.203	.016	.298	322	.298	011	035	-0.140	0.082	5.3	1.2	5.7	1.3	A+	A-
5	613448	3	3	760	.649	.649	.071	.104	.155	.021	.549	.549	220	222	276	-1.322	0.086	-3.5	0.9	-3.5	0.8	B+	B-
6	613587	3	3	1535	.930	.930	.012	.029	.026	.003	.432	.432	175	236	234	-3.761	0.113	-1.6	0.9	-4.4	0.4	A+	B-
7	613588	3	N/A	1535	.572	.228	.572	.178	.014	.008	.404	196	.404	212	144	-0.847	0.059	3.5	1.1	2.3	1.1	A+	A+
8	613589	3	N/A	1535	.240	.259	.419	.074	.240	.009	.267	167	.057	179	.267	1.013	0.066	3.8	1.1	5.4	1.4	A+	A+
9	613595	3	3	1530	.680	.153	.680	.116	.043	.009	.511	307	.511	211	211	-1.452	0.061	-4.5	0.9	-5.4	0.8	A+	A-
10	613596	3	N/A	1530	.285	.498	.074	.137	.285	.006	.292	.028	220	198	.292	0.620	0.062	1.9	1.1	5.6	1.3	A+	A-
11	613571	3	N/A	760	.695	.159	.093	.032	.695	.021	.461	120	306	182	.461	-1.589	0.088	-0.8	1.0	-0.7	1.0	A+	A+
12	613572	3	N/A	760	.709	.101	.111	.054	.709	.025	.606	257	319	214	.606	-1.685	0.089	-5.6	0.8	-5.2	0.7	A-	A-
13	613465	3	3	760	.238	.401	.128	.204	.238	.029	.320	019	259	.020	.320	0.832	0.092	1.1	1.1	0.6	1.0	A-	A-
14	613466	3	N/A	760	.491	.228	.100	.150	.491	.032	.501	122	252	210	.501	-0.548	0.081	-3.1	0.9	-2.4	0.9	A-	A+
15	613563	3	N/A	770	.768	.053	.078	.068	.768	.034	.530	246	246	241	.530	-2.143	0.098	-2.9	0.9	-3.1	0.7	A-	
16	613467	3	N/A	771	.658	.078	.097	.658	.147	.021	.531	243	272	.531	162	-1.355	0.087	-2.1	0.9	-2.4	8.0	A-	A-
17	613455	3	3	771	.510	.143	.510	.087	.237	.023	.372	255	.372	244	.052	-0.552	0.082	3.3	1.1	3.5	1.2	A+	A+
18	613456	3	3	771	.822	.053	.051	.822	.051	.023	.590	268	284	.590	242	-2.560	0.111	-3.2	0.8	-4.3	0.5	B+	B+
19	613457	3	3	771	.734	.734	.060	.110	.067	.029	.450	.450	254	128	178	-1.867	0.095	0.5	1.0	-0.3	1.0	A-	A-
20	613458	3	N/A	771	.658	.048	.198	.067	.658	.029	.534	268	189	268	.534	-1.375	0.087	-2.6	0.9	-1.5	0.9	A+	A+
21	613592	3	N/A	5356	.760	.166	.037	.760	.027	.010	.474	246	247	.474	210	-1.967	0.036	-2.8	1.0	-4.5	0.9	A+	A-
22	613593	3	3	5356	.827	.827	.063	.036	.065	.010	.429	.429	165	224	207	-2.500	0.041	-1.3	1.0	-2.3	0.9	A+	A+
23	613461	3	3	5356	.523	.047	.523	.062	.354	.014	.242	213	.242	201	.016	-0.619	0.031	9.9	1.3	9.9	1.4	A-	A-
24	613462	3	3	5356	.642	.073	.173	.642	.098	.014	.504	234	229	.504	198	-1.253	0.032	-4.5	0.9	-4.9	0.9	A+	A-
25	613445	3	3	764	.736	.100	.110	.736	.039	.016	.554	233	288	.554	264	-1.881	0.094	-2.7	0.9	-2.7	8.0	B+	
26	613443	3	N/A	764	.542	.126	.152	.542	.149	.031	.513	159	277	.513	182	-0.788	0.085	-0.3	1.0	-1.0	1.0	A-	
27	613442	3	3	764	.695	.695	.103	.094	.071	.037	.459	.459	277	218	101	-1.727	0.093	0.6	1.0	0.8	1.1	A+	
28	613441	3	3	764	.584	.130	.111	.136	.584	.039	.518	215	276	165	.518	-1.053	0.086	-0.8	1.0	-0.8	1.0	A+	
29	613447	3	N/A	760	.583	.226	.090	.583	.083	.018	.443	197	148	.443	214	-0.959	0.083	0.5	1.0	0.6	1.0	A+	A+
30	613450	3	3	770	.408	.247	.244	.082	.408	.020	.199	107	.001	045	.199	-0.051	0.082	8.1	1.3	7.4	1.4	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Def	ID	FT	PCS	D.	DVal	D/A)	D/D)	D/C)	D/D)	D/ \	DAD:	DT/A\	DT/D\	DT/C)	DT/D)	24	BACE.	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
31	613451	3	3	770	.449	.268	.140	.120	.449	.023	.395	165	150	092	.395	-0.286	0.081	2.0	1.1	2.4	1.1	A+	
32	613452	3	3	770	.384	.384	.026	.331	.236	.022	.193	.193	181	049	.001	0.069	0.082	8.2	1.3	7.0	1.4	A+	
33	613468	3	N/A	771	.532	.253	.078	.119	.532	.018	.461	134	152	261	.461	-0.659	0.082	-0.1	1.0	0.0	1.0	A-	A-
34	613463	3	N/A	5356	.854	.854	.033	.034	.066	.013	.486	.486	203	201	261	-2.782	0.044	-4.5	0.9	-6.5	0.7	A-	A-
35	613444	3	3	764	.747	.094	.106	.038	.747	.014	.576	315	260	238	.576	-1.946	0.095	-3.7	0.8	-3.7	0.7	A+	
36	613438	3	3	764	.656	.096	.656	.169	.048	.031	.540	225	.540	238	291	-1.447	0.089	-1.8	0.9	-1.7	0.9	A-	
37	613581	3	N/A	766	.573	.573	.165	.088	.151	.024	.303	.303	176	110	026	-0.944	0.084	6.1	1.2	5.1	1.3	A+	A+
38	613601	3	N/A	765	.761	.059	.076	.761	.099	.005	.527	241	303	.527	261	-1.937	0.096	-2.4	0.9	-3.4	0.7	A+	A-
39	613577	3	N/A	760	.765	.765	.076	.086	.063	.011	.446	.446	207	200	198	-2.006	0.096	-0.3	1.0	-0.7	0.9	A-	A-
40	613598	3	N/A	1530	.712	.712	.110	.102	.070	.006	.322	.322	185	122	141	-1.626	0.062	2.9	1.1	4.2	1.2	A+	A-
41	613597	3	N/A	1530	.282	.191	.282	.158	.361	.008	.268	171	.268	.068	119	0.641	0.062	3.9	1.1	4.1	1.2	A-	A-
42	613562	3	N/A	770	.617	.617	.094	.117	.146	.027	.513	.513	232	262	155	-1.169	0.084	-2.1	0.9	-2.4	0.9	A+	
43	613583	3	3	766	.608	.158	.107	.103	.608	.024	.472	199	196	176	.472	-1.142	0.085	-0.7	1.0	-1.3	0.9	A+	A-
44	613584	3	3	766	.571	.151	.128	.125	.571	.025	.449	130	232	163	.449	-0.936	0.084	0.9	1.0	1.1	1.1	A+	A-
45	613585	3	3	766	.710	.086	.072	.107	.710	.025	.519	316	188	174	.519	-1.757	0.091	-2.9	0.9	-2.7	0.8	A+	A+
46	613586	3	3	766	.682	.095	.102	.682	.095	.026	.501	180	274	.501	178	-1.581	0.089	-1.9	0.9	-2.4	0.8	A+	A+
47	613602	3	N/A	765	.771	.077	.072	.076	.771	.004	.527	279	242	301	.527	-2.022	0.098	-2.6	0.9	-1.4	0.9	A+	A-
48	613603	3	N/A	765	.399	.218	.216	.157	.399	.011	.400	112	245	088	.400	0.134	0.085	1.9	1.1	2.1	1.2	A+	A+
49	613568	3	3	760	.743	.040	.087	.743	.126	.004	.466	157	269	.466	252	-1.824	0.092	-1.3	0.9	-1.7	0.9	A+	A-
50	613579	3	N/A	760	.486	.070	.107	.328	.486	.011	.382	173	228	099	.382	-0.441	0.081	2.9	1.1	2.9	1.1	A-	A+
51	613580	3	3	760	.740	.072	.740	.133	.045	.011	.448	201	.448	192	239	-1.828	0.092	-0.1	1.0	-0.7	0.9	A+	B-
52	613578	3	N/A	760	.365	.365	.154	.258	.209	.015	.306	.306	200	.027	135	0.187	0.084	4.1	1.2	4.1	1.3	A-	A+
53	613590	3	N/A	1535	.584	.044	.584	.259	.106	.008	.458	112	.458	262	218	-0.926	0.059	0.4	1.0	0.2	1.0	A+	A-
54	613591	3	3	1535	.371	.371	.212	.141	.265	.011	.267	.267	112	199	.027	0.200	0.059	8.1	1.2	9.6	1.5	A-	A+
55	613573	3	3	760	.445	.224	.166	.445	.145	.021	.393	098	135	.393	155	-0.289	0.080	1.3	1.0	1.1	1.1	A+	A+
56	613574	3	3	760	.613	.255	.032	.613	.076	.024	.564	292	175	.564	258	-1.140	0.083	-4.9	0.8	-4.7	0.8	A-	B-
57	613564	3	N/A	770	.410	.410	.107	.166	.287	.030	.421	.421	200	208	054	-0.104	0.082	0.8	1.0	1.4	1.1	A-	
58	613565	3	3	770	.513	.175	.125	.513	.156	.031	.482	217	078	.482	251	-0.625	0.081	-1.6	1.0	-1.3	0.9	A-	
59	613599	3	3	765	.777	.042	.050	.129	.777	.003	.432	234	265	214	.432	-2.034	0.098	-1.0	1.0	-1.1	0.9	A+	A+
60	613566	3	3	760	.203	.263	.140	.391	.203	.004	.207	062	051	053	.207	1.216	0.099	2.6	1.2	3.4	1.4	A-	A+
61	613610	3	3	760	.888	.042	.036	.032	.888	.003	.511	225	276	301	.511	-3.035	0.125	-2.6	0.8	-3.9	0.5	A+	A-
62	613611	3	3	760	.803	.803	.074	.034	.082	.008	.428	.428	243	187	195	-2.282	0.102	-0.1	1.0	-1.1	0.9	B-	A-
63	613615	3	3	760	.703	.130	.124	.038	.703	.005	.563	319	285	201	.563	-1.583	0.088	-4.3	0.8	-3.9	0.7	B-	A-
64	613449	3	3	760	.736	.122	.736	.070	.051	.021	.533	185	.533	314	257	-1.852	0.093	-2.7	0.9	-2.9	0.8	A+	B-
65	613606	3	3	764	.547	.101	.123	.221	.547	.008	.351	269	243	.014	.351	-0.736	0.083	5.1	1.2	4.3	1.3	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	10	Grade	Grade		ı vai	' (^)	1 (5)	1 (0)	1 (0)	· (-)	i (Di3	11(4)	11(5)	11(0)	11(0)	IVICAS	IVISE	in	in	out	out	/F	/B
66	613594	3	3	760	.321	.353	.220	.321	.099	.008	.256	.015	153	.256	180	0.378	0.084	2.7	1.1	4.0	1.3	A-	A+
67	613608	3	3	760	.372	.168	.372	.296	.157	.007	.274	150	.274	029	113	0.118	0.082	3.1	1.1	4.2	1.2	A-	B+
68	613570	3	3	760	.529	.529	.258	.047	.146	.020	.301	.301	016	220	141	-0.698	0.080	4.8	1.2	3.9	1.2	A-	A-
69	613569	3	3	760	.665	.115	.101	.099	.665	.021	.357	138	149	109	.357	-1.415	0.085	2.4	1.1	2.2	1.1	A+	A-
70	613464	3	N/A	760	.508	.508	.149	.137	.179	.028	.417	.417	201	212	039	-0.622	0.081	0.8	1.0	0.3	1.0	A-	A-
71	613616	3	3	770	.399	.157	.308	.131	.399	.005	.414	197	126	156	.414	0.025	0.082	0.4	1.0	0.1	1.0	B-	
72	613560	3	3	770	.643	.226	.643	.065	.042	.025	.482	220	.482	240	182	-1.300	0.085	-1.0	1.0	-1.0	0.9	A+	
73	613561	3	3	770	.551	.162	.117	.143	.551	.027	.524	227	193	198	.524	-0.813	0.082	-2.7	0.9	-2.8	0.9	B-	
74	613612	3	3	771	.140	.067	.514	.272	.140	.007	.130	158	.017	.034	.130	1.855	0.115	1.2	1.1	3.1	1.5	A-	A-
75	613609	3	3	771	.816	.053	.087	.038	.816	.007	.545	239	296	237	.545	-2.391	0.106	-2.6	0.8	-3.2	0.7	A-	A+
76	613453	3	N/A	771	.423	.398	.423	.083	.075	.021	.443	229	.443	125	090	-0.107	0.082	-0.2	1.0	0.4	1.0	B-	A-
77	613454	3	3	771	.700	.700	.127	.043	.105	.025	.478	.478	175	204	227	-1.630	0.091	-0.3	1.0	-1.4	0.9	A+	A+
78	613605	3	N/A	5356	.572	.572	.128	.067	.226	.008	.356	.356	251	146	075	-0.856	0.031	9.2	1.1	8.3	1.2	A+	A+
79	613613	3	3	5356	.623	.094	.172	.623	.103	.009	.468	198	222	.468	194	-1.133	0.032	-1.3	1.0	-1.8	1.0	A-	A+
80	613614	3	3	5356	.884	.040	.031	.884	.037	.008	.497	260	240	.497	213	-3.064	0.048	-5.2	0.8	-8.8	0.5	A-	B-
81	613460	3	3	5356	.578	.241	.578	.066	.103	.012	.494	191	.494	237	232	-0.904	0.031	-3.5	1.0	-3.7	0.9	A-	A-
82	613459	3	3	5356	.641	.117	.641	.106	.122	.013	.502	207	.502	234	206	-1.253	0.032	-4.4	0.9	-4.4	0.9	A+	A+
83	613607	3	3	770	.896	.026	.046	.896	.027	.005	.444	181	247	.444	229	-3.150	0.130	-1.4	0.9	-2.5	0.6	B+	1
84	613446	3	3	764	.763	.072	.080	.071	.763	.014	.624	285	293	311	.624	-2.068	0.097	-5.4	0.7	-4.8	0.6	B+	
85	613440	3	3	764	.759	.042	.094	.080	.759	.025	.575	207	291	306	.575	-2.109	0.099	-3.1	0.8	-3.7	0.7	B-	l
86	613439	3	3	764	.656	.656	.106	.097	.111	.030	.606	.606	278	277	258	-1.431	0.089	-4.8	0.8	-3.9	0.7	A-	
87	613400	4	4	6629	.571	.176	.213	.036	.571	.005	.438	219	192	204	.438	-0.240	0.028	1.7	1.0	1.9	1.0	A+	A-
88	613401	4	4	6629	.780	.090	.046	.780	.079	.005	.562	281	301	.562	265	-1.486	0.033	-9.9	0.8	-9.9	0.7	A+	A-
89	613214	4	4	818	.752	.059	.100	.075	.752	.015	.546	253	262	233	.546	-1.460	0.093	-3.1	0.9	-3.3	0.7	A+	A-
90	613388	4	4	829	.695	.022	.232	.695	.052	.000	.345	275	176	.345	200	-0.895	0.083	1.8	1.1	1.8	1.1	A+	A-
91	613389	4	4	829	.776	.776	.050	.050	.126	.000	.407	.407	223	291	176	-1.408	0.091	-0.3	1.0	-0.2	1.0	A-	A-
92	613390	4	4	829	.487	.122	.487	.215	.175	.001	.341	262	.341	115	099	0.198	0.078	2.6	1.1	2.5	1.1	A+	A+
93	613375	4	4	824	.470	.058	.299	.171	.470	.002	.354	214	170	104	.354	0.199	0.079	3.2	1.1	3.0	1.2	A+	C+
94	613376	4	4	824	.716	.716	.114	.098	.069	.002	.452	.452	246	291	119	-1.129	0.086	-0.8	1.0	-1.4	0.9	A-	A-
95	613377	4	N/A	824	.659	.041	.204	.093	.659	.002	.444	223	187	281	.444	-0.796	0.082	-0.8	1.0	-1.2	0.9	A-	A-
96	608190	4	4	825	.778	.148	.033	.040	.778	.001	.488	312	261	227	.488	-1.348	0.093	-1.9	0.9	-2.5	8.0	A+	A-
97	613216	4	4	825	.689	.090	.142	.689	.079	.001	.466	218	268	.466	210	-0.768	0.084	-0.8	1.0	-0.8	1.0	A-	A-
98	613175	4	N/A	825	.596	.069	.596	.150	.178	.006	.362	197	.362	131	185	-0.277	0.080	3.7	1.1	3.2	1.2	A-	A+
99	613380	4	4	842	.797	.797	.093	.033	.071	.006	.509	.509	286	177	276	-1.661	0.096	-2.3	0.9	-2.1	0.8	A+	A-
100	613365	4	4	823	.583	.351	.022	.583	.039	.005	.387	258	152	.387	133	-0.276	0.079	2.2	1.1	1.6	1.1	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
101	613366	4	N/A	823	.712	.153	.712	.038	.092	.005	.451	246	.451	182	207	-0.989	0.085	-0.5	1.0	-1.4	0.9	A-	
102	613207	4	4	823	.521	.521	.086	.061	.323	.009	.372	.372	286	144	082	0.031	0.078	3.3	1.1	3.4	1.2	A-	
103	613206	4	4	823	.490	.332	.095	.073	.490	.011	.379	095	148	273	.379	0.180	0.078	2.7	1.1	3.5	1.2	A+	
104	613405	4	4	1657	.776	.776	.127	.041	.047	.010	.513	.513	269	248	233	-1.422	0.066	-3.4	0.9	-3.8	8.0	A-	A+
105	613404	4	4	1657	.786	.022	.036	.146	.786	.010	.524	215	229	324	.524	-1.501	0.067	-3.9	0.9	-4.2	0.7	A+	A-
106	613393	4	4	834	.705	.077	.104	.705	.109	.005	.456	232	211	.456	224	-0.934	0.086	0.6	1.0	-0.2	1.0	A-	A+
107	613394	4	4	834	.767	.124	.068	.038	.767	.002	.478	247	284	201	.478	-1.340	0.092	-1.0	1.0	-0.9	0.9	A+	A+
108	613171	4	4	834	.781	.089	.034	.781	.092	.005	.498	304	199	.498	234	-1.436	0.094	-1.3	0.9	-2.4	0.8	A+	A-
109	613172	4	4	834	.694	.052	.694	.083	.164	.007	.519	254	.519	267	242	-0.868	0.085	-1.8	0.9	-1.4	0.9	A-	A+
110	613173	4	N/A	834	.784	.784	.092	.048	.070	.006	.533	.533	246	263	287	-1.474	0.095	-2.4	0.9	-2.8	0.7	A-	B-
111	613211	4	4	834	.637	.215	.637	.091	.053	.005	.479	314	.479	208	104	-0.584	0.080	-2.2	0.9	-2.3	0.9	A+	A-
112	613210	4	N/A	834	.644	.023	.644	.113	.215	.006	.432	230	.432	242	187	-0.626	0.081	-0.1	1.0	-0.6	1.0	A+	A+
113	613370	4	4	825	.617	.103	.617	.093	.177	.010	.517	169	.517	278	275	-0.396	0.081	-2.1	0.9	-2.1	0.9	A+	A-
114	613371	4	4	825	.772	.772	.136	.041	.041	.010	.490	.490	289	274	185	-1.342	0.093	-1.8	0.9	-1.7	0.9	A+	A-
115	613220	4	4	6629	.550	.227	.139	.079	.550	.005	.383	178	133	200	.383	-0.129	0.028	8.1	1.1	6.6	1.1	A+	A+
116	613219	4	N/A	6629	.689	.689	.153	.049	.103	.005	.447	.447	134	216	315	-0.892	0.030	-1.2	1.0	-0.4	1.0	A+	A-
117	613213	4	N/A	818	.621	.621	.087	.212	.065	.016	.498	.498	209	238	193	-0.633	0.083	-0.6	1.0	-0.2	1.0	A-	A+
118	613378	4	4	824	.686	.039	.182	.091	.686	.002	.544	221	274	331	.544	-0.948	0.083	-4.2	0.9	-3.9	0.8	A-	A-
119	608188	4	4	825	.748	.063	.044	.748	.146	.000	.395	266	255	.395	155	-1.120	0.089	0.1	1.0	2.5	1.2	A+	A-
120	608189	4	4	825	.552	.552	.085	.218	.144	.001	.483	.483	302	131	279	-0.033	0.079	-1.4	1.0	-1.2	0.9	A+	A-
121	613177	4	N/A	825	.533	.131	.533	.147	.184	.005	.362	137	.362	216	126	0.048	0.078	4.2	1.1	3.6	1.2	A+	A+
122	613176	4	N/A	825	.358	.136	.358	.410	.091	.006	.282	126	.282	091	127	0.974	0.081	5.4	1.2	5.2	1.4	A+	A+
123	613189	4	4	842	.799	.799	.128	.021	.049	.002	.431	.431	296	128	206	-1.649	0.096	-0.4	1.0	-1.2	0.9	A-	A-
124	613190	4	4	842	.534	.330	.018	.112	.534	.006	.391	176	124	240	.391	-0.084	0.078	3.2	1.1	3.3	1.2	A+	A+
125	613188	4	4	842	.169	.448	.169	.352	.027	.005	.203	091	.203	.031	183	2.177	0.103	1.3	1.1	3.5	1.5	A+	A+
126	613208	4	4	823	.626	.158	.626	.088	.120	.009	.438	197	.438	122	224	-0.508	0.080	0.3	1.0	0.3	1.0	A+	
127	613209	4	N/A	823	.623	.239	.060	.623	.069	.009	.472	184	199	.472	278	-0.495	0.080	-0.9	1.0	-1.5	0.9	A+	
128	613174	4	N/A	834	.614	.162	.614	.124	.092	.008	.455	203	.455	204	201	-0.403	0.081	1.2	1.0	8.0	1.0	A+	A-
129	613402	4	N/A	6629	.622	.091	.172	.622	.109	.006	.397	185	169	.397	184	-0.513	0.029	5.9	1.1	4.8	1.1	A-	A-
130	613403	4	N/A	6629	.626	.174	.626	.108	.086	.006	.470	212	.470	285	143	-0.534	0.029	-2.4	1.0	-2.8	1.0	A+	A-
131	619041	4	N/A	842	.663	.663	.131	.109	.083	.014	.579	.579	304	281	193	-0.803	0.083	-4.2	0.9	-4.5	0.7	A-	A-
132	619042	4	N/A	842	.556	.099	.556	.081	.251	.014	.362	237	.362	216	050	-0.219	0.079	4.6	1.2	4.0	1.2	A+	A+
133	613395	4	N/A	834	.826	.043	.085	.826	.043	.002	.567	275	382	.567	207	-1.803	0.102	-3.7	0.8	-4.0	0.6	A+	B-
134	613372	4	N/A	825	.741	.056	.078	.741	.116	.010	.540	284	237	.540	290	-1.134	0.089	-3.1	0.9	-3.2	8.0	A-	B-
135	613391	4	4	829	.876	.876	.036	.033	.056	.000	.491	.491	251	312	261	-2.260	0.113	-2.1	0.9	-3.1	0.6	A+	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Dof	ın	FT	PCS	N	D\/al	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:a	DT(A)	DT/D)	DT/C)	DT/D)	Mass	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
136	613392	4	4	829	.742	.103	.742	.064	.091	.001	.450	287	.450	210	200	-1.186	0.088	-1.4	0.9	-1.3	0.9	A-	A-
137	613381	4	4	842	.462	.217	.462	.182	.133	.006	.398	206	.398	096	175	0.301	0.078	2.7	1.1	2.3	1.1	A-	A+
138	619044	4	4	842	.840	.057	.045	.840	.046	.012	.437	171	259	.437	184	-2.040	0.106	-1.0	0.9	-0.5	0.9	A+	A+
139	619043	4	4	842	.808	.057	.055	.808	.069	.012	.523	252	250	.523	246	-1.796	0.099	-2.4	0.9	-2.8	0.7	A+	A-
140	619045	4	4	842	.840	.840	.055	.049	.044	.013	.561	.561	276	261	279	-2.095	0.108	-3.1	0.8	-4.4	0.5	A+	B-
141	619046	4	4	842	.599	.170	.599	.057	.160	.014	.520	204	.520	231	257	-0.447	0.080	-2.2	0.9	-1.9	0.9	B+	B-
142	613367	4	4	823	.842	.026	.024	.842	.103	.005	.402	206	183	.402	215	-1.919	0.104	-0.4	1.0	-1.1	0.9	A+	ł
143	613368	4	4	823	.478	.478	.114	.081	.322	.005	.328	.328	086	157	156	0.254	0.078	4.8	1.2	5.6	1.3	A+	
144	613397	4	4	834	.592	.082	.179	.592	.145	.002	.450	170	232	.450	214	-0.277	0.080	1.3	1.1	0.9	1.1	A-	A-
145	613398	4	4	834	.881	.014	.881	.041	.061	.002	.482	154	.482	295	287	-2.358	0.118	-2.1	0.8	-2.3	0.7	A+	A-
146	613396	4	4	834	.706	.706	.116	.096	.078	.004	.452	.452	182	189	289	-0.933	0.086	0.3	1.0	0.7	1.1	A+	A-
147	613373	4	4	825	.506	.126	.219	.138	.506	.011	.414	162	206	156	.414	0.183	0.078	1.8	1.1	3.0	1.1	A-	A-
148	613399	4	4	6629	.577	.082	.145	.577	.190	.006	.425	196	270	.425	114	-0.272	0.028	3.6	1.0	2.6	1.1	B-	A-
149	613288	4	4	6629	.773	.140	.035	.047	.773	.006	.448	237	224	218	.448	-1.437	0.033	-2.2	1.0	-2.8	0.9	A-	A-
150	613291	4	4	6629	.506	.167	.506	.150	.170	.006	.301	129	.301	198	034	0.098	0.028	9.9	1.2	9.9	1.3	A+	A+
151	613295	4	4	6629	.836	.836	.044	.067	.048	.007	.484	.484	266	261	186	-1.946	0.037	-5.7	0.9	-6.4	0.8	A-	A-
152	613289	4	4	818	.868	.045	.868	.034	.038	.015	.545	277	.545	245	240	-2.492	0.119	-2.6	0.8	-3.4	0.6	A-	A-
153	613292	4	4	818	.782	.049	.782	.059	.097	.013	.490	297	.490	283	121	-1.680	0.097	-0.9	1.0	-1.8	0.8	A+	A-
154	613215	4	4	818	.654	.654	.159	.106	.067	.013	.509	.509	213	265	186	-0.819	0.085	-1.5	0.9	-1.6	0.9	A+	A-
155	613374	4	4	824	.737	.737	.170	.063	.028	.002	.415	.415	246	198	200	-1.257	0.087	-0.2	1.0	0.2	1.0	A+	B-
156	613217	4	4	825	.944	.013	.024	.944	.018	.000	.376	134	280	.376	209	-3.242	0.164	-1.3	0.8	-3.7	0.3	A-	A-
157	613218	4	4	825	.593	.593	.109	.064	.234	.000	.398	.398	161	259	194	-0.241	0.079	2.5	1.1	1.5	1.1	A+	A+
158	613298	4	4	825	.790	.790	.070	.073	.063	.004	.500	.500	291	257	223	-1.445	0.094	-1.9	0.9	-3.0	0.7	A-	A-
159	613379	4	4	842	.910	.910	.037	.026	.023	.005	.391	.391	210	206	150	-2.886	0.137	-0.4	1.0	-1.3	0.7	A+	A-
160	613287	4	4	842	.336	.340	.062	.336	.254	.008	.321	109	303	.321	004	0.955	0.081	3.8	1.1	4.7	1.3	C-	A+
161	613290	4	4	842	.673	.124	.061	.133	.673	.010	.494	174	292	229	.494	-0.854	0.083	-0.8	1.0	-1.4	0.9	A-	A-
162	613294	4	4	842	.672	.249	.050	.672	.019	.010	.496	318	243	.496	112	-0.833	0.083	-1.1	1.0	-1.9	0.9	A-	B-
163	613363	4	4	823	.700	.040	.700	.063	.192	.005	.341	123	.341	192	160	-0.910	0.084	2.7	1.1	1.8	1.1	A-	
164	613364	4	4	823	.683	.683	.103	.058	.150	.006	.379	.379	189	194	160	-0.830	0.083	1.7	1.1	1.6	1.1	A-	
165	613296	4	4	1657	.778	.022	.778	.152	.042	.006	.472	209	.472	287	195	-1.417	0.066	-1.9	0.9	-1.8	0.9	A-	A+
166	613205	4	4	823	.930	.016	.930	.034	.012	.009	.385	163	.385	155	159	-3.040	0.150	-0.6	0.9	-1.5	0.7	A+	
167	613204	4	4	823	.687	.165	.097	.043	.687	.009	.477	258	186	188	.477	-0.845	0.083	-1.4	1.0	-1.7	0.9	A+	
168	613169	4	4	834	.287	.287	.374	.195	.140	.004	.225	.225	.081	227	104	1.395	0.086	6.3	1.3	5.8	1.6	A-	B+
169	613168	4	4	834	.459	.218	.459	.218	.100	.005	.461	158	.461	187	238	0.426	0.079	0.2	1.0	1.5	1.1	A+	A-
170	613293	4	4	834	.651	.097	.120	.130	.651	.002	.476	208	192	275	.476	-0.656	0.081	-1.9	0.9	-2.4	0.9	A-	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

- ·		FT	PCS		537.1	5/4)	5/5\	D/0\	D/D)	5/\	5.5.	D=(4)	D=(D)	D=(0)	5=(5)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
171	613297	4	4	834	.531	.079	.029	.531	.357	.004	.371	155	201	.371	202	-0.022	0.078	2.3	1.1	3.3	1.2	A-	A-
172	613212	4	4	834	.362	.315	.175	.143	.362	.005	.240	078	143	032	.240	0.835	0.080	5.8	1.2	4.3	1.3	A-	A+
173	613369	4	4	825	.778	.778	.138	.039	.038	.007	.493	.493	260	326	210	-1.385	0.093	-2.0	0.9	-2.2	0.8	A-	A-
174	613006	5	5	7652	.245	.245	.185	.203	.360	.009	.232	.232	042	089	043	1.886	0.029	7.7	1.1	9.4	1.3	A+	A-
175	611374	5	5	7652	.698	.110	.071	.698	.111	.011	.490	261	237	.490	163	-0.546	0.028	-6.2	0.9	-6.2	0.9	A-	A-
176	611375	5	5	7652	.575	.235	.575	.097	.082	.011	.320	108	.320	125	163	0.124	0.026	9.9	1.1	8.4	1.1	A-	A-
177	611244	5	5	954	.703	.091	.101	.080	.703	.025	.463	204	173	206	.463	-0.707	0.081	-1.6	0.9	-1.6	0.9	A+	A-
178	611270	5	5	960	.852	.047	.042	.852	.055	.004	.450	193	268	.450	204	-1.767	0.103	-0.6	1.0	-1.7	0.8	A-	B+
179	611271	5	N/A	960	.649	.188	.013	.146	.649	.005	.519	245	204	307	.519	-0.324	0.076	-2.9	0.9	-3.5	0.8	A+	A-
180	611432	5	5	973	.700	.700	.060	.104	.116	.021	.470	.470	116	282	182	-0.673	0.079	-2.1	0.9	-1.8	0.9	A+	A-
181	611438	5	5	973	.519	.249	.124	.519	.086	.022	.432	108	150	.432	271	0.311	0.072	-0.8	1.0	-1.4	0.9	A+	A+
182	614009	5	5	948	.876	.039	.033	.051	.876	.002	.414	192	237	233	.414	-1.894	0.109	-1.4	0.9	-2.4	0.7	A+	A-
183	614010	5	N/A	948	.856	.856	.032	.075	.036	.002	.433	.433	204	295	174	-1.709	0.104	-1.2	0.9	-1.9	0.8	A+	A-
184	611242	5	5	954	.390	.390	.433	.054	.117	.006	.119	.119	.077	219	073	1.039	0.072	7.0	1.2	7.0	1.3	A+	A-
185	611222	5	5	960	.397	.400	.137	.059	.397	.007	.479	306	111	084	.479	1.057	0.073	-2.8	0.9	-2.8	0.9	A+	A-
186	611223	5	5	960	.743	.743	.065	.040	.147	.006	.440	.440	216	210	204	-0.801	0.082	-0.3	1.0	-1.4	0.9	A-	A-
187	611224	5	5	960	.400	.102	.400	.227	.264	.007	.396	215	.396	127	114	1.034	0.073	1.1	1.0	2.1	1.1	A+	A+
188	611275	5	5	1910	.798	.097	.042	.798	.054	.008	.493	204	287	.493	237	-1.120	0.063	-3.3	0.9	-4.2	0.8	A+	A+
189	614003	5	5	960	.745	.745	.075	.065	.083	.032	.551	.551	142	260	310	-0.938	0.085	-3.5	0.9	-3.7	0.7	A-	C-
190	614004	5	N/A	960	.799	.064	.799	.051	.053	.033	.499	247	.499	158	233	-1.361	0.093	-1.9	0.9	-2.5	0.8	A+	B+
191	611190	5	5	950	.304	.211	.304	.107	.365	.013	.241	067	.241	202	.016	1.603	0.076	3.6	1.1	4.5	1.3	A-	A+
192	611173	5	5	950	.418	.418	.070	.259	.238	.016	.341	.341	255	174	.008	1.001	0.072	2.4	1.1	3.2	1.1	A+	A+
193	611170	5	5	950	.508	.104	.277	.092	.508	.019	.485	204	210	189	.485	0.556	0.071	-3.3	0.9	-2.8	0.9	A+	A-
194	611207	5	5	950	.717	.078	.108	.073	.717	.024	.567	270	256	265	.567	-0.576	0.080	-4.5	0.8	-5.1	0.7	B+	A-
195	611267	5	N/A	953	.892	.892	.028	.048	.030	.001	.394	.394	197	243	215	-1.956	0.111	-1.4	0.9	-1.9	0.8	B+	A+
196	611266	5	5	953	.727	.727	.064	.114	.091	.003	.390	.390	230	171	205	-0.661	0.079	0.0	1.0	-0.5	1.0	A-	A+
197	611212	5	5	953	.879	.051	.039	.879	.022	.008	.484	292	191	.484	215	-1.865	0.108	-2.1	0.9	-3.1	0.7	A+	A+
198	611211	5	5	953	.751	.097	.079	.063	.751	.011	.524	253	247	244	.524	-0.834	0.082	-3.5	0.9	-3.7	0.8	A+	A+
199	611213	5	5	953	.630	.276	.630	.058	.022	.015	.367	075	.367	357	224	-0.155	0.073	1.3	1.0	2.2	1.1	A-	A-
200	611249	5	5	960	.547	.158	.090	.192	.547	.014	.531	100	233	326	.531	0.189	0.073	-4.0	0.9	-3.7	0.9	B+	A+
201	611248	5	5	960	.228	.072	.228	.351	.335	.014	.122	096	.122	046	.060	1.964	0.084	4.2	1.2	6.2	1.6	A-	A-
202	611278	5	5	960	.677	.121	.120	.067	.677	.016	.501	228	333	071	.501	-0.539	0.079	-1.3	1.0	-0.9	0.9	A-	A-
203	613007	5	5	7652	.764	.099	.061	.764	.069	.008	.439	197	223	.439	192	-0.957	0.030	-2.7	1.0	-3.5	0.9	A+	A-
204	613005	5	5	7652	.282	.135	.448	.282	.126	.008	.149	177	.103	.149	094	1.657	0.028	9.9	1.2	9.9	1.5	A-	A+
205	611245	5	5	954	.550	.126	.550	.213	.089	.022	.425	159	.425	193	126	0.154	0.073	1.1	1.0	0.4	1.0	A+	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS					- / - >	>						,			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
206	611246	5	5	954	.751	.751	.027	.064	.136	.022	.532	.532	205	226	286	-1.013	0.085	-3.4	0.9	-3.6	0.7	A-	A-
207	611243	5	N/A	954	.629	.247	.082	.629	.037	.005	.313	122	170	.313	204	-0.119	0.073	1.8	1.1	0.7	1.0	A+	C+
208	611237	5	5	960	.803	.078	.074	.803	.039	.006	.471	187	283	.471	192	-1.220	0.089	-1.4	0.9	-2.5	0.8	A-	A+
209	611236	5	5	960	.650	.117	.147	.077	.650	.009	.478	203	183	264	.478	-0.263	0.076	-1.5	1.0	-1.5	0.9	A+	A-
210	611235	5	5	960	.696	.194	.696	.052	.051	.007	.478	262	.478	211	188	-0.518	0.078	-0.7	1.0	-2.0	0.9	A+	A+
211	611168	5	5	950	.793	.057	.793	.084	.052	.015	.508	188	.508	324	191	-1.037	0.088	-2.4	0.9	-3.4	0.7	A+	A+
212	611153	5	N/A	950	.503	.218	.076	.503	.186	.017	.508	212	197	.508	215	0.577	0.071	-4.1	0.9	-3.6	0.9	A+	B-
213	611208	5	5	950	.594	.594	.132	.096	.157	.022	.463	.463	213	268	117	0.114	0.073	-1.5	1.0	-1.4	0.9	A+	B-
214	611209	5	5	950	.662	.238	.662	.041	.037	.022	.493	264	.493	238	212	-0.249	0.076	-2.5	0.9	-2.3	0.9	A+	A+
215	611215	5	N/A	953	.718	.104	.101	.718	.069	.008	.425	195	226	.425	154	-0.616	0.078	-0.9	1.0	-0.3	1.0	A+	A-
216	611214	5	5	953	.897	.897	.028	.036	.028	.011	.530	.530	236	290	254	-2.107	0.117	-2.6	0.8	-5.0	0.4	B+	A-
217	611219	5	5	953	.537	.089	.269	.088	.537	.017	.454	223	201	159	.454	0.306	0.071	-2.2	0.9	-2.1	0.9	A+	A-
218	611220	5	5	953	.489	.214	.489	.136	.143	.018	.318	158	.318	074	115	0.537	0.071	3.5	1.1	3.9	1.2	A+	A+
219	611221	5	5	953	.664	.087	.142	.664	.086	.021	.495	238	236	.495	201	-0.365	0.076	-3.0	0.9	-3.2	0.8	A+	A-
220	611251	5	5	960	.835	.835	.044	.053	.056	.012	.517	.517	233	256	244	-1.696	0.101	-1.3	0.9	-2.5	0.7	A+	A-
221	611250	5	N/A	960	.749	.075	.103	.749	.059	.014	.495	257	227	.495	192	-0.999	0.085	-0.8	1.0	-1.3	0.9	A+	A-
222	611376	5	N/A	7652	.825	.101	.026	.039	.825	.009	.530	297	214	254	.530	-1.427	0.033	-7.6	0.9	-9.9	0.7	A+	B-
223	611272	5	N/A	960	.914	.914	.046	.025	.013	.003	.424	.424	279	176	189	-2.562	0.134	-0.7	0.9	-2.1	0.6	B+	A+
224	611439	5	N/A	973	.694	.694	.069	.082	.137	.019	.511	.511	256	259	164	-0.606	0.078	-3.1	0.9	-2.7	0.8	A+	A+
225	611440	5	5	973	.632	.063	.160	.123	.632	.022	.512	200	230	214	.512	-0.286	0.075	-3.2	0.9	-3.1	0.8	C+	A+
226	614011	5	N/A	948	.732	.114	.732	.043	.107	.004	.450	268	.450	260	169	-0.722	0.082	-1.6	0.9	-1.6	0.9	A-	A-
227	614012	5	5	948	.812	.032	.037	.812	.115	.004	.427	201	255	.427	229	-1.313	0.093	-0.8	1.0	-1.7	0.8	A-	A-
228	611276	5	N/A	1910	.742	.742	.044	.057	.149	.008	.418	.418	227	246	148	-0.731	0.058	-0.6	1.0	0.3	1.0	A+	A-
229	614005	5	N/A	960	.443	.133	.293	.100	.443	.031	.509	257	133	173	.509	0.764	0.073	-2.9	0.9	-2.3	0.9	A+	B-
230	611377	5	5	7652	.585	.117	.585	.159	.131	.009	.401	156	.401	159	181	0.078	0.026	1.3	1.0	1.4	1.0	A+	A+
231	611390	5	5	7652	.408	.238	.167	.176	.408	.010	.360	109	104	162	.360	0.962	0.026	4.2	1.0	6.5	1.1	A-	A-
232	611274	5	5	960	.941	.941	.024	.018	.014	.004	.468	.468	243	254	182	-3.201	0.171	-0.9	0.9	-2.6	0.5	B+	A-
233	611273	5	N/A	960	.289	.230	.229	.289	.245	.007	.300	066	077	.300	120	1.575	0.078	1.2	1.0	4.2	1.3	A-	A-
234	611277	5	5	1910	.585	.031	.175	.585	.198	.010	.403	194	153	.403	194	0.142	0.051	1.8	1.0	1.0	1.0	A+	A-
235	614006	5	5	960	.652	.652	.087	.143	.093	.026	.448	.448	189	171	175	-0.329	0.077	0.6	1.0	0.3	1.0	A+	A-
236	614007	5	5	960	.651	.651	.100	.076	.144	.029	.449	.449	176	231	132	-0.332	0.077	0.6	1.0	0.0	1.0	A+	A-
237	611268	5	N/A	953	.689	.689	.102	.120	.085	.004	.336	.336	131	180	155	-0.438	0.076	1.7	1.1	1.4	1.1	B+	A+
238	611309	5	5	960	.760	.760	.085	.097	.043	.015	.519	.519	271	252	185	-1.070	0.087	-1.8	0.9	-2.1	0.8	A+	A-
239	611291	5	N/A	960	.806	.806	.050	.057	.068	.019	.608	.608	232	293	351	-1.506	0.097	-3.9	0.8	-4.3	0.6	A+	A-
240	611554	5	5	7652	.472	.366	.472	.068	.089	.006	.359	121	.359	234	139	0.645	0.025	5.0	1.1	6.6	1.1	A-	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D/A\	D/D\	D(C)	D/D)	D/ \	PtBis	PT(A)	PT(B)	PT(C)	DT/D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	Grade	IN	PVdI	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PI(D)	PT(C)	PT(D)	ivieas	IVISE	in	in	out	out	/F	/B
241	611354	5	5	7652	.583	.067	.583	.052	.290	.008	.400	200	.400	232	150	0.095	0.026	1.6	1.0	0.1	1.0	A-	A-
242	611550	5	5	954	.763	.763	.049	.090	.083	.015	.528	.528	288	246	180	-1.067	0.086	-2.2	0.9	-2.7	0.8	B-	A-
243	611269	5	5	960	.857	.025	.857	.091	.025	.002	.447	280	.447	237	219	-1.822	0.105	-0.6	1.0	-2.1	0.8	B+	A-
244	611429	5	5	973	.699	.699	.070	.079	.135	.018	.493	.493	209	290	153	-0.651	0.078	-2.1	0.9	-1.7	0.9	A-	A-
245	614008	5	5	948	.769	.769	.197	.018	.015	.001	.491	.491	417	117	170	-0.968	0.086	-2.2	0.9	-2.3	0.8	A-	B-
246	611544	5	5	954	.541	.118	.203	.122	.541	.016	.527	174	235	210	.527	0.229	0.073	-3.9	0.9	-3.6	0.9	A+	A+
247	611241	5	5	954	.884	.039	.043	.031	.884	.003	.405	197	229	171	.405	-1.864	0.108	-0.9	0.9	-2.7	0.7	A+	A+
248	611555	5	5	960	.691	.064	.691	.120	.121	.005	.410	214	.410	093	270	-0.560	0.079	1.0	1.0	0.8	1.1	A-	A+
249	611549	5	5	960	.880	.880	.046	.038	.029	.007	.453	.453	221	240	172	-1.948	0.108	-1.4	0.9	-3.0	0.6	A-	A-
250	611551	5	5	1903	.720	.145	.113	.019	.720	.004	.325	270	027	206	.325	-0.557	0.055	2.0	1.1	3.3	1.2	B-	B+
251	611546	5	5	950	.844	.041	.061	.048	.844	.005	.417	208	224	203	.417	-1.401	0.097	-1.2	0.9	-1.5	0.8	A+	B+
252	611547	5	5	950	.798	.798	.043	.052	.102	.005	.370	.370	227	129	215	-1.019	0.087	0.1	1.0	-0.6	1.0	A-	A-
253	611181	5	5	950	.850	.850	.095	.027	.016	.013	.467	.467	281	228	150	-1.500	0.100	-1.6	0.9	-2.3	0.8	A+	A-
254	611548	5	5	953	.570	.124	.570	.288	.015	.004	.339	191	.339	181	069	0.183	0.071	2.1	1.1	2.0	1.1	A+	B-
255	611552	5	5	953	.607	.104	.172	.110	.607	.007	.333	145	199	083	.333	-0.011	0.072	2.5	1.1	1.6	1.1	A+	A-
256	611210	5	5	953	.639	.639	.176	.134	.042	.008	.382	.382	149	228	121	-0.182	0.073	0.8	1.0	1.0	1.0	A-	A+
257	611247	5	5	960	.868	.024	.047	.050	.868	.012	.540	229	290	258	.540	-2.055	0.113	-1.7	0.9	-3.6	0.6	B+	A-
258	611545	5	5	954	.484	.484	.212	.193	.102	.009	.419	.419	150	213	125	0.581	0.071	-2.5	0.9	-2.4	0.9	A-	B-
259	611553	5	5	954	.782	.072	.782	.049	.090	.006	.446	245	.446	178	202	-1.014	0.085	-1.4	0.9	-1.8	0.9	A-	A+
260	610133	6	6	7268	.646	.224	.646	.070	.041	.019	.499	195	.499	245	250	-0.194	0.028	-4.3	1.0	-4.4	0.9	A+	A-
261	610355	6	6	7268	.569	.090	.078	.569	.243	.020	.413	215	237	.413	075	0.220	0.027	6.0	1.1	5.3	1.1	A+	A-
262	610134	6	6	7268	.696	.159	.072	.696	.052	.021	.515	176	256	.515	257	-0.504	0.029	-5.2	0.9	-5.0	0.9	A+	A-
263	612248	6	6	7268	.735	.067	.094	.735	.076	.027	.535	176	233	.535	259	-0.796	0.031	-6.7	0.9	-6.3	8.0	A+	A-
264	610305	6	6	721	.614	.614	.173	.112	.072	.028	.621	.621	297	269	219	-0.057	0.088	-5.6	0.8	-5.0	0.7	A-	A-
265	610142	6	6	721	.490	.137	.490	.147	.191	.035	.346	269	.346	173	.086	0.595	0.085	4.8	1.2	4.4	1.2	A+	A+
266	610143	6	6	721	.731	.126	.731	.056	.051	.036	.603	274	.603	258	289	-0.812	0.098	-4.1	0.8	-4.2	0.7	A-	B-
267	610309	6	6	730	.893	.893	.019	.055	.030	.003	.413	.413	166	256	195	-2.027	0.131	-0.7	0.9	-1.6	0.7	A+	A-
268	612265	6	6	725	.430	.334	.101	.131	.430	.004	.231	003	184	142	.231	0.880	0.085	6.7	1.3	6.5	1.4	A+	A+
269	610330	6	6	725	.461	.283	.461	.083	.131	.043	.358	051	.358	232	080	0.642	0.086	4.3	1.2	4.4	1.3	A-	A+
270	612294	6	6	731	.594	.130	.108	.167	.594	.001	.381	230	122	174	.381	0.145	0.084	0.9	1.0	0.5	1.0	A-	A-
271	612237	6	6	731	.781	.019	.781	.044	.155	.001	.395	101	.395	243	257	-0.970	0.099	-0.3	1.0	-1.1	0.9	A-	A+
272	612232	6	6	731	.762	.082	.097	.762	.051	.008	.502	231	212	.502	292	-0.877	0.098	-2.2	0.9	-1.8	0.8	A+	B-
273	612255	6	6	731	.289	.348	.201	.289	.089	.074	.208	.171	168	.208	103	1.612	0.091	4.4	1.2	5.7	1.5	A+	A+
274	610318	6	6	730	.799	.115	.799	.032	.049	.006	.449	264	.449	157	194	-1.109	0.104	-0.2	1.0	-1.6	0.8	A+	B-
275	610335	6	6	730	.449	.096	.060	.449	.352	.043	.296	281	267	.296	.161	0.891	0.087	7.1	1.3	6.7	1.4	A-	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\		(-)	/->	/->	(-)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
276	609238	6	6	725	.506	.036	.506	.419	.035	.004	.472	140	.472	330	186	0.443	0.083	-2.7	0.9	-2.2	0.9	A+	A-
277	609239	6	6	725	.738	.738	.050	.150	.058	.004	.285	.285	226	035	193	-0.815	0.093	2.0	1.1	3.5	1.3	A+	B-
278	612221	6	6	725	.596	.168	.596	.073	.156	.007	.431	244	.431	214	120	-0.018	0.085	-0.5	1.0	-0.5	1.0	A+	B-
279	612293	6	6	725	.414	.047	.124	.403	.414	.012	.296	185	133	058	.296	0.909	0.085	3.9	1.1	3.9	1.2	A+	A-
280	612262	6	6	725	.259	.259	.030	.550	.152	.008	.186	.186	139	023	047	1.783	0.093	4.3	1.2	6.3	1.6	A-	A-
281	612225	6	6	725	.559	.188	.072	.559	.095	.087	.557	206	247	.557	208	-0.088	0.089	-3.8	0.9	-3.9	0.8	A+	A+
282	609091	6	6	730	.547	.241	.088	.547	.114	.011	.409	094	195	.409	232	0.380	0.084	1.9	1.1	1.4	1.1	A+	A-
283	609092	6	6	730	.451	.177	.127	.234	.451	.011	.263	011	113	130	.263	0.871	0.084	6.5	1.2	5.5	1.3	A+	B-
284	612211	6	6	730	.704	.112	.071	.085	.704	.027	.650	283	306	272	.650	-0.580	0.094	-5.7	0.8	-5.6	0.6	B-	A-
285	612306	6	6	730	.426	.426	.121	.125	.292	.037	.325	.325	309	215	.156	0.935	0.085	5.1	1.2	4.4	1.3	A+	A-
286	609196	6	6	730	.725	.725	.063	.101	.053	.058	.632	.632	296	292	229	-0.874	0.101	-4.6	0.8	-4.6	0.6	A+	A-
287	609197	6	6	730	.455	.307	.084	.092	.455	.063	.388	.031	317	188	.388	0.713	0.086	3.1	1.1	3.0	1.2	A+	A+
288	609275	6	N/A	730	.682	.127	.682	.063	.058	.070	.531	155	.531	261	297	-0.650	0.097	-2.0	0.9	-2.0	0.8	A+	A+
289	612257	6	6	721	.792	.185	.792	.011	.008	.004	.450	355	.450	193	091	-1.074	0.102	-0.7	1.0	-1.1	0.9	A+	A-
290	610117	6	6	721	.775	.040	.025	.155	.775	.004	.418	234	188	228	.418	-0.960	0.099	-0.1	1.0	0.0	1.0	A+	A-
291	610074	6	6	721	.376	.067	.376	.257	.295	.006	.291	148	.291	168	027	1.252	0.086	4.4	1.2	4.9	1.3	A+	B-
292	608010	6	6	721	.559	.104	.089	.241	.559	.007	.420	263	253	081	.420	0.302	0.085	1.5	1.1	1.6	1.1	A+	A+
293	610062	6	6	721	.354	.291	.221	.354	.083	.051	.309	032	059	.309	160	1.289	0.088	4.3	1.2	5.3	1.4	A-	A-
294	610060	6	6	721	.501	.501	.164	.119	.158	.058	.509	.509	210	190	149	0.464	0.087	-1.4	1.0	-1.4	0.9	B-	A+
295	610061	6	6	721	.363	.221	.198	.148	.363	.069	.454	022	176	219	.454	1.195	0.088	-0.5	1.0	0.7	1.0	A+	A-
296	610127	6	6	731	.289	.294	.220	.289	.192	.006	.226	.022	084	.226	159	1.755	0.090	3.7	1.2	6.1	1.6	A-	A-
297	610128	6	6	731	.358	.424	.079	.358	.133	.006	.337	060	192	.337	185	1.367	0.086	2.0	1.1	3.3	1.2	A+	B+
298	610129	6	N/A	731	.296	.042	.296	.116	.539	.007	.191	194	.191	112	.003	1.717	0.089	5.0	1.2	6.2	1.6	A+	B+
299	609234	6	6	731	.705	.160	.074	.049	.705	.012	.422	208	165	159	.422	-0.503	0.092	0.2	1.0	0.0	1.0	A-	B-
300	609235	6	6	731	.547	.070	.547	.285	.083	.015	.384	198	.384	105	187	0.376	0.084	2.4	1.1	1.5	1.1	A-	A+
301	608003	6	6	731	.501	.140	.093	.224	.501	.042	.466	097	254	104	.466	0.543	0.085	0.7	1.0	1.2	1.1	A+	A-
302	608007	6	6	731	.743	.058	.743	.067	.083	.049	.656	223	.656	273	293	-0.939	0.101	-5.2	0.7	-5.6	0.5	A+	A-
303	610068	6	6	731	.565	.565	.163	.137	.071	.064	.486	.486	107	160	212	0.118	0.088	0.2	1.0	-0.2	1.0	A-	A-
304	610067	6	6	731	.592	.218	.051	.071	.592	.068	.529	131	212	251	.529	-0.052	0.089	-1.2	1.0	-1.7	0.9	A+	A-
305	609089	6	N/A	731	.505	.145	.103	.505	.159	.089	.449	062	249	.449	072	0.389	0.087	1.4	1.1	1.0	1.1	A+	A+
306	610137	6	6	729	.600	.086	.600	.252	.059	.003	.363	183	.363	166	195	0.141	0.085	2.6	1.1	2.3	1.1	A+	A+
307	610138	6	6	729	.325	.191	.082	.325	.392	.010	.132	056	163	.132	.035	1.550	0.087	7.3	1.3	8.0	1.7	B-	A+
308	610159	6	6	1453	.792	.070	.045	.089	.792	.003	.363	201	220	134	.363	-1.023	0.073	1.3	1.1	1.1	1.1	A-	B-
309	610160	6	6	1453	.646	.044	.285	.646	.019	.007	.373	233	216	.373	130	-0.104	0.062	3.4	1.1	2.0	1.1	A-	A+
310	610161	6	6	1453	.776	.081	.776	.041	.096	.006	.511	255	.511	225	266	-0.931	0.071	-2.6	0.9	-3.6	0.8	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Def	ın	FT	PCS	N.	D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT(A)	DT/D)	DT/C)	DT/D)	D4	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
311	612299	6	6	729	.593	.080	.145	.593	.156	.026	.477	313	192	.477	105	0.107	0.086	0.1	1.0	0.6	1.0	A+	A+
312	612300	6	N/A	729	.689	.093	.084	.102	.689	.033	.561	156	272	301	.561	-0.486	0.093	-3.1	0.9	-1.1	0.9	A+	B-
313	609048	6	6	729	.531	.097	.240	.092	.531	.040	.471	199	097	286	.471	0.394	0.085	0.3	1.0	0.8	1.0	A+	A+
314	609043	6	6	729	.565	.086	.244	.059	.565	.045	.434	213	072	277	.434	0.198	0.087	1.9	1.1	2.2	1.1	A-	A+
315	608008	6	6	729	.744	.744	.062	.108	.030	.056	.542	.542	313	221	198	-0.993	0.103	-2.0	0.9	-2.4	0.8	A-	B-
316	612269	6	N/A	722	.137	.216	.137	.068	.572	.007	072	205	072	205	.371	2.980	0.119	2.5	1.2	5.8	2.2	A+	A-
317	612270	6	6	722	.691	.071	.091	.691	.140	.007	.371	207	284	.371	040	-0.339	0.091	1.5	1.1	0.8	1.1	A+	A-
318	609189	6	6	722	.445	.287	.445	.114	.107	.049	.385	.018	.385	265	144	0.871	0.085	1.5	1.1	1.6	1.1	A-	A+
319	609186	6	6	722	.338	.324	.141	.145	.338	.051	.420	.067	284	157	.420	1.401	0.087	-0.5	1.0	0.5	1.0	A-	A-
320	609188	6	6	722	.772	.054	.039	.083	.772	.053	.608	305	224	246	.608	-1.165	0.110	-2.8	0.8	-4.1	0.6	A-	A+
321	612235	6	6	722	.770	.043	.089	.770	.035	.064	.593	227	296	.593	212	-1.204	0.112	-2.7	0.8	-4.1	0.6	A+	A+
322	612154	6	6	724	.684	.684	.116	.036	.155	.010	.435	.435	251	251	121	-0.317	0.092	0.1	1.0	1.0	1.1	A+	A-
323	612155	6	6	724	.920	.025	.920	.026	.021	.008	.458	211	.458	200	197	-2.492	0.165	-1.3	8.0	-2.1	0.5	B+	B-
324	612156	6	N/A	724	.547	.044	.029	.370	.547	.010	.358	195	217	147	.358	0.452	0.085	3.2	1.1	2.9	1.2	A+	A-
325	610079	6	6	724	.413	.090	.207	.233	.413	.057	.415	216	170	026	.415	1.044	0.087	1.0	1.0	1.6	1.1	A+	A+
326	610081	6	6	724	.634	.634	.095	.082	.124	.065	.513	.513	275	225	128	-0.229	0.093	-2.1	0.9	-2.6	0.8	A+	A+
327	609083	6	N/A	724	.225	.240	.101	.225	.358	.076	.077	.058	153	.077	.108	2.214	0.102	5.3	1.3	9.3	2.3	A+	B+
328	610071	6	6	730	.490	.490	.169	.110	.181	.051	.488	.488	179	192	100	0.633	0.087	-0.4	1.0	-0.5	1.0	A-	A+
329	610070	6	6	730	.573	.573	.127	.077	.169	.055	.513	.513	208	208	141	0.151	0.089	-0.9	1.0	-1.5	0.9	A-	A-
330	609023	6	6	1453	.773	.027	.169	.028	.773	.003	.324	183	165	218	.324	-0.897	0.070	2.2	1.1	0.2	1.0	B+	A-
331	609024	6	N/A	1453	.641	.025	.172	.160	.641	.003	.367	135	185	205	.367	-0.078	0.061	2.5	1.1	2.1	1.1	A+	A+
332	610135	6	6	7268	.862	.862	.042	.034	.046	.016	.559	.559	276	255	237	-1.808	0.039	-8.6	8.0	-9.9	0.5	A+	A-
333	610136	6	6	7268	.648	.081	.100	.150	.648	.022	.589	234	265	250	.589	-0.221	0.028	-9.9	0.8	-9.9	0.7	A+	A-
334	610144	6	6	721	.689	.069	.178	.689	.037	.026	.456	150	234	.456	201	-0.494	0.093	0.4	1.0	0.4	1.0	A+	A+
335	610145	6	6	721	.574	.194	.574	.094	.103	.035	.557	142	.557	248	299	0.149	0.087	-2.8	0.9	-2.9	0.8	A+	A-
336	612251	6	6	725	.585	.105	.095	.149	.585	.066	.579	232	249	185	.579	-0.118	0.090	-3.8	0.9	-4.0	0.8	B+	A-
337	612252	6	6	725	.577	.577	.090	.088	.174	.072	.506	.506	281	168	122	-0.091	0.090	-0.5	1.0	-1.0	0.9	A+	A+
338	612253	6	6	725	.272	.059	.272	.508	.088	.073	.320	168	.320	.081	246	1.663	0.095	2.3	1.1	4.8	1.5	A+	A-
339	610320	6	6	730	.704	.126	.085	.704	.081	.004	.405	136	239	.405	198	-0.449	0.093	1.4	1.1	1.3	1.1	A+	A-
340	610319	6	N/A	730	.492	.099	.314	.090	.492	.006	.366	206	187	047	.366	0.749	0.085	2.9	1.1	2.6	1.1	A+	A-
341	612222	6	6	725	.749	.749	.044	.149	.052	.006	.473	.473	242	219	252	-0.893	0.095	-1.5	0.9	-1.7	0.9	A-	A+
342	612223	6	6	725	.546	.178	.117	.150	.546	.008	.369	163	210	091	.369	0.233	0.084	2.0	1.1	2.0	1.1	A-	A-
343	612226	6	6	725	.592	.106	.148	.079	.592	.076	.556	239	202	212	.556	-0.239	0.090	-3.0	0.9	-3.0	0.8	A+	A+
344	612227	6	6	725	.469	.123	.469	.236	.092	.080	.462	183	.462	066	243	0.435	0.087	0.0	1.0	-0.1	1.0	A-	A-
345	609162	6	6	730	.597	.208	.597	.156	.033	.006	.291	030	.291	241	145	0.122	0.085	5.2	1.2	5.0	1.3	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS		_													Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
346	609164	6	N/A	730	.392	.107	.392	.310	.186	.006	.293	049	.293	156	099	1.187	0.084	4.5	1.2	4.0	1.3	A+	A+
347	609198	6	6	730	.749	.049	.749	.119	.029	.053	.615	271	.615	329	203	-1.042	0.104	-4.1	0.8	-4.3	0.6	A+	A+
348	609199	6	6	730	.721	.048	.090	.086	.721	.055	.617	180	250	352	.617	-0.832	0.100	-4.2	0.8	-4.2	0.7	A-	A+
349	609200	6	N/A	730	.606	.190	.069	.606	.081	.055	.465	202	200	.465	105	-0.086	0.089	1.1	1.1	0.0	1.0	A+	B-
350	612258	6	6	721	.578	.087	.287	.578	.043	.004	.297	245	067	.297	173	0.208	0.085	5.4	1.2	4.1	1.2	A-	A+
351	608011	6	6	721	.477	.204	.185	.477	.129	.006	.301	123	134	.301	088	0.724	0.084	5.2	1.2	5.6	1.3	A-	B+
352	610130	6	6	731	.662	.040	.066	.223	.662	.010	.314	072	258	118	.314	-0.238	0.088	4.1	1.2	2.8	1.2	A+	A+
353	610131	6	6	731	.639	.093	.639	.223	.040	.006	.479	265	.479	272	129	-0.098	0.087	-1.6	0.9	-2.3	0.9	A-	A-
354	608014	6	6	731	.814	.049	.066	.814	.033	.038	.595	233	267	.595	201	-1.457	0.114	-2.9	0.8	-3.9	0.6	A-	A+
355	609087	6	6	731	.695	.695	.067	.088	.068	.082	.619	.619	207	294	194	-0.771	0.100	-4.1	0.8	-4.3	0.6	A-	A-
356	609088	6	6	731	.532	.137	.170	.075	.532	.086	.539	122	161	248	.539	0.245	0.088	-2.3	0.9	-2.5	0.9	A+	A+
357	610162	6	6	1453	.822	.019	.044	.822	.109	.006	.494	218	274	.494	274	-1.303	0.078	-2.3	0.9	-3.7	0.7	A+	A+
358	612224	6	6	729	.494	.232	.494	.084	.170	.021	.304	044	.304	267	053	0.645	0.084	5.8	1.2	5.3	1.3	A+	A+
359	609036	6	6	729	.855	.026	.855	.058	.026	.036	.503	222	.503	296	139	-1.880	0.128	-1.8	0.9	-1.4	8.0	B-	A-
360	609035	6	6	729	.694	.070	.110	.694	.086	.040	.456	125	224	.456	185	-0.547	0.094	0.7	1.0	0.9	1.1	A+	A-
361	609031	6	N/A	729	.759	.759	.066	.054	.082	.040	.515	.515	256	282	136	-1.002	0.103	-1.3	0.9	-1.2	0.9	A+	A+
362	608009	6	6	729	.787	.045	.060	.055	.787	.052	.648	238	333	338	.648	-1.332	0.111	-5.1	0.7	-5.3	0.5	A-	B-
363	608012	6	6	729	.479	.141	.479	.134	.192	.054	.546	180	.546	286	132	0.638	0.086	-2.8	0.9	-2.3	0.9	A+	A-
364	607993	6	6	722	.751	.062	.060	.751	.096	.032	.531	220	242	.531	196	-0.887	0.102	-1.1	0.9	-1.4	0.9	A+	A-
365	609184	6	6	722	.518	.518	.238	.100	.100	.044	.394	.394	130	195	045	0.477	0.085	2.4	1.1	3.1	1.2	A-	A-
366	609187	6	6	722	.790	.049	.790	.044	.069	.049	.586	203	.586	256	280	-1.268	0.113	-2.7	0.8	-3.5	0.6	A-	B+
367	612157	6	6	724	.856	.856	.028	.043	.066	.007	.478	.478	232	218	233	-1.635	0.124	-1.2	0.9	-1.4	0.8	A+	A-
368	612158	6	6	724	.620	.233	.065	.072	.620	.010	.448	171	254	202	.448	0.030	0.088	0.5	1.0	0.3	1.0	A+	A-
369	609084	6	6	724	.736	.133	.073	.736	.032	.026	.430	201	198	.430	106	-0.679	0.099	0.5	1.0	0.0	1.0	A-	B-
370	609085	6	6	724	.634	.175	.634	.058	.099	.033	.479	173	.479	183	217	-0.128	0.091	-0.1	1.0	-0.8	1.0	A-	A-
371	609086	6	6	724	.481	.102	.286	.481	.097	.035	.292	154	.016	.292	160	0.732	0.086	7.0	1.3	6.9	1.4	A+	A+
372	609082	6	N/A	724	.105	.408	.105	.115	.304	.069	063	.193	063	206	.120	3.580	0.147	1.9	1.2	5.4	2.7	A+	A+
373	609081	6	6	724	.377	.377	.159	.158	.228	.079	.312	.312	181	115	.047	1.182	0.089	4.8	1.2	5.7	1.4	A+	A-
374	610328	6	6	725	.683	.075	.066	.683	.120	.057	.600	215	269	.600	238	-0.679	0.096	-3.2	0.9	-3.5	0.7	A-	A+
375	610329	6	6	725	.719	.719	.052	.079	.090	.061	.492	.492	156	301	097	-0.956	0.101	0.4	1.0	-0.5	1.0	A+	A-
376	610066	6	6	730	.348	.255	.348	.201	.144	.052	.378	085	.378	128	038	1.442	0.090	2.2	1.1	4.3	1.3	A-	B+
377	610078	6	6	730	.537	.177	.136	.093	.537	.058	.508	116	202	216	.508	0.347	0.088	-1.5	1.0	-1.0	0.9	A+	A-
378	609025	6	6	1453	.395	.158	.180	.395	.264	.003	.247	228	052	.247	023	1.175	0.059	5.9	1.1	5.6	1.2	A-	A-
379	609026	6	6	1453	.315	.315	.079	.103	.500	.003	.203	.203	238	224	.094	1.610	0.062	5.8	1.2	7.8	1.4	A-	A-
380	610310	6	6	730	.529	.529	.047	.406	.016	.003	.431	.431	130	322	130	0.493	0.083	0.2	1.0	0.3	1.0	B-	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS			-4-1	- 4-1											Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
381	612264	6	6	725	.641	.641	.028	.046	.284	.001	.346	.346	156	214	197	-0.230	0.088	3.2	1.1	2.8	1.2	A-	A-
382	610331	6	6	725	.731	.731	.066	.069	.092	.041	.563	.563	207	319	181	-0.949	0.099	-2.7	0.9	-2.6	0.8	B-	A-
383	612233	6	N/A	731	.323	.323	.301	.137	.227	.012	.231	.231	101	146	.039	1.547	0.088	3.0	1.1	4.8	1.4	A-	B-
384	612254	6	N/A	731	.565	.565	.120	.109	.131	.074	.539	.539	214	250	111	0.058	0.088	-2.2	0.9	-1.8	0.9	A+	A+
385	609271	6	6	725	.484	.259	.484	.065	.189	.003	.268	147	.268	161	042	0.558	0.083	5.3	1.2	4.8	1.3	A-	A-
386	609240	6	N/A	725	.247	.175	.117	.457	.247	.004	.222	239	233	.169	.222	1.866	0.095	2.7	1.1	4.6	1.5	A-	A+
387	612263	6	N/A	725	.501	.313	.501	.092	.083	.011	.396	141	.396	132	228	0.463	0.084	1.6	1.1	3.0	1.2	A-	A-
388	609093	6	6	730	.877	.877	.038	.030	.044	.011	.516	.516	246	244	246	-1.900	0.126	-2.3	0.8	-2.5	0.6	A-	B-
389	612212	6	6	730	.769	.080	.064	.769	.060	.027	.547	223	229	.547	257	-1.020	0.102	-2.1	0.9	-3.2	0.7	B+	A-
390	610076	6	N/A	721	.795	.078	.054	.795	.067	.007	.439	199	293	.439	156	-1.109	0.103	-0.6	1.0	-1.4	0.9	A-	A-
391	610077	6	6	721	.494	.494	.243	.092	.168	.004	.249	.249	077	225	027	0.643	0.084	7.4	1.3	6.2	1.4	A-	A+
392	610063	6	N/A	721	.603	.100	.169	.065	.603	.062	.487	194	136	278	.487	-0.120	0.090	-0.3	1.0	-0.8	1.0	A-	A-
393	609236	6	6	731	.486	.486	.066	.289	.149	.011	.280	.280	054	076	167	0.700	0.083	5.4	1.2	5.8	1.3	A-	A+
394	610069	6	6	731	.720	.056	.101	.063	.720	.060	.555	175	233	196	.555	-0.833	0.100	-2.1	0.9	-1.7	0.8	A+	A+
395	610139	6	N/A	729	.755	.755	.071	.129	.038	.007	.494	.494	308	253	209	-0.799	0.097	-1.6	0.9	-2.1	0.8	A-	A-
396	612271	6	6	722	.801	.801	.111	.043	.040	.006	.465	.465	264	195	221	-1.090	0.105	-1.2	0.9	-1.3	0.9	A+	A-
397	610080	6	6	724	.815	.028	.041	.815	.068	.048	.581	173	254	.581	335	-1.642	0.126	-2.6	0.8	-3.8	0.5	A+	A-
398	612249	6	6	7268	.498	.313	.498	.034	.129	.026	.450	216	.450	203	101	0.580	0.027	0.8	1.0	2.8	1.0	A+	A-
399	612259	6	6	725	.309	.015	.666	.309	.008	.001	.210	139	132	.210	121	1.551	0.090	5.2	1.2	5.1	1.5	A-	A-
400	610333	6	6	725	.559	.559	.121	.075	.201	.044	.487	.487	254	191	103	0.108	0.087	0.5	1.0	0.0	1.0	A+	A-
401	612236	6	6	731	.824	.037	.824	.101	.037	.001	.443	208	.443	296	177	-1.309	0.107	-1.6	0.9	-2.2	0.8	A+	A+
402	610337	6	6	730	.537	.078	.537	.104	.240	.041	.385	193	.385	223	.011	0.405	0.087	4.2	1.2	4.4	1.3	A+	A-
403	610336	6	6	730	.775	.067	.048	.064	.775	.045	.587	221	197	283	.587	-1.164	0.107	-3.0	0.8	-3.3	0.6	A-	A-
404	609260	6	6	730	.685	.685	.078	.188	.041	.008	.382	.382	131	189	212	-0.373	0.090	1.9	1.1	2.0	1.2	A-	A+
405	609094	6	6	730	.738	.062	.738	.097	.095	.008	.427	208	.427	155	214	-0.709	0.095	0.6	1.0	0.9	1.1	B-	A-
406	612214	6	6	730	.358	.285	.358	.199	.132	.027	.241	.005	.241	095	080	1.328	0.086	5.6	1.2	8.0	1.6	A-	A+
407	612213	6	6	730	.644	.111	.093	.123	.644	.029	.479	285	201	084	.479	-0.208	0.089	-0.5	1.0	0.4	1.0	A+	A+
408	612215	6	6	730	.752	.070	.752	.069	.077	.033	.561	201	.561	273	236	-0.933	0.100	-2.1	0.9	-3.2	0.7	A+	A-
409	609268	6	6	731	.605	.033	.323	.605	.027	.012	.385	109	209	.385	196	0.073	0.086	1.9	1.1	2.0	1.1	A-	A-
410	609270	6	6	731	.583	.086	.583	.186	.130	.015	.462	186	.462	135	242	0.187	0.085	-0.2	1.0	-0.4	1.0	A-	A-
411	610116	6	6	731	.644	.644	.092	.131	.060	.073	.550	.550	209	197	163	-0.381	0.093	-1.7	0.9	-2.1	0.9	A+	A-
412	610115	6	6	731	.293	.322	.293	.148	.156	.082	.207	.112	.207	061	063	1.619	0.091	5.8	1.3	7.0	1.6	A-	B-
413	610140	6	6	729	.778	.029	.066	.128	.778	.000	.419	217	209	258	.419	-0.923	0.099	-0.7	1.0	-0.6	0.9	A+	B-
414	610302	6	6	729	.562	.353	.033	.562	.051	.001	.244	019	278	.244	275	0.340	0.084	6.9	1.3	6.2	1.4	A+	A-
415	610298	6	6	1453	.516	.516	.061	.127	.294	.003	.360	.360	187	153	161	0.603	0.059	5.1	1.1	4.5	1.2	A-	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

D - 6	ID.	FT	PCS		D) (- I	D/A)	D/D)	D(C)	D/D)	D/ \	Din'-	DT(A)	DT/D)	DT(C)	DT(D)		B 4CE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
416	612273	6	6	722	.395	.152	.395	.220	.226	.007	.330	149	.330	049	151	1.196	0.084	1.7	1.1	2.4	1.1	A-	C+
417	612272	6	6	722	.215	.237	.206	.334	.215	.008	.179	012	173	.053	.179	2.232	0.097	2.2	1.1	3.5	1.4	A-	A-
418	607992	6	6	722	.655	.086	.073	.150	.655	.036	.494	149	196	219	.494	-0.263	0.091	-0.3	1.0	-1.2	0.9	A+	A+
419	612298	6	6	722	.542	.184	.136	.079	.542	.060	.464	027	268	189	.464	0.304	0.087	0.3	1.0	0.6	1.0	B+	A+
420	610107	6	6	724	.695	.695	.077	.112	.066	.050	.561	.561	180	273	249	-0.579	0.098	-2.8	0.9	-3.1	0.7	A+	C-
421	610082	6	6	724	.735	.097	.735	.046	.055	.068	.541	200	.541	246	282	-1.033	0.109	-2.0	0.9	-2.4	0.7	A-	A+
422	610132	6	6	7268	.660	.660	.065	.069	.190	.015	.453	.453	270	233	124	-0.268	0.028	0.8	1.0	-1.8	1.0	A+	A-
423	607918	6	6	7268	.790	.790	.112	.044	.044	.010	.457	.457	278	215	118	-1.098	0.033	-2.9	1.0	-2.9	0.9	B-	A-
424	607921	6	6	7268	.907	.036	.029	.018	.907	.011	.488	252	211	212	.488	-2.333	0.046	-5.1	0.8	-9.2	0.5	A+	A-
425	607927	6	6	721	.479	.316	.082	.114	.479	.010	.401	124	194	204	.401	0.708	0.084	2.2	1.1	1.6	1.1	C-	A-
426	607917	6	6	721	.487	.155	.085	.487	.268	.006	.280	116	160	.280	078	0.674	0.084	6.5	1.2	6.2	1.4	A+	B-
427	610141	6	6	721	.534	.228	.122	.093	.534	.024	.470	101	269	203	.470	0.392	0.085	-0.2	1.0	0.1	1.0	A-	A+
428	607911	6	6	725	.476	.139	.270	.088	.476	.026	.479	170	156	222	.479	0.591	0.085	-0.7	1.0	-0.1	1.0	A+	A+
429	607915	6	6	725	.812	.062	.058	.812	.040	.028	.524	250	278	.524	148	-1.518	0.112	-1.9	0.9	-2.6	0.7	A-	A-
430	607929	6	6	725	.548	.548	.321	.059	.037	.035	.366	.366	119	236	065	0.190	0.087	4.7	1.2	3.2	1.2	B-	A+
431	612231	6	6	731	.792	.052	.792	.120	.027	.008	.436	246	.436	215	198	-1.085	0.102	-0.7	1.0	-0.3	1.0	A-	A+
432	607928	6	6	731	.744	.096	.022	.744	.127	.011	.340	091	171	.340	206	-0.746	0.095	2.1	1.1	1.1	1.1	A+	B-
433	612250	6	6	731	.417	.178	.242	.417	.093	.070	.301	185	.116	.301	163	0.877	0.086	6.0	1.2	5.7	1.3	A-	A+
434	607913	6	6	730	.553	.081	.084	.553	.249	.033	.458	211	294	.458	038	0.338	0.087	1.4	1.1	1.0	1.1	A-	B-
435	607920	6	6	730	.908	.908	.019	.019	.021	.033	.529	.529	202	179	194	-2.653	0.166	-1.1	0.9	-3.1	0.4	A-	B-
436	607924	6	6	730	.556	.138	.127	.141	.556	.037	.530	181	222	148	.530	0.309	0.087	-2.3	0.9	-1.6	0.9	A-	A+
437	607926	6	6	730	.832	.027	.832	.052	.051	.038	.524	165	.524	246	177	-1.638	0.120	-1.5	0.9	-2.2	0.7	A-	A-
438	609237	6	6	725	.469	.166	.142	.469	.219	.004	.394	179	126	.394	180	0.636	0.083	0.4	1.0	0.4	1.0	A-	B-
439	607923	6	6	725	.463	.112	.463	.188	.221	.017	.362	111	.362	283	.007	0.640	0.084	2.9	1.1	2.6	1.1	A-	B-
440	609050	6	6	730	.753	.047	.081	.753	.116	.003	.400	177	239	.400	177	-0.781	0.096	0.3	1.0	-0.6	1.0	C-	A-
441	609090	6	6	730	.607	.111	.607	.159	.116	.007	.448	268	.448	169	170	0.070	0.086	-0.6	1.0	-0.9	1.0	A-	A-
442	607906	6	6	730	.641	.049	.114	.641	.186	.010	.327	208	208	.327	035	-0.118	0.087	3.6	1.2	3.8	1.3	A+	A-
443	607914	6	6	730	.514	.385	.038	.052	.514	.011	.397	127	256	247	.397	0.547	0.084	2.5	1.1	2.4	1.1	A-	A+
444	612256	6	6	721	.796	.796	.057	.068	.075	.004	.401	.401	266	101	230	-1.112	0.102	-0.2	1.0	0.2	1.0	A+	C-
445	610075	6	6	721	.746	.046	.176	.746	.029	.003	.383	249	193	.383	167	-0.760	0.096	0.9	1.0	0.5	1.1	A-	A-
446	608013	6	6	721	.820	.820	.058	.067	.047	.008	.496	.496	336	216	187	-1.337	0.108	-2.2	0.9	-2.7	0.7	A-	C-
447	610058	6	6	721	.773	.773	.069	.076	.039	.043	.597	.597	308	294	187	-1.173	0.106	-4.0	0.8	-4.4	0.6	A-	B+
448	610059	6	6	721	.614	.028	.614	.056	.254	.049	.471	194	.471	235	183	-0.122	0.090	0.5	1.0	0.1	1.0	A-	A+
449	610126	6	6	731	.851	.851	.033	.047	.067	.003	.425	.425	176	204	280	-1.556	0.115	-1.2	0.9	-1.9	8.0	A+	A+
450	607916	6	6	731	.852	.042	.058	.034	.852	.014	.478	244	238	115	.478	-1.636	0.118	-1.2	0.9	-1.2	0.8	A-	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
451	607930	6	6	731	.900	.900	.023	.051	.012	.014	.476	.476	223	226	140	-2.213	0.141	-1.3	0.9	-1.5	0.7	A+	A-
452	610064	6	N/A	731	.274	.274	.123	.510	.033	.060	.173	.173	216	.215	127	1.756	0.092	6.2	1.3	7.4	1.7	A+	A-
453	607908	6	6	729	.702	.033	.702	.229	.029	.007	.366	179	.366	185	242	-0.453	0.091	2.3	1.1	1.8	1.1	B+	A+
454	607912	6	6	729	.366	.366	.140	.353	.133	.008	.203	.203	136	020	083	1.329	0.086	6.7	1.3	8.7	1.7	A-	A+
455	607919	6	6	729	.910	.910	.023	.026	.037	.004	.400	.400	251	155	213	-2.234	0.140	-0.9	0.9	-1.9	0.7	C-	A-
456	609049	6	6	729	.744	.744	.067	.106	.049	.034	.419	.419	121	193	198	-0.861	0.099	1.5	1.1	0.7	1.1	B-	A+
457	612268	6	6	722	.726	.726	.035	.103	.132	.006	.410	.410	293	183	159	-0.557	0.094	0.4	1.0	-0.4	1.0	A-	A-
458	607909	6	6	722	.269	.269	.194	.241	.290	.007	.251	.251	033	136	035	1.880	0.091	1.7	1.1	4.0	1.4	A-	A-
459	607925	6	6	722	.760	.176	.036	.760	.024	.004	.259	065	218	.259	184	-0.747	0.098	2.7	1.2	2.9	1.3	A+	A+
460	607991	6	6	722	.849	.033	.849	.053	.037	.028	.582	267	.582	271	228	-1.721	0.127	-2.2	0.8	-4.0	0.5	A+	A-
461	609185	6	6	722	.759	.097	.035	.759	.072	.037	.438	140	239	.438	142	-0.933	0.103	0.7	1.0	-0.1	1.0	A-	A-
462	612234	6	6	722	.824	.824	.037	.028	.060	.051	.561	.561	286	241	190	-1.680	0.127	-1.9	0.9	-1.9	0.7	A+	A-
463	612153	6	6	724	.902	.025	.046	.902	.021	.007	.377	208	160	.377	131	-2.157	0.146	-0.4	1.0	0.1	1.0	B+	A-
464	607907	6	6	724	.832	.024	.090	.044	.832	.011	.525	184	252	291	.525	-1.406	0.116	-1.9	0.9	-2.6	0.7	A-	C-
465	607922	6	6	724	.562	.218	.562	.087	.123	.010	.422	181	.422	223	112	0.398	0.086	0.3	1.0	0.9	1.1	A-	A-
466	610174	6	6	724	.617	.140	.070	.129	.617	.044	.544	251	252	146	.544	-0.057	0.090	-2.5	0.9	-2.2	0.9	A+	A-
467	610327	6	N/A	725	.752	.066	.088	.041	.752	.052	.557	251	252	146	.557	-1.156	0.105	-2.0	0.9	-2.5	0.7	A+	A-
468	610065	6	6	730	.510	.152	.189	.104	.510	.045	.419	152	080	149	.419	0.543	0.087	2.7	1.1	2.3	1.1	A-	A+
469	609022	6	6	1453	.729	.084	.729	.058	.127	.002	.397	220	.397	198	187	-0.582	0.066	0.3	1.0	-0.3	1.0	A+	C-
470	609661	7	7	5029	.650	.081	.158	.650	.103	.008	.399	217	189	.399	125	0.321	0.033	1.6	1.0	1.4	1.0	A+	A+
471	610325	7	7	5029	.710	.710	.145	.064	.072	.009	.484	.484	243	268	164	-0.025	0.034	-5.6	0.9	-4.7	0.9	A+	A+
472	610147	7	7	572	.766	.033	.098	.094	.766	.009	.369	176	175	130	.369	-0.522	0.109	0.3	1.0	-0.2	1.0	A-	A+
473	610148	7	N/A	572	.809	.039	.046	.809	.098	.009	.439	173	244	.439	161	-0.829	0.117	-1.0	0.9	-1.5	0.8	A+	A+
474	609053	7	7	554	.776	.776	.065	.069	.074	.016	.550	.550	246	268	226	-0.435	0.114	-2.7	0.8	-3.0	0.7	A-	C-
475	609219	7	7	554	.673	.673	.126	.076	.108	.016	.477	.477	240	219	142	0.220	0.101	-1.6	0.9	-1.6	0.9	A+	A-
476	609038	7	7	556	.682	.682	.034	.095	.184	.005	.387	.387	207	143	207	0.084	0.100	0.5	1.0	0.3	1.0	A+	A-
477	609039	7	7	556	.504	.092	.198	.200	.504	.007	.453	145	207	203	.453	0.972	0.093	-2.1	0.9	-2.0	0.9	A-	A+
478	608015	7	7	554	.717	.166	.087	.027	.717	.004	.308	121	187	131	.308	0.005	0.104	1.7	1.1	2.2	1.2	A+	A+
479	607994	7	N/A	554	.690	.143	.690	.112	.051	.005	.316	218	.316	066	136	0.156	0.102	2.4	1.1	2.2	1.2	A-	A-
480	609073	7	7	5029	.844	.028	.844	.046	.072	.010	.474	166	.474	250	244	-1.006	0.043	-4.5	0.9	-6.4	0.7	A+	A-
481	610316	7	7	554	.538	.103	.316	.538	.042	.002	.390	214	173	.390	219	1.036	0.096	1.0	1.0	0.7	1.0	A-	A+
482	609799	7	N/A	554	.827	.042	.114	.014	.827	.004	.445	217	307	170	.445	-0.724	0.123	-1.1	0.9	-2.1	0.8	A+	A-
483	607982	7	7	554	.718	.718	.070	.199	.009	.004	.367	.367	256	196	139	0.043	0.105	0.7	1.0	-0.1	1.0	A-	A+
484	610175	7	7	552	.732	.732	.058	.056	.138	.016	.499	.499	243	177	292	-0.322	0.107	-2.2	0.9	-2.6	0.8	A+	
485	610343	7	7	552	.683	.109	.683	.091	.103	.015	.459	328	.459	180	119	-0.020	0.102	-1.8	0.9	-1.4	0.9	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Def	ID	FT	PCS	N.	DVal	D/A\	D/D)	D/C)	D/D)	D/ \	DAD:-	DT/A\	DT/D\	DT/C)	DT/D)	Nana	BACE.	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
486	610176	7	N/A	552	.563	.054	.067	.299	.563	.016	.204	148	260	.045	.204	0.616	0.096	6.7	1.3	5.0	1.3	A+	
487	609034	7	7	552	.388	.388	.045	.404	.140	.024	.392	.392	259	063	220	1.503	0.098	0.3	1.0	1.1	1.1	A+	
488	609044	7	7	552	.504	.190	.504	.071	.208	.027	.335	174	.335	243	017	0.893	0.096	2.8	1.1	2.0	1.1	A+	
489	609272	7	7	552	.649	.065	.071	.649	.188	.027	.520	251	215	.520	259	0.127	0.101	-3.0	0.9	-2.8	0.8	B+	
490	609033	7	7	552	.518	.170	.190	.518	.094	.027	.403	106	198	.403	184	0.819	0.096	0.7	1.0	0.3	1.0	B+	
491	614852	7	7	552	.882	.045	.024	.045	.882	.004	.221	086	129	151	.221	-1.375	0.143	0.9	1.1	0.7	1.1	A+	B-
492	614853	7	N/A	552	.741	.020	.143	.741	.096	.000	.322	241	155	.322	180	-0.198	0.107	1.1	1.1	1.3	1.1	A-	A-
493	609222	7	N/A	552	.772	.772	.100	.087	.038	.004	.478	.478	285	235	211	-0.410	0.111	-2.2	0.9	-2.2	0.8	B-	B-
494	609278	7	7	552	.768	.768	.116	.047	.067	.002	.416	.416	147	281	249	-0.376	0.111	-0.6	1.0	-1.0	0.9	A+	A+
495	609221	7	7	552	.806	.069	.100	.806	.024	.002	.439	321	160	.439	247	-0.650	0.117	-1.4	0.9	-2.0	0.8	A+	A+
496	612228	7	7	552	.462	.246	.462	.100	.172	.020	.471	224	.471	196	128	1.265	0.097	-1.4	1.0	-0.3	1.0	A+	A-
497	612313	7	7	566	.629	.629	.097	.210	.060	.004	.322	.322	160	118	212	0.528	0.097	2.9	1.1	2.3	1.2	A+	A+
498	612260	7	7	566	.530	.194	.136	.530	.136	.004	.360	237	109	.360	112	1.050	0.093	1.8	1.1	1.4	1.1	A-	A-
499	612314	7	7	566	.458	.484	.019	.037	.458	.002	.382	211	242	233	.382	1.393	0.093	1.1	1.0	1.6	1.1	B-	A+
500	609202	7	7	566	.574	.247	.117	.051	.574	.011	.500	284	184	185	.500	0.803	0.095	-1.8	0.9	-2.0	0.9	A+	A-
501	609201	7	7	566	.617	.094	.617	.156	.120	.014	.500	286	.500	256	118	0.572	0.097	-1.8	0.9	-1.5	0.9	A-	A-
502	609203	7	7	566	.479	.062	.389	.051	.479	.019	.390	268	102	221	.390	1.261	0.094	0.8	1.0	2.5	1.1	A+	A+
503	612207	7	7	566	.489	.288	.489	.120	.076	.027	.381	074	.381	196	201	1.196	0.094	1.9	1.1	1.8	1.1	A+	A+
504	612320	7	7	566	.518	.175	.518	.138	.138	.032	.424	234	.424	177	076	1.030	0.095	0.1	1.0	1.4	1.1	A-	A+
505	610155	7	7	570	.807	.016	.012	.161	.807	.004	.389	183	101	269	.389	-0.597	0.116	0.2	1.0	-0.1	1.0	A+	A-
506	610153	7	7	570	.658	.658	.054	.075	.209	.004	.419	.419	258	288	107	0.339	0.097	-0.7	1.0	0.2	1.0	A+	A-
507	610156	7	N/A	570	.163	.083	.019	.163	.730	.005	016	128	252	016	.216	3.071	0.121	2.7	1.2	5.9	2.0	A-	A+
508	609819	7	7	570	.639	.142	.095	.105	.639	.019	.427	114	149	242	.427	0.394	0.097	0.0	1.0	0.3	1.0	A-	A-
509	612239	7	7	570	.618	.054	.086	.618	.223	.019	.376	187	281	.376	035	0.515	0.096	1.0	1.0	1.1	1.1	A+	B-
510	612238	7	7	570	.611	.611	.156	.067	.142	.025	.391	.391	112	235	126	0.537	0.095	0.7	1.0	-0.2	1.0	A+	A-
511	612308	7	7	570	.698	.698	.077	.081	.118	.026	.483	.483	216	252	141	0.025	0.103	-1.8	0.9	-0.3	1.0	A+	A+
512	612209	7	7	570	.818	.039	.083	.818	.030	.032	.512	169	277	.512	220	-0.862	0.127	-1.6	0.9	-2.6	0.7	A+	A+
513	610257	7	7	572	.453	.248	.453	.185	.105	.009	.384	109	.384	134	183	1.167	0.093	0.5	1.0	2.3	1.1	A-	A-
514	610354	7	7	572	.708	.708	.054	.117	.108	.012	.373	.373	171	236	048	-0.152	0.102	0.5	1.0	-0.1	1.0	A-	A-
515	610261	7	N/A	572	.867	.082	.012	.028	.867	.011	.453	219	151	224	.453	-1.368	0.136	-1.1	0.9	-2.2	0.7	A-	A-
516	612244	7	N/A	572	.778	.115	.052	.778	.037	.018	.497	226	197	.497	196	-0.655	0.113	-1.7	0.9	-2.0	8.0	A+	A+
517	609030	7	7	572	.663	.663	.080	.079	.150	.028	.518	.518	222	238	159	0.060	0.099	-3.0	0.9	-3.0	0.8	A+	A+
518	609032	7	7	572	.615	.100	.136	.119	.615	.030	.549	177	282	155	.549	0.298	0.097	-4.0	0.9	-3.9	8.0	B+	A-
519	609028	7	N/A	572	.754	.052	.040	.124	.754	.030	.560	249	203	240	.560	-0.534	0.110	-3.1	0.8	-3.5	0.7	A+	A+
520	612247	7	7	572	.607	.080	.607	.128	.149	.037	.427	107	.427	185	138	0.332	0.097	0.2	1.0	-0.6	1.0	A+	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
521	609176	7	7	556	.685	.070	.043	.685	.196	.005	.350	201	255	.350	087	0.054	0.100	1.4	1.1	0.5	1.0	A+	A+
522	609177	7	7	556	.860	.034	.032	.067	.860	.007	.528	256	252	258	.528	-1.200	0.133	-2.2	0.8	-2.9	0.6	B+	A+
523	609178	7	7	556	.734	.153	.734	.083	.025	.005	.443	176	.443	266	222	-0.230	0.105	-0.7	1.0	-1.2	0.9	A-	A+
524	609179	7	7	556	.709	.709	.068	.036	.182	.005	.345	.345	180	232	112	-0.079	0.102	1.6	1.1	1.6	1.1	A+	B+
525	612267	7	7	556	.649	.128	.155	.052	.649	.016	.585	250	319	192	.585	0.210	0.099	-4.7	0.8	-4.4	0.7	A+	A-
526	612274	7	7	556	.509	.331	.043	.509	.095	.022	.266	.016	194	.266	210	0.906	0.094	5.0	1.2	4.3	1.2	A-	A+
527	610270	7	7	556	.579	.130	.579	.189	.079	.023	.431	149	.431	208	155	0.548	0.096	-0.4	1.0	-0.2	1.0	A-	A-
528	610269	7	7	556	.543	.126	.543	.201	.101	.029	.197	051	.197	007	103	0.720	0.095	6.6	1.3	6.4	1.4	A+	A+
529	610271	7	N/A	556	.595	.201	.121	.058	.595	.025	.393	063	163	309	.393	0.461	0.096	0.9	1.0	1.2	1.1	A+	A-
530	612311	7	7	1109	.519	.227	.116	.519	.121	.016	.395	109	210	.395	184	0.949	0.067	1.2	1.0	1.5	1.1	A-	A+
531	609167	7	7	553	.801	.801	.056	.033	.109	.002	.380	.380	269	223	158	-0.523	0.115	-0.2	1.0	-0.7	0.9	A+	
532	609169	7	7	553	.637	.089	.179	.637	.094	.002	.458	240	240	.458	196	0.478	0.098	-1.0	1.0	-1.3	0.9	A-	
533	609229	7	7	553	.561	.052	.071	.561	.300	.016	.457	250	272	.457	153	0.839	0.096	-0.3	1.0	-0.5	1.0	A+	
534	609230	7	7	553	.633	.137	.633	.175	.038	.016	.383	167	.383	162	183	0.459	0.099	1.8	1.1	0.7	1.1	A+	
535	609046	7	7	553	.640	.137	.157	.042	.640	.024	.520	242	227	253	.520	0.391	0.100	-2.0	0.9	-2.7	0.8	A+	
536	609069	7	N/A	553	.653	.653	.060	.118	.145	.025	.511	.511	300	256	166	0.311	0.101	-2.3	0.9	-1.8	0.9	A-	
537	609274	7	7	553	.514	.174	.118	.165	.514	.031	.368	050	174	198	.368	1.035	0.096	2.4	1.1	3.0	1.2	A-	
538	614856	7	7	566	.896	.021	.896	.016	.064	.004	.368	296	.368	225	125	-1.436	0.151	-0.6	0.9	-0.3	0.9	A+	A-
539	614857	7	N/A	566	.922	.004	.058	.922	.012	.004	.258	103	130	.258	214	-1.853	0.175	0.3	1.0	0.0	1.0	A+	A-
540	609072	7	7	553	.821	.047	.087	.042	.821	.004	.465	239	249	239	.465	-0.686	0.120	-1.6	0.9	-2.2	0.7	A+	
541	609208	7	7	554	.783	.099	.783	.063	.045	.009	.375	295	.375	109	124	-0.417	0.115	0.6	1.0	0.1	1.0	A+	B-
542	609663	7	N/A	5029	.809	.080	.809	.034	.070	.007	.443	239	.443	253	158	-0.681	0.039	-3.0	0.9	-3.9	0.9	A-	A+
543	610149	7	7	572	.526	.434	.526	.016	.019	.005	.153	029	.153	069	181	0.828	0.092	8.1	1.3	7.0	1.4	A-	A-
544	610338	7	7	572	.378	.086	.145	.378	.381	.011	.314	258	190	.314	.052	1.544	0.095	2.3	1.1	2.1	1.1	A+	A+
545	609243	7	7	554	.863	.018	.052	.863	.051	.016	.474	199	236	.474	191	-1.185	0.139	-1.3	0.9	-1.8	0.7	A+	A+
546	609074	7	7	5029	.840	.840	.026	.087	.039	.009	.442	.442	230	203	213	-0.956	0.042	-2.6	0.9	-3.9	0.8	A+	A-
547	609075	7	N/A	5029	.835	.106	.016	.033	.835	.011	.410	192	185	223	.410	-0.928	0.042	-1.1	1.0	-2.4	0.9	A+	A-
548	610073	7	7	554	.668	.076	.139	.103	.668	.014	.476	286	142	199	.476	0.253	0.101	-1.6	0.9	-0.5	1.0	A-	A+
549	610119	7	N/A	554	.491	.098	.321	.491	.074	.016	.388	169	152	.388	131	1.170	0.095	1.1	1.0	1.4	1.1	A-	A-
550	610118	7	7	554	.894	.034	.894	.038	.018	.016	.546	242	.546	290	227	-1.559	0.156	-2.3	0.8	-3.9	0.4	A-	A-
551	609058	7	7	554	.565	.123	.186	.565	.108	.018	.450	184	148	.450	212	0.788	0.096	-0.1	1.0	-0.9	1.0	B+	A-
552	609056	7	N/A	554	.560	.123	.152	.146	.560	.020	.429	108	196	193	.429	0.809	0.096	0.1	1.0	-0.2	1.0	A+	A+
553	609057	7	N/A	554	.614	.043	.614	.045	.276	.022	.230	113	.230	132	049	0.520	0.098	5.4	1.2	5.5	1.4	A-	A+
554	609800	7	7	554	.655	.655	.170	.081	.092	.002	.379	.379	160	182	217	0.419	0.100	1.3	1.1	1.0	1.1	A-	A+
555	609801	7	N/A	554	.803	.074	.060	.061	.803	.002	.395	243	152	209	.395	-0.523	0.117	-0.3	1.0	0.3	1.0	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D/A\	D/D\	D(C)	D/D)	D/ \	PtBis	PT(A)	PT(B)	PT(C)	DT/D\	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID	Grade	Grade	IN	PVdI	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PT(A)	PI(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
556	607983	7	7	554	.937	.014	.029	.937	.018	.002	.424	225	261	.424	190	-2.024	0.185	-1.1	0.8	-2.9	0.4	A-	A-
557	609045	7	N/A	552	.594	.062	.134	.185	.594	.025	.406	179	188	160	.406	0.431	0.098	0.5	1.0	0.5	1.0	A+	
558	609042	7	N/A	552	.692	.080	.692	.083	.120	.025	.466	145	.466	264	224	-0.116	0.104	-1.4	0.9	-2.0	8.0	B+	
559	614854	7	N/A	552	.897	.060	.007	.897	.031	.005	.322	211	128	.322	185	-1.548	0.152	-0.1	1.0	-1.4	0.7	B+	A-
560	612229	7	7	552	.516	.516	.228	.136	.100	.020	.451	.451	292	108	116	0.985	0.096	-0.3	1.0	-0.2	1.0	A+	A-
561	612230	7	N/A	552	.429	.299	.107	.145	.429	.020	.430	103	158	244	.430	1.434	0.097	-0.4	1.0	0.1	1.0	A+	A-
562	609277	7	7	566	.767	.092	.095	.767	.034	.012	.507	319	196	.507	216	-0.302	0.111	-1.9	0.9	-2.4	0.8	A+	B-
563	609204	7	N/A	566	.647	.161	.647	.129	.048	.016	.431	236	.431	087	278	0.414	0.099	0.2	1.0	-0.2	1.0	A+	A-
564	612208	7	N/A	566	.664	.048	.143	.664	.120	.025	.474	175	197	.474	247	0.281	0.101	-0.8	1.0	-1.0	0.9	A+	A+
565	615199	7	7	570	.951	.028	.014	.004	.951	.004	.443	235	267	082	.443	-2.307	0.207	-1.0	0.8	-3.0	0.4	A-	A-
566	610154	7	N/A	570	.633	.175	.149	.633	.039	.004	.274	038	175	.274	180	0.478	0.095	3.6	1.2	3.9	1.2	A-	B+
567	609820	7	7	570	.912	.026	.912	.028	.018	.016	.537	232	.537	288	159	-1.849	0.175	-1.3	0.8	-3.0	0.4	A+	A+
568	609029	7	7	572	.844	.037	.056	.844	.039	.025	.553	199	246	.553	243	-1.273	0.134	-2.3	0.8	-3.0	0.6	B+	A-
569	609027	7	7	572	.512	.512	.189	.063	.210	.026	.445	.445	263	216	021	0.831	0.093	-0.8	1.0	-0.7	1.0	A+	A-
570	612310	7	7	1109	.400	.333	.172	.079	.400	.015	.325	074	196	106	.325	1.543	0.068	3.8	1.1	3.7	1.2	A+	A-
571	609170	7	7	553	.723	.723	.013	.224	.038	.002	.229	.229	145	122	185	-0.013	0.104	3.2	1.2	2.5	1.2	A-	
572	609070	7	7	553	.881	.040	.881	.036	.020	.024	.445	217	.445	221	207	-1.439	0.152	-1.2	0.9	-2.4	0.6	A-	
573	609071	7	N/A	553	.430	.118	.152	.430	.277	.024	.426	189	270	.426	047	1.474	0.096	0.4	1.0	1.0	1.1	A-	
574	614859	7	N/A	566	.822	.822	.023	.085	.069	.002	.386	.386	233	221	195	-0.677	0.121	-0.4	1.0	-0.1	1.0	A+	A-
575	614858	7	7	566	.758	.027	.129	.085	.758	.002	.395	139	195	265	.395	-0.201	0.108	0.0	1.0	-0.1	1.0	A-	A-
576	609209	7	7	554	.489	.107	.323	.489	.072	.009	.388	255	114	.388	184	1.267	0.096	1.5	1.1	1.7	1.1	A+	A+
577	609210	7	7	554	.646	.067	.150	.128	.646	.009	.428	244	207	165	.428	0.443	0.100	0.0	1.0	-0.6	1.0	A+	A-
578	609040	7	7	556	.800	.029	.800	.074	.094	.004	.480	141	.480	258	277	-0.669	0.115	-1.9	0.9	-1.8	0.8	A-	A-
579	607995	7	7	554	.625	.099	.625	.087	.184	.005	.334	209	.334	156	083	0.519	0.097	2.7	1.1	2.0	1.1	A-	A+
580	609223	7	7	552	.473	.375	.473	.098	.051	.004	.281	112	.281	148	147	1.249	0.096	5.0	1.2	4.5	1.3	A-	A+
581	612261	7	7	566	.156	.156	.477	.205	.159	.004	.168	.168	.029	051	131	3.259	0.126	1.3	1.1	2.7	1.5	A-	A+
582	612309	7	7	570	.419	.246	.419	.291	.025	.019	.349	120	.349	095	187	1.517	0.093	0.1	1.0	1.5	1.1	A-	B-
583	612210	7	7	570	.768	.768	.061	.111	.032	.028	.460	.460	180	255	121	-0.451	0.113	-0.7	1.0	-1.2	0.9	A+	B-
584	612316	7	7	570	.670	.112	.091	.097	.670	.030	.444	168	223	137	.444	0.176	0.100	-0.5	1.0	-0.5	1.0	B-	A-
585	610265	7	N/A	572	.542	.131	.542	.112	.206	.009	.347	126	.347	107	151	0.737	0.093	1.7	1.1	1.8	1.1	A-	A+
586	610272	7	7	556	.644	.644	.110	.148	.072	.027	.507	.507	260	202	179	0.197	0.099	-2.2	0.9	-2.3	0.9	A-	A+
587	609231	7	7	553	.624	.101	.624	.159	.103	.013	.351	257	.351	059	147	0.517	0.098	2.4	1.1	2.0	1.1	A+	
588	609232	7	7	553	.664	.215	.071	.036	.664	.015	.396	164	171	258	.396	0.294	0.100	0.8	1.0	1.2	1.1	C+	
589	609152	7	7	553	.588	.074	.257	.588	.076	.005	.448	242	304	.448	054	0.723	0.096	-0.7	1.0	-0.2	1.0	A+	
590	609041	7	7	556	.558	.558	.038	.279	.121	.005	.298	.298	100	165	109	0.714	0.094	2.8	1.1	2.3	1.1	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS					5						0 - 5				Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
591	610317	7	7	554	.825	.137	.825	.022	.014	.002	.402	346	.402	142	108	-0.693	0.122	-0.9	0.9	-1.0	0.9	A-	B-
592	607984	7	N/A	554	.545	.177	.153	.545	.121	.004	.337	148	140	.337	164	0.994	0.096	2.2	1.1	2.8	1.2	A-	C+
593	610157	7	7	552	.690	.690	.105	.080	.111	.015	.363	.363	207	102	169	-0.062	0.102	0.6	1.0	2.4	1.2	A+	
594	610177	7	7	552	.400	.230	.092	.400	.261	.016	.346	238	098	.346	035	1.451	0.097	2.3	1.1	2.2	1.1	A-	
595	609224	7	N/A	552	.732	.141	.065	.732	.056	.005	.370	215	210	.370	112	-0.152	0.106	0.6	1.0	-0.2	1.0	A-	A+
596	612315	7	N/A	566	.859	.051	.037	.051	.859	.002	.428	213	254	212	.428	-1.000	0.132	-0.9	0.9	-1.4	8.0	A+	A-
597	612217	7	7	566	.876	.876	.023	.035	.034	.032	.408	.408	124	239	201	-1.494	0.156	-0.6	0.9	-0.5	0.9	A+	A-
598	610170	7	7	570	.667	.667	.023	.105	.202	.004	.349	.349	208	193	133	0.292	0.097	1.1	1.1	0.7	1.0	A-	A+
599	610171	7	7	570	.712	.125	.081	.712	.075	.007	.357	151	179	.357	164	0.017	0.102	1.0	1.1	-0.2	1.0	A+	A-
600	610173	7	7	570	.653	.146	.140	.054	.653	.007	.414	111	239	238	.414	0.364	0.097	-1.0	1.0	-0.9	0.9	A-	A-
601	610172	7	7	570	.897	.058	.030	.897	.011	.005	.366	137	244	.366	152	-1.475	0.152	0.0	1.0	-0.5	0.9	B-	A-
602	610169	7	N/A	570	.679	.028	.679	.197	.093	.004	.411	125	.411	235	197	0.224	0.098	-0.2	1.0	-0.7	1.0	A+	A-
603	612240	7	7	570	.335	.146	.335	.216	.283	.021	.344	181	.344	069	050	1.931	0.096	-0.3	1.0	1.3	1.1	A-	A+
604	610353	7	7	572	.701	.100	.701	.046	.147	.007	.239	136	.239	169	.004	-0.106	0.101	4.3	1.2	3.0	1.3	A+	A+
605	612245	7	7	572	.904	.019	.904	.037	.025	.016	.531	197	.531	271	168	-1.918	0.165	-1.2	0.9	-3.3	0.4	A+	A-
606	612317	7	7	572	.892	.892	.040	.032	.021	.016	.478	.478	207	168	181	-1.714	0.153	-1.0	0.9	-1.7	0.7	A+	A+
607	612318	7	N/A	572	.612	.612	.089	.110	.157	.032	.380	.380	211	213	.024	0.311	0.097	1.7	1.1	1.6	1.1	B-	A+
608	612266	7	7	556	.639	.639	.137	.176	.036	.013	.441	.441	149	225	211	0.284	0.098	-0.9	1.0	-0.4	1.0	B+	A-
609	610273	7	7	556	.714	.056	.115	.090	.714	.025	.394	173	168	148	.394	-0.206	0.105	0.2	1.0	1.9	1.2	A+	A+
610	609172	7	7	553	.825	.045	.016	.825	.114	.000	.351	131	207	.351	252	-0.692	0.120	-0.3	1.0	-0.4	1.0	A-	
611	609171	7	7	553	.872	.052	.872	.060	.016	.000	.400	236	.400	233	205	-1.110	0.134	-1.2	0.9	-1.9	0.7	A-	
612	615229	7	7	553	.633	.633	.174	.130	.049	.015	.457	.457	208	242	146	0.463	0.099	-0.5	1.0	-0.7	1.0	A+	
613	609233	7	N/A	553	.336	.333	.213	.103	.336	.015	.374	036	207	154	.374	1.989	0.099	0.4	1.0	3.1	1.2	A-	1
614	609658	7	7	5029	.735	.735	.102	.116	.041	.007	.443	.443	264	203	146	-0.165	0.035	-2.6	1.0	-3.2	0.9	A-	A-
615	610324	7	7	5029	.643	.199	.097	.643	.054	.007	.405	123	266	.405	186	0.361	0.033	1.5	1.0	1.7	1.0	A-	A+
616	610146	7	7	572	.909	.909	.021	.021	.042	.007	.384	.384	130	201	193	-1.901	0.163	-0.2	1.0	-0.7	0.8	A-	A+
617	607933	7	7	554	.661	.126	.024	.175	.661	.014	.402	184	213	153	.402	0.294	0.100	0.8	1.0	0.8	1.1	A+	B+
618	607936	7	7	554	.601	.051	.033	.601	.301	.014	.316	159	223	.316	090	0.616	0.097	3.8	1.2	3.3	1.2	B-	B+
619	609037	7	7	556	.856	.020	.086	.856	.034	.004	.349	228	201	.349	078	-1.134	0.130	0.1	1.0	-0.4	0.9	B-	A+
620	607939	7	7	5029	.764	.083	.764	.093	.056	.005	.419	218	.419	214	164	-0.346	0.036	-1.6	1.0	-2.1	0.9	A+	A+
621	607945	7	7	5029	.593	.593	.026	.231	.145	.006	.217	.217	186	020	140	0.629	0.032	9.9	1.2	9.9	1.3	A+	A-
622	607938	7	7	554	.731	.731	.094	.045	.114	.016	.531	.531	298	176	221	-0.129	0.107	-3.1	0.8	-2.9	0.8	A-	A+
623	610315	7	7	554	.841	.088	.034	.036	.841	.000	.379	200	196	247	.379	-0.819	0.126	-0.5	1.0	-0.9	0.9	B-	A-
624	607937	7	7	554	.928	.024	.036	.011	.928	.002	.391	240	214	171	.391	-1.893	0.176	-1.2	0.9	-2.3	0.5	A+	A-
625	607943	7	7	554	.709	.052	.709	.200	.034	.004	.293	206	.293	105	210	0.099	0.104	2.3	1.1	2.3	1.2	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

D. C	ID.	FT	PCS		DV-1	D/A)	D/D)	D(C)	D(D)	D/ \	Din'-	DT(4)	DT/D)	DT/C)	DT/D)		D 4 C E	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
626	607949	7	7	554	.811	.047	.054	.811	.085	.004	.455	258	207	.455	251	-0.591	0.119	-1.1	0.9	-2.3	0.7	A+	B-
627	607932	7	7	552	.770	.053	.103	.069	.770	.005	.381	153	250	147	.381	-0.516	0.111	0.4	1.0	-0.5	0.9	C-	
628	607940	7	7	552	.549	.089	.313	.549	.044	.005	.352	159	187	.352	121	0.729	0.095	2.3	1.1	1.2	1.1	A-	
629	607941	7	7	552	.573	.304	.063	.056	.573	.004	.557	432	185	078	.557	0.613	0.096	-4.5	0.8	-3.6	0.8	C-	
630	610158	7	7	552	.823	.054	.074	.823	.044	.005	.419	178	279	.419	142	-0.901	0.121	-0.8	0.9	-1.2	0.8	A+	
631	609220	7	7	552	.723	.091	.161	.022	.723	.004	.502	263	297	229	.502	-0.093	0.105	-1.9	0.9	-2.6	0.8	A-	A-
632	607935	7	7	552	.652	.652	.190	.054	.098	.005	.362	.362	162	209	171	0.315	0.100	1.8	1.1	0.7	1.0	A+	A+
633	607946	7	7	552	.824	.085	.038	.051	.824	.002	.428	192	243	256	.428	-0.793	0.121	-1.0	0.9	-1.1	0.9	A+	A-
634	607953	7	7	552	.944	.013	.015	.025	.944	.004	.308	043	245	187	.308	-2.296	0.198	-0.4	0.9	-1.2	0.7	A-	A+
635	612312	7	7	566	.917	.046	.009	.917	.027	.002	.323	138	146	.323	243	-1.711	0.166	-0.3	1.0	0.1	1.0	A-	A+
636	607931	7	7	566	.403	.223	.237	.134	.403	.004	.290	150	182	.020	.290	1.675	0.094	3.6	1.1	2.5	1.2	B-	A-
637	607947	7	7	566	.564	.564	.163	.129	.138	.007	.368	.368	184	078	204	0.881	0.094	1.9	1.1	2.1	1.1	A-	C-
638	609205	7	7	566	.838	.018	.113	.838	.023	.009	.440	236	254	.440	189	-0.854	0.127	-0.4	1.0	-1.3	0.8	C+	A+
639	612206	7	7	566	.763	.763	.062	.051	.099	.025	.404	.404	156	216	159	-0.364	0.113	0.9	1.1	-0.1	1.0	A+	A+
640	612319	7	7	566	.848	.090	.019	.848	.014	.028	.387	184	221	.387	162	-1.147	0.140	-0.1	1.0	0.1	1.0	A-	A-
641	610152	7	7	570	.507	.186	.507	.081	.223	.004	.127	014	.127	151	.009	1.118	0.092	8.2	1.3	6.6	1.3	A-	A-
642	607944	7	7	570	.905	.025	.042	.905	.023	.005	.426	169	245	.426	161	-1.571	0.157	-0.8	0.9	-1.9	0.7	B-	A-
643	607950	7	7	570	.883	.086	.014	.012	.883	.005	.379	238	184	076	.379	-1.322	0.144	-0.1	1.0	-0.5	0.9	A-	A-
644	609818	7	7	570	.840	.021	.097	.028	.840	.014	.519	137	298	247	.519	-0.955	0.129	-1.4	0.9	-2.4	0.7	A-	A+
645	612307	7	7	570	.793	.019	.119	.053	.793	.016	.501	185	237	243	.501	-0.556	0.116	-1.4	0.9	-1.9	0.8	A-	A+
646	610255	7	7	572	.385	.302	.198	.385	.108	.007	.265	017	112	.265	134	1.531	0.095	3.6	1.1	4.7	1.3	A+	A+
647	607951	7	7	572	.729	.231	.011	.019	.729	.011	.273	088	153	195	.273	-0.289	0.104	2.7	1.2	3.5	1.3	A+	A-
648	607952	7	7	572	.969	.007	.011	.969	.005	.009	.451	125	184	.451	130	-3.427	0.307	-0.2	0.9	-2.2	0.3	A-	A+
649	609047	7	7	572	.248	.316	.248	.308	.101	.026	.273	.073	.273	110	134	2.278	0.106	1.2	1.1	3.4	1.4	A-	A+
650	612246	7	7	572	.698	.061	.156	.056	.698	.030	.391	156	110	155	.391	-0.169	0.103	1.1	1.1	1.0	1.1	A-	A+
651	609175	7	7	556	.351	.081	.259	.302	.351	.007	.188	091	050	047	.188	1.728	0.096	4.1	1.2	6.2	1.5	A+	B-
652	609174	7	7	556	.858	.059	.041	.036	.858	.005	.426	248	224	140	.426	-1.168	0.132	-0.8	0.9	-1.9	0.7	A+	A-
653	607934	7	7	556	.795	.144	.795	.040	.018	.004	.235	078	.235	204	057	-0.617	0.114	2.2	1.2	2.8	1.3	A-	A-
654	607948	7	7	556	.166	.662	.079	.088	.166	.005	.205	.056	219	082	.205	2.892	0.120	0.6	1.0	1.9	1.3	A+	B-
655	610268	7	7	556	.838	.031	.094	.838	.018	.020	.531	256	270	.531	250	-1.100	0.130	-2.0	0.8	-3.1	0.6	A-	A-
656	612216	7	7	1109	.748	.061	.124	.748	.050	.016	.511	203	306	.511	213	-0.305	0.077	-3.2	0.9	-4.1	0.7	A+	A+
657	609166	7	7	553	.687	.259	.029	.025	.687	.000	.250	130	132	234	.250	0.206	0.101	3.6	1.2	3.0	1.3	B-	
658	607942	7	7	553	.881	.013	.083	.881	.020	.004	.379	209	255	.379	138	-1.236	0.140	-0.9	0.9	-1.1	0.8	A+	
659	607954	7	7	553	.883	.029	.022	.063	.883	.004	.365	128	201	234	.365	-1.256	0.141	-0.5	1.0	-1.4	0.8	A-	
660	609273	7	7	553	.694	.109	.694	.103	.072	.022	.402	160	.402	286	062	0.088	0.104	0.6	1.0	1.0	1.1	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS				_,_,		- 4- 3						,			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
661	614855	7	7	566	.982	.009	.002	.007	.982	.000	.231	188	113	096	.231	-3.744	0.385	-0.3	0.9	-2.3	0.2	A-	A-
662	609059	8	8	4712	.430	.107	.430	.288	.162	.013	.147	211	.147	.064	.020	1.449	0.032	9.9	1.3	9.9	1.4	A-	A+
663	607999	8	8	4712	.435	.097	.123	.327	.435	.018	.295	113	166	014	.295	1.415	0.032	8.0	1.1	9.3	1.2	A+	A-
664	609143	8	8	534	.307	.155	.212	.307	.322	.004	.120	128	057	.120	.061	2.019	0.100	3.9	1.2	3.2	1.2	A+	B+
665	609140	8	8	534	.787	.081	.064	.787	.067	.002	.409	152	264	.409	201	-0.416	0.112	-1.2	0.9	-1.6	0.9	A-	A-
666	609265	8	8	521	.781	.013	.163	.781	.029	.013	.433	224	158	.433	215	-0.487	0.117	-0.7	1.0	0.3	1.0	A-	
667	609266	8	N/A	521	.639	.144	.119	.639	.086	.012	.390	174	067	.390	181	0.371	0.100	0.2	1.0	0.4	1.0	A+	
668	609076	8	8	521	.726	.169	.067	.726	.033	.006	.404	202	165	.404	166	-0.039	0.107	-0.8	1.0	-0.1	1.0	A+	A+
669	607997	8	8	4712	.568	.568	.168	.127	.115	.023	.399	.399	127	172	110	0.755	0.033	0.8	1.0	0.6	1.0	A+	A+
670	610166	8	8	521	.422	.271	.422	.054	.205	.048	.262	.014	.262	248	.038	1.404	0.097	4.5	1.2	4.3	1.2	A-	A-
671	610186	8	8	521	.530	.111	.111	.186	.530	.061	.512	075	210	167	.512	0.837	0.099	-3.0	0.9	-2.7	0.9	A-	B-
672	610199	8	8	521	.599	.154	.075	.599	.109	.063	.505	072	230	.505	182	0.472	0.102	-2.3	0.9	-2.5	0.9	A+	B-
673	610198	8	8	521	.507	.507	.146	.104	.177	.067	.460	.460	081	232	069	0.942	0.099	-1.3	1.0	-1.1	1.0	A+	A-
674	610180	8	8	520	.896	.033	.039	.896	.029	.004	.485	254	259	.485	192	-1.452	0.154	-1.5	0.8	-3.1	0.5	B+	
675	610181	8	N/A	520	.719	.092	.719	.129	.056	.004	.483	184	.483	285	208	-0.036	0.106	-2.7	0.9	-2.8	0.8	A-	
676	610308	8	8	520	.348	.252	.146	.348	.248	.006	.138	041	087	.138	.013	1.822	0.099	4.8	1.2	5.7	1.4	A+	
677	610312	8	8	520	.308	.308	.252	.283	.089	.069	.293	.293	.011	041	065	1.958	0.104	1.3	1.1	2.4	1.2	A-	
678	609114	8	8	516	.337	.161	.355	.337	.101	.047	.252	179	.117	.252	152	1.806	0.102	3.1	1.1	3.3	1.3	B-	A-
679	609097	8	8	516	.514	.159	.114	.155	.514	.058	.504	068	254	214	.504	0.869	0.100	-2.3	0.9	-2.0	0.9	A+	B-
680	610188	8	8	516	.607	.145	.109	.607	.070	.070	.568	182	326	.568	170	0.326	0.105	-3.6	0.8	-3.0	0.8	A+	A-
681	609121	8	8	527	.884	.023	.044	.884	.042	.008	.460	161	197	.460	234	-1.292	0.148	-1.5	0.9	-2.6	0.6	A+	
682	609118	8	8	527	.666	.216	.666	.030	.078	.010	.475	307	.475	127	145	0.311	0.102	-2.0	0.9	-2.8	8.0	B-	
683	609122	8	8	527	.890	.890	.047	.034	.019	.010	.422	.422	099	233	233	-1.381	0.153	-1.0	0.9	-1.5	0.7	A+	
684	609099	8	8	527	.696	.044	.127	.696	.125	.008	.350	150	217	.350	074	0.142	0.104	0.3	1.0	-0.3	1.0	A+	
685	610163	8	8	527	.602	.602	.108	.154	.072	.065	.491	.491	222	120	235	0.452	0.103	-2.0	0.9	-1.9	0.9	A+	
686	610164	8	8	527	.550	.137	.177	.550	.072	.065	.471	119	235	.471	141	0.731	0.100	-1.4	1.0	-1.1	0.9	A+	
687	612283	8	N/A	529	.159	.779	.030	.027	.159	.006	001	.225	204	195	001	3.093	0.126	2.4	1.2	5.0	1.8	A+	
688	612281	8	8	529	.822	.059	.822	.042	.062	.015	.504	206	.504	142	236	-0.746	0.126	-1.6	0.9	-2.4	0.7	A+	
689	609062	8	8	529	.522	.151	.113	.522	.174	.040	.404	032	215	.404	079	0.971	0.097	0.5	1.0	0.6	1.0	A+	
690	610507	8	8	529	.677	.108	.062	.083	.677	.070	.531	123	214	190	.531	0.000	0.110	-1.8	0.9	-2.0	0.8	A-	
691	610506	8	8	529	.544	.544	.176	.130	.074	.076	.499	.499	167	119	125	0.747	0.100	-2.0	0.9	-1.3	0.9	A+	
692	610522	8	8	529	.425	.062	.320	.115	.425	.078	.370	194	.082	192	.370	1.359	0.099	1.8	1.1	2.3	1.1	A+	
693	610521	8	8	529	.499	.129	.142	.499	.142	.089	.501	233	151	.501	019	0.942	0.100	-2.4	0.9	-2.0	0.9	B+	
694	610537	8	8	516	.785	.074	.089	.045	.785	.008	.543	268	250	256	.543	-0.393	0.117	-2.8	0.8	-3.4	0.7	A-	
695	610538	8	8	516	.878	.037	.041	.878	.039	.006	.461	166	251	.461	229	-1.192	0.145	-1.3	0.9	-2.4	0.6	A+	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
696	610539	8	N/A	516	.680	.010	.289	.680	.016	.006	.323	220	184	.323	160	0.264	0.104	2.0	1.1	1.6	1.1	A+	
697	610213	8	8	516	.620	.159	.074	.111	.620	.037	.522	185	183	231	.522	0.487	0.102	-2.5	0.9	-2.8	0.8	A+	
698	610341	8	8	516	.475	.196	.475	.155	.111	.064	.458	040	.458	186	209	1.163	0.100	-1.0	1.0	-0.6	1.0	A+	
699	610224	8	8	516	.485	.485	.200	.165	.083	.068	.486	.486	156	181	117	1.092	0.100	-1.9	0.9	-1.8	0.9	A-	
700	610232	8	8	516	.531	.169	.128	.097	.531	.076	.474	061	182	219	.474	0.841	0.101	-0.9	1.0	-1.1	0.9	A+	
701	609829	8	N/A	516	.684	.056	.684	.072	.109	.080	.585	186	.585	305	187	-0.065	0.114	-3.3	0.8	-3.4	0.7	A-	
702	612288	8	8	521	.488	.488	.031	.432	.042	.008	.199	.199	198	.004	156	1.117	0.095	6.0	1.2	4.8	1.3	A-	
703	612289	8	8	521	.837	.025	.837	.035	.090	.013	.412	117	.412	169	153	-0.928	0.131	-0.3	1.0	0.2	1.0	A+	
704	612327	8	8	521	.758	.758	.042	.058	.127	.015	.447	.447	242	202	105	-0.338	0.113	-0.6	1.0	-1.2	0.9	A-	
705	612285	8	8	521	.480	.140	.148	.211	.480	.021	.480	234	196	048	.480	1.133	0.096	-3.6	0.9	-2.8	0.9	B+	
706	612286	8	8	521	.772	.075	.058	.772	.073	.023	.508	185	211	.508	175	-0.470	0.117	-1.6	0.9	-2.1	0.8	B+	
707	610543	8	8	521	.561	.052	.561	.171	.192	.025	.472	178	.472	185	137	0.729	0.097	-2.2	0.9	-2.0	0.9	B+	
708	610544	8	8	521	.729	.125	.046	.063	.729	.037	.575	211	215	257	.575	-0.251	0.112	-3.3	0.8	-3.7	0.7	A+	
709	610545	8	8	521	.495	.134	.240	.495	.090	.040	.349	091	065	.349	133	1.012	0.097	1.6	1.1	2.9	1.2	A-	
710	612334	8	8	521	.353	.255	.267	.353	.073	.052	.257	010	.021	.257	197	1.704	0.100	3.2	1.1	3.2	1.2	A-	
711	615618	8	8	528	.856	.032	.057	.053	.856	.002	.436	195	203	273	.436	-0.911	0.133	-1.4	0.9	-2.2	0.7	A+	
712	615614	8	8	528	.748	.059	.070	.119	.748	.004	.523	279	244	253	.523	-0.100	0.110	-2.4	0.9	-3.0	0.8	A-	
713	615615	8	N/A	528	.314	.025	.314	.612	.046	.004	.068	123	.068	.071	144	2.176	0.102	6.9	1.3	6.7	1.6	A-	
714	612295	8	8	528	.852	.852	.046	.044	.055	.004	.561	.561	205	311	333	-0.893	0.133	-2.8	0.8	-3.9	0.5	A-	
715	612296	8	8	528	.794	.044	.097	.794	.063	.004	.456	202	311	.456	142	-0.411	0.117	-1.2	0.9	-1.7	0.8	A-	
716	612220	8	8	1062	.694	.082	.133	.694	.049	.042	.498	159	250	.498	226	0.026	0.076	-2.4	0.9	-3.2	0.8	A+	A-
717	612276	8	8	528	.542	.117	.144	.165	.542	.032	.520	246	226	123	.520	0.964	0.098	-2.3	0.9	-2.0	0.9	A+	
718	612275	8	8	528	.623	.100	.089	.623	.150	.038	.434	201	145	.434	137	0.516	0.102	0.8	1.0	0.2	1.0	A+	
719	612277	8	8	528	.580	.146	.580	.153	.078	.044	.460	110	.460	122	301	0.736	0.101	0.0	1.0	-0.1	1.0	A+	
720	610332	8	8	528	.703	.102	.059	.703	.083	.053	.593	226	230	.593	314	-0.030	0.112	-3.5	0.8	-3.9	0.7	A+	
721	610314	8	N/A	528	.705	.034	.055	.152	.705	.055	.571	227	246	283	.571	-0.052	0.112	-2.8	0.9	-3.6	0.7	A+	
722	612331	8	N/A	534	.828	.015	.079	.828	.073	.006	.368	188	287	.368	095	-0.740	0.123	-0.5	1.0	-0.8	0.9	A+	A-
723	612242	8	8	534	.781	.047	.781	.140	.024	.008	.458	283	.458	195	253	-0.405	0.113	-1.6	0.9	-1.7	0.9	A-	B-
724	612243	8	8	534	.661	.056	.077	.202	.661	.004	.452	156	212	259	.452	0.309	0.098	-2.1	0.9	-2.1	0.9	A+	A-
725	612333	8	8	534	.524	.311	.524	.111	.051	.004	.320	099	.320	146	232	0.971	0.093	1.7	1.1	1.5	1.1	A+	A+
726	611455	8	8	534	.710	.060	.133	.075	.710	.023	.551	277	222	250	.551	-0.030	0.105	-3.4	0.8	-3.8	0.7	A+	A+
727	611456	8	8	534	.517	.333	.079	.517	.047	.024	.223	.116	232	.223	279	0.956	0.094	4.9	1.2	4.4	1.2	A+	A+
728	612305	8	8	534	.581	.200	.109	.069	.581	.041	.564	220	219	249	.564	0.604	0.097	-5.1	0.8	-4.6	0.8	A+	A-
729	612304	8	8	534	.277	.277	.185	.305	.184	.049	.222	.222	117	.006	.005	2.108	0.103	1.5	1.1	4.0	1.3	A-	A-
730	612301	8	8	534	.195	.303	.358	.195	.086	.058	.240	.022	.079	.240	296	2.615	0.115	0.1	1.0	3.1	1.4	A+	B+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D/A)	D/D\	D(C)	D/D)	D/ \	PtBis	PT(A)	PT(B)	PT(C)	DT/D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID	Grade	Grade	IN	PVai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PT(A)	PI(D)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
731	612279	8	8	520	.627	.065	.173	.627	.129	.006	.334	114	105	.334	211	0.461	0.099	0.7	1.0	0.4	1.0	A-	
732	609245	8	8	529	.667	.023	.032	.667	.268	.010	.257	160	168	.257	060	0.291	0.101	3.1	1.2	3.2	1.2	A+	
733	609252	8	N/A	529	.741	.741	.034	.195	.021	.010	.319	.319	208	109	126	-0.140	0.109	1.0	1.1	1.5	1.1	A+	
734	608016	8	8	4712	.722	.722	.146	.052	.064	.017	.505	.505	222	260	163	-0.061	0.036	-6.7	0.9	-7.2	0.8	A-	C-
735	609267	8	8	521	.503	.284	.050	.148	.503	.015	.330	034	226	111	.330	1.035	0.096	2.0	1.1	1.8	1.1	A+	
736	609269	8	N/A	521	.513	.213	.513	.106	.156	.013	.430	290	.430	091	025	0.993	0.096	-1.6	1.0	-1.1	1.0	A+	
737	609153	8	N/A	521	.493	.142	.493	.140	.217	.008	.253	100	.253	154	004	1.149	0.095	3.3	1.1	3.3	1.2	A+	A+
738	607996	8	8	4712	.813	.104	.813	.037	.026	.020	.500	218	.500	237	185	-0.718	0.042	-4.4	0.9	-6.7	0.8	A+	A-
739	610167	8	8	521	.555	.555	.117	.161	.119	.048	.356	.356	138	016	100	0.746	0.099	1.4	1.1	1.5	1.1	A-	A+
740	610168	8	N/A	521	.660	.134	.060	.096	.660	.050	.504	223	251	027	.504	0.170	0.105	-2.0	0.9	-1.9	0.9	A+	A-
741	610182	8	8	520	.937	.937	.025	.017	.017	.004	.471	.471	248	225	199	-2.065	0.192	-1.4	0.8	-2.8	0.4	A+	
742	610183	8	N/A	520	.698	.154	.106	.037	.698	.006	.453	252	178	226	.453	0.078	0.104	-1.5	0.9	-2.0	0.9	A+	
743	610313	8	N/A	520	.367	.129	.194	.240	.367	.069	.305	067	023	030	.305	1.635	0.100	2.3	1.1	3.2	1.2	A+	
744	609212	8	8	516	.446	.446	.306	.105	.140	.004	.260	.260	026	087	219	1.336	0.097	3.2	1.1	4.0	1.2	A+	A+
745	609213	8	8	516	.291	.205	.384	.118	.291	.002	.210	109	025	088	.210	2.132	0.104	2.4	1.1	3.1	1.3	A-	A-
746	609214	8	8	516	.601	.049	.049	.300	.601	.002	.434	223	210	237	.434	0.585	0.098	-1.0	1.0	-1.1	0.9	A-	A+
747	609117	8	8	516	.746	.062	.093	.746	.056	.043	.566	254	231	.566	235	-0.421	0.117	-2.8	0.8	-3.4	0.7	A+	A-
748	609100	8	8	527	.463	.463	.177	.190	.161	.010	.336	.336	118	118	107	1.329	0.096	1.1	1.0	1.4	1.1	B+	
749	609180	8	8	527	.843	.843	.034	.065	.049	.010	.460	.460	212	164	230	-0.882	0.131	-1.6	0.9	-2.5	0.7	A+	
750	610529	8	N/A	529	.698	.096	.698	.076	.051	.079	.573	154	.573	233	190	-0.180	0.114	-2.5	0.9	-3.3	0.7	A+	
751	610523	8	8	529	.643	.643	.087	.106	.085	.079	.650	.650	182	234	264	0.176	0.107	-5.5	0.8	-5.8	0.6	A-	
752	609218	8	8	529	.448	.174	.130	.448	.146	.102	.343	037	017	.343	107	1.172	0.100	2.8	1.1	3.4	1.2	A+	
753	609261	8	8	529	.645	.645	.183	.044	.025	.104	.369	.369	.027	218	196	0.042	0.111	1.7	1.1	2.7	1.2	A-	
754	609217	8	8	529	.378	.310	.151	.378	.055	.106	.360	.010	062	.360	186	1.537	0.101	1.6	1.1	1.8	1.1	A-	
755	610540	8	8	516	.702	.702	.138	.047	.109	.006	.444	.444	186	317	148	0.143	0.106	-0.8	1.0	-1.1	0.9	A+	
756	610541	8	N/A	516	.603	.176	.056	.159	.603	.006	.416	106	176	265	.416	0.675	0.099	-0.8	1.0	-0.5	1.0	A+	
757	610214	8	8	516	.758	.758	.105	.045	.062	.031	.508	.508	243	180	179	-0.325	0.117	-1.7	0.9	-1.7	8.0	A+	
758	609832	8	8	516	.717	.132	.031	.717	.043	.078	.539	166	264	.539	239	-0.285	0.119	-2.1	0.9	-2.0	8.0	A-	
759	609853	8	N/A	516	.580	.070	.114	.155	.580	.081	.492	113	236	130	.492	0.562	0.104	-1.4	0.9	-0.8	1.0	A+	
760	610546	8	8	521	.758	.081	.100	.758	.029	.033	.583	266	294	.583	081	-0.427	0.116	-3.3	0.8	-3.6	0.7	A+	
761	610547	8	N/A	521	.424	.424	.271	.077	.194	.035	.304	.304	.027	274	033	1.374	0.097	3.0	1.1	1.6	1.1	A+	
762	615616	8	8	528	.314	.316	.292	.314	.072	.006	.155	114	.089	.155	154	2.175	0.102	4.8	1.2	5.6	1.5	A+	
763	615617	8	N/A	528	.769	.059	.769	.121	.047	.004	.424	238	.424	133	292	-0.238	0.113	-0.5	1.0	-0.6	0.9	A+	
764	612219	8	8	1062	.581	.581	.075	.215	.091	.038	.486	.486	189	251	125	0.671	0.070	-2.4	0.9	-3.0	0.9	A+	A-
765	612218	8	N/A	1062	.491	.164	.246	.491	.061	.039	.421	204	077	.421	217	1.122	0.068	-0.5	1.0	-0.3	1.0	A-	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\	•	(-)	/->	(-)	(-)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
766	610334	8	N/A	528	.284	.284	.123	.267	.273	.053	.171	.171	180	065	.166	2.277	0.105	4.6	1.2	5.2	1.5	A+	
767	611457	8	8	534	.545	.545	.079	.187	.167	.023	.325	.325	222	067	088	0.827	0.094	2.0	1.1	1.7	1.1	A+	A-
768	609254	8	8	529	.469	.299	.053	.469	.170	.010	.339	025	214	.339	183	1.282	0.095	1.6	1.1	1.9	1.1	A-	
769	609279	8	8	529	.677	.132	.095	.085	.677	.011	.367	116	171	142	.367	0.244	0.102	0.8	1.0	0.6	1.0	A-	
770	609060	8	8	4712	.700	.139	.700	.122	.026	.013	.437	165	.437	217	185	0.085	0.035	-2.4	1.0	-3.2	0.9	A+	A-
771	609135	8	8	534	.251	.251	.234	.461	.051	.004	.160	.160	125	026	.051	2.334	0.106	2.1	1.1	3.8	1.4	A-	A+
772	609131	8	8	534	.916	.039	.011	.032	.916	.002	.461	235	198	285	.461	-1.624	0.163	-1.6	0.8	-2.8	0.6	A+	A+
773	609125	8	8	527	.763	.082	.087	.059	.763	.010	.489	248	217	202	.489	-0.275	0.112	-2.7	0.9	-2.8	0.8	A+	
774	610165	8	8	527	.579	.116	.171	.074	.579	.061	.513	233	165	187	.513	0.590	0.101	-2.6	0.9	-2.3	0.9	A-	
775	612284	8	8	529	.745	.745	.142	.062	.045	.006	.444	.444	179	309	147	-0.152	0.109	-1.7	0.9	-1.3	0.9	B-	
776	612983	8	8	529	.828	.091	.023	.828	.053	.006	.455	205	209	.455	245	-0.753	0.126	-1.3	0.9	-1.2	0.9	A+	
777	610228	8	8	516	.438	.275	.167	.438	.056	.064	.387	034	124	.387	221	1.342	0.100	1.0	1.0	1.1	1.1	A-	
778	612328	8	8	521	.407	.025	.407	.505	.050	.013	.207	215	.207	.084	236	1.500	0.097	4.8	1.2	4.5	1.3	A-	
779	612332	8	8	528	.462	.241	.091	.203	.462	.004	.439	229	205	112	.439	1.421	0.096	-0.9	1.0	0.4	1.0	A+	
780	612278	8	8	528	.761	.072	.072	.059	.761	.036	.584	233	240	289	.584	-0.344	0.118	-2.9	0.8	-3.1	0.7	B+	
781	612302	8	8	534	.418	.049	.090	.412	.418	.032	.361	226	198	041	.361	1.415	0.095	0.4	1.0	1.0	1.0	A-	A-
782	610087	8	8	516	.928	.021	.033	.928	.014	.004	.362	159	194	.362	214	-1.882	0.184	-0.7	0.9	-2.3	0.5	A+	<u> </u>
783	610260	8	8	516	.888	.012	.035	.058	.888	.008	.372	157	142	246	.372	-1.347	0.153	-0.8	0.9	-1.0	0.8	A+	
784	610090	8	8	516	.723	.107	.723	.037	.130	.004	.338	198	.338	193	104	0.018	0.108	1.1	1.1	1.6	1.1	A-	
785	610089	8	8	516	.684	.684	.173	.062	.076	.006	.337	.337	082	194	202	0.243	0.104	1.5	1.1	1.4	1.1	A-	
786	610088	8	8	516	.543	.109	.233	.543	.109	.008	.350	143	162	.350	113	0.959	0.097	1.2	1.0	2.1	1.1	A-	
787	609120	8	8	534	.622	.064	.622	.090	.223	.002	.424	205	.424	216	197	0.511	0.096	-2.0	0.9	-1.9	0.9	A-	A-
788	607998	8	8	4712	.628	.056	.243	.052	.628	.021	.337	165	046	223	.337	0.449	0.033	5.7	1.1	5.9	1.1	A+	A-
789	610184	8	8	521	.401	.259	.132	.401	.140	.067	.301	.064	153	.301	056	1.476	0.099	2.3	1.1	2.5	1.1	A-	A+
790	610197	8	8	521	.518	.294	.056	.518	.061	.071	.370	006	158	.370	158	0.879	0.099	1.4	1.1	1.8	1.1	A+	A+
791	609112	8	N/A	516	.479	.112	.186	.171	.479	.052	.532	242	207	114	.532	1.062	0.099	-4.0	0.9	-3.5	0.8	A+	A-
792	609096	8	8	516	.488	.080	.488	.269	.109	.054	.336	274	.336	.019	108	1.011	0.099	2.5	1.1	3.5	1.2	A-	A+
793	610189	8	N/A	516	.459	.087	.221	.167	.459	.066	.431	213	054	170	.431	1.124	0.100	-0.3	1.0	0.8	1.0	B+	A+
794	609130	8	8	527	.509	.042	.287	.509	.156	.008	.126	086	.107	.126	159	1.114	0.096	7.8	1.3	8.3	1.4	A-	
795	612282	8	8	529	.501	.121	.093	.274	.501	.011	.400	156	159	125	.400	1.127	0.095	0.0	1.0	0.3	1.0	A+	
796	609063	8	8	529	.216	.340	.216	.217	.185	.042	.231	.068	.231	062	023	2.612	0.113	1.2	1.1	3.3	1.4	A+	
797	610223	8	8	516	.481	.064	.481	.171	.233	.052	.294	109	.294	197	.072	1.168	0.099	4.6	1.2	3.9	1.2	A+	
798	612290	8	8	521	.843	.006	.106	.040	.843	.006	.438	096	245	242	.438	-0.931	0.131	-0.9	0.9	-1.6	0.8	A+	
799	612287	8	8	521	.461	.261	.069	.461	.188	.021	.389	153	115	.389	073	1.225	0.096	-0.1	1.0	0.2	1.0	A+	
800	612292	8	N/A	521	.407	.407	.144	.138	.261	.050	.357	.357	178	204	.076	1.430	0.098	0.6	1.0	1.7	1.1	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D/A\	D/D)	D(C)	D/D/	D/ \	D+D:a	DT/A\	DT/D\	DT/C)	DT/D)	Mans	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID	Grade	Grade	IN	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
801	612297	8	8	528	.364	.254	.127	.364	.252	.004	.278	099	191	.278	023	1.914	0.099	2.6	1.1	3.7	1.3	A+	1
802	612322	8	8	528	.436	.436	.258	.129	.136	.042	.398	.398	.000	182	214	1.486	0.098	1.1	1.0	1.0	1.1	A+	1
803	612303	8	8	534	.790	.105	.032	.041	.790	.032	.446	135	264	205	.446	-0.611	0.120	-1.0	0.9	-0.3	1.0	A-	A-
804	612324	8	8	520	.598	.083	.598	.092	.219	.008	.336	241	.336	267	.014	0.604	0.098	0.6	1.0	0.9	1.1	A-	
805	612280	8	8	520	.679	.100	.679	.054	.162	.006	.451	115	.451	256	259	0.186	0.102	-1.7	0.9	-2.2	0.9	A+	
806	608017	8	8	4712	.755	.047	.080	.103	.755	.015	.477	152	209	226	.477	-0.263	0.037	-4.7	0.9	-6.2	0.8	A+	A-
807	609264	8	8	521	.856	.031	.856	.065	.033	.015	.393	098	.393	123	169	-1.126	0.139	0.4	1.0	-0.5	0.9	A+	
808	609136	8	8	521	.756	.052	.086	.098	.756	.008	.292	119	074	157	.292	-0.241	0.111	1.0	1.1	1.1	1.1	A+	A+
809	607955	8	8	4712	.362	.137	.362	.271	.216	.014	.285	114	.285	025	120	1.784	0.033	5.4	1.1	9.3	1.2	A-	A+
810	607973	8	8	4712	.754	.754	.028	.200	.009	.009	.319	.319	236	128	117	-0.233	0.037	3.4	1.1	4.7	1.2	A+	A+
811	607966	8	8	521	.797	.071	.797	.038	.052	.042	.572	237	.572	220	186	-0.736	0.127	-2.2	0.8	-3.2	0.7	A-	B-
812	610349	8	8	521	.791	.791	.042	.058	.052	.058	.493	.493	166	207	092	-0.789	0.130	-0.9	0.9	-1.2	0.8	A+	A-
813	610179	8	8	520	.300	.300	.358	.108	.227	.008	.292	.292	088	224	.000	2.073	0.103	0.4	1.0	0.6	1.1	A-	
814	607965	8	8	520	.864	.864	.054	.042	.033	.008	.467	.467	201	245	207	-1.115	0.138	-1.3	0.9	-2.4	0.7	A-	
815	610311	8	8	520	.698	.046	.127	.698	.060	.069	.607	256	233	.607	189	-0.165	0.113	-3.2	0.8	-3.7	0.7	A+	
816	607959	8	8	516	.733	.126	.039	.733	.072	.031	.404	213	193	.404	081	-0.269	0.113	0.4	1.0	0.5	1.1	A-	A-
817	607964	8	8	516	.754	.754	.103	.080	.033	.031	.488	.488	200	245	153	-0.408	0.116	-0.8	1.0	-1.0	0.9	A+	A-
818	607969	8	8	516	.785	.041	.087	.785	.056	.031	.526	178	297	.526	177	-0.638	0.123	-1.5	0.9	-2.0	0.8	A+	A-
819	609095	8	8	516	.678	.678	.060	.126	.095	.041	.502	.502	301	113	212	0.031	0.108	-1.8	0.9	-1.2	0.9	A-	B-
820	610187	8	8	516	.533	.533	.244	.097	.066	.060	.397	.397	011	143	333	0.761	0.100	0.6	1.0	0.1	1.0	A+	A+
821	609115	8	8	527	.909	.042	.011	.032	.909	.006	.391	239	150	119	.391	-1.585	0.164	-0.6	0.9	-2.0	0.6	A-	
822	607960	8	8	527	.970	.013	.004	.970	.006	.008	.398	141	092	.398	142	-3.127	0.307	-0.1	0.9	-1.7	0.4	A+	
823	607961	8	8	527	.662	.112	.030	.188	.662	.008	.331	210	213	046	.331	0.335	0.101	0.8	1.0	0.1	1.0	A+	
824	607967	8	8	527	.573	.362	.029	.029	.573	.008	.463	265	185	213	.463	0.795	0.097	-2.1	0.9	-2.4	0.9	A-	
825	612325	8	8	529	.847	.847	.036	.087	.017	.013	.501	.501	218	257	141	-0.960	0.134	-1.7	0.9	-2.5	0.7	A+	
826	607956	8	8	529	.737	.059	.100	.737	.083	.021	.397	072	180	.397	153	-0.157	0.110	0.6	1.0	-0.4	1.0	B-	l
827	607978	8	8	529	.909	.019	.909	.032	.025	.015	.520	206	.520	214	159	-1.689	0.171	-1.2	0.9	-2.9	0.5	B+	
828	609061	8	8	529	.790	.790	.061	.066	.047	.036	.584	.584	170	273	205	-0.616	0.123	-2.6	0.8	-3.1	0.7	B+	
829	610536	8	8	516	.775	.775	.124	.070	.025	.006	.389	.389	250	124	141	-0.319	0.115	-0.2	1.0	-0.3	1.0	A+	
830	607972	8	8	516	.459	.190	.459	.118	.223	.010	.323	125	.323	110	115	1.369	0.097	2.2	1.1	1.7	1.1	A+	
831	607975	8	8	516	.771	.103	.072	.049	.771	.006	.424	218	150	219	.424	-0.292	0.114	-0.9	0.9	-0.6	0.9	A-	
832	610212	8	8	516	.830	.016	.016	.830	.114	.025	.461	111	189	.461	244	-0.861	0.133	-0.8	0.9	-1.2	8.0	A-	
833	610227	8	8	516	.673	.093	.047	.673	.143	.045	.435	101	264	.435	125	0.168	0.107	0.5	1.0	-0.3	1.0	A-	
834	612326	8	8	521	.799	.180	.008	.799	.008	.006	.393	247	233	.393	146	-0.587	0.119	-0.2	1.0	-0.2	1.0	A-	
835	607971	8	8	521	.259	.115	.313	.259	.298	.015	.244	135	044	.244	.029	2.278	0.106	0.9	1.1	2.8	1.3	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D/A\	D/D\	D(C)	D/D)	D/ \	PtBis	PT(A)	PT(B)	PT(C)	DT/D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID	Grade	Grade	IN	PVdI	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PI(B)	PI(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
836	607977	8	8	521	.822	.822	.054	.079	.033	.013	.543	.543	213	272	156	-0.796	0.126	-2.1	0.9	-2.6	0.7	A-	
837	610542	8	8	521	.850	.035	.056	.035	.850	.025	.569	225	247	188	.569	-1.150	0.140	-2.0	0.8	-3.3	0.6	A-	
838	612291	8	8	521	.234	.100	.499	.125	.234	.042	.228	032	.154	267	.228	2.396	0.110	1.3	1.1	2.4	1.3	A-	
839	615613	8	8	528	.860	.047	.860	.068	.023	.002	.312	192	.312	160	115	-0.947	0.135	0.5	1.0	0.0	1.0	A+	
840	612330	8	8	528	.864	.864	.089	.023	.021	.004	.461	.461	254	291	178	-1.002	0.137	-1.3	0.9	-1.5	0.8	A+	
841	607970	8	8	528	.648	.267	.648	.059	.021	.006	.473	288	.473	262	098	0.483	0.101	-1.0	1.0	-1.4	0.9	A+	
842	607974	8	8	528	.737	.053	.047	.737	.157	.006	.524	272	243	.524	263	-0.033	0.109	-2.1	0.9	-2.9	0.8	A+	
843	612321	8	8	528	.867	.867	.047	.038	.023	.025	.482	.482	210	241	177	-1.231	0.149	-1.1	0.9	-1.9	0.7	A+	
844	612329	8	8	534	.493	.219	.243	.493	.043	.002	.174	.060	162	.174	151	1.121	0.093	5.1	1.2	5.2	1.2	A-	A-
845	612241	8	8	534	.852	.852	.086	.043	.017	.002	.387	.387	263	180	121	-0.938	0.129	-0.8	0.9	-1.9	0.8	A-	A-
846	607968	8	8	534	.869	.034	.869	.062	.030	.006	.309	223	.309	139	077	-1.109	0.137	0.2	1.0	-0.1	1.0	A-	A-
847	607976	8	8	534	.684	.684	.077	.154	.081	.006	.311	.311	132	157	119	0.187	0.100	1.1	1.1	0.6	1.0	A+	A-
848	612323	8	8	534	.611	.611	.155	.152	.051	.032	.448	.448	120	201	229	0.480	0.098	-1.4	1.0	-1.4	0.9	A+	A-
849	607957	8	8	521	.699	.067	.699	.071	.127	.037	.440	162	.440	182	101	-0.011	0.108	-0.3	1.0	-1.2	0.9	A+	A-
850	607963	8	8	521	.658	.144	.083	.658	.077	.038	.413	027	188	.413	194	0.219	0.104	-0.3	1.0	-0.6	1.0	A-	A+
851	607958	8	8	520	.608	.106	.208	.071	.608	.008	.360	128	164	170	.360	0.556	0.098	1.1	1.0	0.2	1.0	B-	
852	607962	8	8	520	.781	.025	.781	.112	.075	.008	.324	218	.324	186	037	-0.433	0.115	0.4	1.0	1.4	1.2	A+	
853	609244	8	8	529	.556	.193	.556	.185	.061	.006	.372	133	.372	219	085	0.881	0.096	0.2	1.0	-0.2	1.0	B-	
854	608136	Lit	Lit	261	.782	.031	.782	.138	.042	.008	.308	184	.308	117	111	-0.387	0.168	1.8	1.2	0.9	1.2	A+	
855	608137	Lit	Lit	261	.728	.081	.134	.728	.042	.015	.478	165	224	.478	242	-0.063	0.159	-0.8	0.9	0.1	1.0	A-	
856	614030	Lit	Lit	271	.897	.055	.897	.030	.019	.000	.395	313	.395	176	141	-1.301	0.208	-0.9	0.9	-1.9	0.6	A+	
857	614031	Lit	Lit	271	.565	.144	.218	.565	.074	.000	.131	138	.038	.131	123	0.893	0.135	4.5	1.3	4.8	1.4	A-	
858	610092	Lit	Lit	263	.677	.053	.171	.099	.677	.000	.529	182	295	320	.529	0.264	0.147	-2.1	0.9	-2.3	0.8	A-	
859	610091	Lit	Lit	263	.635	.255	.027	.635	.080	.004	.146	.081	142	.146	262	0.507	0.143	4.6	1.3	4.7	1.5	A+	
860	612498	Lit	Lit	262	.359	.294	.359	.218	.122	.008	.310	.080	.310	187	225	1.935	0.140	1.1	1.1	1.8	1.2	A+	
861	612548	Lit	Lit	262	.622	.076	.168	.622	.126	.008	.356	170	130	.356	136	0.634	0.141	1.1	1.1	0.9	1.1	A+	
862	612496	Lit	Lit	262	.687	.687	.092	.115	.099	.008	.390	.390	212	174	101	0.303	0.147	0.2	1.0	0.0	1.0	A+	
863	616077	Lit	Lit	3947	.768	.768	.089	.067	.053	.022	.555	.555	277	228	183	-0.375	0.043	-6.9	0.9	-8.6	0.7	A+	A+
864	610282	Lit	Lit	3947	.688	.061	.688	.136	.090	.025	.561	243	.561	243	201	0.132	0.039	-8.3	0.9	-9.3	0.8	A+	A+
865	612495	Lit	Lit	258	.655	.655	.081	.136	.101	.027	.527	.527	131	246	276	0.275	0.150	-1.2	0.9	-0.6	0.9	A-	
866	612560	Lit	Lit	258	.465	.190	.465	.194	.120	.031	.352	115	.352	078	157	1.285	0.143	2.6	1.2	2.3	1.2	A+	
867	612561	Lit	Lit	258	.516	.202	.078	.516	.178	.027	.281	087	106	.281	077	1.037	0.143	4.4	1.3	3.9	1.4	A-	
868	612559	Lit	Lit	258	.678	.093	.062	.678	.124	.043	.520	191	268	.520	210	0.061	0.155	-1.4	0.9	-1.5	0.8	A+	
869	610229	Lit	Lit	258	.488	.229	.112	.488	.120	.050	.351	.091	288	.351	191	1.114	0.145	2.4	1.1	2.6	1.2	A+	
870	610307	Lit	Lit	258	.283	.283	.244	.221	.198	.054	.394	.394	151	090	028	2.288	0.158	0.7	1.1	0.7	1.1	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

D-f	I.D.	FT	PCS		D) /- I	D/A)	D/D)	D(C)	D(D)	D/ \	Din'-	DT/A)	DT/D)	DT/C)	DT/D)		D 4 C E	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
871	610253	Lit	Lit	525	.446	.213	.215	.101	.446	.025	.361	045	090	242	.361	1.487	0.099	2.1	1.1	3.4	1.2	B-	
872	612530	Lit	Lit	263	.608	.103	.164	.091	.608	.034	.680	298	326	159	.680	0.619	0.145	-4.4	0.8	-4.1	0.7	A-	
873	612573	Lit	Lit	262	.595	.130	.595	.118	.149	.008	.434	069	.434	297	229	0.759	0.141	-1.4	0.9	-1.3	0.9	B-	
874	612574	Lit	Lit	262	.695	.095	.076	.695	.126	.008	.553	258	385	.553	183	0.196	0.151	-1.6	0.9	-1.8	0.8	A-	
875	612576	Lit	Lit	262	.790	.076	.061	.069	.790	.004	.599	337	304	273	.599	-0.421	0.169	-2.3	0.8	-2.7	0.6	B-	
876	612558	Lit	Lit	262	.489	.336	.027	.134	.489	.015	.368	170	215	079	.368	1.276	0.138	1.6	1.1	2.2	1.2	B-	
877	616076	Lit	Lit	262	.481	.126	.481	.122	.206	.065	.419	096	.419	252	.002	1.224	0.141	0.5	1.0	0.4	1.0	A+	
878	610233	Lit	Lit	523	.390	.044	.317	.390	.191	.057	.302	202	.041	.302	069	1.735	0.102	4.5	1.2	6.2	1.5	A-	
879	610234	Lit	Lit	523	.480	.134	.191	.136	.480	.059	.466	198	092	091	.466	1.246	0.101	0.3	1.0	1.1	1.1	A+	
880	608134	Lit	Lit	264	.447	.466	.027	.057	.447	.004	.210	002	208	219	.210	1.357	0.137	4.0	1.2	3.8	1.3	B+	
881	609098	Lit	Lit	264	.424	.201	.140	.224	.424	.011	.430	.017	279	219	.430	1.459	0.138	-0.4	1.0	0.4	1.0	A-	
882	616073	Lit	Lit	264	.602	.250	.602	.061	.068	.019	.363	030	.363	301	243	0.544	0.141	1.3	1.1	0.8	1.1	A-	
883	616075	Lit	Lit	264	.530	.083	.197	.530	.159	.030	.505	296	249	.505	051	0.884	0.139	-1.5	0.9	-1.4	0.9	A+	
884	610218	Lit	Lit	264	.511	.163	.511	.144	.140	.042	.548	127	.548	254	218	0.956	0.139	-2.6	0.9	-2.2	0.9	A-	
885	610215	Lit	Lit	264	.583	.125	.133	.117	.583	.042	.611	265	266	192	.611	0.581	0.142	-3.8	8.0	-3.6	0.7	A+	
886	610247	Lit	Lit	264	.428	.428	.265	.110	.148	.049	.419	.419	062	294	090	1.353	0.140	0.2	1.0	0.2	1.0	A+	
887	616066	Lit	Lit	261	.705	.077	.142	.065	.705	.012	.531	286	228	175	.531	0.105	0.155	-2.2	8.0	-1.1	0.9	A-	
888	610296	Lit	Lit	261	.625	.058	.107	.625	.199	.012	.367	165	222	.367	067	0.581	0.147	2.1	1.1	1.5	1.2	A+	
889	610295	Lit	Lit	261	.755	.146	.050	.038	.755	.012	.537	216	290	251	.537	-0.222	0.163	-1.9	0.9	-1.4	0.8	A-	
890	608131	Lit	Lit	261	.444	.444	.061	.268	.207	.019	.444	.444	307	050	161	1.534	0.143	1.0	1.1	1.3	1.1	A-	
891	616068	Lit	Lit	261	.529	.268	.529	.088	.073	.042	.428	077	.428	203	110	1.038	0.145	2.0	1.1	2.0	1.2	A-	
892	610120	Lit	Lit	261	.659	.103	.659	.073	.111	.054	.575	145	.575	227	245	0.220	0.156	-1.7	0.9	-1.6	0.8	A-	
893	609253	Lit	Lit	263	.639	.224	.639	.088	.042	.008	.284	177	.284	054	097	0.511	0.140	0.9	1.1	0.9	1.1	A-	
894	609109	Lit	Lit	263	.179	.281	.240	.179	.293	.008	.056	040	.025	.056	.054	2.923	0.168	1.6	1.2	3.5	1.7	A-	
895	609107	Lit	Lit	263	.559	.068	.281	.080	.559	.011	.359	145	062	256	.359	0.893	0.135	0.5	1.0	0.1	1.0	A+	
896	609105	Lit	Lit	263	.578	.023	.300	.088	.578	.011	.341	222	118	129	.341	0.801	0.136	8.0	1.0	0.6	1.0	A+	
897	612487	Lit	Lit	263	.654	.654	.156	.129	.049	.011	.412	.412	187	208	063	0.418	0.141	-0.5	1.0	-0.5	1.0	B-	
898	612488	Lit	Lit	263	.681	.122	.681	.095	.084	.019	.447	150	.447	127	267	0.242	0.145	-1.2	0.9	-1.0	0.9	A-	
899	612503	Lit	Lit	263	.327	.145	.327	.395	.118	.015	.248	115	.248	.060	168	2.010	0.141	1.7	1.1	1.6	1.1	A-	
900	612502	Lit	Lit	263	.761	.129	.042	.761	.057	.011	.467	222	184	.467	187	-0.201	0.157	-1.3	0.9	-1.4	0.8	A+	
901	609113	Lit	Lit	263	.369	.300	.221	.084	.369	.027	.299	.119	239	150	.299	1.774	0.138	1.0	1.1	1.3	1.1	B+	
902	609156	Lit	Lit	263	.384	.183	.384	.175	.232	.027	.345	094	.345	146	036	1.693	0.137	0.6	1.0	0.5	1.0	B-	
903	609158	Lit	Lit	263	.586	.095	.167	.126	.586	.027	.589	223	265	197	.589	0.711	0.138	-4.2	0.8	-3.7	0.8	A+	
904	616072	Lit	Lit	263	.551	.179	.095	.551	.145	.030	.399	103	213	.399	092	0.873	0.137	0.2	1.0	0.2	1.0	A-	
905	609160	Lit	Lit	263	.422	.422	.209	.141	.194	.034	.368	.368	205	064	025	1.495	0.136	0.2	1.0	0.8	1.1	A+	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
i.c.	1.5	Grade	Grade		1 741	' (~)	. (5)	. (0)	. (5)	. ()	1 (513	1 1(///)	(5)	(0)	(5)	ivicus	IVIOL	in	in	out	out	/F	/B
906	612568	Lit	Lit	263	.506	.506	.099	.179	.183	.034	.453	.453	140	187	121	1.088	0.136	-1.3	0.9	-1.2	0.9	C-	
907	612546	Lit	Lit	262	.863	.038	.027	.069	.863	.004	.535	217	287	295	.535	-1.001	0.198	-1.2	0.9	-2.0	0.6	A-	
908	612492	Lit	Lit	262	.882	.019	.882	.084	.012	.004	.408	181	.408	247	158	-1.166	0.209	-0.6	0.9	-0.6	0.9	A+	
909	612493	Lit	Lit	262	.649	.073	.137	.134	.649	.008	.477	362	105	187	.477	0.513	0.143	-1.2	0.9	-1.4	0.9	A-	
910	612545	Lit	Lit	262	.935	.004	.042	.935	.012	.008	.514	100	311	.514	227	-2.034	0.285	-0.8	0.8	-2.1	0.4	A-	
911	612549	Lit	Lit	262	.584	.157	.145	.103	.584	.012	.466	167	269	115	.466	0.824	0.139	-1.1	0.9	-1.1	0.9	A-	
912	612527	Lit	Lit	262	.282	.099	.282	.221	.370	.027	.230	106	.230	060	.006	2.342	0.149	1.3	1.1	1.9	1.2	A+	
913	612565	Lit	Lit	262	.435	.088	.435	.321	.122	.034	.383	265	.383	073	084	1.486	0.138	0.2	1.0	0.7	1.1	A-	
914	609141	Lit	Lit	271	.343	.092	.421	.133	.343	.011	.257	198	.060	190	.257	1.980	0.140	2.3	1.1	2.3	1.2	B+	
915	612489	Lit	Lit	271	.605	.173	.605	.100	.096	.026	.545	288	.545	244	116	0.621	0.139	-2.1	0.9	-2.2	0.8	A+	
916	616070	Lit	Lit	271	.561	.214	.074	.122	.561	.030	.503	094	192	337	.503	0.839	0.137	-1.3	0.9	-1.1	0.9	A-	
917	612501	Lit	Lit	271	.491	.103	.188	.188	.491	.030	.600	213	230	233	.600	1.196	0.136	-3.7	0.8	-3.4	0.8	C+	
918	612556	Lit	Lit	271	.572	.114	.572	.137	.144	.033	.553	162	.553	246	229	0.778	0.138	-2.3	0.9	-2.0	0.9	A-	
919	616074	Lit	Lit	263	.787	.057	.057	.095	.787	.004	.594	338	263	314	.594	-0.451	0.167	-2.7	0.8	-2.9	0.6	A+	
920	616069	Lit	Lit	263	.753	.091	.753	.084	.049	.023	.535	163	.535	327	248	-0.309	0.164	-1.1	0.9	-1.8	0.8	A-	
921	612529	Lit	Lit	263	.551	.152	.088	.551	.183	.027	.371	180	195	.371	048	0.872	0.141	2.0	1.1	2.1	1.2	B+	
922	612528	Lit	Lit	263	.654	.122	.654	.145	.053	.027	.585	316	.585	210	243	0.309	0.148	-2.3	0.9	-2.0	0.8	A+	
923	612486	Lit	Lit	263	.529	.049	.243	.152	.529	.027	.524	176	229	218	.524	0.991	0.140	-1.3	0.9	-1.2	0.9	A-	
924	610608	Lit	Lit	263	.821	.068	.821	.042	.042	.027	.550	242	.550	266	247	-0.808	0.185	-1.8	0.8	-2.0	0.6	C+	
925	610201	Lit	Lit	263	.475	.084	.156	.247	.475	.038	.429	193	290	020	.429	1.231	0.140	0.7	1.0	1.0	1.1	A-	
926	610351	Lit	Lit	263	.426	.183	.426	.126	.228	.038	.390	242	.390	212	.044	1.509	0.141	1.0	1.1	1.5	1.1	A-	
927	610200	Lit	Lit	263	.574	.186	.103	.574	.099	.038	.447	069	219	.447	268	0.709	0.143	0.7	1.0	0.1	1.0	A-	
928	614018	Lit	Lit	262	.607	.179	.607	.107	.107	.000	.438	252	.438	299	081	0.640	0.140	-0.5	1.0	-0.6	1.0	A-	
929	614021	Lit	Lit	262	.290	.141	.225	.290	.340	.004	.126	137	135	.126	.103	2.245	0.148	3.4	1.2	4.2	1.6	A-	
930	614020	Lit	Lit	262	.622	.233	.118	.622	.027	.000	.289	178	160	.289	081	0.562	0.141	2.2	1.1	2.2	1.2	B-	
931	616067	Lit	Lit	262	.657	.241	.657	.042	.061	.000	.430	128	.430	312	363	0.380	0.143	-0.1	1.0	-0.6	0.9	A+	
932	609181	Lit	Lit	262	.626	.115	.176	.626	.080	.004	.426	160	329	.426	080	0.538	0.141	0.0	1.0	-0.5	1.0	A+	
933	610251	Lit	Lit	262	.492	.095	.286	.111	.492	.015	.412	225	054	327	.412	1.168	0.138	0.5	1.0	1.0	1.1	A+	
934	610250	Lit	Lit	262	.641	.061	.641	.225	.053	.019	.364	197	.364	125	270	0.386	0.144	1.1	1.1	1.0	1.1	A+	
935	609078	Lit	Lit	523	.686	.048	.149	.092	.686	.025	.595	222	251	351	.595	0.162	0.106	-4.6	0.8	-4.2	0.7	B+	
936	610290	Lit	Lit	262	.439	.439	.386	.084	.065	.027	.460	.460	153	304	223	1.400	0.139	-0.4	1.0	-0.9	0.9	A+	
937	610289	Lit	Lit	262	.622	.622	.076	.172	.103	.027	.631	.631	320	318	285	0.457	0.144	-4.0	0.8	-3.9	0.7	B+	
938	610099	Lit	Lit	261	.575	.172	.575	.088	.157	.008	.289	103	.289	175	096	0.857	0.137	2.1	1.1	1.4	1.1	A-	
939	610101	Lit	Lit	261	.502	.502	.330	.069	.092	.008	.240	.240	038	082	213	1.211	0.136	2.9	1.2	2.7	1.2	A+	
940	610191	Lit	Lit	261	.368	.261	.172	.188	.368	.012	.510	134	132	242	.510	1.871	0.140	-2.5	0.9	-2.5	0.8	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Dof	ID	FT	PCS	N	D\/al	D/A)	D/D\	D/C)	D(D)	D/ \	D+D:	DT/A\	DT/D\	DT/C)	DT/D)	Mana	MCE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
941	610205	Lit	Lit	261	.422	.100	.399	.061	.422	.019	.363	272	.006	194	.363	1.589	0.138	1.0	1.1	0.8	1.1	A+	
942	610264	Lit	Lit	261	.594	.126	.138	.100	.594	.042	.565	268	175	197	.565	0.672	0.142	-3.0	0.8	-2.8	0.8	B+	
943	609241	Lit	Lit	261	.720	.088	.096	.720	.084	.012	.386	229	142	.386	116	-0.089	0.154	-0.4	1.0	-0.9	0.9	A+	
944	609054	Lit	Lit	261	.318	.364	.180	.123	.318	.015	.347	020	084	181	.347	2.005	0.146	0.5	1.0	1.0	1.1	A+	
945	609052	Lit	Lit	261	.399	.399	.092	.238	.249	.023	.368	.368	146	037	089	1.557	0.140	0.1	1.0	0.2	1.0	A-	
946	616633	Lit	Lit	261	.659	.188	.659	.058	.073	.023	.451	152	.451	151	137	0.222	0.146	-0.3	1.0	-0.5	1.0	A-	
947	609051	Lit	Lit	261	.625	.138	.138	.077	.625	.023	.528	090	201	271	.528	0.411	0.143	-1.9	0.9	-2.0	0.8	A+	
948	610237	Lit	Lit	261	.571	.571	.264	.061	.077	.027	.468	.468	165	127	133	0.681	0.140	-0.9	1.0	-1.2	0.9	A-	
949	610245	Lit	Lit	261	.548	.548	.169	.119	.138	.027	.487	.487	108	237	094	0.798	0.139	-2.1	0.9	-1.5	0.9	A-	
950	610246	Lit	Lit	261	.648	.648	.188	.073	.061	.031	.546	.546	155	233	176	0.265	0.146	-2.4	0.9	-2.4	0.8	A+	
951	609077	Lit	Lit	261	.188	.180	.188	.211	.356	.065	.188	.074	.188	018	.047	2.743	0.171	1.1	1.1	3.8	1.8	A-	
952	609206	Lit	Lit	261	.391	.391	.211	.230	.100	.069	.362	.362	018	104	028	1.495	0.143	1.5	1.1	1.0	1.1	A-	
953	609248	Lit	Lit	269	.621	.621	.294	.030	.052	.004	.260	.260	104	127	171	0.536	0.139	3.0	1.2	2.2	1.2	A+	
954	609247	Lit	Lit	269	.792	.052	.093	.792	.060	.004	.376	159	172	.376	203	-0.483	0.164	0.0	1.0	-0.7	0.9	A+	
955	609246	Lit	Lit	269	.409	.409	.041	.134	.409	.007	.295	184	036	075	.295	1.585	0.137	2.5	1.1	2.7	1.2	B-	
956	610279	Lit	Lit	269	.643	.052	.093	.205	.643	.007	.513	244	163	278	.513	0.410	0.141	-2.2	0.9	-1.3	0.9	A-	
957	610277	Lit	Lit	269	.357	.357	.227	.164	.245	.007	.173	.173	051	119	.035	1.853	0.139	3.6	1.2	4.0	1.4	A+	
958	610276	Lit	Lit	269	.520	.223	.089	.520	.156	.011	.487	150	263	.487	184	1.040	0.135	-2.0	0.9	-1.8	0.9	A-	
959	610278	Lit	Lit	269	.632	.141	.078	.632	.134	.015	.560	212	305	.560	220	0.440	0.141	-2.9	0.8	-2.9	0.8	A+	
960	614123	Lit	Lit	269	.528	.253	.528	.138	.052	.030	.362	.025	.362	236	241	0.938	0.137	1.7	1.1	2.0	1.1	A+	
961	612510	Lit	Lit	269	.487	.312	.145	.026	.487	.030	.410	125	168	197	.410	1.144	0.137	0.6	1.0	0.8	1.1	A+	
962	612490	Lit	Lit	269	.465	.119	.152	.465	.231	.034	.444	122	188	.444	139	1.246	0.137	-0.2	1.0	-0.3	1.0	A-	
963	609133	Lit	Lit	262	.710	.710	.088	.126	.073	.004	.503	.503	251	253	210	-0.021	0.151	-2.7	0.8	-2.4	0.8	B+	
964	609138	Lit	Lit	262	.225	.168	.225	.176	.428	.004	.141	202	.141	162	.196	2.587	0.160	0.9	1.1	2.7	1.5	A+	
965	609137	Lit	Lit	262	.679	.061	.176	.076	.679	.008	.501	217	220	259	.501	0.135	0.147	-1.3	0.9	-1.8	0.8	A+	
966	609132	Lit	Lit	262	.645	.168	.645	.118	.053	.015	.389	105	.389	174	172	0.319	0.144	0.5	1.0	0.5	1.0	A+	
967	610284	Lit	Lit	262	.389	.309	.179	.389	.099	.023	.186	.168	125	.186	169	1.612	0.140	4.6	1.3	4.3	1.4	A-	
968	610283	Lit	Lit	262	.637	.637	.053	.202	.080	.027	.476	.476	268	155	113	0.310	0.145	-0.8	1.0	-0.9	0.9	B+	
969	612484	Lit	Lit	262	.576	.206	.092	.576	.095	.031	.399	.043	211	.399	210	0.638	0.141	1.1	1.1	1.7	1.1	B-	
970	612540	Lit	Lit	262	.622	.050	.622	.092	.202	.034	.422	151	.422	163	090	0.376	0.145	0.8	1.1	0.4	1.0	A-	
971	614024	Lit	Lit	527	.899	.032	.899	.017	.017	.034	.576	236	.576	197	119	-1.933	0.186	-1.1	0.8	-2.2	0.5	A+	
972	609192	Lit	Lit	262	.481	.481	.218	.111	.137	.053	.408	.408	152	096	040	1.079	0.140	0.1	1.0	1.1	1.1	A-	
973	612551	Lit	Lit	265	.457	.049	.128	.457	.355	.011	.279	250	107	.279	.006	1.402	0.137	3.5	1.2	2.8	1.2	A+	
974	612552	Lit	Lit	265	.551	.551	.117	.166	.155	.011	.382	.382	239	.015	183	0.931	0.138	0.6	1.0	0.8	1.1	B-	
975	616071	Lit	Lit	265	.694	.694	.079	.053	.151	.023	.429	.429	193	249	024	0.127	0.151	0.3	1.0	-0.1	1.0	A+	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
I.C.		Grade	Grade			. ,	. (5)		• •	. ()		11(A)			1 1(5)	IVICUS		in	in	out	out	/F	/B
976	609104	Lit	Lit	265	.528	.249	.106	.528	.098	.019	.336	.000	196	.336	111	1.035	0.138	2.5	1.1	2.0	1.2	A+	—
977	612507	Lit	Lit	265	.438	.276	.438	.109	.121	.057	.364	.031	.364	206	084	1.409	0.140	1.9	1.1	1.4	1.1	A-	—
978	612508	Lit	Lit	265	.472	.159	.472	.106	.208	.057	.378	048	.378	238	.012	1.232	0.140	1.6	1.1	1.6	1.1	A+	—
979	610603	Lit	Lit	265	.574	.072	.109	.574	.185	.060	.469	181	148	.469	086	0.682	0.144	-0.1	1.0	-0.4	1.0	A+	
980	608138	Lit	Lit	261	.720	.054	.077	.720	.142	.008	.429	213	235	.429	141	0.033	0.156	0.2	1.0	0.4	1.1	A+	
981	614032	Lit	Lit	271	.661	.033	.661	.218	.089	.000	.355	237	.355	121	267	0.406	0.140	1.3	1.1	1.1	1.1	A-	
982	614033	Lit	Lit	271	.849	.044	.081	.849	.026	.000	.401	232	216	.401	233	-0.819	0.179	-1.3	0.9	-1.2	8.0	B+	
983	614034	Lit	Lit	271	.292	.292	.299	.218	.192	.000	.332	.332	187	085	077	2.277	0.145	0.6	1.0	1.9	1.2	A+	
984	610352	Lit	Lit	263	.152	.152	.160	.278	.411	.000	.027	.027	124	079	.145	3.313	0.186	1.8	1.2	3.6	2.0	A-	
985	610094	Lit	Lit	263	.608	.608	.186	.084	.118	.004	.490	.490	103	276	343	0.629	0.141	-1.0	0.9	-1.0	0.9	A+	
986	610095	Lit	Lit	263	.703	.205	.703	.053	.030	.008	.486	261	.486	318	185	0.106	0.151	-1.2	0.9	-1.5	0.8	A+	
987	610093	Lit	Lit	263	.285	.118	.285	.434	.160	.004	.206	230	.206	.107	164	2.336	0.150	2.2	1.2	2.8	1.4	A-	1
988	610239	Lit	Lit	258	.861	.039	.861	.089	.012	.000	.128	109	.128	052	077	-1.144	0.197	1.1	1.1	1.4	1.4	A-	
989	610240	Lit	Lit	258	.694	.694	.089	.120	.097	.000	.539	.539	262	357	195	0.129	0.150	-2.5	0.8	-2.5	0.7	A-	
990	610242	Lit	Lit	258	.477	.205	.477	.295	.023	.000	.430	132	.430	299	167	1.285	0.141	0.7	1.0	1.0	1.1	B-	
991	610258	Lit	Lit	3947	.354	.036	.241	.352	.354	.017	.334	162	151	028	.334	1.898	0.037	4.5	1.1	7.8	1.2	A+	A-
992	610259	Lit	Lit	3947	.663	.131	.663	.114	.073	.020	.416	087	.416	225	156	0.301	0.038	1.9	1.0	0.7	1.0	A+	A+
993	610262	Lit	Lit	3947	.723	.085	.723	.084	.087	.021	.534	185	.534	237	230	-0.067	0.040	-7.0	0.9	-6.0	8.0	A+	A+
994	612563	Lit	Lit	258	.760	.109	.760	.081	.023	.027	.548	346	.548	177	203	-0.394	0.167	-1.9	0.8	-2.3	0.7	A+	
995	612562	Lit	Lit	258	.667	.078	.105	.112	.667	.039	.553	209	237	252	.553	0.155	0.153	-2.5	0.8	-1.9	8.0	A+	
996	610230	Lit	Lit	258	.574	.574	.151	.078	.147	.050	.388	.388	221	227	.025	0.648	0.147	1.6	1.1	1.5	1.2	A-	
997	610231	Lit	Lit	258	.395	.109	.163	.283	.395	.050	.453	177	138	122	.453	1.623	0.147	0.3	1.0	0.4	1.0	B-	
998	610226	Lit	Lit	258	.295	.205	.229	.295	.221	.050	.285	106	140	.285	.078	2.217	0.156	2.6	1.2	4.0	1.6	A+	
999	610300	Lit	Lit	263	.354	.236	.354	.137	.270	.004	.225	.041	.225	266	035	2.015	0.143	3.1	1.2	2.8	1.3	A+	
1000	610299	Lit	Lit	263	.806	.806	.072	.076	.038	.008	.547	.547	266	274	233	-0.565	0.173	-2.5	0.8	-3.0	0.5	A+	
1001	610256	Lit	Lit	525	.770	.770	.095	.053	.051	.031	.556	.556	252	253	181	-0.405	0.121	-2.1	0.9	-2.0	8.0	C+	
1002	610208	Lit	Lit	527	.687	.093	.173	.687	.040	.008	.360	153	161	.360	192	0.176	0.105	1.3	1.1	0.7	1.1	A-	
1003	612571	Lit	Lit	262	.305	.305	.282	.157	.256	.000	.130	.130	141	.016	006	2.233	0.146	3.7	1.3	5.0	1.8	A-	
1004	612572	Lit	Lit	262	.653	.653	.061	.042	.237	.008	.415	.415	235	197	203	0.454	0.145	0.1	1.0	-0.4	1.0	A+	
1005	610192	Lit	Lit	262	.351	.351	.149	.286	.149	.065	.447	.447	236	002	092	1.894	0.144	-1.0	0.9	0.4	1.0	A-	
1006	610235	Lit	Lit	523	.447	.218	.447	.187	.086	.061	.412	076	.412	061	186	1.415	0.101	2.4	1.1	2.1	1.1	B+	
1007	608135	Lit	Lit	264	.689	.080	.689	.091	.136	.004	.477	147	.477	398	137	0.124	0.146	-1.3	0.9	-0.7	0.9	A-	
1008	609064	Lit	Lit	264	.663	.144	.663	.095	.091	.008	.485	211	.485	262	174	0.258	0.144	-1.1	0.9	-1.5	0.9	A-	1
1009	610306	Lit	Lit	264	.667	.667	.091	.114	.095	.034	.485	.485	170	171	243	0.139	0.148	-1.2	0.9	-0.4	1.0	A-	
1010	610221	Lit	Lit	264	.307	.186	.265	.208	.307	.034	.403	203	102	019	.403	2.038	0.147	-0.2	1.0	0.1	1.0	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1011	610342	Grade Lit	Grade Lit	264	.421	.318	.068	.421	.152	.042	.449	215	165	.449	050	1.420	0.139	-0.6	in 1.0	0.2	out 1.0	/F A+	/B
1012	610263	Lit	Lit	264	.477	.133	.477	.216	.133	.042	.410	262	.410	054	094	1.130	0.139	0.8	1.0	0.6	1.0	A-	
1013	610297	Lit	Lit	261	.368	.368	.211	.299	.111	.012	.247	.247	065	040	096	1.962	0.146	3.6	1.2	4.4	1.6	A-	
1014	608132	Lit	Lit	261	.571	.130	.571	.103	.176	.019	.424	066	.424	267	123	0.856	0.144	1.0	1.1	1.6	1.2	A-	
1015	609065	Lit	Lit	261	.709	.077	.084	.088	.709	.042	.638	280	234	199	.638	-0.043	0.161	-3.2	0.8	-2.3	0.7	A-	
1016	609066	Lit	Lit	261	.590	.590	.234	.031	.103	.042	.469	.469	033	106	345	0.694	0.148	0.9	1.1	0.6	1.1	Α-	
1017	609067	Lit	Lit	261	.310	.088	.092	.467	.310	.042	.366	227	270	.134	.366	2.262	0.152	1.6	1.1	2.1	1.3	A-	
1018	609108	Lit	Lit	263	.350	.171	.350	.434	.038	.008	.208	043	.208	010	207	1.903	0.139	2.9	1.2	2.5	1.2	A-	
1019	609111	Lit	Lit	263	.327	.327	.281	.232	.133	.027	.130	.130	.043	.062	125	1.995	0.141	3.8	1.2	3.9	1.4	A-	
1020	609110	Lit	Lit	263	.521	.236	.129	.521	.095	.019	.361	073	153	.361	153	1.052	0.135	0.8	1.0	0.6	1.0	A-	
1021	609159	Lit	Lit	263	.297	.145	.221	.312	.297	.027	.208	142	.043	004	.208	2.149	0.145	1.9	1.1	2.7	1.3	A+	
1022	612569	Lit	Lit	263	.491	.114	.491	.186	.175	.034	.303	116	.303	187	.064	1.162	0.136	2.1	1.1	2.2	1.1	B+	i
1023	612570	Lit	Lit	263	.548	.133	.145	.548	.137	.038	.381	123	141	.381	095	0.871	0.137	0.5	1.0	0.2	1.0	A+	i
1024	612550	Lit	Lit	262	.779	.779	.099	.038	.069	.015	.583	.583	308	289	204	-0.327	0.167	-2.1	0.8	-2.5	0.7	A+	i
1025	609255	Lit	Lit	262	.424	.424	.256	.145	.157	.019	.305	.305	009	232	050	1.594	0.137	2.0	1.1	1.9	1.2	A+	
1026	609256	Lit	Lit	262	.687	.141	.687	.092	.065	.015	.340	155	.340	090	135	0.255	0.149	1.4	1.1	2.0	1.2	A+	
1027	609257	Lit	Lit	262	.275	.275	.038	.435	.237	.015	.227	.227	261	.063	089	2.361	0.148	1.5	1.1	1.9	1.2	A+	1
1028	612566	Lit	Lit	262	.275	.130	.332	.275	.225	.038	.274	080	103	.274	.016	2.350	0.150	0.6	1.0	1.0	1.1	B+	1
1029	612567	Lit	Lit	262	.305	.164	.305	.187	.305	.038	.206	099	.135	170	.206	2.197	0.146	2.5	1.2	1.8	1.2	B+	<u> </u>
1030	609144	Lit	Lit	271	.365	.365	.081	.170	.380	.004	.232	.232	252	188	.079	1.870	0.138	3.2	1.2	3.0	1.3	A+	
1031	609259	Lit	Lit	271	.568	.568	.214	.092	.103	.022	.366	.366	046	202	192	0.820	0.137	1.8	1.1	1.3	1.1	A-	
1032	609276	Lit	Lit	271	.620	.074	.122	.620	.159	.026	.431	227	215	.431	080	0.543	0.140	0.5	1.0	-0.3	1.0	A-	
1033	609258	Lit	Lit	271	.579	.214	.579	.103	.078	.026	.438	131	.438	276	107	0.755	0.138	0.2	1.0	-0.3	1.0	A+	
1034	612521	Lit	Lit	271	.535	.185	.535	.140	.107	.033	.490	092	.490	195	271	0.967	0.137	-0.9	1.0	-0.6	1.0	B-	
1035	612557	Lit	Lit	271	.410	.410	.210	.148	.203	.030	.359	.359	041	243	050	1.606	0.137	1.7	1.1	1.5	1.1	A+	i
1036	612499	Lit	Lit	263	.373	.373	.357	.183	.084	.004	.348	.348	125	147	146	1.830	0.141	1.4	1.1	2.9	1.3	A-	
1037	610609	Lit	Lit	263	.821	.019	.061	.072	.821	.027	.511	192	304	194	.511	-0.843	0.186	-0.9	0.9	-1.6	0.7	A+	
1038	610610	Lit	Lit	263	.521	.198	.122	.521	.129	.030	.472	082	224	.472	242	1.022	0.140	-0.1	1.0	0.1	1.0	A+	
1039	614022	Lit	Lit	262	.599	.599	.149	.164	.084	.004	.366	.366	195	234	063	0.674	0.140	0.8	1.1	0.5	1.0	A-	
1040	614023	Lit	Lit	262	.649	.057	.168	.122	.649	.004	.343	191	156	180	.343	0.407	0.143	1.0	1.1	1.2	1.1	A-	
1041	615185	Lit	Lit	262	.210	.282	.340	.164	.210	.004	.064	.226	066	264	.064	2.745	0.162	2.6	1.2	3.3	1.6	A-	
1042	609102	Lit	Lit	262	.573	.573	.294	.053	.080	.000	.233	.233	.012	295	199	0.814	0.138	3.5	1.2	3.4	1.3	A-	$\sqcup \sqcup$
1043	609079	Lit	Lit	523	.551	.142	.551	.109	.178	.021	.441	097	.441	141	275	0.903	0.098	0.0	1.0	-0.5	1.0	C-	ш
1044	609080	Lit	Lit	523	.555	.126	.207	.555	.086	.027	.432	097	227	.432	184	0.866	0.098	0.0	1.0	-0.1	1.0	A+	$\sqcup \sqcup$
1045	610291	Lit	Lit	262	.473	.115	.199	.187	.473	.027	.568	121	342	243	.568	1.226	0.139	-3.0	0.8	-2.5	0.8	B+	ш

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Itel		Grade	Grade	.,			. (5)		• •	٠,,	1 (513	1 1(///)		1 1(0)	(5)			in	in	out	out	/F	/B
1046	610097	Lit	Lit	261	.425	.425	.073	.299	.199	.004	.171	.171	191	.002	038	1.592	0.137	4.6	1.3	4.6	1.4	A+	
1047	610096	Lit	Lit	261	.644	.103	.088	.644	.161	.004	.368	049	157	.368	263	0.523	0.141	0.0	1.0	-0.2	1.0	A+	
1048	610098	Lit	Lit	261	.755	.058	.161	.755	.019	.008	.413	243	200	.413	206	-0.126	0.156	-0.6	1.0	-0.8	0.9	A+	
1049	610185	Lit	Lit	261	.651	.192	.058	.651	.092	.008	.297	060	277	.297	075	0.470	0.142	1.7	1.1	1.5	1.2	A+	
1050	610190	Lit	Lit	261	.383	.138	.383	.142	.330	.008	.197	215	.197	240	.200	1.796	0.139	3.7	1.2	3.3	1.3	B-	
1051	610206	Lit	Lit	261	.414	.138	.126	.414	.303	.019	.410	259	206	.410	.023	1.627	0.138	-0.1	1.0	0.1	1.0	B-	
1052	610266	Lit	Lit	261	.494	.096	.494	.153	.215	.042	.485	098	.485	100	265	1.181	0.139	-1.3	0.9	-1.4	0.9	A-	
1053	610267	Lit	Lit	261	.245	.245	.295	.249	.169	.042	.199	.199	.194	131	129	2.529	0.156	2.3	1.2	2.5	1.4	A-	
1054	609055	Lit	Lit	261	.341	.096	.341	.088	.452	.023	.208	138	.208	242	.190	1.858	0.143	3.4	1.2	3.5	1.4	B-	
1055	612519	Lit	Lit	261	.701	.701	.134	.081	.038	.046	.580	.580	223	171	185	-0.132	0.156	-2.4	0.8	-2.5	0.7	B+	
1056	609068	Lit	Lit	261	.510	.249	.103	.510	.084	.054	.359	.040	166	.359	138	0.907	0.141	2.2	1.1	1.3	1.1	A+	
1057	609182	Lit	Lit	261	.395	.238	.395	.226	.081	.061	.312	115	.312	.082	088	1.489	0.142	2.4	1.1	2.8	1.2	A-	
1058	609207	Lit	Lit	261	.617	.103	.103	.107	.617	.069	.602	232	193	148	.602	0.283	0.149	-3.4	0.8	-3.3	0.7	B+	
1059	609183	Lit	Lit	261	.594	.054	.192	.594	.092	.069	.495	041	140	.495	213	0.415	0.147	-0.8	1.0	-1.2	0.9	A+	
1060	609211	Lit	Lit	261	.506	.100	.142	.506	.176	.077	.436	024	220	.436	038	0.873	0.143	0.5	1.0	-0.3	1.0	A-	
1061	609249	Lit	Lit	269	.558	.558	.115	.271	.048	.007	.338	.338	217	051	236	0.853	0.136	1.4	1.1	0.9	1.1	A-	
1062	609250	Lit	Lit	269	.219	.015	.100	.219	.662	.004	.078	164	141	.078	.105	2.680	0.159	2.3	1.2	4.1	1.7	B-	
1063	609251	Lit	Lit	269	.565	.238	.565	.074	.119	.004	.436	118	.436	265	238	0.820	0.136	-0.4	1.0	-0.5	1.0	A+	
1064	610274	Lit	Lit	269	.744	.744	.063	.093	.089	.011	.409	.409	271	239	026	-0.185	0.155	-0.2	1.0	-0.1	1.0	B+	
1065	610275	Lit	Lit	269	.472	.268	.472	.060	.193	.007	.397	156	.397	279	079	1.291	0.135	0.5	1.0	0.5	1.0	A+	
1066	612542	Lit	Lit	269	.387	.138	.260	.197	.387	.019	.279	342	015	.085	.279	1.670	0.138	2.9	1.2	2.2	1.2	A+	
1067	612544	Lit	Lit	269	.446	.301	.446	.067	.167	.019	.330	055	.330	306	046	1.369	0.136	2.0	1.1	2.1	1.2	C-	
1068	612543	Lit	Lit	269	.595	.048	.245	.093	.595	.019	.498	303	230	122	.498	0.621	0.139	-1.2	0.9	-1.1	0.9	A-	
1069	614028	Lit	Lit	269	.480	.480	.164	.264	.067	.026	.461	.461	142	114	310	1.185	0.136	-0.5	1.0	-0.7	1.0	A+	
1070	614027	Lit	Lit	269	.617	.078	.115	.617	.160	.030	.484	280	201	.484	108	0.472	0.142	-0.7	1.0	-0.9	0.9	B-	
1071	612515	Lit	Lit	269	.558	.171	.558	.145	.097	.030	.398	117	.398	095	216	0.785	0.138	1.2	1.1	0.6	1.1	A+	
1072	612511	Lit	Lit	269	.684	.108	.684	.115	.060	.034	.589	231	.589	261	265	0.075	0.149	-2.6	8.0	-3.1	0.7	B-	
1073	609139	Lit	Lit	262	.450	.378	.103	.450	.065	.004	.252	.077	271	.252	250	1.329	0.137	2.7	1.1	3.2	1.3	A+	
1074	610285	Lit	Lit	262	.263	.263	.378	.179	.157	.023	.258	.258	.028	064	098	2.301	0.152	0.6	1.0	2.2	1.3	A-	
1075	612541	Lit	Lit	262	.603	.603	.134	.164	.073	.027	.545	.545	208	148	223	0.521	0.142	-2.5	0.9	-2.8	0.8	A-	
1076	614026	Lit	Lit	527	.526	.288	.080	.070	.526	.036	.366	.054	224	200	.366	0.947	0.099	2.7	1.1	2.3	1.1	B+	
1077	614025	Lit	Lit	527	.801	.030	.070	.801	.063	.036	.559	092	167	.559	285	-0.759	0.128	-1.7	0.9	-1.8	0.8	A+	
1078	609191	Lit	Lit	262	.699	.088	.065	.095	.699	.053	.541	168	169	210	.541	-0.138	0.158	-1.4	0.9	-2.0	0.8	A-	
1079	612564	Lit	Lit	265	.377	.109	.174	.332	.377	.008	.345	122	122	102	.345	1.803	0.140	0.8	1.0	2.1	1.2	A+	
1080	612553	Lit	Lit	265	.626	.125	.626	.193	.045	.011	.411	100	.411	225	122	0.538	0.142	0.1	1.0	0.0	1.0	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1081	612554	Grade Lit	Grade Lit	265	.732	.732	.125	.079	.053	.011	.518	.518	235	290	096	-0.075	0.155	-1.4	in 0.9	-2.0	out 0.8	/F A+	/B
1081	612555	Lit	Lit	265	.664	.083	.117	.125	.664	.011	.567	232	139	323	.567	0.331	0.133	-3.3	0.9	-3.1	0.7	A-	
1083	609101	Lit	Lit	265	.362	.045	.362	.298	.276	.019	.265	182	.265	147	.088	1.868	0.141	2.2	1.1	3.7	1.4	A-	
1084	612512	Lit	Lit	265	.506	.170	.147	.121	.506	.057	.479	184	081	119	.479	1.054	0.141	-0.9	1.0	-0.7	0.9	A-	
1085	612509	Lit	Lit	265	.445	.091	.287	.121	.445	.057	.324	173	.115	186	.324	1.370	0.140	2.7	1.2	3.2	1.3	C-	
1086	610606	Lit	Lit	265	.543	.079	.272	.049	.543	.057	.563	242	190	129	.563	0.853	0.142	-3.0	0.8	-2.6	0.8	A+	
1087	610604	Lit	Lit	265	.611	.611	.128	.117	.083	.060	.467	.467	073	251	061	0.469	0.147	0.2	1.0	-0.2	1.0	Α-	
1088	610281	Lit	Lit	3947	.474	.214	.069	.220	.474	.024	.441	122	237	122	.441	1.275	0.036	-1.2	1.0	0.5	1.0	A+	A-
1089	610210	Lit	Lit	527	.435	.435	.123	.366	.065	.011	.324	.324	140	037	239	1.486	0.098	2.6	1.1	2.5	1.2	A+	i
1090	612531	Lit	Lit	263	.502	.502	.160	.186	.122	.030	.525	.525	106	209	226	1.190	0.140	-2.0	0.9	-1.5	0.9	A+	1
1091	612534	Lit	Lit	262	.500	.027	.500	.279	.179	.015	.187	112	.187	139	.041	1.209	0.138	5.0	1.3	4.1	1.4	A+	1
1092	612535	Lit	Lit	262	.817	.817	.050	.099	.027	.008	.550	.550	290	287	238	-0.651	0.179	-2.0	0.8	-2.0	0.7	A-	i l
1093	610196	Lit	Lit	262	.454	.199	.149	.454	.149	.050	.439	175	119	.439	038	1.389	0.140	0.3	1.0	0.5	1.0	B-	i l
1094	610193	Lit	Lit	262	.679	.679	.080	.111	.080	.050	.539	.539	131	342	057	0.146	0.155	-0.7	1.0	-1.2	0.9	A-	i
1095	610194	Lit	Lit	262	.664	.088	.664	.153	.046	.050	.550	263	.550	159	169	0.242	0.153	-1.2	0.9	-1.0	0.9	A+	1
1096	610195	Lit	Lit	262	.637	.111	.115	.637	.073	.065	.613	177	255	.613	240	0.334	0.152	-2.6	0.8	-2.5	0.8	A-	i
1097	610304	Lit	Lit	264	.640	.189	.640	.087	.057	.027	.442	107	.442	279	164	0.326	0.144	-0.2	1.0	0.0	1.0	A-	1
1098	610249	Lit	Lit	264	.519	.106	.133	.197	.519	.046	.426	185	191	078	.426	0.902	0.140	0.3	1.0	0.7	1.1	A-	1
1099	610248	Lit	Lit	264	.265	.265	.261	.220	.205	.049	.201	.201	.009	037	052	2.253	0.153	2.3	1.2	3.8	1.5	A+	<u> </u>
1100	610122	Lit	Lit	261	.659	.188	.659	.065	.042	.046	.561	201	.561	215	207	0.260	0.155	-1.1	0.9	-1.5	0.8	A+	
1101	612504	Lit	Lit	263	.776	.776	.065	.042	.107	.011	.490	.490	220	195	215	-0.296	0.160	-1.3	0.9	-2.1	0.7	A-	
1102	612505	Lit	Lit	263	.776	.107	.068	.776	.034	.015	.492	265	183	.492	146	-0.318	0.161	-1.2	0.9	-2.0	8.0	A+	
1103	612523	Lit	Lit	262	.611	.092	.145	.126	.611	.027	.561	215	174	303	.561	0.654	0.142	-3.1	0.8	-3.2	8.0	A-	
1104	612526	Lit	Lit	262	.405	.080	.141	.347	.405	.027	.374	196	365	.098	.374	1.670	0.138	8.0	1.0	-0.3	1.0	A+	i
1105	609148	Lit	Lit	271	.801	.801	.044	.048	.103	.004	.502	.502	240	213	313	-0.464	0.164	-1.9	0.8	-2.4	0.7	A+	
1106	609147	Lit	Lit	271	.454	.162	.240	.140	.454	.004	.559	111	309	273	.559	1.425	0.134	-3.2	0.9	-2.7	0.8	A-	
1107	609146	Lit	Lit	271	.332	.539	.332	.070	.048	.011	.187	013	.187	196	053	2.038	0.141	3.4	1.2	4.3	1.5	A-	
1108	610350	Lit	Lit	263	.532	.107	.532	.221	.107	.034	.382	210	.382	126	085	0.965	0.141	1.8	1.1	1.4	1.1	A+	
1109	610203	Lit	Lit	263	.479	.110	.266	.479	.110	.034	.395	149	012	.395	313	1.262	0.140	0.9	1.1	0.9	1.1	A+	
1110	610294	Lit	Lit	262	.527	.160	.527	.256	.027	.031	.520	264	.520	275	162	0.945	0.140	-1.7	0.9	-1.5	0.9	A-	
1111	610178	Lit	Lit	261	.904	.023	.904	.035	.031	.008	.448	149	.448	259	173	-1.431	0.227	-0.7	0.9	-1.3	0.7	A+	
1112	610207	Lit	Lit	261	.728	.728	.107	.092	.054	.019	.514	.514	161	247	237	-0.003	0.154	-1.8	0.9	-1.5	0.8	A+	
1113	610340	Lit	Lit	261	.257	.387	.149	.257	.165	.042	.313	038	186	.313	.046	2.457	0.154	0.6	1.0	1.5	1.2	A-	
1114	610243	Lit	Lit	261	.594	.081	.594	.119	.180	.027	.451	185	.451	217	021	0.561	0.142	-0.7	1.0	0.1	1.0	A+	
1115	610238	Lit	Lit	261	.494	.376	.065	.494	.038	.027	.278	.083	203	.278	189	1.068	0.138	3.6	1.2	3.1	1.2	A-	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	Grade					, ,	• •									in	in	out	out	/F	/B
1116	612520	Lit	Lit	261	.732	.732	.069	.096	.061	.042	.630	.630	246	214	195	-0.313	0.162	-3.0	0.8	-3.4	0.6	A+	
1117	609216	Lit	Lit	261	.249	.184	.249	.238	.253	.077	.168	034	.168	093	.230	2.300	0.157	3.0	1.2	3.6	1.5	A-	
1118	612491	Lit	Lit	269	.610	.086	.104	.171	.610	.030	.403	142	212	095	.403	0.512	0.141	0.9	1.1	0.7	1.1	A+	
1119	610288	Lit	Lit	262	.725	.099	.725	.095	.065	.015	.468	186	.468	159	195	-0.156	0.155	-0.5	1.0	-0.6	0.9	A-	
1120	609195	Lit	Lit	262	.279	.134	.168	.366	.279	.053	.173	004	131	.146	.173	2.143	0.150	3.0	1.2	3.7	1.5	A-	
1121	609103	Lit	Lit	265	.762	.151	.762	.034	.038	.015	.388	109	.388	144	180	-0.280	0.161	1.0	1.1	0.5	1.1	A+	
1122	612513	Lit	Lit	265	.547	.547	.151	.109	.151	.042	.430	.430	190	113	035	0.882	0.141	0.7	1.0	0.4	1.0	A-	
1123	612514	Lit	Lit	265	.577	.577	.094	.170	.109	.049	.577	.577	194	213	149	0.698	0.143	-3.1	0.8	-3.0	0.8	A+	
1124	610280	Lit	Lit	3947	.473	.171	.128	.473	.205	.024	.329	080	116	.329	085	1.278	0.036	9.0	1.1	9.2	1.2	A+	A+
1125	610301	Lit	Lit	263	.532	.532	.319	.114	.030	.004	.275	.275	142	142	045	1.093	0.139	2.9	1.2	3.8	1.3	A+	
1126	610209	Lit	Lit	527	.455	.177	.288	.455	.070	.010	.269	177	.074	.269	242	1.386	0.097	4.9	1.2	4.1	1.2	A-	
1127	618407	Lit	Lit	527	.839	.059	.055	.839	.038	.010	.502	227	249	.502	190	-0.882	0.130	-2.1	8.0	-2.2	0.7	A+	
1128	612532	Lit	Lit	263	.730	.068	.068	.103	.730	.030	.589	290	233	201	.589	-0.115	0.160	-2.3	0.8	-2.7	0.7	A+	
1129	612516	Lit	Lit	262	.744	.141	.076	.031	.744	.008	.360	137	171	223	.360	-0.112	0.159	0.6	1.1	1.0	1.1	A-	
1130	612517	Lit	Lit	262	.710	.069	.710	.126	.088	.008	.412	180	.412	231	139	0.107	0.153	0.2	1.0	0.2	1.0	A+	
1131	610121	Lit	Lit	261	.529	.092	.077	.529	.257	.046	.401	133	172	.401	053	1.021	0.146	2.3	1.2	2.9	1.3	A-	
1132	610123	Lit	Lit	261	.728	.728	.096	.073	.050	.054	.557	.557	297	190	086	-0.251	0.168	-1.1	0.9	-1.7	0.7	A+	
1133	610125	Lit	Lit	261	.674	.061	.674	.138	.073	.054	.584	228	.584	151	287	0.121	0.158	-1.8	0.9	-1.7	0.8	B+	1
1134	610124	Lit	Lit	261	.690	.690	.081	.146	.031	.054	.560	.560	235	208	169	0.019	0.161	-1.6	0.9	-0.7	0.9	A+	
1135	609157	Lit	Lit	263	.631	.631	.118	.133	.091	.027	.515	.515	163	188	247	0.478	0.141	-2.1	0.9	-1.9	0.9	A+	
1136	612485	Lit	Lit	262	.588	.588	.351	.042	.015	.004	.305	.305	154	150	203	0.829	0.138	1.8	1.1	1.4	1.1	A-	
1137	612494	Lit	Lit	262	.756	.756	.099	.057	.084	.004	.334	.334	181	189	087	-0.113	0.158	0.9	1.1	0.3	1.0	A-	
1138	612525	Lit	Lit	262	.542	.168	.202	.542	.061	.027	.326	128	.017	.326	299	0.988	0.138	2.0	1.1	2.5	1.2	A+	
1139	612539	Lit	Lit	271	.458	.055	.343	.458	.114	.030	.461	206	136	.461	203	1.363	0.136	-0.6	1.0	0.3	1.0	A-	
1140	612538	Lit	Lit	271	.620	.092	.166	.620	.092	.030	.556	262	251	.556	162	0.533	0.141	-2.2	0.9	-2.4	8.0	A-	
1141	612500	Lit	Lit	263	.878	.878	.049	.038	.030	.004	.524	.524	306	274	237	-1.270	0.208	-1.3	0.8	-2.3	0.5	A+	
1142	610202	Lit	Lit	263	.544	.544	.126	.068	.228	.034	.462	.462	206	237	129	0.905	0.141	0.0	1.0	0.0	1.0	A+	
1143	610252	Lit	Lit	262	.576	.576	.225	.115	.057	.027	.521	.521	270	239	204	0.710	0.141	-1.7	0.9	-1.1	0.9	A+	
1144	610292	Lit	Lit	262	.603	.061	.199	.603	.107	.031	.520	276	278	.520	202	0.547	0.143	-1.7	0.9	-1.4	0.9	B+	
1145	610293	Lit	Lit	262	.359	.157	.359	.218	.241	.027	.235	146	.235	186	.073	1.815	0.142	3.3	1.2	2.9	1.3	A+	
1146	610211	Lit	Lit	261	.674	.084	.674	.088	.142	.012	.340	164	.340	114	111	0.338	0.145	0.6	1.0	2.2	1.2	A-	
1147	610241	Lit	Lit	261	.395	.395	.272	.157	.134	.042	.406	.406	120	168	044	1.685	0.140	0.1	1.0	0.7	1.1	A-	
1148	610244	Lit	Lit	261	.506	.318	.069	.077	.506	.031	.255	.118	159	181	.255	1.004	0.139	4.3	1.2	3.3	1.3	A+	
1149	609215	Lit	Lit	261	.356	.153	.176	.356	.238	.077	.250	021	083	.250	.092	1.668	0.145	3.3	1.2	3.9	1.4	A-	
1150	610287	Lit	Lit	262	.382	.038	.050	.512	.382	.019	.185	181	211	.116	.185	1.635	0.140	4.5	1.3	4.7	1.5	A+	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PUDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
1151	610286	Lit	Lit	262	.550	.103	.118	.550	.206	.023	.474	210	171	.474	097	0.789	0.139	-0.8	1.0	-0.9	0.9	A-	
1152	609193	Lit	Lit	262	.714	.065	.714	.092	.076	.053	.550	140	.550	214	207	-0.266	0.162	-1.4	0.9	-1.5	0.8	A-	
1153	609194	Lit	Lit	262	.626	.626	.095	.157	.069	.053	.531	.531	202	136	201	0.281	0.148	-1.6	0.9	-1.4	0.9	B-	
1154	614029	Lit	Lit	271	.801	.801	.177	.022	.000	.000	.345	.345	324	097	.000	-0.442	0.162	-0.3	1.0	-0.8	0.9	A-	
1155	608118	Lit	Lit	269	.866	.866	.056	.026	.041	.011	.517	.517	312	225	148	-1.177	0.198	-1.0	0.9	-2.1	0.6	A+	
1156	612547	Lit	Lit	262	.668	.141	.668	.130	.053	.008	.491	109	.491	335	206	0.389	0.145	-1.4	0.9	-1.4	0.9	A-	
1157	608112	Lit	Lit	3947	.819	.075	.045	.819	.047	.014	.456	202	172	.456	193	-0.715	0.046	-1.9	1.0	-4.2	0.8	A-	A-
1158	608115	Lit	Lit	3947	.932	.932	.023	.018	.014	.013	.494	.494	200	197	193	-2.115	0.073	-2.8	0.8	-7.9	0.4	A+	A-
1159	608121	Lit	Lit	3947	.798	.071	.052	.066	.798	.013	.417	157	195	158	.417	-0.550	0.044	-1.1	1.0	-0.2	1.0	A+	A-
1160	610225	Lit	Lit	258	.705	.078	.093	.074	.705	.050	.585	243	269	240	.585	-0.146	0.161	-2.6	0.8	-2.6	0.7	A-	
1161	610254	Lit	Lit	525	.867	.059	.034	.867	.015	.025	.529	251	261	.529	175	-1.292	0.152	-1.5	0.9	-2.6	0.6	A+	
1162	608113	Lit	Lit	263	.399	.399	.475	.080	.030	.015	.233	.233	.012	144	150	1.747	0.141	4.0	1.2	3.4	1.3	A-	
1163	608122	Lit	Lit	263	.586	.137	.586	.247	.015	.015	.321	051	.321	148	177	0.788	0.142	2.4	1.2	1.6	1.1	A-	
1164	612575	Lit	Lit	262	.691	.092	.084	.134	.691	.000	.303	167	227	085	.303	0.253	0.149	1.5	1.1	2.2	1.3	A+	
1165	612533	Lit	Lit	262	.908	.023	.038	.908	.023	.008	.520	216	287	.520	248	-1.666	0.242	-1.0	0.8	-2.1	0.4	A+	
1166	608105	Lit	Lit	262	.752	.752	.046	.153	.034	.015	.408	.408	183	265	072	-0.209	0.162	0.6	1.1	0.0	1.0	A+	
1167	608133	Lit	Lit	264	.682	.682	.083	.144	.083	.008	.400	.400	294	103	180	0.151	0.146	0.0	1.0	0.7	1.1	A+	
1168	609242	Lit	Lit	264	.318	.242	.239	.193	.318	.008	.323	029	.011	314	.323	2.014	0.144	0.7	1.0	2.0	1.2	A-	
1169	608100	Lit	Lit	264	.606	.023	.299	.606	.061	.011	.356	185	156	.356	183	0.548	0.140	1.4	1.1	1.3	1.1	A-	
1170	608114	Lit	Lit	264	.546	.068	.546	.231	.136	.019	.308	174	.308	088	113	0.832	0.138	2.7	1.2	2.2	1.2	A+	
1171	610222	Lit	Lit	264	.436	.436	.091	.227	.212	.034	.321	.321	212	053	054	1.353	0.139	2.3	1.1	2.3	1.2	A-	
1172	608130	Lit	Lit	261	.847	.847	.042	.081	.019	.012	.398	.398	234	110	164	-0.963	0.192	-0.3	1.0	0.4	1.1	A-	
1173	608110	Lit	Lit	261	.801	.046	.801	.058	.073	.023	.532	276	.532	189	163	-0.630	0.178	-1.0	0.9	-0.3	0.9	A-	
1174	608111	Lit	Lit	261	.824	.054	.042	.824	.054	.027	.511	200	165	.511	175	-0.852	0.189	-0.8	0.9	-0.9	0.8	A+	
1175	609106	Lit	Lit	263	.517	.517	.042	.331	.107	.004	.272	.272	225	178	.047	1.098	0.134	2.5	1.1	2.3	1.1	B-	
1176	608120	Lit	Lit	525	.756	.069	.149	.756	.023	.004	.389	152	234	.389	175	-0.177	0.110	-0.5	1.0	-0.3	1.0	C-	
1177	608116	Lit	Lit	262	.470	.237	.157	.470	.126	.012	.305	161	050	.305	068	1.369	0.136	2.3	1.1	1.7	1.1	A-	
1178	612522	Lit	Lit	262	.573	.573	.084	.267	.046	.031	.427	.427	225	153	140	0.825	0.140	0.1	1.0	-0.1	1.0	A-	
1179	612524	Lit	Lit	262	.618	.095	.618	.134	.122	.031	.465	341	.465	074	158	0.578	0.143	-0.6	1.0	-1.1	0.9	A+	
1180	609142	Lit	Lit	271	.550	.126	.052	.269	.550	.004	.230	010	078	188	.230	0.956	0.134	3.7	1.2	3.3	1.3	A+	
1181	608117	Lit	Lit	271	.472	.092	.472	.033	.391	.011	.277	032	.277	247	113	1.324	0.135	3.4	1.2	3.3	1.2	B-	
1182	612536	Lit	Lit	271	.734	.734	.118	.055	.063	.030	.542	.542	220	247	282	-0.144	0.155	-2.1	0.9	-2.3	0.7	A+	
1183	612497	Lit	Lit	263	.521	.030	.205	.521	.232	.011	.235	197	155	.235	002	1.068	0.139	4.0	1.2	4.0	1.3	C-	
1184	608101	Lit	Lit	263	.734	.030	.734	.103	.129	.004	.466	227	.466	266	222	-0.064	0.155	-0.6	1.0	-1.4	0.8	A-	
1185	608106	Lit	Lit	263	.692	.114	.141	.049	.692	.004	.452	258	206	199	.452	0.166	0.149	0.0	1.0	-1.0	0.9	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1100	C4 4040	Grade	Grade	262	600	. ,		, ,	• •		225					0.440	0.440	in	in	out	out	/F	/B
1186	614019	Lit	Lit	262	.699	.130	.699	.103	.069	.000	.325	167	.325	252	066	0.148	0.148	1.3	1.1	0.6	1.1	Α-	
1187	608102	Lit	Lit	262	.382	.206	.176	.237	.382	.000	.512	134	262	223	.512	1.759	0.139	-1.8	0.9	-1.4	0.9	Α-	
1188	608103	Lit	Lit	262	.897	.897	.027	.034	.042	.000	.419	.419	210	214	273	-1.380	0.213	-0.7	0.9	-2.1	0.5	A+	
1189 1190	610100	Lit	Lit Lit	261 261	.330	.027	.088	.552	.330	.004	.370 .488	030	.002 321	299 173	.370	2.081 -0.524	0.143 0.171	-0.8 -1.3	1.0	0.4 -2.0	1.0	A-	
	610204	Lit				.812	.100			.008		.488			143		-		0.9		0.7	Α-	
1191	608104	Lit	Lit	261	.625	.084	.100	.625	.176	.015	.399	126	332	.399	030	0.595	0.141	0.3	1.0	-0.1	1.0	A+	
1192	610339	Lit	Lit	261	.540	.195	.042	.184	.540	.038	.419	207	120	095	.419	0.957	0.139	0.4	1.0	-0.2	1.0	B-	
1193	608123	Lit	Lit	261	.854	.854	.031	.023	.069	.023	.457	.457	072	116	178	-1.189	0.200	-0.1	1.0	-0.4	0.9	Α-	
1194	612518	Lit	Lit	261	.724	.031	.111	.092	.724	.042	.542	139	196	172	.542	-0.261	0.160	-1.4	0.9	-1.5	0.8	A-	
1195	612506	Lit	Lit	269	.788	.788	.071	.056	.056	.030	.595	.595	323	214	239	-0.612	0.171	-2.3	0.8	-2.9	0.6	B-	
1196	609134	Lit	Lit	262	.313	.439	.210	.034	.313	.004	.302	155	054	123	.302	2.015	0.145	0.2	1.0	0.5	1.1	A+	
1197	608119	Lit	Lit	262	.821	.004	.034	.821	.118	.023	.446	085	276	.446	117	-0.909	0.185	0.2	1.0	0.3	1.1	A-	
1198	609190	Lit	Lit	262	.756	.061	.756	.080	.057	.046	.494	228	.494	176	066	-0.526	0.170	-0.3	1.0	-0.7	0.9	Α-	
1199	608107	Lit	Lit	265	.506	.200	.170	.506	.094	.030	.304	.034	222	.304	020	1.118	0.138	3.4	1.2	3.1	1.3	A+	
1200	608108	Lit	Lit	265	.521	.253	.098	.106	.521	.023	.404	146	080	118	.404	1.069	0.138	1.0	1.1	0.6	1.1	A-	
1201	608109	Lit	Lit	265	.830	.045	.830	.026	.076	.023	.594	182	.594	202	282	-0.863	0.187	-1.7	0.8	-2.6	0.5	Α-	
1202	661545	6	6	251	.845	.064	.845	.048	.044	.000	.503	402	.503	181	222	-1.482	0.191	-1.4	0.8	-1.9	0.7	Α-	
1203	661546	6	6	606	.828	.053	.828	.053	.066	.000	.426	348	.426	253	106	-1.388	0.119	-0.6	1.0	-0.8	0.9	A+	
1204	661549	6	6	261	.801	.801	.058	.100	.042	.000	.435	.435	380	184	151	-1.207	0.174	-0.2	1.0	-0.8	0.9	A-	
1205	661550	6	6	577	.820	.094	.820	.045	.042	.000	.458	282	.458	255	205	-1.403	0.120	-0.7	1.0	-2.4	0.7	A+	
1206	661553	6	6	294	.721	.099	.143	.037	.721	.000	.459	207	262	277	.459	-0.557	0.145	-0.8	0.9	-1.3	0.9	A+	
1207	661555	6	6	595	.892	.061	.892	.022	.025	.000	.282	078	.282	241	214	-2.013	0.143	0.1	1.0	2.1	1.4	B+	A+
1208	661557	6	6	252	.734	.111	.734	.123	.032	.000	.453	274	.453	237	206	-0.704	0.160	-0.3	1.0	-0.7	0.9	A+	
1209	661558	6	6	618	.835	.078	.835	.044	.044	.000	.497	333	.497	246	220	-1.508	0.119	-1.8	0.9	-3.0	0.7	A-	
1210	661560	6	6	243	.901	.901	.041	.033	.025	.000	.362	.362	263	123	217	-1.938	0.228	-0.3	0.9	-1.1	0.7	A+	
1211	661562	6	6	637	.799	.038	.082	.082	.799	.000	.586	268	361	309	.586	-1.216	0.110	-3.8	0.8	-4.6	0.6	A+	
1212	661564	6	6	237	.317	.190	.317	.236	.257	.000	.196	119	.196	046	056	1.509	0.151	1.4	1.1	4.1	1.6	A-	
1213	661566	6	6	597	.496	.164	.214	.496	.126	.000	.190	212	.034	.190	092	0.538	0.091	5.9	1.2	5.9	1.3	A-	
1214	663048	6	6	265	.577	.143	.177	.102	.577	.000	.460	202	193	274	.460	0.095	0.141	-0.4	1.0	-0.4	1.0	A-	
1215	663049	6	6	263	.673	.084	.152	.673	.091	.000	.413	299	108	.413	251	-0.389	0.148	0.4	1.0	-0.3	1.0	A-	
1216	663050	6	6	281	.534	.263	.534	.100	.103	.000	.376	205	.376	120	201	0.346	0.135	0.9	1.1	1.1	1.1	A+	
1217	663051	6	6	269	.420	.420	.164	.316	.100	.000	.207	.207	221	.030	114	0.907	0.138	3.9	1.2	4.2	1.4	A-	
1218	663052	6	6	834	.622	.175	.090	.622	.113	.000	.468	191	361	.468	161	-0.083	0.080	-1.9	0.9	-1.9	0.9	A+	A-
1219	663053	6	6	796	.300	.181	.300	.114	.405	.000	003	177	003	132	.228	1.547	0.084	8.1	1.3	9.9	2.0	A+	A+
1220	663054	6	6	784	.429	.329	.107	.429	.135	.000	.186	.030	192	.186	137	0.880	0.080	5.8	1.2	8.5	1.5	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1221 663055 6 6 776 769 0.77 0.84 769 0.70 0.00 0.00 5.08 -213 -2.81 5.08 -3.11 -0.986 0.095 -2.4 0.9 -2.9 0.8 4 8 -1.222 663061 6 6 6 294 4.52 4.52 1.84 2.14 1.50 0.00 2.93 2.93 -0.95 -0.61 -2.36 0.713 0.132 2.7 1.2 3.2 1.3 A -1.223 663062 6 6 302 3.54 4.37 3.34 0.73 1.35 0.00 4.42 4.42 -2.74 -1.91 -1.86 -0.222 0.136 0.1 1.0 0.2 1.0 A -1.224 663063 6 6 302 3.54 4.37 3.54 0.73 1.35 0.00 4.46 4.62 -2.42 -1.03 1.224 0.133 3.5 1.2 7.2 1.9 B -1.225 663064 6 6 1.98 3.64 3.03 3.44 3.73 3.47 0.00 1.55 -0.76 1.55 -0.76 -1.55 -0.75 -1.55 -0.75 -1.55 -0.75 -1.55 -0.75 -1.55 -1.55 -1.55 -1.55	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1222 663061 6			Grade	Grade										. ,					in	in	out	out	/F	/B
1223 663062 6 6 6 302 .636 .636 .129 .103 .133 .000 .442 .442 .274 .191 .186 .0.232 0.136 .01 1.0 .0.2 1.0 A				-																				B-
1225 663064 6 6 302 354 437 354 0.73 1.36 0.00 1.46 0.57 1.46 0.42 0.103 1.224 0.133 3.5 1.2 7.2 1.9 B. 1225 663065 6 6 6 294 3.64 1.60 3.64 3.03 1.74 0.00 1.55 0.76 1.55 0.70 0.039 1.177 0.135 4.7 1.3 4.4 1.5 B+ 1226 663065 6 6 6 198 6.697 6.697 1.16 0.091 0.06 0.00 0.571 5.71 -2.68 3.46 2.62 -0.523 0.176 1.9 0.8 1.9 0.8 1.9 0.8 1.9 1228 663066 6 6 192 6.551 0.094 1.72 0.033 6.551 0.000 3.44 -0.087 -2.61 1.46 3.44 -0.232 0.172 1.2 1.1 1.8 1.2 A+ 1228 663067 6 6 6 0.01 6.17 1.41 1.39 1.10 6.17 0.00 0.78 1.147 7.384 4.78 -0.059 0.155 1.0 0.9 0.1 1.0 A- 1229 663068 6 6 804 7.46 7.46 1.80 0.37 0.36 0.00 3.16 3.16 -1.51 -2.40 -1.82 0.090 1.6 1.1 3.3 1.3 A+ 1230 663069 6 6 815 7.03 1.02 0.80 1.15 7.03 0.00 5.09 -2.81 -2.50 -2.51 5.09 -0.538 0.066 -2.7 0.9 -3.4 0.8 A+ 1232 663071 6 6 803 4.96 1.69 1.96 4.96 4.40 0.000 3.11 1.36 -0.10 1.71 0.87 0.562 0.079 7.6 1.2 8.1 1.4 B+ 1233 663105 6 6 803 4.96 5.42 5.06 5.42 1.50 0.00 4.83 +2.21 -2.24 -1.76 0.354 0.18 -2.0 0.9 0.1 1.0 A+ 1234 663105 6 6 389 383 2.78 3.68 0.72 0.00 3.85 1.85 -0.34 0.05 -2.73 1.713 0.122 2.3 1.1 4.2 1.6 A+ 1235 663107 6 6 389 383 2.78 3.68 0.07 0.00 3.85 1.85 -0.34 0.05 0.079 7.6 1.2 8.1 4.4 B+ 1236 663108 6 6 387 3.88 2.78 3.88 0.07 0.00 3.85 1.85 -0.34 0.05 0.07 7.6 1.2 8.1 4.7 1.5 A+ 1236 663107 6 6 389 3.83 2.78 3.88 0.07 0.00 3.85 1.85 -0.04 0.05 0.05 0.05 0.07 0.05 0.07 0.05 0.05 0.07 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05	1																							\vdash
1225 663064 6 6 294 364 160 364 303 174 000 155 -076 1.15 -070 0.039 1.177 0.135 4.7 1.1 4.4 1.5 8+ 1226 663065 6 6 198 .697 .697 .116 .091 .096 .000 .571 .571 .572 .268 .346 .262 .0523 0.176 .1.9 0.8 .1.9 0.8 A+ 1228 663067 6 6 201 .617 .134 .139 .110 .617 .000 .344 .087 .261 .1.46 .344 .0232 0.172 .1.2 1.1 1.8 1.2 A+ 1228 663068 6 6 6 201 .617 .134 .139 .110 .617 .000 .478 .149 .1.77 .384 .478 .0.059 0.165 .1.0 .00 0.1 1.0 A- 1220 663068 6 6 6 815 .703 .102 .080 .115 .703 .000 .316 .316 .315 .240 .322 .0.12 .0.90 .1.6 .1.1 .3.3 .1.3 A+ 1230 663069 6 6 815 .703 .102 .080 .115 .703 .000 .509 .281 .250 .251 .509 .0.538 .0.066 .2.7 .0.9 .3.4 .0.8 A+ 1231 663070 6 6 849 .481 .200 .224 .196 .481 .000 .361 .109 .276 .116 .361 .044 .0.076 .0.7 .1.2 .8.1 1.4 A+ 1233 663105 6 6 369 .542 .206 .542 .152 .100 .000 .483 .221 .483 .274 .176 .0.354 .0.18 .2.0 .0.9 .0.8 .1.1 A+ 1233 663105 6 6 389 .283 .283 .283 .283 .283 .283 .383 .274 .276 .226 .213 .0.582 .0.12 .0.1 1236 663107 6 6 387 .762 .762 .109 .0.90 .0.90 .0.90 .385 .185 .0.94 .0.95 .273 .1713 .0.12 .2.3 .1.1 .4.2 .1.6 A+ 1235 663107 6 6 387 .762 .762 .109 .0.90 .0.90 .0.90 .385 .185 .0.94 .0.95 .0.91 .0.114 .1.7 .0.9 .1.7 .0.8 A+ 1236 663108 6 6 387 .762 .762 .0.99 .0.90 .0.90 .0.90 .3.95 .1.85 .1.85 .0.99 .0.90 .0.90 .0.90 .3.95 .1.85 .1.85 .0.99 .0.90 .0.90 .0.90 .3.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .0.95 .	-			-												-								\vdash
1226 663065 6 6 198 .697 .697 .116 .091 .096 .000 .571 .577 .268 .346 .262 .0523 0.176 .1.9 0.8 .1.9 0.8 A+ .1227 .663066 6 6 .122 .6551 .094 .172 .083 .0551 .000 .348 .4.96 .146 .344 .0.322 .0.172 .1.2 .1.1 .1.8 .1.2 A+ .1228 .663067 6 6 .201 .617 .134 .139 .110 .617 .000 .478 .1.49 .1.77 .344 .4.48 .0.059 .0.165 .1.0 .0.9 0.1 .1.0 A																							H	
1227 663066 6 6 192 .651 .094 .172 .083 .651 .000 .344 .087 .261 .146 .344 .0.232 0.172 .12 1.1 1.8 1.2 A+ .128 .129 .663067 6 6 .201 .017 .134 .139 .110 .617 .000 .478 .149 .177 .384 .478 .0.059 0.165 .10 .0.9 0.1 1.0 A- .1229 .663068 6 6 .804 .746 .746 .180 .307 .305 .000 .316 .316 .151 .240 .182 .0.812 .0.99 .0.65 .1.0 .0.9 0.1 1.0 A- .1220 .663069 6 6 .815 .703 .102 .080 .115 .703 .000 .509 .281 .250 .251 .509 .0.538 .0.86 .27 .0.9 .3.4 .0.8 A+ .1231 .663070 6 6 .849 .481 .200 .124 .196 .481 .000 .316 .119 .276 .116 .361 .0.644 .0.076 .0.7 .1.0 .1.1 .1.1 A+ .1233 .663105 6 6 .369 .542 .206 .542 .152 .100 .000 .485 .484 .201 .124 .196 .481 .000 .171 .136 .0.10 .171 .087 .0.522 .0.79 .76 .1.2 .8.1 .1.4 B+ .1233 .663105 6 6 .369 .542 .206 .542 .152 .100 .000 .485 .465 .270 .240 .213 .0.582 .0.123 .0.5 .0.9 .0.9 .0.8 .1.0 A+ .1235 .663107 6 6 .389 .283 .283 .278 .368 .072 .000 .185 .185 .334 .205 .273 .1.713 .0.122 .2.3 .1.1 .4.2 .1.6 A+ .1236 .663108 6 6 .387 .762 .762 .109 .0.90 .0.90 .0.85 .165 .354 .246 .202 .0.911 .0.134 .1.7 .0.9 .1.7 .0.8 A+ .1237 .663109 6 6 .383 .381 .261 .243 .381 .115 .000 .227 .0.71 .166 .227 .2.19 .1.182 .0.116 .2.8 .1.1 .4.7 .1.5 A+ .1238 .663110 6 6 .383 .381 .261 .243 .381 .15 .000 .307 .309 .000 .316 .3184 .2.7 .2.19 .1.182 .0.116 .2.8 .1.1 .4.7 .1.5 A+ .1.24 .4.6 .2.24 .	-			-				.364															B+	igwdot
1228 663067 6 6 6 201 6.617 .134 .139 .110 6.617 .000 .478 .149 .177 .384 .478 .0.059 0.165 .1.0 0.9 0.1 1.0 A .129 663068 6 6 804 .746 .746 .180 .037 .036 .000 .316 .316 .151 .240 .182 .0.812 .0.90 .1.6 .1.1 .33 .1.3 A .123 .123 .663070 6 6 804 .746 .746 .180 .037 .036 .000 .509 .281 .250 .251 .509 .0.538 .0.986 .2.7 .0.9 .3.4 0.88 A .1231 .663070 6 6 803 .496 .169 .196 .481 .000 .361 .309 .276 .1.16 .361 .0.644 .0.076 .0.7 .1.0 .1.8 .1.1 A .1.1		663065	6	6				.116			.000	.571		268		262			-1.9	0.8	-1.9		A+	igwdot
1229 663068 6 6 804 7.46 7.46 1.80 0.37 0.36 0.00 0.316 3.16 1.51 -2.40 -1.82 0.909 1.6 1.1 3.3 1.3 A+ 1230 663069 6 6 815 7.03 1.02 0.80 1.15 7.03 0.00 5.59 -2.81 -2.50 -2.51 5.59 -0.538 0.086 -2.7 0.9 -3.4 0.8 A+ 1231 663070 6 6 803 4.96 1.69 1.96 4.96 1.40 0.00 1.71 -1.36 0.10 1.71 -0.87 0.562 0.079 7.6 1.2 8.1 1.4 B+ 1233 663071 6 6 803 4.96 1.69 1.96 4.96 1.40 0.00 1.71 -1.36 0.10 1.71 -0.87 0.562 0.079 7.6 1.2 8.1 1.4 B+ 1233 663105 6 6 3.99 5.42 2.06 5.42 1.52 1.00 0.00 4.83 -2.21 4.83 -2.74 -1.16 0.515 0.554 0.118 -2.0 0.9 -0.8 1.0 A+ 1234 663106 6 6 3.89 2.83 2.83 2.78 3.68 0.02 4.65 6.52 -2.70 -2.40 -2.13 -5.82 0.123 0.5 1.0 1.7 0.8 A- 1235 663107 6 6 3.89 2.83 2.83 2.78 3.68 0.72 0.00 .185 1.85 0.034 0.05 -2.73 1.713 0.122 2.3 1.1 4.2 1.6 A+ 1236 663108 6 6 3.72 4.30 4.30 1.37 2.77 1.56 0.00 3.07 3.07 -2.24 0.21 0.92 0.116 2.1 1.1 2.0 1.2 A- 1238 663110 6 6 3.83 3.81 2.61 2.43 3.81 1.15 0.00 2.27 0.71 1.66 2.27 2.19 1.182 0.116 2.8 1.1 4.7 1.5 A- 1240 663120 6 6 6 1.055 4.99 4.99 4.81 2.73 4.84 0.00 3.91 3.91 -2.82 -0.99 -2.00 0.607 0.667 0.66 7.1 1.2 9.9 1.5 A- 1244 663121 6 6 6 1.125 2.50 1.45 5.20 2.00 1.36 0.00 3.42 -1.75 0.33 2.28 0.00 0.607 0.607 0.607 0.66 0.7 1.0 4.2 1.4 A- 1244 663121 6 6 6 1.125 3.48 1.15 0.00 0.38 0.00 0.342 -1.75 0.33 0.006 0.06 0.06 0.7 0.07 0.06 0.07 0.06 0.07 0.06 0	1227	663066	6	6		.651	.094	.172	.083	.651	.000	.344	087	261	146	.344	-0.232	0.172	1.2	1.1	1.8	1.2	A+	<u> </u>
1230 663069 6 6 815 .703 .102 .080 .115 .703 .000 .509 .281 .250 .251 .509 .0.538 .0.086 .2.7 .0.9 .3.4 .0.8 A+ .221 .663070 6 6 .849 .481 .200 .124 .196 .481 .000 .361 .109 .276 .116 .361 .0.644 .0.076 .0.7 .1.0 .1.8 .1.1 A+ .213 .663071 6 6 6 .803 .496 .194 .996 .440 .000 .171 .136 .0.10 .171 .0.87 .0.562 .0.079 .7.6 .1.2 .8.1 .1.4 B+ .2133 .663105 6 6 .369 .542 .206 .542 .152 .100 .000 .483 .221 .483 .224 .4.76 .0.354 .0.118 .2.0 .0.9 .0.8 .1.0 A+ .2124 .663106 6 6 .415 .718 .718 .718 .0.84 .130 .068 .000 .465 .4.65 .2.70 .2.40 .2.13 .0.582 .0.123 .0.5 .0.5 .1.0 .1.7 .0.8 A- .2.25 .6.3107 .6.6 6 .6.6 .389 .283	1228	663067	6	6	201	.617	.134	.139	.110	.617	.000	.478	149	177	384	.478	-0.059	0.165	-1.0	0.9	0.1	1.0	A-	<u> </u>
1231 663070 6 6 849 .481 .200 .124 .196 .481 .000 .361 .109 .276 .116 .361 0.644 0.076 0.7 1.0 1.8 1.1 A+	1229	663068	6	6	804	.746	.746	.180	.037	.036	.000	.316	.316	151	240	182	-0.812	0.090	1.6	1.1	3.3	1.3	A+	
1232 663071 6 6 803 .496 .169 .196 .496 .440 .000 .171 .136 .010 .171 .087 0.562 0.079 7.6 1.2 8.1 1.4 8+ 1233 663105 6 6 369 .542 .206 .542 .152 .100 .000 .483 .221 .483 .274 .176 0.354 0.118 .2.0 0.9 0.8 1.0 A+ 1235 663107 6 6 389 .283 .283 .278 .368 .072 .000 .185 .185 .034 .005 .273 .1713 0.122 .2.3 1.1 4.2 1.6 A+ 1236 663108 6 6 387 .762 .762 .109 .090 .039 .000 .516 .516 .354 .246 .202 .0911 0.134 .17 0.9 .17 0.8 A- 1237 663109 6 6 387 .430 .430 .137 .277 .156 .000 .307 .284 .042 .201 0.922 0.116 .2.1 1.1 .2.0 1.2 A- 1238 663110 6 6 383 .381 .261 .243 .381 .115 .000 .227 .071 .166 .227 .219 1.182 0.116 .2.8 1.1 .47 .15 A- 1239 663119 6 6 1105 .386 .179 .337 .386 .098 .000 .148 .037 .067 .148 .277 1.169 0.068 .71 1.2 .99 1.5 A- 1240 663120 6 6 1105 .386 .179 .337 .386 .098 .000 .381 .391 .282 .099 .200 0.607 0.067 0.067 0.06 0.06 .10 1.8 1.1 A- 1241 663121 6 6 1135 .214 .409 .175 .203 .214 .000 .331 .391 .282 .275 .170 .503 .0026 0.065 .40 .09 .4.4 0.8 A- 1242 663123 6 6 1152 .214 .409 .175 .203 .214 .000 .381 .159 .077 .083 .038 .2159 0.077 .56 .12 .99 .2.5 A+ 1243 663149 6 6 6 .1144 .469 .183 .172 .177 .469 .000 .387 .193 .287 .144 .052 .0514 .0066 .39 .11 .1.1 .2.4 .44 1244 663124 6 6 6 .1144 .469 .183 .172 .177 .469 .000 .387 .193 .287 .144 .052 .0514 .0066 .0.9 .0.9 .1.1 .4.4 .4.4 1245 663149 6 6 6 .314 .348 .511 .072 .070 .000 .311 .071 .311 .281 .193 .049 .0.07 .56 .1.2 .9.9 .2.5 .	1230	663069	6	6		.703	.102	.080	.115	.703	.000	.509	281	250	251	.509	-0.538	0.086	-2.7	0.9	-3.4	8.0	A+	
1233 663105 6 6 369 .542 .206 .542 .152 .100 .000 .483 221 .483 274 176 0.354 0.118 -2.0 0.9 -0.8 1.0 A+ 1234 663106 6 6 415 .718 .718 .088 .000 .465 .270 .240 .213 .0582 .0123 .05. 1.0 .17 0.8 A 1235 663107 6 6 389 .283 .288 .072 .000 .185 .034 .005 .273 1.713 .0122 .23 1.1 4.2 1.6 A+ 1236 663108 6 6 387 .762 .762 .109 .000 .030 .307 .284 .042 .201 .0922 .0116 2.1 1.1 2.0 1.2 .4 .0 .203 .0 .0 .0 .0 .0 .0	1231	663070	6	6	849	.481	.200	.124	.196	.481	.000	.361	109	276	116	.361	0.644	0.076	0.7	1.0	1.8	1.1	A+	
1234 663106 6 6 415 718 718 718 0.84 1.30 0.68 0.00 0.465 0.465 0.465 0.270 0.240 0.213 0.582 0.123 0.5 1.0 -1.7 0.8 A 1235 663107 6 6 389 0.283	1232	663071	6	6	803	.496	.169	.196	.496	.140	.000	.171	136	010	.171	087	0.562	0.079	7.6	1.2	8.1	1.4	B+	
1235 663107 6	1233	663105	6	6	369	.542	.206	.542	.152	.100	.000	.483	221	.483	274	176	0.354	0.118	-2.0	0.9	-0.8	1.0	A+	<u> </u>
1236 663108 6 6 387 .762 .762 .109 .090 .039 .000 .516 .516 .354 .226 .202 -0.911 0.134 -1.7 0.9 -1.7 0.8 A-1237 1237 663109 6 6 372 .430 .430 .137 .277 .156 .000 .307 .284 .042 .201 .0.922 0.116 2.1 1.1 2.0 1.2 A-123 1239 663119 6 6 1105 .386 .179 .337 .386 .098 .000 .148 .057 .067 .148 .277 .1.169 .0.68 7.1 1.2 .99 1.5 A-A 1240 663120 6 6 1085 .499 .499 .181 .273 .048 .000 .503 .289 .275 .170 .503 -0.060 .0.065 .4.4 .0.9 .4.4 .0.8 <th< td=""><td>1234</td><td>663106</td><td>6</td><td>6</td><td>415</td><td>.718</td><td>.718</td><td>.084</td><td>.130</td><td>.068</td><td>.000</td><td>.465</td><td>.465</td><td>270</td><td>240</td><td>213</td><td>-0.582</td><td>0.123</td><td>-0.5</td><td>1.0</td><td>-1.7</td><td>0.8</td><td>A-</td><td><u> </u></td></th<>	1234	663106	6	6	415	.718	.718	.084	.130	.068	.000	.465	.465	270	240	213	-0.582	0.123	-0.5	1.0	-1.7	0.8	A-	<u> </u>
1237 663109 6 6 6 372 .430 .430 .137 .277 .156 .000 .307 .307 .284 .042 .201 0.922 0.116 2.1 1.1 2.0 1.2 A- 1238 663110 6 6 6 383 .381 .261 .243 .381 .115 .000 .227 .071 .166 .227 .219 1.182 0.116 2.8 1.1 4.7 1.5 A- 1239 663119 6 6 6 1105 .386 .179 .337 .386 .098 .000 .148 .057 .067 .148 .277 1.169 0.068 7.1 1.2 9.9 1.5 A- 1240 663120 6 6 6 1085 .499 .499 .181 .273 .048 .000 .391 .391 .282 .099 .200 0.607 0.067 .0.6 1.0 1.8 1.1 A- 1241 663121 6 6 6 1233 .628 .163 .108 .101 .628 .000 .503 .289 .275 .170 .503 .0.026 0.065 .4.4 0.9 -4.4 0.8 A+ 1242 663122 6 6 6 1152 .214 .409 .175 .203 .214 .000 .308 .159 .077 .083 .038 .2.159 0.077 5.6 1.2 9.9 2.5 A+ 1243 663123 6 6 1128 .520 .145 .520 .200 .136 .000 .287 .193 .287 .144 .052 0.514 0.066 3.9 1.1 4.6 1.2 A- 1244 663124 6 6 6 1114 .469 .183 .172 .177 .469 .000 .342 .156 .129 .426 .342 0.758 0.066 0.7 1.0 4.2 1.2 A+ 1245 663149 6 6 6 .977 .511 .348 .511 .072 .070 .000 .311 .071 .311 .281 .193 0.491 0.079 .3.1 1.1 3.9 1.2 A+ 1246 663150 6 6 804 .619 .619 .167 .086 .128 .000 .437 .437 .102 .305 .266 .0.059 0.082 .0.7 1.0 .0.7 1.0 A+ 1247 663151 6 6 6 .356 .565 .267 .163 .214 .356 .000 .423 .217 .276 .011 .423 1.292 0.079 .2.4 0.9 -1.3 0.9 A+ 1248 663190 6 6 6 .366 .366 .366 .366 .378 .141 .070 .603 .000 .335 .258 .169 .385 .135 0.239 0.120 0.8 1.0 1.1 1.1 A+ 1250 663191 6 6 6 .346 .503 .055 .165 .278 .503 .000 .325 .258 .169 .385 .135 0.239 0.120 0.8 1.0 1.1 1.1 A+ 1250 663193 6 6 6 .344 .433 .151 .204 .212 .433 .000 .497 .363 .497 .206 .229 .1.057 0.147 .0.9 0.9 -1.18 0.8 A- 1251 663194 6 6 6 .346 .503 .055 .165 .278 .503 .000 .262 .142 .196 .058 .262 .0.580 0.119 .2.6 1.1 4.3 1.3 A- 1251 663193 6 6 6 .344 .433 .151 .204 .212 .433 .000 .188 .122 .077 .209 .198 .0.884 0.121 4.3 1.2 5.3 1.5 A+ 1252 663193 6 6 6 .346 .533 .557 .355 .082 .127 .000 .208 .000 .000 .208 .234 .001 0.0378 .0143 3.6 1.2 4.5 1.4 A+	1235	663107	6	6	389	.283	.283	.278	.368	.072	.000	.185	.185	034	.005	273	1.713	0.122	2.3	1.1	4.2	1.6	A+	
1238 663110 6 6 6 383 .381 .261 .243 .381 .115 .000 .227 .071 .1.66 .227 .219 1.182 0.116 2.8 1.1 4.7 1.5 A- 1239 663119 6 6 6 1105 .386 .179 .337 .386 .098 .000 .148 .057 .067 .148277 1.169 0.068 .7.1 1.2 9.9 1.5 A- 1240 663120 6 6 6 1085 .499 .499 .181 .273 .048 .000 .391 .391 .282 .0.99 .2.00 0.607 0.067 .0.66 .1.0 1.8 1.1 A- 1241 663121 6 6 6 .1233 .628 .163 .108 .101 .628 .000 .503 .289 .275 .1.70 .503 .0.026 .0.065 .4.4 0.9 .4.4 0.8 A+ 1242 663122 6 6 6 .1152 .214 .409 .175 .203 .214 .000 .038 .159 .0.07 .083 .0.38 .2.159 .0.075 .5.6 .1.2 9.9 2.5 A+ 1243 663123 6 6 6 .1128 .520 .145 .520 .200 .136 .000 .287 .193 .287 .144 .052 .0.514 .0.066 .3.9 1.1 4.6 1.2 A- 1244 663124 6 6 6 .1114 .469 .183 .172 .177 .469 .000 .342 .156 .129 .162 .342 .0.758 .0.066 .0.7 1.0 4.2 1.2 A+ 1245 663149 6 6 797 .511 .348 .511 .072 .070 .000 .311 .071 .311 .281 .193 .0.491 .0.079 .3.1 1.1 3.9 1.2 A+ 1246 .663150 6 6 804 .619 .619 .619 .617 .086 .128 .000 .437 .437 .102 .3.05 .2.66 .0.059 .0.082 .0.7 1.0 .0.7 1.0 A+ 1248 .663151 6 6 6 .835 .356 .267 .163 .214 .356 .000 .423 .217 .276 .0.01 .423 1.292 .0.079 .2.4 .0.9 -1.3 0.9 A+ 1249 .663190 6 6 6 .346 .503 .055 .165 .278 .503 .000 .326 .142 .196 .0.58 .326 .0.580 .0.119 .2.6 1.1 4.3 1.3 A- 1250 .663191 6 6 6 .346 .503 .055 .165 .278 .503 .000 .262 .142 .196 .0.58 .262 .0.580 .0.119 .2.6 1.1 4.3 1.3 A- 1251 .663193 6 6 6 .344 .433 .151 .204 .212 .433 .000 .188 .1.62 .107 .0.90 .188 .1.62 .2.71 .1.63 .1.23 .0.144 .3 1.2 4.5 1.5 B- 1252 .663194 6 6 6 .344 .433 .151 .204 .212 .433 .000 .188 .1.62 .107 .209 .209 .198 .0.884 .0.121 .4.3 1.2 4.5 1.4 A+ 1253 .663194 6 6 6 .346 .533 .367 .131 .367 .173 .328 .000 .188 .1.62 .209 .209 .209 .209 .0.100 .0.378 .0.143 .3.6 1.2 4.5 1.4 A+	1236	663108	6	6	387	.762	.762	.109	.090	.039	.000	.516	.516	354	246	202	-0.911	0.134	-1.7	0.9	-1.7	8.0	A-	
1239 663119 6 6 1105 3.86 1.79 3.37 3.86 .098 .000 .148 057 .067 .148 277 1.169 0.068 7.1 1.2 9.9 1.5 A- A+ 1240 663120 6 6 1085 .499 .499 .181 .273 .048 .000 .391 .391 282 .099 200 0.667 0.067 0.06 1.0 1.8 1.1 A- A- 1241 663121 6 6 1233 .628 .163 .108 .101 .628 .000 .503 289 275 170 .503 -0.026 0.065 -4.4 0.9 -4.4 0.8 A- A- 1242 663122 6 6 1128 .520 .103 .287 .193 .287 .144 052 .0.514 .0.066 3.9 .1.1 .4.6 1.2 A- <td>1237</td> <td>663109</td> <td>6</td> <td>6</td> <td>372</td> <td>.430</td> <td>.430</td> <td>.137</td> <td>.277</td> <td>.156</td> <td>.000</td> <td>.307</td> <td>.307</td> <td>284</td> <td>.042</td> <td>201</td> <td>0.922</td> <td>0.116</td> <td>2.1</td> <td>1.1</td> <td>2.0</td> <td>1.2</td> <td>A-</td> <td></td>	1237	663109	6	6	372	.430	.430	.137	.277	.156	.000	.307	.307	284	.042	201	0.922	0.116	2.1	1.1	2.0	1.2	A-	
1240 663120 6 6 1085 .499 .489 .181 .273 .048 .000 .391 .282 .099 200 .0.607 .0.67 -0.6 1.0 1.8 1.1 A- A- 1241 663121 6 6 1233 .628 .163 .108 .101 .628 .000 .503 289 275 170 .503 -0.026 0.065 -4.4 0.9 -4.4 0.8 A+ A- 1242 663122 6 6 1152 .214 .409 .175 .203 .214 .000 038 .159 .077 .083 038 2.159 0.077 5.6 1.2 9.9 2.5 A+ A- 1243 663123 6 6 1124 .469 .183 .172 .177 .469 .000 .342 .156 .129 .052 .0514 .066 0.7 1.0 .42	1238	663110	6	6	383	.381	.261	.243	.381	.115	.000	.227	.071	166	.227	219	1.182	0.116	2.8	1.1	4.7	1.5	A-	
1241 663121 6 6 1233 .628 .163 .108 .101 .628 .000 .503 275 170 .503 -0.026 0.065 -4.4 0.9 -4.4 0.8 A+ A- 1242 663122 6 6 1152 .214 .409 .175 .203 .214 .000 -038 .159 -0.07 -0.08 .2159 0.077 5.6 1.2 9.9 2.5 A+ A- 1243 663123 6 6 11128 .520 .145 .520 .200 .136 .000 .287 193 .287 144 052 .0.514 .0.066 3.9 1.1 4.6 1.2 A- 1244 663124 6 6 1114 .469 .183 .172 .177 .469 .000 .342 156 129 162 .342 0.758 0.066 0.7 1.0 .4 .2 </td <td>1239</td> <td>663119</td> <td>6</td> <td>6</td> <td>1105</td> <td>.386</td> <td>.179</td> <td>.337</td> <td>.386</td> <td>.098</td> <td>.000</td> <td>.148</td> <td>057</td> <td>.067</td> <td>.148</td> <td>277</td> <td>1.169</td> <td>0.068</td> <td>7.1</td> <td>1.2</td> <td>9.9</td> <td>1.5</td> <td>A-</td> <td>A+</td>	1239	663119	6	6	1105	.386	.179	.337	.386	.098	.000	.148	057	.067	.148	277	1.169	0.068	7.1	1.2	9.9	1.5	A-	A+
1242 663122 6 6 1152 .214 .409 .175 .203 .214 .000 038 .159 077 .083 038 2.159 0.077 5.6 1.2 9.9 2.5 A+ A- 1243 663123 6 6 1128 .520 .145 .520 .200 .136 .000 .287 193 .287 144 052 .0.514 0.066 3.9 1.1 4.6 1.2 A- B- 1244 663124 6 6 1114 .469 .183 .172 .177 .469 .000 .342 156 129 162 .342 0.758 0.066 0.7 1.0 4.2 1.2 A+ A+ 1245 .663149 6 6 .797 .511 .348 .511 .072 .070 .000 .437 .437 102 .305 .266 -0.059 0.082 -0.7<	1240	663120	6	6	1085	.499	.499	.181	.273	.048	.000	.391	.391	282	099	200	0.607	0.067	-0.6	1.0	1.8	1.1	A-	A-
1243 663123 6 6 1128 .520 .145 .520 .120 .136 .000 .287 193 .287 144 052 .0.514 0.066 3.9 1.1 4.6 1.2 A- B- 1244 663124 6 6 1114 .469 .183 .172 .177 .469 .000 .342 156 .342 0.758 0.066 0.7 1.0 4.2 1.2 A+ A+ 1245 663149 6 6 797 .511 .348 .511 .072 .070 .000 .311 071 .311 281 193 0.491 0.079 3.1 1.1 3.9 1.2 A+ 1246 663150 6 6 804 .619 .167 .086 .128 .000 .437 .437 102 305 266 -0.059 0.082 07 1.0 .42 .1 .4	1241	663121	6	6	1233	.628	.163	.108	.101	.628	.000	.503	289	275	170	.503	-0.026	0.065	-4.4	0.9	-4.4	0.8	A+	A-
1244 663124 6 6 1114 .469 .183 .172 .177 .469 .000 .342 156 129 .162 .342 0.758 0.066 0.7 1.0 4.2 1.2 A+ A+ 1245 663149 6 6 797 .511 .348 .511 .072 .070 .000 .311 071 .311 281 193 0.491 0.079 3.1 1.1 3.9 1.2 A+ 1246 663150 6 6 804 .619 .167 .086 .128 .000 .437 .437 102 305 266 -0.059 0.082 -0.7 1.0 -0.7 1.0 A+ 1246 663151 6 6 835 .356 .267 .163 .214 .356 .000 .423 217 276 .011 .423 1.292 0.079 -2.4 0.9 -1.3 0.9 </td <td>1242</td> <td>663122</td> <td>6</td> <td>6</td> <td>1152</td> <td>.214</td> <td>.409</td> <td>.175</td> <td>.203</td> <td>.214</td> <td>.000</td> <td>038</td> <td>.159</td> <td>077</td> <td>083</td> <td>038</td> <td>2.159</td> <td>0.077</td> <td>5.6</td> <td>1.2</td> <td>9.9</td> <td>2.5</td> <td>A+</td> <td>A-</td>	1242	663122	6	6	1152	.214	.409	.175	.203	.214	.000	038	.159	077	083	038	2.159	0.077	5.6	1.2	9.9	2.5	A+	A-
1245 663149 6 6 797 .511 .348 .511 .072 .070 .000 .311 071 .311 281 193 0.491 0.079 3.1 1.1 3.9 1.2 A+ 1246 663150 6 6 804 .619 .167 .086 .128 .000 .437 437 102 305 266 -0.059 0.082 -0.7 1.0 -0.7 1.0 A+ 1247 663151 6 6 835 .356 .267 .163 .214 .356 .000 .423 217 276 011 .423 1.292 0.079 -2.4 0.9 -1.3 0.9 A+ A- 1248 663152 6 6 790 .603 .187 .141 .070 .603 .000 .350 068 168 340 .350 0.027 0.082 2.1 1.1 2.1 B+<	1243	663123	6	6	1128	.520	.145	.520	.200	.136	.000	.287	193	.287	144	052	0.514	0.066	3.9	1.1	4.6	1.2	A-	B-
1246 663150 6 6 804 .619 .167 .086 .128 .000 .437 .437 102 305 266 -0.059 0.082 -0.7 1.0 -0.7 1.0 A+ 1247 663151 6 6 835 .356 .267 .163 .214 .356 .000 .423 217 276 011 .423 1.292 0.079 -2.4 0.9 -1.3 0.9 A+ A- 1248 663152 6 6 790 .603 .187 .141 .070 .603 .000 .350 068 168 340 .350 0.027 0.082 2.1 1.1 2.1 1.1 B+ 1249 663190 6 6 356 .565 .267 .155 .565 .014 .000 .385 258 169 .385 135 0.239 0.120 0.8 1.0 1.1 1.1<	1244	663124	6	6	1114	.469	.183	.172	.177	.469	.000	.342	156	129	162	.342	0.758	0.066	0.7	1.0	4.2	1.2	A+	A+
1247 663151 6 6 835 .356 .267 .163 .214 .356 .000 .423 217 276 011 .423 1.292 0.079 -2.4 0.9 -1.3 0.9 A+ A- 1248 663152 6 6 790 .603 .187 .141 .070 .603 .000 .350 068 168 340 .350 0.027 0.082 2.1 1.1 2.1 1.1 B+ 1249 663190 6 6 356 .565 .267 .155 .565 .014 .000 .385 258 169 .385 135 0.239 0.120 0.8 1.0 1.1 1.1 A+ 1250 663191 6 6 346 .503 .055 .165 .278 .503 .000 .262 142 196 058 .262 0.580 0.119 2.6 1.1 4.3 <td>1245</td> <td>663149</td> <td>6</td> <td>6</td> <td>797</td> <td>.511</td> <td>.348</td> <td>.511</td> <td>.072</td> <td>.070</td> <td>.000</td> <td>.311</td> <td>071</td> <td>.311</td> <td>281</td> <td>193</td> <td>0.491</td> <td>0.079</td> <td>3.1</td> <td>1.1</td> <td>3.9</td> <td>1.2</td> <td>A+</td> <td></td>	1245	663149	6	6	797	.511	.348	.511	.072	.070	.000	.311	071	.311	281	193	0.491	0.079	3.1	1.1	3.9	1.2	A+	
1248 663152 6 6 790 .603 .187 .141 .070 .603 .000 .350 068 168 340 .350 0.027 0.082 2.1 1.1 2.1 1.1 B+ 1249 663190 6 6 356 .565 .267 .155 .565 .014 .000 .385 169 .385 135 0.239 0.120 0.8 1.0 1.1 1.1 A+ 1250 663191 6 6 346 .503 .055 .165 .278 .503 .000 .262 142 196 058 .262 0.580 0.119 2.6 1.1 4.3 1.3 A- 1251 663192 6 6 343 .781 .096 .041 .000 .497 363 .497 206 229 -1.057 0.147 -0.9 0.9 -1.8 0.8 A- 1252 663193 6 6 344 .433 .151 .204 .212 .433 </td <td>1246</td> <td>663150</td> <td>6</td> <td>6</td> <td>804</td> <td>.619</td> <td>.619</td> <td>.167</td> <td>.086</td> <td>.128</td> <td>.000</td> <td>.437</td> <td>.437</td> <td>102</td> <td>305</td> <td>266</td> <td>-0.059</td> <td>0.082</td> <td>-0.7</td> <td>1.0</td> <td>-0.7</td> <td>1.0</td> <td>A+</td> <td></td>	1246	663150	6	6	804	.619	.619	.167	.086	.128	.000	.437	.437	102	305	266	-0.059	0.082	-0.7	1.0	-0.7	1.0	A+	
1249 663190 6 6 356 .565 .267 .155 .565 .014 .000 .385 258 169 .385 135 0.239 0.120 0.8 1.0 1.1 1.1 A+ 1250 663191 6 6 346 .503 .055 .165 .278 .503 .000 .262 142 196 058 .262 0.580 0.119 2.6 1.1 4.3 1.3 A- 1251 663192 6 6 343 .781 .096 .041 .000 .497 363 .497 206 229 -1.057 0.147 -0.9 0.9 -1.8 0.8 A- 1252 663193 6 6 344 .433 .151 .204 .212 .433 .000 .198 122 .077 209 .198 0.884 0.121 4.3 1.2 5.3 1.5 A+ 1253 663194 6 6 335 .367 .131 .367 .173 </td <td>1247</td> <td>663151</td> <td>6</td> <td>6</td> <td>835</td> <td>.356</td> <td>.267</td> <td>.163</td> <td>.214</td> <td>.356</td> <td>.000</td> <td>.423</td> <td>217</td> <td>276</td> <td>011</td> <td>.423</td> <td>1.292</td> <td>0.079</td> <td>-2.4</td> <td>0.9</td> <td>-1.3</td> <td>0.9</td> <td>A+</td> <td>A-</td>	1247	663151	6	6	835	.356	.267	.163	.214	.356	.000	.423	217	276	011	.423	1.292	0.079	-2.4	0.9	-1.3	0.9	A+	A-
1250 663191 6 346 .503 .055 .165 .278 .503 .000 .262 142 196 058 .262 0.580 0.119 2.6 1.1 4.3 1.3 A- 1251 663192 6 6 343 .781 .082 .781 .096 .041 .000 .497 363 .497 206 229 -1.057 0.147 -0.9 0.9 -1.8 0.8 A- 1252 663193 6 6 344 .433 .151 .204 .212 .433 .000 .198 122 .077 209 .198 0.884 0.121 4.3 1.2 5.3 1.5 A+ 1253 663194 6 6 335 .367 .131 .367 .173 .328 .000 .168 162 .168 271 .163 1.233 0.124 4.3 1.2 4.5 1.5 B- 1254 663249 6 6 245 .535 .257 .535 .082 .127 .000 .208 234 001 0.378 0.143 3.6 1.2 4.5 1.4	1248	663152	6	6	790	.603	.187	.141	.070	.603	.000	.350	068	168	340	.350	0.027	0.082	2.1	1.1	2.1	1.1	B+	
1250 663191 6 6 346 .503 .055 .165 .278 .503 .000 .262 142 196 058 .262 0.580 0.119 2.6 1.1 4.3 1.3 A- 1251 663192 6 6 343 .781 .082 .781 .096 .041 .000 .497 363 .497 206 229 -1.057 0.147 -0.9 0.9 -1.8 0.8 A- 1252 663193 6 6 344 .433 .151 .204 .212 .433 .000 .198 122 .077 209 .198 0.884 0.121 4.3 1.2 5.3 1.5 A+ 1253 663194 6 6 335 .367 .131 .367 .173 .328 .000 .168 162 .168 271 .163 1.233 0.124 4.3 1.2 4.5 1.5 B- 1254 663249 6 6 245 .535 .257 <td>1249</td> <td>663190</td> <td>6</td> <td>6</td> <td>356</td> <td>.565</td> <td>.267</td> <td>.155</td> <td>.565</td> <td>.014</td> <td>.000</td> <td>.385</td> <td>258</td> <td>169</td> <td>.385</td> <td>135</td> <td>0.239</td> <td>0.120</td> <td>0.8</td> <td>1.0</td> <td>1.1</td> <td>1.1</td> <td>A+</td> <td></td>	1249	663190	6	6	356	.565	.267	.155	.565	.014	.000	.385	258	169	.385	135	0.239	0.120	0.8	1.0	1.1	1.1	A+	
1252 663193 6 6 344 .433 .151 .204 .212 .433 .000 .198 122 .077 209 .198 0.884 0.121 4.3 1.2 5.3 1.5 A+ 1253 663194 6 6 335 .367 .131 .367 .173 .328 .000 .168 162 .168 271 .163 1.233 0.124 4.3 1.2 4.5 1.5 B- 1254 663249 6 6 245 .535 .257 .535 .082 .127 .000 .208 090 .208 234 001 0.378 0.143 3.6 1.2 4.5 1.4 A+	1250	663191	6	6	346	.503	.055	.165	.278	.503	.000	.262	142	196	058	.262	0.580	0.119	2.6	1.1	4.3	1.3	A-	
1252 663193 6 6 344 .433 .151 .204 .212 .433 .000 .198 122 .077 209 .198 0.884 0.121 4.3 1.2 5.3 1.5 A+ 1253 663194 6 6 335 .367 .131 .367 .173 .328 .000 .168 162 .168 271 .163 1.233 0.124 4.3 1.2 4.5 1.5 B- 1254 663249 6 6 245 .535 .257 .535 .082 .127 .000 .208 090 .208 234 001 0.378 0.143 3.6 1.2 4.5 1.4 A+	1251	663192	6	6	343	.781	.082	.781			.000	.497	363	.497	206	229		0.147	-0.9	0.9		0.8	A-	
1253 663194 6 6 335 .367 .131 .367 .173 .328 .000 .168 162 .168 271 .163 1.233 0.124 4.3 1.2 4.5 1.5 B- 1254 663249 6 6 245 .535 .257 .535 .082 .127 .000 .208 090 .208 234 001 0.378 0.143 3.6 1.2 4.5 1.4 A+	-			6																				
1254 663249 6 6 245 .535 .257 .535 .082 .127 .000 .208090 .208234001 0.378 0.143 3.6 1.2 4.5 1.4 A+	-			6												-							H	
																-								
	1255	663250	6	6	256	.836	.074	.836	.055	.035	.000	.521	264	.521	291	312	-1.453	0.187	-1.3	0.9	-2.1	0.6	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade						` '									in	in	out	out	/F	/B
1256	663251	6	6	246	.504	.171	.504	.232	.094	.000	.316	052	.316	078	362	0.538	0.141	1.8	1.1	1.6	1.1	A+	
1257	663252	6	6	242	.806	.806	.008	.062	.124	.000	.549	.549	151	340	368	-1.251	0.181	-2.0	0.8	-1.6	0.7	A-	
1258	661568	7	7	821	.735	.124	.735	.102	.039	.000	.541	321	.541	340	155	-0.630	0.088	-3.4	0.9	-4.1	0.7	A+	A-
1259	661570	7	7	665	.668	.150	.084	.668	.098	.000	.393	214	295	.393	091	-0.122	0.094	1.5	1.1	1.1	1.1	B-	A-
1260	661600	7	7	705	.678	.095	.180	.047	.678	.000	.480	327	211	224	.480	-0.139	0.092	-1.0	1.0	-1.1	0.9	A-	A-
1261	661601	7	7	829	.865	.041	.059	.035	.865	.000	.503	295	314	214	.503	-1.704	0.111	-2.6	0.8	-3.0	0.7	A+	A-
1262	661602	7	7	672	.362	.423	.362	.080	.135	.000	.177	069	.177	172	013	1.475	0.088	4.8	1.2	7.6	1.6	A-	
1263	661603	7	7	909	.567	.099	.567	.114	.220	.000	.334	360	.334	142	031	0.309	0.075	2.6	1.1	2.7	1.1	A-	B-
1264	661604	7	7	715	.768	.768	.120	.085	.027	.000	.374	.374	230	211	150	-0.752	0.099	0.7	1.0	0.1	1.0	A+	A-
1265	661605	7	7	848	.789	.076	.120	.789	.015	.000	.443	293	276	.443	110	-1.012	0.093	-1.2	0.9	-1.4	0.9	B+	A-
1266	661606	7	7	694	.735	.735	.065	.180	.020	.000	.387	.387	354	147	192	-0.455	0.097	1.0	1.1	-0.2	1.0	A+	
1267	661607	7	7	858	.731	.731	.107	.085	.077	.000	.359	.359	124	291	149	-0.595	0.086	1.3	1.1	1.3	1.1	A+	A-
1268	661608	7	7	674	.576	.576	.061	.043	.321	.000	.233	.233	325	204	.008	0.392	0.087	5.3	1.2	4.9	1.3	B-	A+
1269	661621	7	7	797	.745	.745	.107	.088	.060	.000	.527	.527	396	258	145	-0.766	0.092	-2.3	0.9	-3.4	0.8	A+	A-
1270	663139	7	7	901	.424	.424	.177	.219	.181	.000	.391	.391	310	174	008	1.176	0.075	-0.7	1.0	1.3	1.1	A-	
1271	663140	7	7	866	.599	.167	.140	.599	.094	.000	.421	171	133	.421	332	0.281	0.078	-0.2	1.0	0.3	1.0	A+	
1272	663141	7	7	856	.457	.280	.152	.457	.111	.000	.226	038	151	.226	132	1.001	0.077	5.6	1.2	8.2	1.4	A+	
1273	663142	7	7	844	.520	.237	.111	.132	.520	.000	.337	051	242	209	.337	0.683	0.077	2.4	1.1	3.8	1.2	B-	
1274	663145	7	7	796	.563	.153	.563	.122	.162	.000	.387	269	.387	219	065	0.368	0.080	0.4	1.0	0.4	1.0	A-	A-
1275	663146	7	7	740	.469	.469	.181	.160	.191	.000	.332	.332	166	171	100	0.813	0.082	1.7	1.1	2.6	1.1	A+	
1276	663147	7	7	731	.425	.213	.200	.425	.161	.000	.205	.075	153	.205	193	1.024	0.083	5.1	1.2	6.5	1.4	A+	
1277	663148	7	7	725	.290	.457	.290	.117	.137	.000	.037	.287	.037	228	250	1.741	0.089	6.7	1.3	8.4	1.8	A-	
1278	663165	7	7	847	.508	.156	.174	.163	.508	.000	.411	050	187	317	.411	0.615	0.077	-0.2	1.0	0.5	1.0	B+	A+
1279	663166	7	7	791	.602	.152	.132	.602	.115	.000	.446	125	286	.446	240	0.119	0.082	-0.7	1.0	-0.2	1.0	B+	A-
1280	663167	7	7	806	.458	.458	.143	.101	.299	.000	.243	.243	235	245	.076	0.861	0.079	6.1	1.2	5.4	1.3	A+	A+
1281	663168	7	7	800	.693	.693	.103	.105	.100	.000	.466	.466	227	275	207	-0.397	0.087	-1.0	1.0	-1.8	0.9	C+	A-
1282	663169	7	7	915	.368	.368	.145	.209	.278	.000	.211	.211	222	109	.047	1.447	0.075	4.5	1.1	8.5	1.5	A-	A-
1283	663170	7	7	899	.437	.162	.263	.437	.138	.000	.123	053	.006	.123	127	1.099	0.075	9.8	1.3	9.9	1.6	A+	A-
1284	663171	7	7	876	.691	.111	.081	.118	.691	.000	.488	256	247	243	.488	-0.240	0.083	-1.5	0.9	-2.0	0.9	A+	Α-
1285	663172	7	7	961	.486	.214	.486	.200	.100	.000	.398	010	.398	285	269	0.855	0.072	0.2	1.0	0.8	1.0	A+	Α-
1286	663180	7	7	774	.470	.470	.101	.190	.239	.000	.405	.405	234	250	078	0.779	0.080	-0.7	1.0	1.0	1.1	A-	A-
1287	663181	7	7	823	.525	.186	.186	.103	.525	.000	.525	255	275	184	.525	0.525	0.078	-5.1	0.9	-4.3	0.8	A-	A-
1288	663182	7	7	795	.584	.225	.068	.123	.584	.000	.319	038	189	285	.319	0.225	0.080	2.8	1.1	2.9	1.1	A-	A+
1289	663183	7	7	784	.383	.383	.255	.218	.144	.000	.253	.253	053	052	224	1.220	0.081	3.4	1.1	5.0	1.3	A+	B+
1290	663199	7	7	900	.321	.314	.321	.218	.147	.000	.014	.193	.014	167	077	1.719	0.031	9.2	1.3	9.9	1.9	A+	A+
1230	003133		,	300	.541	.514	.541	.210	.147	.000	.014	.193	.014	107	077	1./15	0.076	3.2	1.5	9.9	1.9	Λ.	Α.

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1292 6	663200 663201	Grade 7	Grade		PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	_			M	W
1292 6		7 1															_	in	in	out	out	/F	/B
1	663201	-	7	887	.384	.127	.200	.289	.384	.000	.162	178	039	009	.162	1.388	0.076	6.7	1.2	8.0	1.5	A+	A-
1 1293 1 6		7	7	963	.440	.333	.440	.112	.114	.000	.301	052	.301	247	147	1.126	0.072	2.6	1.1	5.1	1.2	A-	A+
+	663202	7	7	923	.403	.143	.281	.173	.403	.000	.139	153	.100	157	.139	1.310	0.074	6.8	1.2	9.9	1.7	A+	A+
	663242	7	7	712	.383	.188	.236	.383	.192	.000	.300	122	089	.300	154	1.271	0.086	1.8	1.1	5.6	1.4	A-	A-
	663243	7	7	710	.717	.137	.717	.103	.044	.000	.484	257	.484	253	260	-0.512	0.094	-1.2	0.9	-2.2	8.0	A+	A-
	663244	7	7	773	.679	.155	.128	.679	.038	.000	.555	361	306	.555	137	-0.252	0.087	-3.5	0.9	-4.2	0.8	A-	A-
	663245	7	7	723	.658	.078	.126	.138	.658	.000	.473	187	246	269	.473	-0.156	0.089	-1.2	1.0	-1.2	0.9	A-	A-
	663290	7	7	1294	.295	.295	.314	.277	.114	.000	.254	.254	.036	118	250	1.867	0.066	2.2	1.1	5.9	1.4	A-	A-
1299 6	663291	7	7	1330	.825	.825	.058	.068	.050	.000	.508	.508	302	251	274	-1.142	0.080	-3.0	0.9	-4.1	0.7	A+	B-
1300 6	663292	7	7	1379	.604	.212	.604	.116	.068	.000	.362	137	.362	206	220	0.291	0.062	2.4	1.1	2.7	1.1	A-	A-
1301 6	663293	7	7	1312	.541	.148	.165	.541	.146	.000	.302	157	125	.302	137	0.601	0.062	4.6	1.1	5.7	1.2	A+	A-
1302 6	663294	7	7	1279	.513	.513	.176	.169	.142	.000	.412	.412	267	195	090	0.735	0.063	-0.3	1.0	1.1	1.0	A+	A-
1303 6	663295	7	7	1256	.373	.373	.303	.198	.126	.000	.190	.190	100	093	026	1.435	0.064	7.6	1.2	8.4	1.5	A-	A-
1304 6	663309	7	7	1114	.672	.672	.163	.099	.066	.000	.521	.521	255	271	280	-0.258	0.072	-3.6	0.9	-4.1	0.8	A-	A-
1305 6	663310	7	7	1107	.651	.103	.155	.090	.651	.000	.566	318	226	318	.566	-0.127	0.071	-5.7	0.8	-5.7	0.8	A-	A-
1306 6	663311	7	7	1196	.477	.477	.166	.130	.226	.000	.209	.209	232	071	.014	0.776	0.064	8.1	1.2	7.5	1.3	A+	A+
1307 6	663312	7	7	1135	.471	.127	.283	.119	.471	.000	.436	221	099	308	.436	0.794	0.066	-2.5	0.9	0.7	1.0	A-	A+
1308 6	663313	7	7	1098	.416	.175	.416	.248	.161	.000	.117	069	.117	096	.028	1.066	0.068	9.9	1.3	9.9	1.6	A+	A-
1309 6	663314	7	7	1081	.333	.184	.333	.347	.136	.000	.030	093	.030	.051	008	1.495	0.070	9.9	1.3	9.9	1.8	A-	A+
1310 6	663315	7	7	1099	.746	.104	.089	.746	.061	.000	.518	233	329	.518	255	-0.805	0.077	-3.2	0.9	-4.2	0.8	B+	B-
1311 6	663316	7	7	1183	.543	.543	.269	.145	.044	.000	.371	.371	207	177	150	0.360	0.065	1.2	1.0	2.4	1.1	A+	A-
1312 6	663317	7	7	1045	.226	.231	.226	.344	.200	.000	154	027	154	.060	.117	2.024	0.080	9.2	1.4	9.9	2.9	A+	A+
1313 6	663318	7	7	1071	.379	.379	.194	.252	.175	.000	.320	.320	204	126	052	1.146	0.069	2.4	1.1	2.4	1.1	A+	A-
1314 6	663319	7	7	1106	.754	.102	.109	.754	.035	.000	.368	205	152	.368	267	-0.849	0.078	1.0	1.0	0.0	1.0	A+	A-
1315 6	663320	7	7	1085	.634	.176	.083	.634	.107	.000	.507	384	222	.507	119	-0.152	0.071	-3.4	0.9	-3.7	0.8	A+	A-
1316 6	661609	8	8	5077	.711	.711	.122	.090	.076	.000	.491	.491	319	263	160	-0.041	0.035	-3.7	0.9	-6.1	0.8	A-	A-
1317 6	661610	8	8	3461	.410	.246	.112	.410	.233	.000	.316	206	238	.316	.019	1.583	0.038	2.5	1.0	9.8	1.3	A-	A-
1318 6	661611	8	8	4980	.756	.756	.083	.090	.071	.000	.478	.478	349	238	159	-0.313	0.037	-2.8	0.9	-5.5	0.8	A-	A-
1319 6	661612	8	8	3536	.381	.195	.381	.265	.159	.000	.129	084	.129	.017	100	1.734	0.038	9.9	1.2	9.9	1.6	A+	A-
1320 6	661613	8	8	4975	.604	.604	.144	.225	.027	.000	.223	.223	184	058	123	0.549	0.033	9.9	1.2	9.9	1.4	A+	A-
1321 6	661614	8	8	3457	.528	.166	.268	.528	.038	.000	.320	185	144	.320	143	1.001	0.038	6.7	1.1	8.1	1.2	A-	C-
1322 6	661615	8	8	4949	.809	.809	.067	.046	.078	.000	.506	.506	355	252	214	-0.717	0.040	-4.8	0.9	-8.3	0.7	A+	B-
1323 6	661616	8	8	3400	.905	.044	.905	.036	.014	.000	.503	317	.503	318	191	-1.635	0.064	-4.3	0.8	-7.7	0.5	A+	A+
1324 6	661617	8	8	4939	.873	.873	.051	.052	.024	.000	.376	.376	248	230	128	-1.329	0.047	-0.2	1.0	-0.7	1.0	B+	A-
1325 6	661618	8	8	3478	.928	.025	.030	.928	.017	.000	.379	217	222	.379	203	-1.979	0.070	-1.6	0.9	-3.0	0.7	A+	B-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
i.c.	10	Grade	Grade		. vai	1 (///)	. (5)	. (0)	. (5)	. ()	i (Dis	(, ,	11(5)	(0)	(5)	IVICUS	IVISE	in	in	out	out	/F	/B
1326	661619	8	8	4964	.505	.093	.340	.063	.505	.000	.337	316	035	250	.337	1.074	0.032	5.8	1.1	8.5	1.2	A+	A-
1327	661620	8	8	3368	.555	.140	.067	.238	.555	.000	.247	186	163	041	.247	0.891	0.039	9.9	1.2	9.9	1.3	A-	A+
1328	663187	8	8	3610	.621	.085	.621	.211	.083	.000	.445	232	.445	195	260	0.495	0.039	-1.7	1.0	-2.1	1.0	A+	A-
1329	663188	8	8	3566	.434	.434	.353	.164	.050	.000	.144	.144	.091	151	271	1.449	0.037	9.9	1.3	9.9	1.5	A+	A-
1330	663189	8	8	3729	.838	.838	.073	.058	.031	.000	.522	.522	348	313	164	-0.938	0.049	-5.6	8.0	-8.1	0.6	B+	A-
1331	663195	8	8	4829	.637	.117	.139	.108	.637	.000	.525	264	289	219	.525	0.389	0.034	-7.9	0.9	-8.0	0.8	A+	A-
1332	663196	8	8	4914	.492	.159	.492	.147	.202	.000	.211	047	.211	221	025	1.141	0.032	9.9	1.2	9.9	1.4	A-	A+
1333	663197	8	8	4782	.631	.631	.138	.122	.109	.000	.506	.506	215	325	205	0.423	0.034	-6.7	0.9	-5.9	0.9	A+	A-
1334	663198	8	8	5251	.561	.259	.134	.561	.046	.000	.309	013	275	.309	260	0.805	0.031	8.7	1.1	9.9	1.2	A+	A-
1335	663208	8	8	4561	.621	.104	.200	.621	.075	.000	.333	154	090	.333	298	0.567	0.034	5.6	1.1	7.0	1.2	A+	A-
1336	663209	8	8	4489	.528	.101	.528	.265	.106	.000	.325	252	.325	072	177	1.039	0.033	5.6	1.1	9.0	1.2	A+	A-
1337	663210	8	8	4433	.569	.108	.168	.569	.156	.000	.410	233	178	.410	177	0.829	0.034	-0.7	1.0	1.6	1.0	A+	A-
1338	663211	8	8	4845	.506	.138	.154	.203	.506	.000	.444	169	266	169	.444	1.162	0.032	-6.8	0.9	-0.8	1.0	A+	A+
1339	663212	8	8	7150	.475	.475	.329	.138	.058	.000	.214	.214	.091	259	259	1.217	0.026	9.9	1.2	9.9	1.4	A-	A-
1340	663213	8	8	7677	.624	.146	.624	.103	.127	.000	.401	244	.401	226	118	0.459	0.026	2.1	1.0	1.1	1.0	A+	A-
1341	663214	8	8	7249	.821	.055	.056	.821	.068	.000	.477	257	312	.477	209	-0.832	0.034	-4.7	0.9	-5.3	0.8	A-	A-
1342	663215	8	8	6977	.476	.476	.253	.188	.083	.000	.361	.361	090	239	173	1.193	0.027	2.7	1.0	9.5	1.2	A-	A-
1343	663216	8	8	7109	.454	.143	.193	.210	.454	.000	.406	195	167	167	.406	1.320	0.026	-3.1	1.0	3.9	1.1	A+	A-
1344	663217	8	8	6902	.295	.144	.178	.295	.384	.000	.008	106	045	.008	.104	2.135	0.029	9.9	1.3	9.9	2.0	A+	A+
1345	663218	8	8	4439	.441	.441	.227	.131	.201	.000	.302	.302	048	226	134	1.435	0.033	6.0	1.1	9.9	1.2	A+	A+
1346	663219	8	8	4494	.610	.140	.610	.126	.124	.000	.513	231	.513	269	245	0.586	0.034	-8.4	0.9	-7.3	0.9	A+	A-
1347	663220	8	8	4662	.409	.133	.210	.248	.409	.000	.398	122	225	145	.398	1.617	0.033	-4.8	0.9	3.3	1.1	A+	A-
1348	663221	8	8	4819	.477	.138	.183	.477	.202	.000	.302	141	179	.302	083	1.278	0.032	6.3	1.1	9.9	1.3	B-	A-
1349	663235	8	8	4952	.597	.118	.597	.134	.152	.000	.308	242	.308	078	129	0.618	0.033	9.3	1.1	9.3	1.2	A-	B-
1350	663236	8	8	4881	.483	.213	.109	.483	.196	.000	.251	017	266	.251	090	1.197	0.032	9.9	1.2	9.9	1.3	A+	A-
1351	663237	8	8	4794	.523	.523	.187	.187	.104	.000	.400	.400	182	193	175	0.986	0.032	0.3	1.0	4.0	1.1	A+	A+
1352	663238	8	8	5227	.438	.127	.244	.438	.192	.000	.160	174	087	.160	.041	1.426	0.031	9.9	1.2	9.9	1.5	A+	A+
1353	663270	8	8	6662	.328	.328	.279	.257	.136	.000	.241	.241	068	090	128	1.951	0.029	7.8	1.1	9.9	1.5	A-	A+
1354	663271	8	8	7065	.517	.167	.517	.103	.213	.000	.447	149	.447	297	190	0.998	0.027	-4.6	1.0	-0.6	1.0	A-	A-
1355	663272	8	8	6999	.514	.139	.193	.155	.514	.000	.453	290	147	188	.453	1.018	0.027	-5.3	1.0	-2.9	1.0	A-	A-
1356	663273	8	8	6911	.488	.108	.488	.126	.278	.000	.350	198	.350	277	049	1.141	0.027	4.7	1.1	9.3	1.2	A-	A-
1357	663274	8	8	7456	.763	.111	.092	.763	.034	.000	.513	241	364	.513	204	-0.394	0.031	-7.7	0.9	-5.6	0.9	A+	A-
1358	663275	8	8	6770	.379	.379	.302	.197	.122	.000	.185	.185	.037	207	075	1.692	0.028	9.9	1.2	9.9	1.4	A+	A-
1359	663284	8	8	6777	.737	.055	.121	.737	.088	.000	.435	245	241	.435	202	-0.134	0.031	-1.3	1.0	-2.5	0.9	A-	B-
1360	663285	8	8	7068	.795	.056	.112	.795	.037	.000	.501	296	300	.501	209	-0.529	0.033	-5.8	0.9	-9.1	0.7	A-	B-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT Grade	PCS Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1361	663286	8	8	6761	.560	.081	.251	.108	.560	.000	.246	281	085	028	.246	0.849	0.027	9.9	1.2	9.9	1.3	A-	A-
1362	663287	8	8	6672	.662	.126	.662	.148	.065	.000	.413	137	.413	295	184	0.310	0.029	1.1	1.0	-2.1	1.0	A+	A+
1363	663288	8	8	6548	.405	.221	.127	.405	.248	.000	.170	131	278	.170	.147	1.615	0.028	9.9	1.2	9.9	1.6	A-	A+
1364	663289	8	8	6445	.731	.149	.731	.067	.053	.000	.423	113	.423	315	305	-0.116	0.032	-1.0	1.0	0.4	1.0	A+	A-
1365	663296	8	8	4976	.314	.142	.500	.314	.045	.000	.205	162	.038	.205	279	2.069	0.033	8.6	1.1	9.9	1.6	A-	A-
1366	663297	8	8	4911	.490	.186	.490	.226	.099	.000	.306	133	.306	134	152	1.161	0.032	8.3	1.1	9.9	1.3	A+	A-
1367	663298	8	8	4848	.814	.814	.058	.079	.049	.000	.590	.590	279	343	333	-0.767	0.041	-9.7	0.8	-9.9	0.6	A+	A-
1368	663299	8	8	5236	.465	.166	.197	.172	.465	.000	.469	236	277	095	.469	1.291	0.031	-8.2	0.9	-3.4	0.9	A+	A-
1369	663301	8	8	4633	.449	.285	.076	.190	.449	.000	.310	140	198	099	.310	1.410	0.033	5.6	1.1	9.9	1.2	A-	A-
1370	663302	8	8	4566	.644	.179	.131	.644	.046	.000	.438	141	314	.438	238	0.412	0.035	-1.1	1.0	-2.2	1.0	A+	A+
1371	663303	8	8	4869	.706	.078	.706	.138	.079	.000	.445	242	.445	184	277	0.076	0.035	-1.8	1.0	-3.2	0.9	A+	A-
1372	663304	8	8	4504	.601	.601	.098	.137	.165	.000	.289	.289	241	214	.009	0.638	0.034	9.3	1.1	9.9	1.2	A+	A+
1373	682472	K	K	452	.936	.022	.031	.936	.009	.002	.430	248	318	.430	173	-4.352	0.203	-1.0	0.9	-1.5	0.6	B-	
1374	686495	K	K	452	.898	.035	.020	.898	.046	.000	.375	250	162	.375	212	-3.777	0.168	-0.1	1.0	-0.8	0.8	A+	
1375	683139	K	K	452	.631	.069	.179	.119	.631	.002	.424	194	180	258	.424	-1.756	0.110	1.0	1.1	0.8	1.1	A-	
1376	683140	K	K	452	.920	.920	.020	.022	.035	.002	.480	.480	238	274	280	-4.088	0.185	-1.2	0.8	-2.7	0.4	A-	
1377	683063	K	K	452	.626	.064	.626	.204	.102	.004	.360	149	.360	145	239	-1.732	0.110	2.5	1.1	1.8	1.1	A+	
1378	683062	K	K	452	.900	.027	.027	.038	.900	.009	.501	276	212	330	.501	-3.806	0.169	-1.4	0.8	-2.5	0.5	A-	
1379	683061	K	K	452	.717	.035	.053	.188	.717	.007	.506	144	329	300	.506	-2.256	0.117	-1.1	0.9	-1.0	0.9	B-	
1380	682473	K	K	447	.866	.866	.045	.049	.040	.000	.431	.431	298	211	201	-3.437	0.150	-0.7	0.9	-1.9	0.7	A+	A+
1381	686535	K	K	447	.483	.483	.264	.089	.159	.004	.340	.340	203	202	060	-1.065	0.107	3.2	1.1	3.3	1.2	A-	A+
1382	683135	K	K	447	.629	.235	.072	.629	.065	.000	.346	140	225	.346	203	-1.814	0.110	2.5	1.1	2.2	1.2	A-	A-
1383	683136	K	K	447	.483	.170	.483	.237	.105	.004	.416	273	.416	108	175	-1.065	0.107	1.0	1.0	1.3	1.1	A+	A+
1384	683138	K	K	447	.678	.136	.045	.678	.139	.002	.533	375	223	.533	219	-2.086	0.113	-2.2	0.9	-2.3	0.8	A-	A+
1385	683125	K	K	447	.770	.098	.027	.105	.770	.000	.489	323	256	224	.489	-2.654	0.124	-1.7	0.9	-0.9	0.9	A+	A-
1386	686541	K	K	447	.801	.801	.043	.141	.009	.007	.426	.426	117	393	045	-2.879	0.130	-0.5	1.0	-1.0	0.9	A-	A-
1387	683126	K	K	447	.758	.034	.094	.758	.110	.004	.436	264	214	.436	232	-2.579	0.122	-0.6	1.0	-0.4	1.0	A+	A-
1388	682474	K	K	453	.843	.020	.093	.042	.843	.002	.431	195	231	304	.431	-3.233	0.137	-1.5	0.9	-1.5	0.8	A+	B-
1389	686537	K	K	453	.671	.671	.166	.099	.060	.004	.328	.328	308	084	065	-2.118	0.108	1.1	1.1	0.9	1.1	A+	A+
1390	683078	K	K	453	.764	.084	.764	.126	.026	.000	.383	207	.383	215	211	-2.654	0.119	-0.4	1.0	-0.8	0.9	A+	A-
1391	683077	K	K	453	.620	.102	.238	.038	.620	.002	.407	109	257	271	.407	-1.856	0.105	-0.3	1.0	-0.5	1.0	A-	A+
1392	683076	K	K	453	.687	.687	.033	.247	.031	.002	.335	.335	143	204	250	-2.201	0.110	0.9	1.0	1.2	1.1	A+	A+
1393	683069	K	K	453	.647	.040	.146	.647	.166	.002	.468	168	204	.468	316	-1.991	0.107	-1.7	0.9	-1.5	0.9	A+	A-
1394	683081	K	K	453	.892	.049	.040	.892	.013	.007	.387	160	285	.387	195	-3.705	0.158	-1.1	0.9	-1.3	0.8	B+	B-
1395	683080	K	K	453	.534	.278	.077	.534	.104	.007	.382	211	217	.382	098	-1.435	0.103	0.6	1.0	0.5	1.0	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1996 683079 K K 453 A68 A68	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1398 682475 K K 459 815 0.06 0.74 815 0.05 0.00 3.76 -2.53 -1.69 3.76 -1.99 -3.007 0.132 0.1 1.0 0.0 1.1 A+ 1.39 686512 K K 459 3.09 2.44 3.46 3.09 0.08 0.02 3.47 -1.92 -0.80 3.47 -1.39 -0.009 0.117 2.4 1.1 3.5 1.4 A+ 1.40 683122 K K 459 8.852 0.055 8.52 0.01 0.08 0.06 4.12 -2.56 412 -2.44 -2.03 -3.326 0.142 -0.8 0.0 -0.8 0.8 A+ 1.400 683282 K K 459 8.876 0.092 0.02 0.07 8.76 0.04 485 -4.06 -2.28 -1.41 4.85 -3.564 0.152 -1.9 0.8 -1.8 0.6 C+ 1.400 683101 K K 459 6.62 1.00 0.08 0.07 6.62 0.04 4.71 -2.05 6.298 4.71 -1.999 0.113 0.3 1.0 0.0 1.0 0.1 0.4 1.400 683162 K K 459 6.95 1.39 6.95 1.00 0.63 0.07 6.62 0.04 4.71 -2.05 2.98 4.71 -1.999 0.115 1.1 1.1 0.0 1.0 0.1 0.4 1.403 6.8162 K K 459 7.76 7.72 0.24 0.37 0.07 3.24 3.24 1.34 3.04 1.57 -2.374 0.118 2.7 1.2 3.2 1.4 A+ 1.404 683142 K K 459 7.75 7.72 0.24 0.37 0.07 3.24 3.			Grade	Grade																in			/F	/B
1398 686512 K K 459 3.09 2.44 3.46 3.09 0.08 0.02 3.47 1.19 0.000 0.147 2.4 1.1 3.5 1.4 A 1.10 1.05 1.40 683122 K K 459 8.52 0.35 8.52 0.31 0.78 0.04 4.12 2.266 4.12 2.244 2.23 3.326 0.142 0.8 0.9 0.8 0.8 A 1.40 683122 K K 459 8.65 0.92 0.02 0.07 8.76 0.04 4.85 -4.06 -2.28 1.41 4.85 -3.564 0.152 1.19 0.8 1.8 0.6 C 1.40 0.8 1.8 0.8 0.8 1.8 0.6 C 1.40 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 1.8 0.8 0.8 1.8 0.8			K																	1.0			A+	A-
1399 683112 K K 459 852 0.35 852 0.31 0.78 0.004 4.85 -4.06 -2.28 -1.41 4.85 -3.564 0.152 -1.9 0.8 0.9 -0.8 0.8 0.4 -1.00 0.85 0.004 4.85 -4.06 -2.28 -1.41 4.85 -3.564 0.152 -1.9 0.8 1.8 0.6 0.7 1.40 0.83110 K K K 459 6.62 1.09 0.68 0.076 6.62 0.004 4.85 -4.06 -2.28 -1.41 4.85 -3.564 0.152 -1.9 0.8 1.8 0.6 0.7 1.40 0.8 1.8 0.6 0.7 1.40 0.83110 K K K 459 6.62 1.99 0.68 0.076 6.62 0.004 4.71 -2.00 -2.68 -2.28 -							.046													1.0			A+	
1401 683181	1398	686512					.244				.002	.347	192	080	.347	139				1.1			A-	
1401 683110 K K 459 662 190 068 076 662 0.04 .471 .200 .268 .298 .471 .1.989 0.113 0.3 1.0 0.1 1.0 C+ 1402 683161 K K 459 .726 .725 0.24 .037 .070 .034 .324 .173 .304 .181 .219 .2.184 0.115 1.1 1.1 0.0 1.0 A+ 1404 683162 K K 459 .726 .725 0.24 .037 .007 .324 .324 .173 .304 .187 .2.74 0.118 2.7 1.2 3.2 1.4 A+ 1404 683142 K K 459 .726 .725 0.24 .037 .007 .324 .324 .173 .304 .157 .2.374 0.118 2.7 1.2 3.2 1.4 A+ 1404 683142 K K 447 .922 .031 .922 .011 .036 .000 .487 .325 .487 .197 .326 .4183 0.119 .15 .08 .2.7 0.4 A+ 1406 686539 K K 447 .859 .058 .859 .043 .040 .000 .487 .325 .487 .197 .326 .4183 0.119 .15 .08 .2.7 0.4 A+ 1406 686539 K K 447 .669 .038 .038 .822 .022 .653 .004 .391 .244 .252 .182 .391 .1942 .0113 .19 .11 1.8 .1.2 A- 1406 683155 K K 447 .669 .034 .040 .000 .487 .232 .479 .239 .218 .3407 .0149 .1.2 .0.9 .1.8 0.7 A- 1406 683155 K K 447 .669 .034 .049 .091 .04 .482 .160 .318 .338 .482 .4014 .0178 .1.7 0.8 .1.4 0.7 A- 1406 683155 K K 447 .669 .034 .029 .011 .004 .0482 .160 .318 .338 .482 .4014 .0178 .1.7 0.8 .1.4 0.7 A- 1411 .683158 K K 447 .477 .034 .344 .355 .029 .049 .002 .390 .139 .390 .315 .221 .3342 .0146 .0.2 .1.0 0.2 1.0 A+ 1412 .683157 K K .447 .680 .092 .093 .0680 .092 .000 .334 .149 .197 .334 .209 .2.066 .0.15 .7.1 .3.8 1.4 A+ 1412 .683158 K K .449 .933 .056 .111 .793 .038 .002 .597 .266 .383 .597 .285 .2827 .0.127 .3.6 0.8 .1.5 0.6 A+ 1414 .683158 K K .449 .849 .849 .849 .849 .355 .	1399						.035				.004		256		244	203			-0.8	0.9			A+	
1402 683161 K	1400	683282	K	K		.876	.092	.022	.007		.004	.485	406			.485	-3.564		-1.9	0.8	-1.8	0.6	C+	
1404 683142 K K 459 .726 .725 .024 .037 .073 .073 .007 .324 .324 173 .304 157 .2374 .0.118 .2.7 .1.2 .3.2 1.4 A+ .1404 .683424 K K 449 .791 .102 .039 .791 .063 .004 .356 .395 182 .556 .264 .2.822 .0.127 .2.3 .0.9 .1.8 .0.7 A .1406 .6854276 K K 447 .922 .031 .922 .011 .036 .000 .487 .285 .487 .917 .326 .4.183 .0.189 .1.5 .0.8 .2.7 .0.4 A+ .1406 .686539 K K 447 .653 .038 .282 .022 .653 .004 .000 .479 .323 .479 .2.29 .2.18 .3.407 .0.149 .1.2 .0.9 .1.8 .0.7 A .1408 .683155 K K 447 .663 .684 .669 .083 .007 .485 .2.27 .2.76 .445 .2.44 .2.52 .1.82 .3.91 .1.942 .0.113 .1.9 .1.1 .1.8 .1.2 A .1408 .683155 K K .447 .663 .034 .029 .911 .004 .482 .160 .3.18 .3.38 .482 .4.014 .0.178 .1.7 .0.8 .1.4 .0.7 A .1410 .0.8 .1.5 .0.8 .1.4 .0.7 .0.4 .1.4 .0.7 .0.4 .1.4 .0.7 .0.4 .1.4 .0.8 .1.5 .0.8 .1.4 .0.7 .0.4 .1.4 .0.7 .0.4 .0.8 .1.5 .0.8 .1.4 .0.7 .0.4 .1.4 .0.8 .1.5 .0.8 .1.5 .0.8 .1.4 .0.7 .0.4 .1.4 .0.8 .1.5 .0.8 .1.4 .0.7 .0.8 .1.4 .0.7 .0.8 .1.4 .0.7 .0.8 .1.4 .0.7 .0.8 .1.4 .0.8 .1.5 .0.8 .1.4	1401	683110	K	K	459	.662	.190	.068	.076	.662	.004	.471	200	268	298	.471	-1.989	0.113	0.3	1.0	-0.1	1.0	C+	
1404 683142 K	1402	683161	K	K	459	.695	.139	.695	.100	.063	.002	.430	259	.430	181	219	-2.184	0.115	1.1	1.1	0.0	1.0	A+	
1405 682476 K	1403	683162	K	K	459	.726	.725	.024	.037	.207	.007	.324	.324	173	304	157	-2.374	0.118	2.7	1.2	3.2	1.4	A+	
1406 686539 K K 447 .859 .058 .859 .043 .040 .000 .479 .323 .479 .239 .218 3.407 0.149 .1.2 0.9 .1.8 0.7 A 1407 683156 K K 447 .653 .038 .282 .022 .653 .004 .391 .244 .252 .1.82 .391 .1.942 .0.113 1.9 1.1 1.8 1.2 A 1408 683155 K K 447 .669 .043 .244 .669 .038 .007 .482 .227 .275 .445 .224 .244 .201 0.114 .05 .1.0 .05 .1.0 A 1409 683160 K K 447 .911 .022 .034 .029 .911 .004 .482 .160 .318 .338 .482 .4.014 .0.178 .1.7 .0.8 .1.4 .0.7 A 1410 683155 K K 447 .770 .034 .034 .159 .770 .004 .479 .254 .3.26 .2666 .479 .2.668 .0.126 .0.9 .0.9 .0.6 .0.9 A 1411 683155 K K 447 .852 .067 .852 .029 .049 .002 .303 .315 .221 .3.342 .0.146 .0.2 .1.0 .0.2 .1.0 A 1412 .683157 K K 447 .680 .192 .036 .680 .0.92 .000 .334 .149 .1.97 .334 .2.09 .2.096 .0.115 .2.7 .1.2 .3.8 1.4 A .1413 .682477 K K 449 .933 .038 .022 .933 .007 .000 .0.412 .3.30 .2.26 .3.330 .2.20 .4.309 .0.198 .1.1 .0.8 .1.5 .0.6 A 1416 .683058 K K 449 .860 .004 .005 .004 .0.46 .1.99 .2.25 .2.27 .2.25 .3.380 .0.46 .1.2 .0.9 .0.7 .1.1 A .1.1 .4.115	1404	683142	K	K	459	.791	.102	.039	.791	.063	.004	.536	395	182	.536	264	-2.822	0.127	-2.3	0.9	-1.8	0.7	B+	
1407 683156 K K 447 6.653 .038 .282 .022 .653 .004 .391 .244 .252 .182 .391 .1.942 0.113 1.9 1.1 1.8 1.2 A-	1405	682476	K	K	447	.922	.031	.922	.011	.036	.000	.487	285	.487	197	326	-4.183	0.189	-1.5	0.8	-2.7	0.4	A+	
1408 683155 K K 447 .669 .043 .244 .669 .038 .007 .445 .227 .276 .445 .244 .2.031 .0.114 .0.5 1.0 .0.5 1.0 A+ .109 .0.5 .0.0 .0.0 .0.5 .0.0 .0.0 .0.5 .0.0 .0.0 .0.5 .0.0 .0.5 .0.0 .0.0 .0.5 .0.5 .0.0 .0.5	1406	686539	K	K	447	.859	.058	.859	.043	.040	.000	.479	323	.479	239	218	-3.407	0.149	-1.2	0.9	-1.8	0.7	A-	
1409 683160 K	1407	683156	K	K	447	.653	.038	.282	.022	.653	.004	.391	244	252	182	.391	-1.942	0.113	1.9	1.1	1.8	1.2	A-	
1410 683159 K K 447 .770 .034 .034 .159 .770 .004 .479 .254 .326 .266 .479 .2.668 .0.126 .0.9 .0.9 .0.6 .0.9 A+ .1411 .683158 K K .447 .852 .067 .852 .029 .049 .002 .390 .313 .390 .315 .221 .3.342 .0.146 .0.2 .10 .0.2 .10 A+ .1412 .683157 K K .447 .680 .192 .036 .680 .092 .000 .334 .149 .197 .334 .2.09 .2.096 .0.115 .2.7 .1.2 3.8 .1.4 A+ .1413 .682477 K K .449 .933 .038 .022 .933 .007 .000 .412 .330 .2.26 .412 .0.800 .4.309 .0.198 .1.1 .0.8 .1.5 .0.6 A+ .1414 .683058 K K .449 .933 .0.38 .0.22 .0.45 .0	1408	683155	K	K	447	.669	.043	.244	.669	.038	.007	.445	227	276	.445	244	-2.031	0.114	0.5	1.0	0.5	1.0	A+	
1411 683158 K K 447 .852 .067 .852 .029 .049 .002 .390 139 .390 315 221 3.342 .0.146 -0.2 1.0 0.2 1.0 A+ 1412 683157 K K 447 .680 .192 .036 .680 .092 .000 .334 149 197 .334 209 2.096 .0.115 .2.7 1.2 3.8 1.4 A+ 1413 682477 K K 449 .933 .038 .022 .933 .007 .000 .412 330 226 .412 .080 .4.309 .0.198 11 0.8 1.5 .0.6 A+ 1414 683058 K K 449 .793 .056 .111 .793 .038 .002 .097 .296 .383 .597 .285 .2827 .0.127 .3.6 0.8 .3.7 0.6 A+ 1415 683060 K K 449 .860 .040 .051 .860 .045 .004 .426 .190 225 .426 .257 .3.380 .0.146 -1.2 0.9 0.7 1.1 A+ 1416 683059 K K 449 .844 .844 .016 .091 .045 .004 .407 .407 205 .470 .300 .248 -2.700 .0.124 -1.0 0.9 -1.8 0.8 A- 1417 683168 K K 449 .844 .844 .016 .091 .045 .004 .407 .407 .407 .156 .218 .284 -3.236 .0.140 -0.4 1.0 -1.1 0.8 B+ 1418 686542 K K 449 .555 .227 .555 .073 .143 .002 .452 .289 .452 .215 .127 -1.442 .0.107 0.1 1.0 -0.3 1.0 A+ 1420 684830 K K 443 .844 .844 .844 .056 .099 .002 .355 .231 .355 .194 .152 .2933 0.130 0.6 1.0 0.5 1.1 A+ 1421 683153 K K 443 .846 .668 .059 .826 .047 .000 .482 .255 .300 .482 .226 .3182 0.137 1.7 0.9 1.9 0.7 B+ 1422 683151 K K 443 .849 .849 .059 .016 .070 .07 .07 .519 .335 .209 .285 .3380 .0140 -2.2 0.8 .2.7 0.5 A+ 1423 683169 K K 443 .849 .849 .849 .059 .016 .070 .07 .07 .07 .07 .07 .07 .07 .07 .07 .07 .07 .08 .08 .08 .08 .034 .068 .011 .885 .002 .499 .288 .346 .157 .499 .3746 .0160 .2.2 0.8 .2.7 0.5 A+ 1424 683065	1409	683160	K	K	447	.911	.022	.034	.029	.911	.004	.482	160	318	338	.482	-4.014	0.178	-1.7	0.8	-1.4	0.7	A-	
1412 683157 K K 447 680 .192 .036 .680 .092 .000 .334 .149 .197 .334 .209 .2.096 .0.115 2.7 1.2 3.8 1.4 A+	1410	683159	K	K	447	.770	.034	.034	.159	.770	.004	.479	254	326	266	.479	-2.668	0.126	-0.9	0.9	-0.6	0.9	A+	
1413 682477 K K 449 .933 .038 .022 .933 .007 .000 .412 330 226 .412 080 -4.309 0.198 -1.1 0.8 -1.5 0.6 A+ 1414 683058 K K 449 .793 .056 .111 .793 .038 .002 .597 296 .383 .597 285 -2.827 0.127 -3.6 0.8 -3.7 0.6 A+ 1415 683060 K K 449 .860 .040 .051 .860 .045 .004 .470 205 .470 300 248 -2.700 .0124 -1.0 0.9 -1.8 0.8 A- 1417 683168 K K 449 .844 .844 .016 .091 .045 .004 .407 .407 156 218 283 2336 0.140 -0.01 1.0 .0.3	1411	683158	K	K	447	.852	.067	.852	.029	.049	.002	.390	139	.390	315	221	-3.342	0.146	-0.2	1.0	0.2	1.0	A+	
1414 683058 K K 449 .793 .056 .111 .793 .038 .002 .597 .296 .383 .597 .285 .2.827 0.127 -3.6 0.8 -3.7 0.6 A+ 1415 683060 K K 449 .860 .040 .051 .860 .045 .004 .426 .190 .225 .426 .257 .3.380 0.146 -1.2 0.9 0.7 1.1 A+ 1416 683059 K K 449 .775 .089 .775 .078 .053 .004 .470 .205 .470 .300 .248 .2.700 0.124 -1.0 0.9 -1.8 0.8 A- 1417 683168 K K 449 .844 .844 .016 .091 .045 .004 .407 .407 .407 .156 .218 .284 .3.236 0.140 -0.4 1.0 -1.1 0.8 B+ 1418 .68542 K K 449 .555 .227 .555 .273 .143 .002 .452 .289 .452 .2.215 .127 -1.442 0.107 0.1 1.0 -0.3 1.0 A+	1412	683157	K	K	447	.680	.192	.036	.680	.092	.000	.334	149	197	.334	209	-2.096	0.115	2.7	1.2	3.8	1.4	A+	
1415 683060 K K 449 .860 .040 .051 .860 .045 .004 .225 .426 257 -3.380 0.146 -1.2 0.9 0.7 1.1 A+ 1416 683059 K K 449 .775 .089 .775 .078 .053 .004 .470 205 .470 300 248 -2.700 0.124 -1.0 0.9 -1.8 0.8 A- 1417 683168 K K 449 .844 .844 .016 .091 .045 .004 .407 .407 156 .218 284 -3.236 0.140 -0.4 1.0 -1.1 0.8 B+ 1418 6856542 K K K 449 .555 .227 .555 .073 .143 .002 .452 .2289 .452 .215 127 -1.442 .0107 .01 1.0 -0.3 1.0 A+ </td <td>1413</td> <td>682477</td> <td>K</td> <td>K</td> <td>449</td> <td>.933</td> <td>.038</td> <td>.022</td> <td>.933</td> <td>.007</td> <td>.000</td> <td>.412</td> <td>330</td> <td>226</td> <td>.412</td> <td>080</td> <td>-4.309</td> <td>0.198</td> <td>-1.1</td> <td>0.8</td> <td>-1.5</td> <td>0.6</td> <td>A+</td> <td></td>	1413	682477	K	K	449	.933	.038	.022	.933	.007	.000	.412	330	226	.412	080	-4.309	0.198	-1.1	0.8	-1.5	0.6	A+	
1416 683059 K K 449 .775 .089 .775 .078 .053 .004 .470 205 .470 300 .248 -2.700 0.124 -1.0 0.9 -1.8 0.8 A 1417 683168 K K 449 .844 .844 .016 .091 .045 .004 .407 156 218 284 -3.236 0.140 -0.4 1.0 -1.1 0.8 B+ 1418 686542 K K 449 .555 .227 .555 .073 .143 .002 .452 289 .452 215 127 -1.442 0.107 0.1 1.0 -0.3 1.0 A+ 1419 683165 K K K 449 .512 .225 .143 .118 .512 .002 .351 .150 .192 071 .311 -1.228 0.106 .38 1.2 3.1 1.2 </td <td>1414</td> <td>683058</td> <td>K</td> <td>K</td> <td>449</td> <td>.793</td> <td>.056</td> <td>.111</td> <td>.793</td> <td>.038</td> <td>.002</td> <td>.597</td> <td>296</td> <td>383</td> <td>.597</td> <td>285</td> <td>-2.827</td> <td>0.127</td> <td>-3.6</td> <td>8.0</td> <td>-3.7</td> <td>0.6</td> <td>A+</td> <td></td>	1414	683058	K	K	449	.793	.056	.111	.793	.038	.002	.597	296	383	.597	285	-2.827	0.127	-3.6	8.0	-3.7	0.6	A+	
1417 683168 K K 449 .844 .844 .016 .091 .045 .004 .407 .407 .156 .218 284 -3.236 0.140 -0.4 1.0 -1.1 0.8 B+ 1418 686542 K K 449 .555 .227 .555 .073 .143 .002 .452 -289 .452 -215 -127 -1.442 0.107 0.1 1.0 -0.3 1.0 A+ 1419 683165 K K 449 .512 .225 .143 .118 .512 .002 .311 -1.50 192 .071 .311 -1.228 0.106 3.8 1.2 3.1 1.2 A+ 1420 684830 K K 443 .826 .068 .059 .826 .047 .000 .482 255 300 .482 226 -3.182 0.137 -1.7 0.9 -1.9 0.7<	1415	683060	K	K	449	.860	.040	.051	.860	.045	.004	.426	190	225	.426	257	-3.380	0.146	-1.2	0.9	0.7	1.1	A+	
1418 686542 K K 449 .555 .227 .555 .073 .143 .002 .452 289 .452 215 127 -1.442 0.107 0.1 1.0 -0.3 1.0 A+ 1419 683165 K K 449 .512 .225 .143 .118 .512 .002 .311 150 192 071 .311 -1.228 0.106 3.8 1.2 3.1 1.2 A+ 1420 684830 K K 443 .795 .043 .795 .059 .102 .002 .355 231 .355 194 152 -2.933 0.130 .06 1.0 0.5 1.1 A+ 1421 683153 K K 443 .849 .059 .016 .070 .007 .519 519 335 209 285 3380 0.144 22 0.8 -2.7 0.5	1416	683059	K	K	449	.775	.089	.775	.078	.053	.004	.470	205	.470	300	248	-2.700	0.124	-1.0	0.9	-1.8	0.8	A-	
1419 683165 K K 449 .512 .225 .143 .118 .512 .002 .311 150 192 071 .311 -1.228 0.106 3.8 1.2 3.1 1.2 A+ 1420 684830 K K K 443 .795 .043 .795 .059 .102 .002 .355 231 .355 194 152 -2.933 0.130 0.6 1.0 0.5 1.1 A+ 1421 683153 K K 443 .826 .068 .059 .826 .047 .000 .482 255 300 .482 226 -3.182 0.137 -1.7 0.9 -1.9 0.7 B+ 1422 683151 K K 443 .849 .059 .016 .070 .007 .519 .519 335 209 285 3380 0.144 -2.2 0.8 -2.7 0.	1417	683168	K	K	449	.844	.844	.016	.091	.045	.004	.407	.407	156	218	284	-3.236	0.140	-0.4	1.0	-1.1	0.8	B+	
1420 684830 K K 443 .795 .043 .795 .059 .102 .002 .355 231 .355 194 152 -2.933 0.130 0.6 1.0 0.5 1.1 A+ 1421 683153 K K K 443 .826 .068 .059 .826 .047 .000 .482 255 300 .482 226 -3.182 0.137 -1.7 0.9 -1.9 0.7 B+ 1422 683151 K K K 443 .849 .859 .016 .070 .007 .519 -519 335 209 285 -3.380 0.144 -2.2 0.8 -2.7 0.5 A+ 1423 683169 K K K 443 .865 .063 .029 .034 .865 .009 .404 269 156 235 .404 -3.531 0.150 -0.9 0.9 </td <td>1418</td> <td>686542</td> <td>K</td> <td>K</td> <td>449</td> <td>.555</td> <td>.227</td> <td>.555</td> <td>.073</td> <td>.143</td> <td>.002</td> <td>.452</td> <td>289</td> <td>.452</td> <td>215</td> <td>127</td> <td>-1.442</td> <td>0.107</td> <td>0.1</td> <td>1.0</td> <td>-0.3</td> <td>1.0</td> <td>A+</td> <td></td>	1418	686542	K	K	449	.555	.227	.555	.073	.143	.002	.452	289	.452	215	127	-1.442	0.107	0.1	1.0	-0.3	1.0	A+	
1421 683153 K K 443 .826 .068 .059 .826 .047 .000 .482 255 300 .482 226 -3.182 0.137 -1.7 0.9 -1.9 0.7 B+ 1422 683151 K K 443 .849 .849 .059 .016 .070 .007 .519 .519 335 209 285 -3.380 0.144 -2.2 0.8 -2.7 0.5 A+ 1423 683169 K K 443 .865 .063 .029 .034 .865 .009 .404 269 156 235 .404 -3.531 0.150 -0.9 .0.9 -0.6 0.9 A+ 1424 683064 K K 443 .885 .034 .068 .011 .885 .002 .499 288 346 157 .499 -3.746 0.160 -2.2 0.8 -2.7	1419	683165	K	K	449	.512	.225	.143	.118	.512	.002	.311	150	192	071	.311	-1.228	0.106	3.8	1.2	3.1	1.2	A+	
1422 683151 K K 443 .849 .849 .059 .016 .070 .007 .519 .519 .335 209 285 -3.380 0.144 -2.2 0.8 -2.7 0.5 A+ 1423 683169 K K 443 .865 .063 .029 .034 .865 .009 .404 269 156 235 .404 -3.531 0.150 -0.9 0.9 -0.6 0.9 A+ 1424 683064 K K 443 .431 .269 .144 .431 .151 .005 .405 240 134 .405 123 -0.855 0.110 2.1 1.1 2.5 1.2 A+ 1425 683067 K K 443 .885 .034 .068 .011 .885 .002 .499 288 346 157 .499 -3.746 0.160 -2.2 0.8 -2.7 <t< td=""><td>1420</td><td>684830</td><td>K</td><td>K</td><td>443</td><td>.795</td><td>.043</td><td>.795</td><td>.059</td><td>.102</td><td>.002</td><td>.355</td><td>231</td><td>.355</td><td>194</td><td>152</td><td>-2.933</td><td>0.130</td><td>0.6</td><td>1.0</td><td>0.5</td><td>1.1</td><td>A+</td><td></td></t<>	1420	684830	K	K	443	.795	.043	.795	.059	.102	.002	.355	231	.355	194	152	-2.933	0.130	0.6	1.0	0.5	1.1	A+	
1423 683169 K K 443 .865 .063 .029 .034 .865 .009 .404 269 156 235 .404 -3.531 0.150 -0.9 0.9 -0.6 0.9 A+ 1424 683064 K K 443 .431 .269 .144 .431 .151 .005 .405 240 134 .405 123 -0.855 0.110 2.1 1.1 2.5 1.2 A+ 1425 683067 K K 443 .885 .034 .068 .011 .885 .002 .499 288 346 157 .499 -3.746 0.160 -2.2 0.8 -2.7 0.5 A+ 1426 683065 K K K 443 .571 .059 .219 .149 .571 .002 .483 233 214 .483 -1.588 0.109 -0.3 1.0 -0.2 1	1421	683153	K	K	443	.826	.068	.059	.826	.047	.000	.482	255	300	.482	226	-3.182	0.137	-1.7	0.9	-1.9	0.7	B+	
1424 683064 K K 443 .431 .269 .144 .431 .151 .005 .405 240 134 .405 123 -0.855 0.110 2.1 1.1 2.5 1.2 A+ 1425 683067 K K 443 .885 .034 .068 .011 .885 .002 .499 288 346 157 .499 -3.746 0.160 -2.2 0.8 -2.7 0.5 A+ 1426 683065 K K 443 .571 .059 .219 .149 .571 .002 .483 233 253 214 .483 -1.588 0.109 -0.3 1.0 -0.2 1.0 A+ 1427 683066 K K 443 .632 .147 .632 .070 .147 .005 .478 315 .478 182 -1.917 0.112 -0.2 1.0 -0.7 0.9 A- 1428 684832 K K 453 .808 .053 <td< td=""><td>1422</td><td>683151</td><td>K</td><td>K</td><td>443</td><td>.849</td><td>.849</td><td>.059</td><td>.016</td><td>.070</td><td>.007</td><td>.519</td><td>.519</td><td>335</td><td>209</td><td>285</td><td>-3.380</td><td>0.144</td><td>-2.2</td><td>0.8</td><td>-2.7</td><td>0.5</td><td>A+</td><td></td></td<>	1422	683151	K	K	443	.849	.849	.059	.016	.070	.007	.519	.519	335	209	285	-3.380	0.144	-2.2	0.8	-2.7	0.5	A+	
1425 683067 K K 443 .885 .034 .068 .011 .885 .002 .499 288 346 157 .499 -3.746 0.160 -2.2 0.8 -2.7 0.5 A+ 1426 683065 K K 443 .571 .059 .219 .149 .571 .002 .483 233 253 214 .483 -1.588 0.109 -0.3 1.0 -0.2 1.0 A+ 1427 683066 K K 443 .632 .147 .632 .070 .147 .005 .478 315 .478 185 182 -1.917 0.112 -0.2 1.0 -0.7 0.9 A- 1428 684832 K K 453 .746 .038 .029 .188 .746 .000 .419 303 289 196 .419 -2.552 0.121 0.5 1.0 0.8 <	1423	683169	K	K	443	.865	.063	.029	.034	.865	.009	.404	269	156	235	.404	-3.531	0.150	-0.9	0.9	-0.6	0.9	A+	
1426 683065 K K 443 .571 .059 .219 .149 .571 .002 .483 233 253 214 .483 -1.588 0.109 -0.3 1.0 -0.2 1.0 A+ 1427 683066 K K 443 .632 .147 .632 .070 .147 .005 .478 315 .478 185 182 -1.917 0.112 -0.2 1.0 -0.7 0.9 A- 1428 684832 K K 453 .746 .038 .029 .188 .746 .000 .419 303 289 196 .419 -2.552 0.121 0.5 1.0 0.8 1.1 A+ 1429 683074 K K 453 .808 .053 .102 .808 .035 .002 .412 291 188 .412 208 -3.000 0.132 -0.2 1.0 1.0 1.1 A+	1424	683064	K	K	443	.431	.269	.144	.431	.151	.005	.405	240	134	.405	123	-0.855	0.110	2.1	1.1	2.5	1.2	A+	
1427 683066 K K 443 .632 .147 .632 .070 .147 .005 .478 315 .478 185 182 -1.917 0.112 -0.2 1.0 -0.7 0.9 A- 1428 684832 K K 453 .746 .038 .029 .188 .746 .000 .419 303 289 196 .419 -2.552 0.121 0.5 1.0 0.8 1.1 A+ 1429 683074 K K 453 .808 .053 .102 .808 .035 .002 .412 291 188 .412 208 -3.000 0.132 -0.2 1.0 1.0 1.1 A+	1425	683067	K	K	443	.885	.034	.068	.011	.885	.002	.499	288	346	157	.499	-3.746	0.160	-2.2	0.8	-2.7	0.5	A+	
1428 684832 K K 453 .746 .038 .029 .188 .746 .000 .419 303 289 196 .419 -2.552 0.121 0.5 1.0 0.8 1.1 A+ 1429 683074 K K 453 .808 .053 .102 .808 .035 .002 .412 291 188 .412 208 -3.000 0.132 -0.2 1.0 1.0 1.1 A+	1426	683065	K	K	443	.571	.059	.219	.149	.571	.002	.483	233	253	214	.483	-1.588	0.109	-0.3	1.0	-0.2	1.0	A+	
1429 683074 K K 453 .808 .053 .102 .808 .035 .002 .412291188 .412208 -3.000 0.132 -0.2 1.0 1.0 1.1 A+	1427	683066	K	K	443	.632	.147	.632	.070	.147	.005	.478	315	.478	185	182	-1.917	0.112	-0.2	1.0	-0.7	0.9	A-	
1429 683074 K K 453 .808 .053 .102 .808 .035 .002 .412291188 .412208 -3.000 0.132 -0.2 1.0 1.0 1.1 A+	1428	684832	K	K	453	.746	.038	.029	.188	.746	.000	.419	303	289	196	.419	-2.552	0.121	0.5	1.0	0.8	1.1	A+	
	1429	683074	K	K	453	.808	.053	.102	.808	.035	.002	.412	291	188	.412	208		0.132	-0.2	1.0	1.0	1.1	A+	
ן +1 U.1 C.U- U.1 L.U C.II.U L.UI.5 C/4. 202. U.2 U.2 C/4. 200.	1430	683073	K	K	453	.669	.068	.139	.121	.669	.002	.475	270	250	202	.475	-2.071	0.113	0.1	1.0	-0.5	1.0	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1.121	602074	Grade	Grade	452	005			024	040		404					2.720	0.450	in	in	out	out	/F	/B
1431	683071	K	K	453	.885	.885	.035	.031	.049	.000	.481	.481	289	222	286	-3.729	0.159	-1.3	0.9	-2.1	0.6	A+	
1432	683072	K	K K	453 460	.810	.051	.051	.084	.810	.004	.553	281	293	305	.553	-3.018	0.133	-2.1	0.9	-2.6	0.7	B+	
1433	684833	K			.609	.211	.083	.609	.096	.002	.329	320	093	.329	011	-1.778	0.104	1.5	1.1	2.1	1.1	Α-	-
1434 1435	683130	K	K K	460 460	.494 .774	.143	.293	.070	.493 .774	.000	.404 .425	328 282	097 205	168	.404 .425	-1.219 -2.707	0.102 0.120	0.0	1.0	-0.3	1.0 0.9	A+	-
	686540	K	K			.122	.048							176	-			-0.7	1.0	-1.4		A+	$\vdash \vdash \vdash$
1436	683129	K		460	.811	.113	.022	.052	.811	.002	.400	230	193	249	.400	-2.967	0.128	-0.5	1.0	-1.2	0.9	B+	-
1437	684838	K	K	447	.779	.186	.020	.016	.779	.000	.383	279	210	168	.383	-2.691	0.127	0.7	1.1	0.7	1.1	A+	$\vdash \vdash$
1438	683145	K	K	447	.819	.078	.027	.076	.819	.000	.441	303	176	227	.441	-3.000	0.136	-0.6	1.0	-0.5	0.9	A+	$\vdash \vdash$
1439	683146	K	K	447	.667	.667	.145	.076	.105	.007	.416	.416	140	282	222	-1.974	0.114	1.5	1.1	0.8	1.1	Α-	—
1440	683148	K	K	447	.477	.477	.065	.136	.322	.000	.215	.215	228	115	025	-0.940	0.109	7.2	1.4	6.4	1.5	Α-	-
1441	686443	K	K	444	.800	.119	.800	.016	.065	.000	.377	259	.377	127	207	-2.955	0.130	0.3	1.0	-0.4	1.0	Α-	A+
1442	683150	K	K	444	.768	.768	.052	.088	.090	.002	.512	.512	190	250	356	-2.729	0.124	-1.7	0.9	-1.8	0.8	A+	A-
1443	683127	K	K	444	.779	.086	.068	.779	.063	.005	.560	341	275	.560	241	-2.808	0.126	-2.8	0.8	-2.2	0.8	A+	A+
1444	683149	K	K	444	.743	.083	.090	.743	.081	.002	.564	335	290	.564	255	-2.565	0.120	-2.7	0.8	-2.8	0.7	A+	B-
1445	683128	K	K	444	.604	.126	.065	.604	.200	.005	.311	221	314	.311	.008	-1.763	0.109	3.4	1.2	3.3	1.2	A+	A-
1446	686455	K	K	450	.851	.851	.020	.049	.080	.000	.330	.330	176	287	114	-3.260	0.141	-0.1	1.0	0.0	1.0	B+	—
1447	683123	K	K	450	.660	.660	.102	.102	.136	.000	.417	.417	276	217	141	-2.015	0.108	-0.7	1.0	-1.0	0.9	A+	—
1448	683121	K	K	450	.878	.053	.033	.878	.031	.004	.359	092	263	.359	238	-3.516	0.152	-0.6	0.9	-1.0	0.8	A+	
1449	686468	K	K	440	.534	.168	.091	.534	.202	.005	.386	242	234	.386	089	-1.362	0.106	1.3	1.1	1.1	1.1	A+	
1450	686471	K	K	440	.446	.359	.136	.059	.445	.000	.364	266	047	156	.364	-0.924	0.106	1.6	1.1	2.6	1.2	A+	
1451	683164	K	K	440	.689	.052	.109	.689	.148	.002	.430	152	288	.430	208	-2.165	0.113	-0.4	1.0	-0.5	1.0	A+	
1452	683274	K	K	440	.921	.018	.039	.020	.920	.002	.411	212	290	208	.411	-4.058	0.183	-0.9	0.9	-2.3	0.5	B+	
1453	683163	K	K	440	.836	.045	.836	.032	.084	.002	.476	256	.476	204	310	-3.150	0.138	-1.4	0.9	-2.7	0.6	B+	
1454	683132	K	K	453	.863	.062	.863	.046	.029	.000	.452	281	.452	280	173	-3.472	0.146	-1.2	0.9	-2.3	0.7	A-	1
1455	683134	K	K	453	.907	.029	.031	.033	.907	.000	.440	198	258	279	.440	-3.964	0.171	-1.3	0.9	-2.6	0.5	A-	
1456	683131	K	K	453	.647	.647	.095	.066	.188	.004	.443	.443	202	319	163	-2.018	0.108	-0.7	1.0	-1.0	0.9	A-	
1457	682464	1	1	452	.750	.750	.049	.055	.144	.002	.367	.367	300	254	090	-2.469	0.122	1.2	1.1	2.1	1.2	A+	
1458	683503	1	1	452	.737	.126	.035	.097	.737	.004	.447	211	287	222	.447	-2.382	0.120	0.1	1.0	-0.4	1.0	C+	
1459	683505	1	1	452	.378	.088	.378	.188	.330	.015	.267	272	.267	127	.043	-0.457	0.108	3.8	1.2	4.0	1.4	A+	
1460	683504	1	1	452	.274	.476	.104	.274	.128	.018	.326	.086	237	.326	265	0.125	0.116	-0.1	1.0	3.3	1.4	A+	
1461	683506	1	1	452	.666	.086	.115	.117	.666	.015	.570	288	300	201	.570	-1.953	0.112	-2.7	0.9	-1.8	0.9	A-	
1462	683070	1	1	447	.902	.902	.058	.027	.013	.000	.428	.428	355	160	159	-3.840	0.169	-1.1	0.9	-1.8	0.6	A-	A-
1463	683231	1	1	447	.875	.875	.049	.027	.047	.002	.466	.466	337	126	293	-3.529	0.154	-1.4	0.9	-2.2	0.6	A+	A-
1464	683068	1	1	447	.503	.215	.503	.163	.110	.009	.394	164	.394	116	235	-1.167	0.106	1.5	1.1	2.5	1.2	A-	A-
1465	682465	1	1	453	.464	.106	.020	.464	.408	.002	.405	350	103	.405	153	-1.097	0.103	0.0	1.0	0.2	1.0	A+	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1466	682466	Grade	Grade	452	470	470	251	007	075		406	406		140	055	-1.129	0.102	in 0.1	in	out	out	/F	/B
1466		1	1	453	.470	.470	.351	.097	.075	.007	.406	.406 006	280 .363	149 207	055 293	-0.850	0.103	-0.1	1.0	0.0	1.0	B-	Α-
1467 1468	685910 685912	1	1	453 453	.413	.351	.413	.106	.119	.011	.363	236	104	.345	231	-1.001	0.104	1.0	1.0	0.9	1.1	Α-	A+
1469	685912	1	1	453	.402	.402	.307	.148	.137	.007	.466	236 .466	104	109	339	-0.796	0.103	-1.7	0.9	1.6 -1.4	0.9	A+ A+	A- A+
1470	685911	1	1	453	.384	.402	.132	.384	.201	.007	.438	058	130	.438	222	-0.796	0.105	-1.7	1.0	-0.9	1.0	A+	A-
1470	683382	1	1	459	.739	.179	.739	.028	.048	.003	.600	407	.600	262	275	-2.459	0.103	-3.5	0.8	-2.9	0.7	A+	A-
1471	683387	1	1	459	.767	.133	.767	.059	.035	.007	.623	417	.623	295	227	-2.459	0.113	-4.1	0.8	-3.4	0.6	B+	
1472	683385	1	1	459	.139	.205	.294	.139	.355	.007	.104	070	.125	.104	112	1.312	0.152	2.9	1.3	5.7	2.8	A+	
1474	683383	1	1	459	.527	.292	.046	.126	.527	.007	.446	208	174	236	.446	-1.238	0.109	1.7	1.1	0.8	1.1	A+	+
1475	682468	1	1	447	.931	.025	.931	.022	.022	.000	.447	286	.447	264	205	-4.334	0.109	-1.1	0.9	-1.9	0.5	A+	+
1476	682467	1	1	447	.835	.023	.834	.047	.022	.000	.478	274	.478	296	221	-3.177	0.140	-1.1	0.9	-1.5	0.8	B-	+
1477	683086	1	1	447	.819	.819	.074	.043	.060	.004	.443	.443	188	232	277	-3.043	0.136	-0.3	1.0	-1.0	0.8	A-	
1478	683088	1	1	447	.472	.101	.139	.472	.284	.004	.494	143	306	.494	195	-0.979	0.108	-1.3	1.0	-0.3	1.0	A+	
1479	683087	1	1	447	.418	.291	.116	.172	.418	.002	.445	175	334	069	.445	-0.699	0.109	-0.2	1.0	1.6	1.1	A+	
1480	683089	1	1	447	.468	.468	.313	.098	.119	.002	.399	.399	201	104	208	-0.956	0.108	1.6	1.1	3.1	1.3	A-	
1481	682469	1	1	449	.924	.027	.031	.018	.924	.000	.415	229	268	200	.415	-4.160	0.188	-1.1	0.9	-1.3	0.7	A+	
1482	683377	1	1	449	.568	.143	.236	.053	.568	.000	.492	261	215	271	.492	-1.510	0.107	-1.1	1.0	-0.8	0.9	A+	
1483	683379	1	1	449	.806	.109	.036	.045	.806	.004	.500	304	242	248	.500	-2.926	0.130	-1.9	0.9	-1.9	0.8	A+	
1484	683378	1	1	449	.278	.278	.038	.655	.024	.004	.223	.223	244	018	253	0.024	0.117	3.0	1.2	4.4	1.5	Α-	
1485	683372	1	1	449	.510	.131	.276	.510	.076	.007	.546	350	242	.546	143	-1.217	0.106	-2.9	0.9	-2.3	0.9	Α-	
1486	683381	1	1	449	.423	.339	.423	.163	.067	.009	.279	171	.279	032	142	-0.776	0.107	3.8	1.2	4.2	1.3	A+	
1487	683384	1	1	449	.579	.147	.065	.198	.579	.011	.484	241	234	218	.484	-1.568	0.107	-0.9	1.0	-1.0	0.9	A-	
1488	683373	1	1	449	.588	.082	.089	.227	.588	.013	.472	252	274	168	.472	-1.614	0.107	-0.6	1.0	-0.8	0.9	A-	
1489	684088	1	1	443	.546	.352	.546	.038	.059	.005	.299	086	.299	228	238	-1.458	0.109	4.8	1.2	4.8	1.4	A+	
1490	684087	1	1	443	.670	.670	.070	.129	.126	.005	.524	.524	276	262	242	-2.133	0.114	-1.8	0.9	-1.4	0.9	A+	
1491	684089	1	1	443	.494	.208	.494	.160	.129	.009	.496	140	.496	220	291	-1.187	0.108	-0.5	1.0	-0.1	1.0	A-	
1492	684090	1	1	443	.438	.124	.111	.316	.438	.011	.453	189	272	135	.453	-0.891	0.109	0.8	1.0	0.2	1.0	A-	
1493	682471	1	1	453	.951	.022	.951	.015	.011	.000	.386	260	.386	228	160	-4.780	0.228	-0.7	0.9	-2.2	0.4	A-	
1494	682470	1	1	453	.510	.225	.214	.510	.049	.002	.471	237	236	.471	190	-1.209	0.107	-0.5	1.0	0.8	1.1	A+	
1495	684091	1	1	453	.768	.768	.071	.102	.055	.004	.569	.569	320	298	261	-2.703	0.125	-2.5	0.8	-1.9	0.8	A+	
1496	684092	1	1	453	.709	.104	.709	.119	.062	.007	.564	174	.564	412	249	-2.310	0.117	-2.1	0.9	-2.5	0.8	A+	
1497	684093	1	1	453	.530	.530	.075	.225	.163	.007	.446	.446	292	.013	376	-1.313	0.107	0.9	1.0	0.0	1.0	A-	
1498	684094	1	1	453	.333	.190	.117	.333	.349	.011	.215	215	219	.215	.140	-0.273	0.112	4.4	1.2	5.6	1.6	A-	
1499	683102	1	1	453	.570	.570	.073	.121	.227	.009	.385	.385	151	322	074	-1.522	0.108	2.6	1.1	2.5	1.2	A+	
1500	683103	1	1	453	.607	.607	.126	.139	.117	.011	.529	.529	235	145	357	-1.724	0.110	-1.2	0.9	-1.7	0.9	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1501 683277 1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1502 683104 1			Grade	Grade			. ,			. ,										in	out		/F	/B
1503 683386 1			1																				A+	
1506 683376	_		1															_		0.9			A+	—
1505 683375 1	1503	683386	1	1			.211	.074			.002		187			.086	0.710			1.1			A+	—
1506 683374		683376	1	1			.139			.667	.000		332		203	-			-2.5	0.9	-		A+	
1507 683084		683375	1	1		.365	.083				.002	.313		206	.313	066			1.3	1.1		1.2	A-	
1509 683082 1	1506	683374	1	1	460	.313	.313	.226		.178	.007	.034	.034	100	.066	019	-0.319	0.109	6.0	1.3	6.3	1.6	A-	
1509 683085 1	1507	683084	1	1	460	.448	.309	.448	.117	.124	.002	.349	160	.349	199	091	-1.000	0.102	1.2	1.0	1.2	1.1	A-	
1510 683083 1	1508	683082	1	1	460	.641	.141	.109	.641	.102	.007	.379	184	261	.379	088	-1.943	0.106	0.4	1.0	0.2	1.0	A+	
1511 683492 1	1509	683085	1	1	460	.746	.746	.091	.072	.089	.002	.556	.556	296	291	265	-2.526	0.116	-3.2	0.8	-3.6	0.7	A-	
1512 683491 1	1510	683083	1	1	460	.635	.174	.635	.111	.072	.009	.452	337	.452	.018	310	-1.910	0.106	-1.3	0.9	-1.3	0.9	A-	
1513 683493 1	1511	683492	1	1	447	.718	.718	.058	.179	.045	.000	.589	.589	307	394	204	-2.285	0.119	-3.0	0.8	-3.0	0.7	B+	
1514 683494	1512	683491	1	1	447	.515	.192	.515	.201	.083	.009	.525	211	.525	238	285	-1.141	0.109	-1.1	1.0	-0.7	1.0	A+	1
1515 683499	1513	683493	1	1	447	.468	.161	.047	.322	.468	.002	.416	315	268	068	.416	-0.892	0.109	2.2	1.1	2.1	1.2	A-	
1516 683500 1	1514	683494	1	1	447	.711	.074	.143	.711	.067	.004	.572	252	346	.572	271	-2.243	0.118	-2.5	0.9	-2.7	0.7	A+	
1517 683502 1	1515	683499	1	1	447	.640	.132	.130	.640	.092	.007	.541	316	157	.541	317	-1.820	0.113	-1.7	0.9	-1.0	0.9	A+	
1518 683501 1	1516	683500	1	1	447	.828	.047	.049	.828	.069	.007	.536	252	259	.536	322	-3.075	0.138	-2.1	8.0	-2.4	0.6	A+	
1519 683509 1	1517	683502	1	1	447	.752	.060	.752	.110	.067	.011	.538	335	.538	250	234	-2.504	0.123	-2.0	0.9	-1.9	8.0	A+	
1520 683513 1	1518	683501	1	1	447	.188	.497	.145	.188	.157	.013	.164	051	089	.164	.038	0.831	0.135	2.6	1.2	5.3	2.1	A+	
1521 683489 1 1 444 .613 .613 .104 .164 .117 .002 .391 143 166 254 -1.810 0.109 1.5 1.1 1.0 1.1 B- A- 1522 683490 1 1 444 .617 .137 .617 .146 .092 .007 .509 257 .509 238 226 -1.834 0.110 -1.4 0.9 -1.6 0.9 A+ A- 1523 683488 1 1 444 .669 .135 .124 .088 .649 .005 .487 228 312 154 .487 -2.005 0.111 -0.9 1.0 -0.5 1.0 A+ A+ 1524 683108 1 1 444 .658 .077 .074 .658 .180 .011 .496 235 183 .496 275 2.055 0.112 1 1.	1519	683509	1	1	444	.484	.070	.041	.484	.403	.002	.251	275	194	.251	036	-1.153	0.107	5.1	1.2	5.2	1.3	A+	A+
1522 683490 1 1 444 .617 .137 .617 .146 .092 .007 .509 257 .509 238 226 -1.834 0.110 -1.4 0.9 -1.6 0.9 A+ A- 1523 683488 1 1 444 .649 .135 .124 .088 .649 .005 .487 228 312 154 .487 -2.005 0.111 -0.9 1.0 -0.5 1.0 A+ A+ 1524 683108 1 1 444 .658 .077 .074 .658 .180 .011 .496 235 183 .496 275 -2.055 0.112 -1.1 1.0 -1.1 0.9 8+ A+ 1525 683107 1 1 444 .588 .135 .072 .191 .588 .014 .477 278 282 111 .477 1680 0.108	1520	683513	1	1	444	.658	.137	.658	.110	.095	.000	.480	277	.480	298	134	-2.055	0.112	-0.7	1.0	-1.1	0.9	A+	A+
1523 683488 1 1 444 .649 .135 .124 .088 .649 .005 .487 228 312 154 .487 -2.005 0.111 -0.9 1.0 -0.5 1.0 A+ A+ 1524 683108 1 1 444 .658 .077 .074 .658 .180 .011 .496 235 183 .496 275 -2.055 0.112 -1.1 1.0 -1.1 0.9 B+ A+ 1525 683107 1 1 444 .712 .191 .512 .038 .045 .014 .580 364 .580 239 245 2368 0.117 -3.1 0.8 -3.2 0.7 A+ A+ 1526 683109 1 1 444 .682 .137 .065 .099 .682 .016 .555 267 288 243 .555 -2.196 0.114	1521	683489	1	1	444	.613	.613	.104	.164	.117	.002	.391	.391	143	166	254	-1.810	0.109	1.5	1.1	1.0	1.1	B-	A-
1524 683108 1 1 444 .658 .077 .074 .658 .180 .011 .496 235 183 .496 275 -2.055 0.112 -1.1 1.0 -1.1 0.9 B+ A+ 1525 683107 1 1 444 .712 .191 .712 .038 .045 .014 .580 364 .580 239 245 -2.368 0.117 -3.1 0.8 -3.2 0.7 A+ A+ 1526 683109 1 1 444 .588 .135 .072 .191 .588 .014 .477 278 282 111 .477 -1.680 0.108 -0.5 1.0 -0.9 0.9 A+ A- 1527 683106 1 1 444 .682 .137 .065 .099 .682 .016 .555 267 288 243 .555 -2.196 0.114	1522	683490	1	1	444	.617	.137	.617	.146	.092	.007	.509	257	.509	238	226	-1.834	0.110	-1.4	0.9	-1.6	0.9	A+	A-
1525 683107 1 1 444 .712 .191 .712 .038 .045 .014 .580 364 .580 239 245 -2.368 0.117 -3.1 0.8 -3.2 0.7 A+ A+ 1526 683109 1 1 444 .588 .135 .072 .191 .588 .014 .477 278 282 111 .477 -1.680 0.108 -0.5 1.0 -0.9 0.9 A+ A- 1527 683106 1 1 444 .682 .137 .065 .099 .682 .016 .555 267 288 243 .555 2196 0.114 -2.5 0.9 -2.4 0.8 A+ A- 1528 683100 1 1 450 .676 .153 .093 .076 .676 .002 .430 229 216 -2.642 0.120 -1.4 0.9 -1	1523	683488	1	1	444	.649	.135	.124	.088	.649	.005	.487	228	312	154	.487	-2.005	0.111	-0.9	1.0	-0.5	1.0	A+	A+
1526 683109 1 1 444 .588 .135 .072 .191 .588 .014 .477 278 282 111 .477 -1.680 0.108 -0.5 1.0 -0.9 0.9 A+ A- 1527 683106 1 1 444 .682 .137 .065 .099 .682 .016 .555 267 288 243 .555 -2.196 0.114 -2.5 0.9 -2.4 0.8 A+ A- 1528 683276 1 1 450 .769 .062 .069 .100 .000 .449 .449 204 298 216 -2.642 0.120 -1.4 0.9 -1.5 0.9 B+ 1529 683100 1 1 450 .676 .153 .093 .076 .676 .002 .430 229 177 231 .430 -2.097 0.109 -1.0 1.0 -1.0 0.9 A+ 1530 683101 1 1 450	1524	683108	1	1	444	.658	.077	.074	.658	.180	.011	.496	235	183	.496	275	-2.055	0.112	-1.1	1.0	-1.1	0.9	B+	A+
1527 683106 1 1 444 .682 .137 .065 .099 .682 .016 .555 267 288 243 .555 -2.196 0.114 -2.5 0.9 -2.4 0.8 A+ A- 1528 683276 1 1 450 .769 .062 .069 .100 .000 .449 .449 204 298 216 -2.642 0.120 -1.4 0.9 -1.5 0.9 B+ 1529 683100 1 1 450 .676 .153 .093 .076 .676 .002 .430 229 177 231 .430 -2.097 0.109 -1.0 1.0 -1.0 0.9 A+ 1530 683101 1 1 450 .327 .216 .242 .000 .180 121 .180 153 .066 -0.386 0.108 3.3 1.2 2.9 1.2 A+ 1531 683499 1 1 450 .596 .596 .136 .	1525	683107	1	1	444	.712	.191	.712	.038	.045	.014	.580	364	.580	239	245	-2.368	0.117	-3.1	0.8	-3.2	0.7	A+	A+
1528 683276 1 1 450 .769 .062 .069 .100 .000 .449 .449 204 298 216 -2.642 0.120 -1.4 0.9 -1.5 0.9 B+ 1529 683100 1 1 450 .676 .153 .093 .076 .676 .002 .430 229 177 231 .430 -2.097 0.109 -1.0 1.0 -1.0 0.9 A+ 1530 683101 1 1 450 .327 .216 .327 .216 .242 .000 .180 121 .180 153 .066 -0.386 0.108 3.3 1.2 2.9 1.2 A+ 1531 683099 1 1 450 .596 .136 .129 .129 .011 .470 .470 198 238 198 -1.690 0.104 -2.0 0.9 -1.8 0.9 A+ 1532 683498 1 1 450 .653 .653 .093 <td< td=""><td>1526</td><td>683109</td><td>1</td><td>1</td><td>444</td><td>.588</td><td>.135</td><td>.072</td><td>.191</td><td>.588</td><td>.014</td><td>.477</td><td>278</td><td>282</td><td>111</td><td>.477</td><td>-1.680</td><td>0.108</td><td>-0.5</td><td>1.0</td><td>-0.9</td><td>0.9</td><td>A+</td><td>A-</td></td<>	1526	683109	1	1	444	.588	.135	.072	.191	.588	.014	.477	278	282	111	.477	-1.680	0.108	-0.5	1.0	-0.9	0.9	A+	A-
1529 683100 1 1 450 .676 .153 .093 .076 .676 .002 .430 229 177 231 .430 -2.097 0.109 -1.0 1.0 -1.0 0.9 A+ 1530 683101 1 1 450 .327 .216 .327 .216 .242 .000 .180 121 .180 153 .066 -0.386 0.108 3.3 1.2 2.9 1.2 A+ 1531 683099 1 1 450 .596 .596 .136 .129 .129 .011 .470 .470 198 238 198 -1.690 0.104 -2.0 0.9 -1.8 0.9 A+ 1532 683498 1 1 450 .653 .653 .093 .202 .044 .007 .390 .390 228 171 178 -1.980 0.107 -0.1 1.0 -0.1 1.0 A+ 1533 683495 1 1 450 .302 <td< td=""><td>1527</td><td>683106</td><td>1</td><td>1</td><td>444</td><td>.682</td><td>.137</td><td>.065</td><td>.099</td><td>.682</td><td>.016</td><td>.555</td><td>267</td><td>288</td><td>243</td><td>.555</td><td>-2.196</td><td>0.114</td><td>-2.5</td><td>0.9</td><td>-2.4</td><td>0.8</td><td>A+</td><td>A-</td></td<>	1527	683106	1	1	444	.682	.137	.065	.099	.682	.016	.555	267	288	243	.555	-2.196	0.114	-2.5	0.9	-2.4	0.8	A+	A-
1530 683101 1 1 450 .327 .216 .327 .216 .242 .000 .180 121 .180 153 .066 -0.386 0.108 3.3 1.2 2.9 1.2 A+ 1531 683099 1 1 450 .596 .596 .136 .129 .129 .011 .470 .470 198 238 198 -1.690 0.104 -2.0 0.9 -1.8 0.9 A+ 1532 683498 1 1 450 .653 .653 .093 .202 .044 .007 .390 .390 228 171 178 -1.980 0.107 -0.1 1.0 -0.1 1.0 A+ 1533 683495 1 1 450 .591 .089 .171 .591 .144 .004 .331 144 056 .331 263 -1.668 0.104 1.4 1.1 1.4 1.1 A+ 1534 683496 1 1 450 .302 .	1528	683276	1	1	450	.769	.769	.062	.069	.100	.000	.449	.449	204	298	216	-2.642	0.120	-1.4	0.9	-1.5	0.9	B+	
1531 683099 1 1 450 .596 .596 .136 .129 .129 .011 .470 .470 198 238 198 -1.690 0.104 -2.0 0.9 -1.8 0.9 A+ 1532 683498 1 1 450 .653 .653 .093 .202 .044 .007 .390 .390 228 171 178 -1.980 0.107 -0.1 1.0 -0.1 1.0 A+ 1533 683495 1 1 450 .591 .089 .171 .591 .144 .004 .331 144 056 .331 263 -1.668 0.104 1.4 1.1 1.4 1.1 A+ 1534 683496 1 1 450 .302 .249 .127 .313 .009 .228 .228 .032 237 058 -0.254 0.110 2.3 1.1 2.3 1.2 A+	1529	683100	1	1	450	.676	.153	.093	.076	.676	.002	.430	229	177	231	.430	-2.097	0.109	-1.0	1.0	-1.0	0.9	A+	
1532 683498 1 1 450 .653 .653 .093 .202 .044 .007 .390 .390 228 171 178 -1.980 0.107 -0.1 1.0 -0.1 1.0 -0.1 1.0 A+ 1533 683495 1 1 450 .591 .089 .171 .591 .144 .004 .331 144 056 .331 263 -1.668 0.104 1.4 1.1 1.4 1.1 A+ 1534 683496 1 1 450 .302 .302 .249 .127 .313 .009 .228 .228 .032 237 058 -0.254 0.110 2.3 1.1 2.3 1.2 A+	1530	683101	1	1	450	.327	.216	.327	.216	.242	.000	.180	121	.180	153	.066	-0.386	0.108	3.3	1.2	2.9	1.2	A+	
1533 683495 1 1 450 .591 .089 .171 .591 .144 .004 .331 144 056 .331 263 -1.668 0.104 1.4 1.1 1.4 1.1 A+ 1534 683496 1 1 450 .302 .249 .127 .313 .009 .228 .228 .032 237 058 -0.254 0.110 2.3 1.1 2.3 1.2 A+	1531	683099	1	1	450	.596	.596	.136	.129	.129	.011	.470	.470	198	238	198	-1.690	0.104	-2.0	0.9	-1.8	0.9	A+	
1534 683496 1 1 450 .302 .302 .249 .127 .313 .009 .228 .228 .032237058 -0.254 0.110 2.3 1.1 2.3 1.2 A+	1532	683498	1	1	450	.653	.653	.093	.202	.044	.007	.390	.390	228	171	178	-1.980	0.107	-0.1	1.0	-0.1	1.0	A+	
1534 683496 1 1 450 .302 .302 .249 .127 .313 .009 .228 .228 .032237058 -0.254 0.110 2.3 1.1 2.3 1.2 A+	1533	683495	1	1	450	.591	.089	.171	.591	.144	.004	.331	144	056	.331	263	-1.668	0.104	1.4	1.1	1.4	1.1	A+	
	1534	683496	1	1	450		.302	.249		.313	.009	.228	.228	.032		058	-0.254	0.110	2.3	1.1	2.3	1.2	A+	
	1535	683497		1	450	.549	.549	.096	.144	.202	.009	.259	.259	274	123	.022	-1.465	0.103	3.3	1.1	3.1	1.2	Α-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1536 683301 1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1537 683300 1			Grade	Grade																in	out		/F	/B
1588 683293 1			1	_																			A-	—
1539 683302 1				_																			A-	—
1540 683292 1		683293	1	1				.152			.005	.483	198			222			-1.4	0.9			A+	—
1541 684101 1			1	1			.684				.007					l			1.8	1.1			A+	
1542 684100 1	1540	683292	1	1	440	.191	.289	.295			.007	025	.079	.058		025			4.3	1.4	6.2	2.1	A-	
1543 684085 1	1541	684101	1	1	440	.621	.216	.061	.095	.620	.007	.417	185	217	211	.417	-1.798	0.109	0.3	1.0	-0.6	1.0	B+	
1544 684102 1	1542	684100	1	1	440	.418	.418	.105	.205	.259	.014	.432	.432	138	143	218	-0.787	0.107	-0.7	1.0	0.3	1.0	A-	
1545 684086 1	1543	684085	1	1	440	.591	.086	.591	.216	.091	.016	.441	135	.441	113	371	-1.646	0.107	-0.2	1.0	-0.6	1.0	A-	
1546 683510 1	1544	684102	1	1	440	.414	.120	.268	.180	.414	.018	.453	204	134	194	.453	-0.764	0.107	-1.0	1.0	-0.7	1.0	A-	
1547 683512 1	1545	684086	1	1	440	.523	.093	.300	.523	.068	.016	.367	240	127	.367	124	-1.306	0.106	1.8	1.1	2.0	1.1	A+	
1548 683508 1	1546	683510	1	1	453	.684	.684	.084	.075	.157	.000	.419	.419	339	175	151	-2.221	0.111	-0.2	1.0	-0.7	0.9	A-	
1549 683511 1	1547	683512	1	1	453	.254	.227	.313	.254	.203	.002	.329	049	151	.329	131	-0.007	0.116	0.3	1.0	0.6	1.1	A-	1
1550 684095 1	1548	683508	1	1	453	.322	.320	.322	.172	.179	.007	.241	.003	.241	082	203	-0.399	0.109	2.3	1.1	3.9	1.3	A+	
1551 684097 1	1549	683511	1	1	453	.819	.819	.044	.071	.060	.007	.438	.438	176	299	211	-3.091	0.132	-0.8	0.9	-1.5	8.0	A+	
1552 684099 1	1550	684095	1	1	453	.885	.885	.007	.031	.071	.007	.334	.334	143	216	184	-3.699	0.156	-0.1	1.0	-0.9	8.0	A+	
1553 684096 1	1551	684097	1	1	453	.717	.084	.717	.121	.071	.007	.500	143	.500	302	289	-2.410	0.114	-2.0	0.9	-2.1	8.0	B+	
1554 684098 1	1552	684099	1	1	453	.600	.196	.600	.108	.082	.013	.510	203	.510	245	257	-1.779	0.105	-2.5	0.9	-2.0	0.9	A+	
1555 682480 2 2 452 .403 .403 .279 .181 .117 .020 .260 .027 .148 150 0584 0.107 4.3 1.2 4.3 1.4 A+ 1556 683114 2 2 452 .719 .046 .075 .135 .719 .024 .489 238 284 163 .489 -2.269 0.117 -0.9 1.0 -0.1 1.0 A- 1557 683113 2 2 452 .794 .060 .794 .046 .071 .029 .603 298 336 -2.783 0.129 -3.0 0.8 -3.2 0.6 A+ 1558 683278 2 2 .452 .449 .117 .449 .197 .210 .027 .380 .079 .380 182 123 0821 0.106 1.7 1.1 1.0 .4 .16 .18 .22 <td>1553</td> <td>684096</td> <td>1</td> <td>1</td> <td>453</td> <td>.327</td> <td>.355</td> <td>.327</td> <td>.068</td> <td>.236</td> <td>.013</td> <td>.284</td> <td>.006</td> <td>.284</td> <td>227</td> <td>136</td> <td>-0.423</td> <td>0.109</td> <td>2.1</td> <td>1.1</td> <td>1.7</td> <td>1.1</td> <td>A-</td> <td></td>	1553	684096	1	1	453	.327	.355	.327	.068	.236	.013	.284	.006	.284	227	136	-0.423	0.109	2.1	1.1	1.7	1.1	A-	
1556 683114 2 2 452 .719 .046 .075 .135 .719 .024 .489 238 284 163 .489 -2.269 0.117 -0.9 1.0 -0.1 1.0 A- 1557 683113 2 2 452 .794 .060 .794 .046 .071 .029 .603 229 .603 288 336 -2.783 0.129 -3.0 0.8 -3.2 0.6 A+ 1558 683278 2 2 .452 .449 .117 .449 .197 .210 .027 .380 182 123 -0.821 0.106 1.7 1.1 1.3 1.1 A- 1559 683298 2 2 .452 .547 .111 .100 .208 .546 .035 .498 153 .238 220 .498 -1.314 0.106 .13 1.0 -1.5 0.9 2	1554	684098	1	1	453	.214	.214	.139	.276	.355	.015	.088	.088	058	.092	066	0.249	0.123	3.1	1.2	4.2	1.6	A+	
1557 683113 2 2 452 .794 .060 .794 .046 .071 .029 .603 229 .603 298 336 -2.783 0.129 -3.0 0.8 -3.2 0.6 A+ 1558 683278 2 2 452 .449 .117 .449 .197 .210 .027 .380 079 .380 182 123 -0.821 0.106 1.7 1.1 1.3 1.1 A- 1559 683298 2 2 452 .547 .111 .100 .208 .546 .035 .498 153 238 220 .498 -1.314 0.106 -1.3 1.0 -1.3 0.9 B- 1560 683370 2 2 .452 .673 .162 .080 .673 .055 .031 .563 159 333 .563 .343 -1.991 .0113 .25 0.9 -1.5 <t< td=""><td>1555</td><td>682480</td><td>2</td><td>2</td><td>452</td><td>.403</td><td>.403</td><td>.279</td><td>.181</td><td>.117</td><td>.020</td><td>.260</td><td>.260</td><td>.027</td><td>148</td><td>150</td><td>-0.584</td><td>0.107</td><td>4.3</td><td>1.2</td><td>4.3</td><td>1.4</td><td>A+</td><td></td></t<>	1555	682480	2	2	452	.403	.403	.279	.181	.117	.020	.260	.260	.027	148	150	-0.584	0.107	4.3	1.2	4.3	1.4	A+	
1558 683278 2 2 452 .449 .117 .449 .197 .210 .027 .380 079 .380 182 123 0821 0.106 1.7 1.1 1.3 1.1 A- 1559 683298 2 2 452 .547 .111 .100 .208 .546 .035 .498 153 238 220 .498 -1.314 0.106 -1.3 1.0 -1.3 0.9 B- 1560 683370 2 2 452 .673 .162 .080 .673 .055 .031 .563 159 333 .563 343 -1.991 0.113 -2.5 0.9 -1.5 0.9 C- 1561 683297 2 2 452 .449 .290 .449 .122 .104 .035 .354 064 .354 186 167 -0.821 0.106 2.3 1.1 2.2 <td< td=""><td>1556</td><td>683114</td><td>2</td><td>2</td><td>452</td><td>.719</td><td>.046</td><td>.075</td><td>.135</td><td>.719</td><td>.024</td><td>.489</td><td>238</td><td>284</td><td>163</td><td>.489</td><td>-2.269</td><td>0.117</td><td>-0.9</td><td>1.0</td><td>-0.1</td><td>1.0</td><td>A-</td><td></td></td<>	1556	683114	2	2	452	.719	.046	.075	.135	.719	.024	.489	238	284	163	.489	-2.269	0.117	-0.9	1.0	-0.1	1.0	A-	
1559 683298 2 2 452 .547 .111 .100 .208 .546 .035 .498 153 238 220 .498 -1.314 0.106 -1.3 1.0 -1.3 0.9 B- 1560 683370 2 2 452 .673 .162 .080 .673 .055 .031 .563 159 333 .563 343 -1.991 0.113 -2.5 0.9 -1.5 0.9 C- 1561 683297 2 2 452 .797 .796 .040 .073 .060 .031 .614 .614 233 340 321 -2.800 0.130 -3.5 0.8 -2.4 0.7 A- 1562 683299 2 2 .452 .449 .290 .449 .122 .104 .035 .354 064 .354 186 167 -0.821 0.106 2.3 1.1 2.2	1557	683113	2	2	452	.794	.060	.794	.046	.071	.029	.603	229	.603	298	336	-2.783	0.129	-3.0	0.8	-3.2	0.6	A+	
1560 683370 2 2 452 .673 .162 .080 .673 .055 .031 .563 159 333 .563 343 -1.991 0.113 -2.5 0.9 -1.5 0.9 C- 1561 683297 2 2 452 .797 .796 .040 .073 .060 .031 .614 -614 233 340 321 -2.800 0.130 -3.5 0.8 -2.4 0.7 A- 1562 683299 2 2 452 .449 .290 .449 .122 .104 .035 .354 064 .354 186 167 -0.821 0.106 2.3 1.1 2.2 1.2 A- 1563 682481 2 2 447 .904 .036 .904 .013 .034 .013 .483 116 167 -0.821 0.106 2.3 1.1 2.2 1.2 1.2 1.	1558	683278	2	2	452	.449	.117	.449	.197	.210	.027	.380	079	.380	182	123	-0.821	0.106	1.7	1.1	1.3	1.1	A-	
1561 683297 2 2 452 .797 .796 .040 .073 .060 .031 .614 .614 233 340 321 -2.800 0.130 -3.5 0.8 -2.4 0.7 A- 1562 683299 2 2 452 .449 .290 .449 .122 .104 .035 .354 064 .354 186 167 -0.821 0.106 2.3 1.1 2.2 1.2 A- 1563 682481 2 2 447 .904 .036 .904 .013 .034 .013 .483 311 .483 159 266 -3.869 0.171 -1.5 0.8 -2.8 0.4 A- 1564 683280 2 2 447 .392 .391 .282 .128 .177 .022 .418 .418 182 116 138 -0.591 0.109 0.5 1.0 1.8 1.1 A+ A+ 1565 683119 2 2 447 .4	1559	683298	2	2	452	.547	.111	.100	.208	.546	.035	.498	153	238	220	.498	-1.314	0.106	-1.3	1.0	-1.3	0.9	B-	
1562 683299 2 2 452 .449 .290 .449 .122 .104 .035 .354 064 .354 186 167 -0.821 0.106 2.3 1.1 2.2 1.2 A- 1563 682481 2 2 447 .904 .036 .904 .013 .034 .013 .483 311 .483 159 266 -3.869 0.171 -1.5 0.8 -2.8 0.4 A- A- 1564 683280 2 2 447 .392 .391 .282 .128 .177 .022 .418 .418 182 116 138 -0.591 0.109 0.5 1.0 1.8 1.1 A+ A+ 1565 683119 2 2 447 .682 .078 .116 .101 .682 .022 .508 216 204 274 .508 -2.111 0.113 -1.6 0.9 -1.8 0.9 A- 1566 683120 2 2 447	1560	683370	2	2	452	.673	.162	.080	.673	.055	.031	.563	159	333	.563	343	-1.991	0.113	-2.5	0.9	-1.5	0.9	C-	
1563 682481 2 2 447 .904 .036 .904 .013 .034 .013 .483 311 .483 159 266 -3.869 0.171 -1.5 0.8 -2.8 0.4 A- A- 1564 683280 2 2 447 .392 .391 .282 .128 .177 .022 .418 .418 182 116 138 -0.591 0.109 0.5 1.0 1.8 1.1 A+ A+ 1565 683119 2 2 447 .682 .078 .116 .101 .682 .022 .508 216 204 274 .508 -2.111 0.113 -1.6 0.9 -1.8 0.9 A- 1566 683120 2 2 447 .445 .242 .150 .445 .139 .025 .468 112 185 .468 251 -0.871 0.107 -0.7 1.0 -0.4 1.0 A+ A- 1567 683118 2	1561	683297	2	2	452	.797	.796	.040	.073	.060	.031	.614	.614	233	340	321	-2.800	0.130	-3.5	0.8	-2.4	0.7	A-	
1564 683280 2 2 447 .392 .391 .282 .128 .177 .022 .418 .418 182 116 138 -0.591 0.109 0.5 1.0 1.8 1.1 A+ A+ 1565 683119 2 2 447 .682 .078 .116 .101 .682 .022 .508 216 204 274 .508 -2.111 0.113 -1.6 0.9 -1.8 0.9 A- A- 1566 683120 2 2 447 .445 .242 .150 .445 .139 .025 .468 112 185 .468 251 -0.871 0.107 -0.7 1.0 -0.4 1.0 A+ A- 1567 683118 2 2 447 .459 .597 .159 .145 .072 .163 .022 .433 .433 234 205 123 -1.648 0.108 0.5 1.0 0.2 1.0 A+ A+ 1568 685	1562	683299	2	2	452	.449	.290	.449	.122	.104	.035	.354	064	.354	186	167	-0.821	0.106	2.3	1.1	2.2	1.2	A-	
1565 683119 2 2 447 .682 .078 .116 .101 .682 .022 .508 216 204 274 .508 -2.111 0.113 -1.6 0.9 -1.8 0.9 A- A- 1566 683120 2 2 447 .445 .242 .150 .445 .139 .025 .468 112 185 .468 251 -0.871 0.107 -0.7 1.0 -0.4 1.0 A+ A- 1567 683118 2 2 447 .597 .597 .145 .072 .163 .022 .433 .433 234 205 123 -1.648 0.108 0.5 1.0 0.2 1.0 A+ A+ 1568 685008 2 2 447 .414 .150 .414 .230 .183 .022 .459 172 .459 198 144 -0.709 0.108 -0.6 1.0 0.2 1.0 A+ A+ 1569 685009	1563	682481	2	2	447	.904	.036	.904	.013	.034	.013	.483	311	.483	159	266	-3.869	0.171	-1.5	0.8	-2.8	0.4	A-	A-
1566 683120 2 2 447 .445 .242 .150 .445 .139 .025 .468 112 185 .468 251 -0.871 0.107 -0.7 1.0 -0.4 1.0 A+ A- 1567 683118 2 2 447 .597 .597 .145 .072 .163 .022 .433 .433 234 205 123 -1.648 0.108 0.5 1.0 0.2 1.0 A+ A+ 1568 685008 2 2 447 .414 .150 .414 .230 .183 .022 .459 172 .459 198 144 -0.709 0.108 -0.6 1.0 0.2 1.0 A+ A+ 1569 685009 2 2 447 .459 .262 .114 .141 .459 .025 .492 082 175 355 .492 -0.940 0.107 -1.2 1.0 -0.8 1.0 A+ A+	1564	683280	2	2	447	.392	.391	.282	.128	.177	.022	.418	.418	182	116	138	-0.591	0.109	0.5	1.0	1.8	1.1	A+	A+
1567 683118 2 2 447 .597 .597 .145 .072 .163 .022 .433 .433 234 205 123 -1.648 0.108 0.5 1.0 0.2 1.0 A+ A+ 1568 685008 2 2 447 .414 .150 .414 .230 .183 .022 .459 172 .459 198 144 -0.709 0.108 -0.6 1.0 0.2 1.0 A+ A+ 1569 685009 2 2 447 .459 .262 .114 .141 .459 .025 .492 082 175 355 .492 -0.940 0.107 -1.2 1.0 -0.8 1.0 A+ A+	1565	683119	2	2	447	.682	.078	.116	.101	.682	.022	.508	216	204	274	.508	-2.111	0.113	-1.6	0.9	-1.8	0.9	A-	A-
1568 685008 2 2 447 .414 .150 .414 .230 .183 .022 .459 172 .459 198 144 -0.709 0.108 -0.6 1.0 0.2 1.0 A+ A+ 1569 685009 2 2 447 .459 .262 .114 .141 .459 .025 .492 082 175 355 .492 -0.940 0.107 -1.2 1.0 -0.8 1.0 A+ A+	1566	683120	2	2	447	.445	.242	.150	.445	.139	.025	.468	112	185	.468	251	-0.871	0.107	-0.7	1.0	-0.4	1.0	A+	A-
1569 685009 2 2 447 .459 .262 .114 .141 .459 .025 .492082175355 .492 -0.940 0.107 -1.2 1.0 -0.8 1.0 A+ A-	1567	683118	2	2	447	.597	.597	.145	.072	.163	.022	.433	.433	234	205	123	-1.648	0.108	0.5	1.0	0.2	1.0	A+	A+
1569 685009 2 2 447 .459 .262 .114 .141 .459 .025 .492082175355 .492 -0.940 0.107 -1.2 1.0 -0.8 1.0 A+ A-	1568	685008	2	2	447	.414	.150	.414	.230	.183	.022	.459	172	.459	198	144	-0.709	0.108	-0.6	1.0	0.2	1.0	A+	A+
	1569	685009	2	2	447	.459		.114			.025	.492	082			.492	-0.940	0.107	-1.2	1.0	-0.8	1.0	A+	A-
	1570	685010		2		.407	.139	.255	.177	.407	.022	.371	210	070	141	.371	-0.674	0.108	1.5	1.1	3.3	1.3	A+	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
4574	C05044	Grade	Grade	4.47	25.4						254			, ,	, ,		0.444	in	in	out	out	/F	/B
1571	685011	2	2	447	.354	.362	.353	.107	.152	.025	.351	.038	.351	262	219	-0.385	0.111	1.9	1.1	2.3	1.2	Α-	A-
1572	682482	2	2	453	.768	.064	.084	.768	.068	.015	.533	207	318	.533	263	-2.683 -1.681	0.119	-2.8	0.8	-3.2	0.7	A+	Α-
1573	683096	2	2	453	.585	.104	.585	.221	.071	.020	.458	213	.458	156	293		0.104	-1.5	0.9	-1.6	0.9	A-	A+
1574 1575	683097 683098	2	2	453 453	.289	.327	.203	.163 .159	.289	.018	.279 .414	.058	160 194	186 106	.279	-0.200 -0.894	0.113	1.3 -0.4	1.1	2.8 -0.9	1.3	A- A+	A+ B-
1576	683098	2	2	453		.422		.159	.117		.310		194	.310	171	-0.894	0.104			2.6			
1576		2	2	453 459	.442	.214	.115	.573	.076	.020	.488	019	232		148	-0.991	0.103	2.5	1.1	0.3	1.2	A-	Α-
1578	685004 685005	2	2	459	.573 .588	.168	.111	.588	.120	.013	.533	248 271	232	.488	181 194	-1.487	0.109	0.3 -1.0	1.0	0.3	1.0	A-	\vdash
1579		2	2	459	.730	.089		.089	.730	.015			298	320		-2.402	0.110	-4.4	0.8		0.6	Α-	\vdash
1579	685006	2	2	459	.730	.730	.076	.089	.046	.015	.636	341	252	320	.636 284	-2.402	0.118	-4.4	0.8	-3.6 -1.1		A+	\vdash
1580	685007	2	2	459	.730	.730	.129	.377	.170	.015	.341	.538	252	.341	284	-0.412	0.118		1.2	3.5	0.9 1.3	A+ A+	\vdash
1582	685395		2	459				.098			.513	010	237	274	220	-0.412	0.112	3.5					\vdash
1583	685394	2		459	.612	.612	.166	.157	.107	.017	.513	.513 255	201	302	.584	-0.967	0.110	-0.5 -2.7	1.0 0.9	-0.1 -2.4	1.0	A+	\vdash
1584	685393 685392	2	2	459 459	.477 .608	.131	.089	.115	.477 .608	.022	.541	255	201	302	.584	-0.967	0.109	-2.7	0.9	-2.4	0.8	Α-	\vdash
1585		2	2	439				.694		_	.608	339	323	.608	227	-2.176				-3.3		A+	\vdash
1586	682484 682483	2	2	447	.694 .850	.123	.083	.031	.087	.013	.552	359	323	235	.552	-3.320	0.116 0.146	-3.5 -2.3	0.8	-3.3	0.7 0.6	A+ A+	\vdash
1587	686427	2	2	447	.300	.116	.036	.315	.300	.013	.332	205	.000	233	.332	-0.035	0.146	2.9	1.2	5.9	1.8	A-	\vdash
1588	686428	2	2	447	.336	.365	.336	.143	.134	.027	.376	168	.376	043	204	-0.033	0.113	1.1	1.1	2.9	1.3	A- A-	\vdash
1589	686426	2	2	447	.483	.246	.116	.483	.134	.022	.442	128	248	.442	204	-0.245	0.113	0.3	1.0	0.7	1.1	A+	\vdash
1590	686429	2	2	447	.481	.150	.105	.481	.230	.023	.470	143	275	.470	162	-1.037	0.108	-0.5	1.0	0.7	1.0	A-	
1591	682485	2	2	447	.813	.813	.049	.047	.076	.016	.551	.551	325	283	275	-2.977	0.108	-0.5	0.8	-3.1	0.6	A+	
1592	686173	2	2	449	.488	.163	.488	.131	.196	.022	.478	291	.478	233	093	-1.104	0.106	-1.2	1.0	-0.2	1.0	A+	1
1593	686174	2	2	449	.515	.165	.122	.514	.169	.022	.440	255	167	.440	139	-1.239	0.106	0.1	1.0	0.2	1.0	B-	
1594	686176	2	2	449	.552	.552	.105	.060	.254	.029	.498	.498	107	239	326	-1.431	0.106	-1.3	0.9	-1.3	0.9	A+	
1595	686175	2	2	449	.481	.209	.140	.140	.481	.029	.524	202	234	223	.524	-1.070	0.106	-2.5	0.9	-0.9	0.9	A+	
1596	686456	2	2	443	.431	.431	.363	.093	.090	.023	.510	.510	134	287	260	-0.855	0.110	-1.1	1.0	-0.8	0.9	A+	
1597	686458	2	2	443	.499	.178	.097	.499	.194	.032	.463	173	299	.463	109	-1.210	0.108	0.4	1.0	0.2	1.0	A+	
1598	686459	2	2	443	.542	.176	.169	.086	.542	.027	.566	198	321	199	.566	-1.434	0.109	-2.6	0.9	-2.2	0.8	A-	
1599	686457	2	2	443	.540	.122	.540	.237	.065	.036	.561	217	.561	253	268	-1.422	0.109	-2.4	0.9	-1.0	0.9	A+	
1600	687261	2	2	443	.321	.262	.192	.192	.321	.034	.478	181	018	262	.478	-0.238	0.116	-0.8	1.0	0.6	1.1	A-	
1601	687259	2	2	443	.289	.321	.289	.260	.093	.038	.289	070	.289	059	177	-0.045	0.119	2.9	1.2	4.8	1.6	A+	
1602	687254	2	2	443	.526	.526	.169	.140	.124	.041	.520	.520	232	145	282	-1.351	0.109	-1.1	1.0	-1.4	0.9	A-	
1603	687260	2	2	443	.205	.271	.284	.205	.199	.041	.227	062	.044	.227	127	0.533	0.132	2.6	1.2	3.6	1.6	A+	
1604	682479	2	2	453	.702	.057	.702	.166	.053	.022	.474	201	.474	259	216	-2.269	0.116	-0.1	1.0	-0.6	0.9	A+	
1605	686460	2	2	453	.600	.106	.600	.126	.146	.022	.513	129	.513	274	274	-1.688	0.109	-0.9	1.0	0.3	1.0	A-	
1000	000400			+33	.500	.100	.000	.120	.140	.022	.515	23	.515	, -	/ ¬	1.000	5.105	5.5	1.0	5.5	1.0	,,	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Ref		Grade	Grade				. (5)	. (0)	. (5)	. , ,	T CDIS							in	in	out	out	/F	/B
1606	686461	2	2	453	.495	.494	.238	.124	.119	.024	.422	.422	005	343	224	-1.129	0.107	1.3	1.1	2.1	1.1	A-	
1607	686462	2	2	453	.311	.285	.203	.170	.311	.031	.325	.037	132	230	.325	-0.146	0.113	1.7	1.1	2.7	1.3	A-	└
1608	686463	2	2	453	.483	.093	.163	.227	.483	.033	.488	248	166	194	.488	-1.072	0.107	-0.6	1.0	-1.0	0.9	A+	└
1609	686536	2	2	460	.724	.724	.087	.078	.096	.015	.528	.528	340	246	182	-2.396	0.113	-2.9	0.9	-2.7	0.8	A-	
1610	686524	2	2	460	.344	.320	.087	.343	.233	.017	.352	136	139	.352	102	-0.481	0.106	0.3	1.0	1.6	1.1	A-	
1611	686523	2	2	460	.583	.117	.583	.083	.200	.017	.512	234	.512	204	248	-1.648	0.103	-2.8	0.9	-3.0	0.8	A+	
1612	686525	2	2	460	.554	.130	.554	.067	.228	.020	.543	328	.543	207	198	-1.511	0.103	-3.8	0.9	-3.3	0.8	A+	
1613	684021	2	2	460	.663	.663	.130	.122	.059	.026	.437	.437	207	133	278	-2.057	0.107	-1.1	1.0	-0.8	1.0	A+	
1614	684018	2	2	460	.391	.159	.120	.391	.302	.028	.325	258	259	.325	.098	-0.724	0.104	1.6	1.1	2.0	1.1	A-	
1615	684019	2	2	460	.441	.191	.441	.174	.157	.037	.400	229	.400	070	166	-0.969	0.102	0.0	1.0	-0.3	1.0	A+	
1616	684020	2	2	460	.294	.267	.228	.293	.174	.037	.274	133	035	.274	075	-0.211	0.110	1.2	1.1	2.2	1.2	A+	
1617	684032	2	2	447	.461	.237	.461	.139	.139	.025	.551	279	.551	122	235	-0.856	0.109	-1.9	0.9	-1.8	0.9	A-	<u>. </u>
1618	684030	2	2	447	.465	.210	.465	.121	.177	.027	.478	055	.478	291	230	-0.880	0.109	0.0	1.0	1.2	1.1	A+	
1619	684031	2	2	447	.732	.732	.058	.076	.105	.029	.620	.620	239	320	327	-2.371	0.120	-3.7	0.8	-3.7	0.6	A-	<u>. </u>
1620	683093	2	2	447	.557	.557	.186	.101	.128	.029	.584	.584	165	306	302	-1.367	0.109	-2.7	0.9	-2.0	0.9	B+	1
1621	683091	2	2	447	.407	.407	.230	.150	.181	.031	.346	.346	.001	212	153	-0.568	0.110	3.5	1.2	2.7	1.2	A+	<u> </u>
1622	683092	2	2	447	.606	.094	.606	.132	.139	.029	.534	280	.534	222	210	-1.633	0.111	-1.2	0.9	-1.8	0.9	A+	
1623	683090	2	2	447	.588	.208	.588	.096	.072	.036	.549	291	.549	222	220	-1.535	0.110	-1.6	0.9	-2.2	0.8	A-	
1624	683094	2	2	447	.396	.280	.396	.128	.168	.029	.347	200	.347	165	.018	-0.506	0.111	3.0	1.2	3.1	1.3	A+	<u> </u>
1625	682478	2	2	444	.399	.399	.137	.113	.327	.025	.316	.316	180	311	.081	-0.717	0.108	2.8	1.1	2.8	1.2	A-	A-
1626	671417	2	2	444	.282	.282	.164	.106	.414	.034	.223	.223	218	230	.166	-0.072	0.116	3.3	1.2	3.8	1.4	A-	A-
1627	671414	2	2	444	.653	.144	.653	.088	.088	.027	.621	277	.621	231	356	-2.030	0.112	-4.2	0.8	-4.1	0.7	B+	B-
1628	671418	2	2	444	.480	.205	.104	.480	.180	.032	.464	025	264	.464	275	-1.130	0.107	-0.7	1.0	-0.3	1.0	A-	A-
1629	671416	2	2	444	.383	.383	.196	.173	.214	.034	.290	.290	083	057	118	-0.635	0.109	3.1	1.1	3.5	1.3	A-	A-
1630	671415	2	2	444	.228	.279	.252	.227	.209	.032	.177	089	.095	.177	098	0.270	0.123	2.3	1.2	4.7	1.7	B+	A-
1631	683295	2	2	450	.667	.667	.067	.067	.176	.024	.432	.432	145	229	206	-2.050	0.108	-1.1	1.0	-1.1	0.9	A+	
1632	683303	2	2	450	.571	.571	.133	.082	.187	.027	.472	.472	273	248	099	-1.571	0.103	-2.1	0.9	-2.0	0.9	A+	
1633	683294	2	2	450	.413	.100	.413	.031	.427	.029	.437	129	.437	312	172	-0.821	0.104	-1.5	1.0	-1.5	0.9	A-	
1634	683296	2	2	450	.209	.209	.191	.209	.367	.024	.162	127	072	.162	.099	0.311	0.123	1.4	1.1	3.4	1.4	A+	
1635	685396	2	2	450	.458	.189	.167	.458	.156	.031	.350	155	128	.350	078	-1.034	0.103	0.9	1.0	1.4	1.1	A-	
1636	685413	2	2	450	.487	.140	.487	.153	.187	.033	.439	143	.439	247	109	-1.170	0.102	-1.3	1.0	-1.3	0.9	A-	
1637	685397	2	2	450	.362	.229	.220	.158	.362	.031	.382	260	020	072	.382	-0.569	0.106	-0.9	1.0	1.0	1.1	A+	
1638	685399	2	2	450	.673	.673	.104	.104	.084	.033	.617	.617	223	313	291	-2.085	0.109	-5.1	0.8	-4.7	0.7	A+	
1639	685398	2	2	450	.536	.536	.098	.171	.153	.042	.456	.456	159	130	234	-1.401	0.103	-1.8	0.9	-1.2	0.9	B-	
1640	684025	2	2	440	.782	.077	.782	.050	.061	.030	.533	211	.533	312	282	-2.739	0.125	-2.6	0.8	-2.8	0.7	B-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1641 684 1642 684 1643 684 1644 684 1645 684 1646 684	84026 84027 84029 84028 84023 84033 84024	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	440 440 440	.655 .525	P(A)	P(B)	P(C)	P(D)	P(-)					PT(D)	Meas	MSE						
1642 684 1643 684 1644 684 1645 684 1646 684	84027 84029 84028 84023 84033	2 2 2	2 2	440		.105					PtBis	PT(A)	PT(B)	PT(C)				in	in	out	out	/F	/B
1643 684 1644 684 1645 684 1646 684	84029 84028 84023 84033	2	2		525		.655	.141	.070	.030	.441	221	.441	122	278	-1.978	0.111	-0.4	1.0	-0.6	1.0	A-	<u> </u>
1644 684 1645 684 1646 684	84028 84023 84033	2		<i>11</i> 0		.107	.525	.120	.220	.027	.505	257	.505	293	128	-1.317	0.106	-2.0	0.9	-1.5	0.9	A-	
1645 684 1646 684	84023 84033				.530	.145	.530	.111	.182	.032	.512	172	.512	227	251	-1.340	0.106	-2.2	0.9	-2.2	0.9	A+	<u> </u>
1646 684	84033	2	2	440	.289	.289	.105	.273	.302	.032	.140	.140	063	043	.003	-0.090	0.115	4.1	1.2	5.0	1.5	A-	
			2	453	.225	.194	.309	.225	.245	.026	.169	009	.009	.169	066	0.175	0.121	2.3	1.2	3.1	1.4	A-	
	01021	2	2	453	.583	.049	.313	.583	.026	.029	.437	242	189	.437	203	-1.691	0.105	-0.5	1.0	-0.6	1.0	A+	
1647 684	04024	2	2	453	.576	.576	.084	.221	.088	.031	.503	.503	252	179	222	-1.658	0.105	-2.2	0.9	-2.4	0.9	A-	
1648 684	84022	2	2	453	.336	.263	.236	.130	.336	.035	.343	068	106	138	.343	-0.470	0.108	0.4	1.0	2.3	1.2	A+	
1649 683	83279	2	2	453	.532	.532	.062	.311	.060	.035	.504	.504	211	235	224	-1.442	0.104	-2.5	0.9	-2.0	0.9	A-	
1650 683	83115	2	2	453	.419	.419	.256	.181	.106	.038	.462	.462	085	148	304	-0.896	0.104	-1.6	0.9	-1.4	0.9	A+	
1651 683	83117	2	2	453	.263	.214	.221	.263	.263	.040	.286	084	080	.286	052	-0.061	0.115	1.0	1.1	2.1	1.2	A-	
1652 683	83116	2	2	453	.249	.252	.291	.163	.249	.044	.186	.044	136	.010	.186	0.020	0.117	2.3	1.1	4.2	1.5	A-	<u> </u>
1653 682	82517	3	3	665	.802	.128	.062	.802	.009	.000	.482	392	202	.482	134	-2.076	0.106	-1.6	0.9	-2.1	0.8	A+	A+
1654 682	82511	3	3	665	.608	.281	.608	.072	.036	.003	.471	304	.471	209	182	-0.912	0.088	-0.6	1.0	-1.0	0.9	A-	A+
1655 671	71475	3	3	665	.571	.167	.129	.571	.129	.003	.463	240	254	.463	158	-0.728	0.087	0.1	1.0	-0.5	1.0	A-	A-
1656 671	71481	3	3	665	.758	.140	.080	.758	.020	.003	.412	170	317	.412	217	-1.772	0.099	0.0	1.0	-0.5	1.0	A+	A-
1657 671	71477	3	3	665	.779	.081	.050	.089	.779	.002	.502	281	243	266	.502	-1.914	0.102	-1.9	0.9	-2.8	0.8	B+	A+
1658 686	86588	3	3	665	.490	.220	.490	.209	.080	.002	.471	326	.471	115	201	-0.324	0.086	-1.4	1.0	-0.8	1.0	A+	A-
1659 671	71478	3	3	665	.528	.317	.528	.078	.074	.003	.391	096	.391	315	244	-0.510	0.086	1.9	1.1	1.2	1.1	A+	A+
1660 682	82505	3	3	665	.865	.062	.045	.029	.865	.000	.496	245	316	271	.496	-2.615	0.122	-2.4	0.8	-2.2	0.7	A+	A+
1661 682	82498	3	3	665	.838	.051	.026	.086	.838	.000	.483	265	277	272	.483	-2.366	0.114	-2.0	0.9	-2.4	0.7	A-	A-
1662 686	86501	3	3	665	.562	.180	.182	.071	.562	.005	.460	238	176	243	.460	-0.682	0.087	-0.2	1.0	-0.1	1.0	A+	A+
1663 686	86500	3	3	665	.250	.251	.400	.250	.092	.008	.218	223	.101	.218	120	0.967	0.098	2.9	1.2	5.7	1.6	A-	A-
1664 686	86502	3	3	665	.483	.483	.071	.078	.359	.009	.252	.252	133	234	038	-0.287	0.086	6.0	1.2	5.8	1.3	C+	B-
1665 686	86498	3	3	665	.495	.307	.126	.059	.495	.014	.488	210	197	286	.488	-0.346	0.086	-1.5	1.0	-0.6	1.0	B-	A-
1666 686	86499	3	3	665	.379	.274	.379	.167	.162	.018	.243	111	.243	137	005	0.236	0.088	5.3	1.2	5.9	1.4	A-	A-
1667 682	82492	3	3	665	.883	.071	.021	.017	.883	.009	.547	428	193	217	.547	-2.804	0.129	-2.9	0.8	-4.4	0.4	A-	A-
1668 686	86552	3	3	665	.381	.355	.170	.078	.380	.017	.461	133	201	255	.461	0.228	0.088	-1.4	1.0	-0.5	1.0	A-	B-
1669 686	86546	3	3	665	.582	.582	.152	.141	.105	.020	.505	.505	233	274	176	-0.781	0.087	-2.4	0.9	-2.2	0.9	C-	A-
1670 686	86545	3	3	665	.614	.152	.072	.614	.146	.017	.528	318	304	.528	132	-0.943	0.088	-2.6	0.9	-2.9	0.9	A+	A-
1671 686	86544	3	3	665	.278	.194	.278	.340	.167	.021	.202	182	.202	051	.058	0.792	0.095	3.7	1.2	6.2	1.6	A-	A+
1672 686	86543	3	3	665	.200	.541	.146	.089	.200	.024	.147	.212	206	246	.147	1.303	0.105	3.8	1.2	4.3	1.6	B+	A-
1673 682	82510	3	3	697	.818	.093	.069	.818	.019	.001	.486	303	299	.486	168	-2.432	0.105	-2.6	0.9	-2.9	0.7	A+	A-
1674 671	71530	3	3	697	.412	.412	.297	.135	.156	.000	.404	.404	180	167	164	-0.233	0.084	0.1	1.0	0.5	1.0	A-	A-
1675 671	71528	3	3	697	.759	.052	.143	.759	.040	.006	.554	240	372	.554	250	-2.023	0.096	-3.9	0.8	-4.7	0.7	C+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1676 671532 3	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
1677 686585 3 3 697 199 143 248 406 199 003 199 1180 0.93 0.961 1.99 0.977 0.101 1.6 1.1 6.9 1.8 A.			Grade				. ,																/F	/B
1678 686586 3 3 697 475 283 098 475 145 000 366 -052 -225 366 -262 -0540 0.083 2.2 1.1 1.8 1.1 B A 1.690 685587 3 3 697 1.19 683 1.19 1.22 0.75 0.01 0.14 2.03 0.14 -1.16 -2.25 1.664 0.123 2.2 1.2 7.2 2.4 A A A 1.680 682594 3 3 697 531 3.27 531 0.60 0.80 0.01 4.31 -1.68 4.31 -2.45 -2.73 -0.808 0.083 -0.4 1.0 0.6 1.0 A B 1.681 682497 3 3 697 7.60 1.29 0.82 7.60 0.24 0.04 4.85 -2.72 -2.51 4.85 -2.42 -2.032 0.096 -2.4 0.9 3.1 0.8 A A 1.688 671553 3 3 697 4.45 3.06 1.03 4.45 1.80 0.09 4.60 -2.97 -2.51 4.85 -2.42 -2.032 0.096 -2.4 0.9 3.1 0.8 A A 1.688 671557 3 3 697 7.97 0.05 0.03 4.95 1.38 0.09 4.60 -2.97 -2.51 4.85 -2.42 -2.032 0.096 -2.4 0.9 3.1 0.8 A A 1.688 671557 3 3 697 7.97 0.05 0.03 7.99 0.07 0.03 7.99 0.05 0.02 0.02																							A+	
1679 686587 3 3 697 531 527 531 500 0.001 0.014 0.03 0.14 -116 -2.25 1.664 0.123 2.2 1.2 7.2 2.4 A A A 1680 682594 3 3 697 750 1.29 0.82 750 0.024 0.04 4.485 -2.72 -2.251 4.85 -2.42 -2.032 0.096 -2.44 0.9 -3.1 0.8 A A A 1682 671553 3 3 697 745 3.06 1.03 4.45 1.38 0.09 4.60 -2.97 -1.81 4.60 0.057 -0.394 0.083 -1.5 1.0 1.3 0.9 A A 1.68 4.31 -2.25 -2.25 4.85 -2.24 -2.032 0.096 -2.44 0.9 -3.1 0.8 A A A 1.68 671567 3 3 697 7.49 0.07 7.07 0.63 7.79 0.010 0.533 -2.24 -2.293 -2.61 5.33 -2.294 0.101 -3.4 0.8 4.1 0.7 B A 1.68 671563 3 3 697 4.26 2.24 4.26 0.90 2.27 0.13 3.93 -0.71 3.93 -0.64 -1.64 0.303 0.084 0.9 1.0 1.0 1.1 A A 1.68 671565 3 3 697 4.26 2.24 4.26 0.90 2.27 0.13 3.93 -0.71 3.93 -0.64 -1.64 0.303 0.084 0.9 1.0 1.0 1.1 A A 1.68 671565 3 3 697 5.29 4.72 2.25 2.94 2.93 0.16 3.48 0.03 -1.89 3.48 1.10 0.382 0.090 0.4 1.0 2.5 1.2 A A 4.68 4.164 0.303 0.084 0.9 1.0 1.0 1.1 A A 1.68 671565 3 3 697 2.25 2.24 2.23 2.26 0.16 5.38 2.24 2.25 0.20 0.090 0.4 1.0 2.5 1.2 A A A 4.68 4.164 0.303 0.084 0.9 1.0 0.0 0.1 A A A 1.68 671565 3 3 697 2.25 2.24 2.23 2.25 0.25 0.16 3.48 0.03 5.03 2.28 1.25 0.090 0.4 1.0 2.5 1.2 A A A 1.68 4.164 0.203 0.084 0.083 0.1 0.0 0.	+																						A+	B-
1680 682504 3 3 697 531 327 531 060 080 .001 .431 -1.68 431 -2.45 -273 -0.808 0.033 -0.4 1.0 0.6 1.0 A.4 A.8 A.4 A.4 A.4 A.8 -2.72 -2.51 .485 -2.42 2.032 0.096 -2.4 0.9 -3.1 0.8 A.4 A.4 1.682 671567 3 3 697 .799 0.07 0.03 .48 1.0 .533 -2.294 0.101 -3.4 0.8 -4.1 0.7 8 A.4 A.4 A.6 0.90 .227 0.13 .393 .261 .533 -2.294 0.101 .34 A.8 -1.0 1.1 A.4 A.4 1.686 671553 3 697 .255 1.22 1.02 .101 0.01 .333 .261 .533 -2.24 0.03 0.00 0.0 0.0 0.0 0.0 <td></td> <td>686586</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>.000</td> <td></td> <td>052</td> <td></td> <td></td> <td></td> <td>-0.540</td> <td></td> <td></td> <td>1.1</td> <td></td> <td></td> <td>B+</td> <td>A-</td>		686586									.000		052				-0.540			1.1			B+	A-
1681 682497 3											.001					-			2.2	1.2			A-	
1682 671553 3 3 697 .445 .306 .103 .445 .138 .009 .460 297 .181 .460 057 .0.394 .0.083 .1.5 .1.0 .1.3 .0.9 A. A+ .468 .47163		682504	3	_							.001				245					1.0			A+	B-
1683 671567 3 3 697 7.79 .057 .070 .063 7.99 .010 .533 242 .2.23 261 .533 224 .0.10 .3.4 .08 4.1 .07 B A 1685 671561 3 3 697 .551 .222 .102 .110 .014 .399 .188 .187 .070 .090 .003 .05 1.0 .0 .1 .0 .4 A	1681	682497	3	3	697	.760	.129	.082	.760	.024	.004	.485	272	251	.485	242	-2.032		-2.4	0.9	-3.1	0.8	A+	A+
1684 671563 3 3 697 426 244 426 0.90 2.27 0.13 3.39 3.701 3.393 -2.64 -1.64 -0.303 0.084 0.9 1.0 1.0 1.1 A. A+ 1.685 671561 3 3 697 5.51 5.51 5.51 2.22 1.02 1.10 0.14 3.399 3.39 3.39 3.39 3.48 -1.12 0.382 0.090 0.4 1.0 2.5 1.2 A+ A+ 1.685 671555 3 3 697 2.281 1.22 2.294 2.291 2.91 1.03 1.05 3.48 1.12 0.382 0.090 0.4 1.0 2.5 1.2 A+ A+ 1.686 671555 3 3 697 2.818 8.18 0.55 0.60 0.52 0.16 5.03 5.03 5.284 -2.86 -1.65 -2.432 0.105 -2.7 0.8 3.6 0.7 A- B- 1.688 686577 3 3 697 2.35 419 1.89 2.35 1.38 0.19 1.81 1.24 -1.72 1.81 1.24 0.431 0.091 1.6 1.1 3.1 1.2 A+ A- 1.690 686565 3 3 697 2.86 3.20 2.86 1.29 2.42 0.23 2.299 1.55 2.42 0.431 0.091 1.6 1.1 3.1 1.2 A+ A- 1.690 686579 3 3 697 4.66 1.32 2.47 4.66 1.35 0.02 4.17 1.28 1.61 4.17 2.00 0.498 0.083 0.1 1.0 0.5 1.0 A+ A- 1.692 686575 3 3 697 2.54 2.44 3.00 2.54 1.81 0.22 2.00 0.13 0.066 2.00 0.059 0.618 0.094 3.4 1.2 3.7 1.3 A- A- 1.693 682515 3 3 686 8.76 0.54 0.39 0.31 8.76 0.00 4.92 2.282 2.292 2.242 4.92 2.2882 0.125 1.8 0.9 3.2 0.6 B+ A+ 1.694 6.86589 3 3 686 6.834 2.29 1.99 4.83 1.30 0.00 4.59 -1.269 -1.02 1.05 0.080 0.087 4.0 1.1 1.1 2.0 1.1 A+ A- 1.696 6.71544 3 3 686 6.83 2.29 2.29 1.24 0.03 2.96 -1.02 1.05 0.080 0.087 4.0 1.1 1.1 1.1 0.7 1.0 A+ A- 1.696 6.71547 3 3 6.86 6.879 0.79 0.88 5.57 0.70 0.00 4.77 4.77 2.28 2.29 2.242 4.92 2.2882 0.125 1.8 0.9 3.2 0.6 B+ A+ 1.696 6.71547 3 3 6.86 6.879 0.89 6.57 0.07 0.00 4.77 4.77 4.77 4.77 4.77 4.77 4.77 4.77 4.77 4.	<u> </u>	671553	3	3		.445	.306									-		0.083		1.0	-1.3		A-	A+
1685 671561 3 3 697 .551 .551 .222 .102 .110 .014 .399 .399 .188 .187 .137 .0.906 .0.083 .0.5 .1.0 0.3 1.0 A+ A- .1686 671555 3 3 697 .294 .172 .225 .294 .293 .016 .348 .0.03 .199 .348 .120 .0.382 .0.090 .0.4 .1.0 .2.5 .1.2 A+ A+ .1687 .68491 3 3 .697 .281 .818 .905 .060 .052 .016 .503 .003 .284 .226 .1.65 .2.432 .0.105 .2.7 .0.8 .3.6 .0.7 A- B- .1688 .686577 3 3 .697 .285 .320 .286 .129 .242 .0.23 .299 .156 .142 .0.735 .0.96 .2.9 .1.2 .4.4 .1.4 A- B+ .1689 .686579 3 3 .697 .286 .320 .286 .129 .242 .0.23 .299 .1.56 .1.42 .0.735 .0.96 .2.9 .1.2 .4.4 .1.4 A- .4.4 .1.4	1683	671567	3	3	697	.799	.057	.070	.063	.799	.010	.533	242	293	261	.533	-2.294	0.101	-3.4	8.0	-4.1	0.7	B-	A-
1686 671555 3	1684	671563	3	3	697	.426	.244	.426	.090	.227	.013	.393	071	.393	264	164	-0.303	0.084	0.9	1.0	1.0	1.1	A-	A+
1687 682491 3 3 697 .818 .818 .055 .060 .052 .016 .503 .503 -2.84 .2.86 .165 -2.432 .0.105 -2.7 0.8 -3.6 0.7 A- B-1688 686577 3 3 6697 .235 .419 .189 .235 .138 .019 .181 .124 .172 .181 .124 .033 .0096 2.9 .12 .4.4 .14 .4 .14 .4 .124 .033 .0096 2.9 .12 .4.4 .14 .4 .14 .4 .14 .4 .14 .4 </td <td>1685</td> <td>671561</td> <td>3</td> <td>3</td> <td>697</td> <td>.551</td> <td>.551</td> <td>.222</td> <td>.102</td> <td>.110</td> <td>.014</td> <td>.399</td> <td>.399</td> <td>188</td> <td>187</td> <td>137</td> <td>-0.906</td> <td>0.083</td> <td>0.5</td> <td>1.0</td> <td>0.3</td> <td>1.0</td> <td>A+</td> <td>A-</td>	1685	671561	3	3	697	.551	.551	.222	.102	.110	.014	.399	.399	188	187	137	-0.906	0.083	0.5	1.0	0.3	1.0	A+	A-
1688 686577 3 3 697 .235 .419 .189 .235 .138 .019 .181 .124 172 .181 124 0.735 0.096 2.9 1.2 4.4 1.4 A- B+ 1690 686576 3 3 697 .466 .132 .247 .466 .135 .020 .417 128 161 .417 .200 -0.498 .0083 -0.1 1.0 .0.5 1.0 A+ A- 1691 686578 3 3 697 .416 .416 .171 .260 .132 .022 .536 .536 165 252 .186 -0.254 .0084 -4.6 .09 -3.7 .08 A- A+ 1692 .686575 3 3 .686 .876 .054 .039 .031 .876 .000 .92 .242 .492 2882 .0125 -1.8 .9 -1.0 .7	1686	671555	3	3	697	.294	.172	.225	.294	.293	.016	.348	.003	199	.348	120	0.382	0.090	0.4	1.0	2.5	1.2	A+	A+
1689 686576 3 3 697 .286 .320 .286 .129 .242 .023 .299 .156 .142 .0431 .0.091 1.6 1.1 3.1 1.2 A+ A- 1690 686579 3 3 697 .466 .132 .227 .466 .135 .020 .417 .128 .161 .417 .200 .0498 .0.038 -0.1 1.0 .0.5 1.0 A+ A- 1691 686578 3 3 697 .416 .416 .171 .260 .132 .022 .00 .013 .066 .020 .059 .0618 .0.94 .4.4 .0.9 .3.7 .0.8 A- A+ 1.69 .68578 .0.6 .039 .031 .876 .000 .492 .2.82 .292 .242 .492 .2.882 .0125 .1.8 .0 3.7 .1.6 A+ .4 .1694 .686589 </td <td>1687</td> <td>682491</td> <td>3</td> <td>3</td> <td>697</td> <td>.818</td> <td>.818</td> <td>.055</td> <td>.060</td> <td>.052</td> <td>.016</td> <td>.503</td> <td>.503</td> <td>284</td> <td>286</td> <td>165</td> <td>-2.432</td> <td>0.105</td> <td>-2.7</td> <td>0.8</td> <td>-3.6</td> <td>0.7</td> <td>A-</td> <td>B-</td>	1687	682491	3	3	697	.818	.818	.055	.060	.052	.016	.503	.503	284	286	165	-2.432	0.105	-2.7	0.8	-3.6	0.7	A-	B-
1690 686579 3 3 697 .466 .132 .247 .466 .135 .020 .417 .128 .161 .417 .200 .0.498 .0.083 .0.1 1.0 0.5 1.0 A+ A- .1691 686578 3 3 697 .416 .416 .171 .260 .132 .022 .536 .536 .536 .535 .165 .252 .186 .0.254 .0.084 .4.6 0.9 .3.7 0.8 A- A- .4692 .686575 3 3 686 .876 .054 .039 .031 .876 .000 .492 .282 .292 .242 .492 .2.882 .0.125 .18 .0.9 .3.7 1.3 A- A- .4694 .4698 .483 .499 .483 .499 .483 .499 .483 .499 .483 .499 .484 .492 .4892 .4892 .4892 .4882 .4992 .4882 .4992 .4892	1688	686577	3	3	697	.235	.419	.189	.235	.138	.019	.181	.124	172	.181	124	0.735	0.096	2.9	1.2	4.4	1.4	A-	B+
1691 686578 3 3 697 .416 .416 .171 .260 .132 .022 .536 .536 .165 .252 .186 -0.254 .0.084 -4.6 0.9 -3.7 0.8 A- A+ 1692 686575 3 3 697 .254 .244 .300 .254 .181 .022 .200 .013 .066 .200 .059 .618 0.094 .3.4 1.2 .3.7 1.3 A- A+ 1694 686589 3 3 686 .483 .219 .169 .483 .130 .000 .459 .269 .202 .459 -1.26 -0.399 .085 -1.0 1.0 0.7 1.0 A+ A+ 1695 671544 3 3 686 .388 .232 .388 .157 .220 .003 .296 .150 .296 .102 .105 .080 0.087 4.0	1689	686576	3	3	697	.286	.320	.286	.129	.242	.023	.299	.015	.299	156	142	0.431	0.091	1.6	1.1	3.1	1.2	A+	A-
1692 686575 3 3 697 .254 .244 .300 .254 .181 .022 .200 .013 .066 .200 .059 0.618 0.094 3.4 1.2 3.7 1.3 A- A+ 1693 682515 3 3 686 .876 .054 .039 .031 .876 .000 .492 .282 .292 .242 .492 .2882 0.125 .1.8 0.9 -3.2 0.6 B+ A+ 1695 671544 3 3 686 .434 .292 .092 .434 .178 .004 .370 .151 .311 .370 .005 .0158 .0086 .19 1.1 .20 .11 .A4 A+ A- 1696 671550 3 3 686 .889 .026 .051 .031 .889 .003 .482 .217 .282 .333 .482 .31 .482 .3	1690	686579	3	3	697	.466	.132	.247	.466	.135	.020	.417	128	161	.417	200	-0.498	0.083	-0.1	1.0	0.5	1.0	A+	A-
1693 682515 3 3 686 .876 .054 .039 .031 .876 .000 .492 282 292 242 .492 282 0.125 -1.8 0.9 -3.2 0.6 B+ A+ 1694 686589 3 3 686 .483 .219 .169 .483 .130 .000 .459 269 202 .459 126 -0.399 0.085 -1.0 1.0 0.7 1.0 A+ A- 1695 671544 3 3 686 .388 .232 .388 .157 .220 .003 .296 -1.50 .296 105 .080 .0.88 1.1 .20 .1.1 A+ A+ 1697 671547 3 3 686 .889 .026 .051 .31 .888 .003 .482 217 282 313 .482 311 .1.0 -1.0 .0 .1.1	1691	686578	3	3	697	.416	.416	.171	.260	.132	.022	.536	.536	165	252	186	-0.254	0.084	-4.6	0.9	-3.7	8.0	A-	A+
1694 686589 3 3 686 .483 .219 .169 .483 .130 .000 .459 .202 .459 126 -0.399 0.085 -1.0 1.0 0.7 1.0 A+ A- 1695 671544 3 3 686 .434 .292 .092 .434 .178 .004 .370 151 311 .370 055 -0.158 0.086 1.9 1.1 2.0 1.1 A+ A- 1696 671550 3 3 686 .388 .022 .031 .889 .003 .482 .217 282 .313 .482 -3.030 0.131 -1.6 0.9 -3.1 0.6 A+ A+ 1699 686590 3 3 686 .572 .729 .111 .087 .073 .000 .477 .477 .228 .233 .281 -1.718 0.09 .441 .900 .4130	1692	686575	3	3	697	.254	.244	.300	.254	.181	.022	.200	013	066	.200	059	0.618	0.094	3.4	1.2	3.7	1.3	A-	A+
1695 671544 3 3 686 .434 .292 .092 .434 .178 .004 .370 151 311 .370 055 0158 0.086 1.9 1.1 2.0 1.1 A+ A- 1696 671550 3 3 686 .388 .232 .388 .157 .220 .003 .296 102 105 .0.080 .0.087 4.0 1.1 5.3 1.4 A+ A- 1697 671547 3 3 686 .889 .026 .051 .031 .889 .003 .482 217 282 313 .482 -3.030 0.131 -1.6 0.9 -3.1 0.6 A+ A+ 1699 686591 3 3 686 .657 .105 .089 .657 .147 .001 .460 249 230 .2281 -1.718 0.090 -0.6 1.0 0.0 .10 <td>1693</td> <td>682515</td> <td>3</td> <td>3</td> <td>686</td> <td>.876</td> <td>.054</td> <td>.039</td> <td>.031</td> <td>.876</td> <td>.000</td> <td>.492</td> <td>282</td> <td>292</td> <td>242</td> <td>.492</td> <td>-2.882</td> <td>0.125</td> <td>-1.8</td> <td>0.9</td> <td>-3.2</td> <td>0.6</td> <td>B+</td> <td>A+</td>	1693	682515	3	3	686	.876	.054	.039	.031	.876	.000	.492	282	292	242	.492	-2.882	0.125	-1.8	0.9	-3.2	0.6	B+	A+
1696 671550 3 3 686 .388 .232 .388 .157 .220 .003 .296 102 105 .0.80 0.087 4.0 1.1 5.3 1.4 A+ A- 1697 671547 3 3 686 .889 .026 .051 .031 .889 .003 .482 217 282 313 .482 -3.030 0.131 -1.6 0.9 -3.1 0.6 A+ A+ 1698 686590 3 3 686 .729 .729 .111 .087 .073 .000 .477 .477 -228 .239 281 -1.1718 0.095 -1.1 1.0 -1.6 0.9 A+ A+ 1699 686591 3 3 686 .657 .105 .089 .657 .147 .001 .460 240 -1.300 .090 -0.6 1.0 .0 .0 .0 .0	1694	686589	3	3	686	.483	.219	.169	.483	.130	.000	.459	269	202	.459	126	-0.399	0.085	-1.0	1.0	0.7	1.0	A+	A-
1697 671547 3 3 686 .889 .026 .051 .031 .889 .003 .482 217 282 313 .482 -3.030 0.131 -1.6 0.9 -3.1 0.6 A+ A+ 1698 686590 3 3 686 .729 .729 .111 .087 .073 .000 .477 .477 228 239 281 -1.718 0.095 -1.1 1.0 -1.6 0.9 A+ A+ 1699 686591 3 3 686 .657 .105 .089 .657 .147 .001 .460 265 169 .460 240 -1.300 0.090 -0.6 1.0 0.0 1.0 A+ A+ 1700 682509 3 3 686 .557 .080 .286 .557 .074 .003 .445 237 214 .445 200 0771 .0.086	1695	671544	3	3	686	.434	.292	.092	.434	.178	.004	.370	151	311	.370	055	-0.158	0.086	1.9	1.1	2.0	1.1	A+	A-
1698 686590 3 3 686 .729 .729 .111 .087 .073 .000 .477 .477 228 239 281 -1.718 0.095 -1.1 1.0 -1.6 0.9 A+ A+ 1699 686591 3 3 686 .657 .105 .089 .657 .147 .001 .460 265 169 .460 240 -1.300 0.090 -0.6 1.0 0.0 1.0 A+ A+ 1700 682509 3 3 686 .557 .080 .286 .557 .074 .003 .445 237 214 .445 200 -0.771 0.086 0.1 1.0 0.0 1.0 A+ A+ 1701 686447 3 3 686 .563 .563 .048 .163 .217 .009 .418 .418 248 232 126 -0.801 .008 .10<	1696	671550	3	3	686	.388	.232	.388	.157	.220	.003	.296	150	.296	102	105	0.080	0.087	4.0	1.1	5.3	1.4	A+	A-
1699 686591 3 3 686 .657 .105 .089 .657 .147 .001 .460 265 169 .460 240 1300 0.090 -0.6 1.0 0.0 1.0 A+ A+ 1700 682509 3 3 686 .557 .080 .286 .557 .074 .003 .445 237 214 .445 200 -0.771 0.086 0.1 1.0 0.0 1.0 A- B+ 1701 686447 3 3 686 .783 .099 .783 .067 .045 .006 .526 258 .526 333 209 -2.077 0.102 -2.5 0.9 -2.8 0.7 A+ A- 1702 686448 3 3 686 .410 .410 .156 .306 .120 .009 .214 .214 177 .121 249 -0.032 .0086 .65<	1697	671547	3	3	686	.889	.026	.051	.031	.889	.003	.482	217	282	313	.482	-3.030	0.131	-1.6	0.9	-3.1	0.6	A+	A+
1700 682509 3 3 686 .557 .080 .286 .557 .074 .003 .445 237 214 .445 200 -0.771 0.086 0.1 1.0 0.0 1.0 A- B+ 1701 686447 3 3 686 .783 .099 .783 .067 .045 .006 .526 258 .526 333 209 -2.077 0.102 -2.5 0.9 -2.8 0.7 A+ A- 1702 686448 3 3 686 .563 .048 .163 .217 .009 .418 .418 248 232 126 801 0.086 1.0 1.0 0.9 1.1 A+ A- 1703 686451 3 3 686 .410 .410 .156 .306 .120 .009 .214 .214 177 .121 249 -0.032 .086 .65 1.2	1698	686590	3	3	686	.729	.729	.111	.087	.073	.000	.477	.477	228	239	281	-1.718	0.095	-1.1	1.0	-1.6	0.9	A+	A+
1701 686447 3 3 686 .783 .099 .783 .067 .045 .006 .526 258 .526 333 209 -2.077 0.102 -2.5 0.9 -2.8 0.7 A+ A- 1702 686448 3 3 686 .563 .563 .048 .163 .217 .009 .418 .418 248 232 126 -0.801 0.086 1.0 1.0 0.9 1.1 A+ A- 1703 686451 3 3 686 .410 .410 .156 .306 .120 .009 .214 .214 177 .121 249 -0.032 0.086 6.5 1.2 5.7 1.4 A- A+ 1704 686450 3 3 686 .270 .098 .356 .267 .270 .010 .105 248 .036 .067 .105 0.736 0.094 5.6	1699	686591	3	3	686	.657	.105	.089	.657	.147	.001	.460	265	169	.460	240	-1.300	0.090	-0.6	1.0	0.0	1.0	A+	A+
1702 686448 3 3 686 .563 .563 .048 .163 .217 .009 .418 .418 248 232 126 -0.801 0.086 1.0 1.0 0.9 1.1 A+ A- 1703 686451 3 3 686 .410 .410 .156 .306 .120 .009 .214 .214 177 .121 249 -0.032 0.086 6.5 1.2 5.7 1.4 A- A+ 1704 686450 3 3 686 .270 .098 .356 .267 .270 .010 .105 248 .036 .067 .105 0.736 0.094 5.6 1.3 6.9 1.8 A- A+ 1705 686449 3 3 686 .356 .223 .356 .168 .245 .009 .231 053 .231 161 024 0.249 0.088 4.7	1700	682509	3	3	686	.557	.080	.286	.557	.074	.003	.445	237	214	.445	200	-0.771	0.086	0.1	1.0	0.0	1.0	A-	B+
1703 686451 3 3 686 .410 .410 .156 .306 .120 .009 .214 .214 177 .121 249 -0.032 0.086 6.5 1.2 5.7 1.4 A- A+ 1704 686450 3 3 686 .270 .098 .356 .267 .270 .010 .105 248 .036 .067 .105 0.736 0.094 5.6 1.3 6.9 1.8 A- A+ 1705 686449 3 3 686 .356 .223 .356 .168 .245 .009 .231 053 .231 161 024 0.249 0.088 4.7 1.2 6.2 1.5 B- A- 1706 682503 3 3 686 .831 .831 .077 .055 .028 .009 .511 .511 315 249 199 -2.451 0.111 -2.1 0.9 -2.5 0.7 A+ A- 1707 682496 3	1701	686447	3	3	686	.783	.099	.783	.067	.045	.006	.526	258	.526	333	209	-2.077	0.102	-2.5	0.9	-2.8	0.7	A+	A-
1704 686450 3 3 686 .270 .098 .356 .267 .270 .010 .105 248 .036 .067 .105 0.736 0.094 5.6 1.3 6.9 1.8 A- A+ 1705 686449 3 3 686 .356 .223 .356 .168 .245 .009 .231 053 .231 161 024 0.249 0.088 4.7 1.2 6.2 1.5 B- A- 1706 682503 3 3 686 .831 .831 .077 .055 .028 .009 .511 .511 315 249 199 -2.451 0.111 -2.1 0.9 -2.5 0.7 A+ A- 1707 682496 3 3 686 .653 .090 .653 .207 .038 .012 .480 233 233 -1.276 0.090 -1.0 1.0 -1.5 0.9 A+ B- 1708 686567 3 3 686	1702	686448	3	3	686	.563	.563	.048	.163	.217	.009	.418	.418	248	232	126	-0.801	0.086	1.0	1.0	0.9	1.1	A+	A-
1705 686449 3 3 686 .356 .223 .356 .168 .245 .009 .231 053 .231 161 024 0.249 0.088 4.7 1.2 6.2 1.5 B- A- 1706 682503 3 3 686 .831 .831 .077 .055 .028 .009 .511 .511 315 249 199 -2.451 0.111 -2.1 0.9 -2.5 0.7 A+ A- 1707 682496 3 3 686 .653 .090 .653 .207 .038 .012 .480 243 .480 233 233 -1.276 0.090 -1.0 1.0 -1.5 0.9 A+ B- 1708 686567 3 3 686 .416 .232 .134 .201 .415 .017 .379 161 138 118 .379 -0.062 0.086 1.2 1.0 1.6 1.1 A- 1709 686566 3 3 </td <td>1703</td> <td>686451</td> <td>3</td> <td>3</td> <td>686</td> <td>.410</td> <td>.410</td> <td>.156</td> <td>.306</td> <td>.120</td> <td>.009</td> <td>.214</td> <td>.214</td> <td>177</td> <td>.121</td> <td>249</td> <td>-0.032</td> <td>0.086</td> <td>6.5</td> <td>1.2</td> <td>5.7</td> <td>1.4</td> <td>A-</td> <td>A+</td>	1703	686451	3	3	686	.410	.410	.156	.306	.120	.009	.214	.214	177	.121	249	-0.032	0.086	6.5	1.2	5.7	1.4	A-	A+
1706 682503 3 3 686 .831 .831 .077 .055 .028 .009 .511 .511 315 249 199 -2.451 0.111 -2.1 0.9 -2.5 0.7 A+ A- 1707 682496 3 3 686 .653 .090 .653 .207 .038 .012 .480 243 .480 233 233 -1.276 0.090 -1.0 1.0 -1.5 0.9 A+ B- 1708 686567 3 3 686 .416 .232 .134 .201 .415 .017 .379 161 138 118 .379 -0.062 0.086 1.2 1.0 1.6 1.1 A- 1709 686566 3 3 686 .462 .214 .211 .090 .462 .022 .513 218 193 197 .513 -0.297 0.085 -3.3 0.9 -1.4 0.9 A-	1704	686450	3	3	686	.270	.098	.356	.267	.270	.010	.105	248	.036	.067	.105	0.736	0.094	5.6	1.3	6.9	1.8	A-	A+
1706 682503 3 3 686 .831 .831 .077 .055 .028 .009 .511 .511 315 249 199 -2.451 0.111 -2.1 0.9 -2.5 0.7 A+ A- 1707 682496 3 3 686 .653 .090 .653 .207 .038 .012 .480 243 .480 233 233 -1.276 0.090 -1.0 1.0 -1.5 0.9 A+ B- 1708 686567 3 3 686 .416 .232 .134 .201 .415 .017 .379 161 138 118 .379 -0.062 0.086 1.2 1.0 1.6 1.1 A- 1709 686566 3 3 686 .462 .214 .211 .090 .462 .022 .513 218 193 197 .513 -0.297 0.085 -3.3 0.9 -1.4 0.9 A- B-	1705	686449	3	3	686	.356	.223	.356	.168	.245	.009	.231	053	.231	161	024	0.249	0.088	4.7	1.2	6.2	1.5	B-	A-
1707 682496 3 3 686 .653 .090 .653 .207 .038 .012 .480 243 .480 233 233 -1.276 0.090 -1.0 1.0 -1.5 0.9 A+ B- 1708 686567 3 3 686 .416 .232 .134 .201 .415 .017 .379 161 138 118 .379 -0.062 0.086 1.2 1.0 1.6 1.1 A- A- 1709 686566 3 3 686 .462 .214 .211 .090 .462 .022 .513 218 193 197 .513 -0.297 0.085 -3.3 0.9 -1.4 0.9 A- B-	1706	682503	3	3	686	.831	.831		.055	.028	.009	.511	.511	315	249	199	-2.451	0.111	-2.1	0.9	-2.5	0.7	A+	A-
1708 686567 3 3 686 .416 .232 .134 .201 .415 .017 .379 161 138 118 .379 -0.062 0.086 1.2 1.0 1.6 1.1 A- A- 1709 686566 3 3 686 .462 .214 .211 .090 .462 .022 .513 218 193 197 .513 -0.297 0.085 -3.3 0.9 -1.4 0.9 A- B-	1707	682496	3	3	686	.653	.090	.653	.207	.038	.012	.480	243	.480	233	233	-1.276	0.090	-1.0	1.0	-1.5	0.9	A+	B-
1709 686566 3 3 686 .462 .214 .211 .090 .462 .022 .513218193197 .513 -0.297 0.085 -3.3 0.9 -1.4 0.9 A- B-	1708	686567	3	3	686	.416	.232	.134	.201	.415	.017	.379	161	138	118	.379	-0.062	0.086	1.2	1.0	1.6	1.1	A-	A-
	1709	686566	3	3	686	.462					.022	.513	218			.513	-0.297			0.9	-1.4		A-	
	-			3																	-	0.6		-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

1711 686572 3 3 686 376 197 146 376 261 020 397 138 319	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
1712 686572 3	itei		Grade	Grade		ı vai	' (^,	1 (5)	1 (0)	1 (0)	1 (-)	i tbis	11(//)	1 1(0)	1 1(0)	11(0)	IVICUS	IVISE	in	in	out	out	/F	/B
1713 682514 3 3 692 A36 214 275 A36 069 0.06 A00 -302 -0.87 A00 -1.25 0.032 0.086 1.5 1.1 1.9 1.1 8 A-1714 686509 3 3 692 6.64 6.132 .646 0.84 1.39 0.00 A54 -1.11 A54 -2.81 .294 -1.044 0.089 0.1 1.0 0.9 1.0 A+ A-1715 686508 3 3 692 .534 6.54 0.88 1.49 1.29 0.00 A36 A36 -2.76 -2.36 .1.42 -0.981 0.088 0.3 1.0 0.0 1.0 A- A-1716 686510 3 3 692 .298 .377 .73 .149 .298 .003 .222 .080 .1.43 .228 .222 0.777 0.092 4.7 1.2 5.9 1.5 A+ A-1718 686511 3 3 692 .595 .738 .081 .101 .718 .097 .003 .590 .322 .355 .590 .228 .224 .0.44 0.085 1.0 1.0 .0.7 1.0 A- A-1718 .0.44 .0.84	1711	686571	3	3	686	.313	.222	.138			.016	.323	239		.323	.038	0.481	0.091	1.1	1.0	3.4	1.3	A+	A-
1714 686509 3 3 3 692 694 6132 646 0.84 1.39 0.00 4.54 -1.11 4.54 -2.31 -2.94 -1.044 0.089 0.1 1.0 -0.9 1.0 A+ A A-1715 686508 3 3 692 2.58 3.77 1.73 1.49 2.98 0.03 2.22 0.89 1.43 -2.28 2.22 0.777 0.092 4.7 1.2 5.9 1.5 A+ A A-1715 686511 3 3 692 2.78 3.77 1.73 1.49 2.98 0.03 2.22 0.89 1.43 -2.28 2.22 0.777 0.092 4.7 1.2 5.9 1.5 A+ A A-1718 686511 3 3 692 5.29 5.29 1.73 1.91 1.07 0.00 4.85 4.85 -2.68 1.50 -2.64 -0.434 0.085 1.0 1.0 0.07 1.0 A+ A A-1718 686521 3 3 692 5.29 5.95 0.73 1.19 1.07 0.00 4.85 4.85 -2.68 1.50 -2.64 -0.434 0.085 1.0 1.0 0.07 1.0 A-14 A-1718 686521 3 3 692 5.29 5.99 0.25 1.73 1.91 1.07 0.00 4.85 4.85 -2.68 1.50 -2.64 -0.434 0.085 1.0 1.0 0.07 1.0 A-14 A-1719 6.82508 3 3 692 5.96 0.92 1.71 1.04 5.56 0.07 5.00 -2.71 -1.39 -2.55 5.00 -2.425 5.03 0.085 1.0 1.0 0.07 A-14 A-1721 6.86516 3 3 692 5.98 1.11 6.98 0.09 1.13 0.09 6.01 -3.29 6.01 -2.79 5.00 -0.420 0.085 1.0 1.0 0.07 0.8 4.3 0.14 A-1722 6.86514 3 3 692 5.78 0.72 0.98 7.77 0.43 0.09 5.14 -3.09 -5.01 -2.79 -5.06 -1.385 0.092 4.77 0.8 4.3 0.78 A-1722 6.86517 3 3 692 5.34 5.34 0.05 2.07 0.08 0.07 0.	1712	686572	3	3	686	.376	.197	.146	.376	.261	.020	.397	183	159	.397	085	0.141	0.087	0.5	1.0	1.1	1.1	A-	B-
1715 686508 3 3 692 634 634 638 449 129 120	1713	682514	3	3	692	.436	.214	.275	.436	.069	.006	.400	302	087	.400	125	0.032	0.086	1.5	1.1	1.9	1.1	B-	A-
1716 686510 3	1714	686509	3	3	692	.646	.132	.646	.084	.139	.000	.454	111	.454	281	294	-1.044	0.089	0.1	1.0	-0.9	1.0	A+	A-
1717 1717 1717 1717 1717 1717 1718	1715	686508	3	3	692	.634	.634	.088	.149	.129	.000	.436	.436	276	236	142	-0.981	0.088	0.3	1.0	-0.2	1.0	A-	A-
1718 686472 3 3 692 5.29 5.29 1.73 1.91 1.07 0.00 4.85 4.85 -2.68 -1.50 -2.64 -0.434 0.085 -1.0 1.0 0.7 1.0 A. A+ 1719 682508 3 3 692 5.26 0.092 1.71 1.204 5.26 0.07 5.00 -2.63 4.81 -2.29 -2.895 0.133 -1.9 0.8 -3.2 0.55 A+ A+ 1712 686515 3 3 692 5.26 0.092 1.71 1.204 5.26 0.07 5.00 -2.71 -1.39 -2.50 5.00 -0.420 0.085 -1.0 1.0 -1.6 0.9 A- A+ 1712 686516 3 3 692 6.98 1.11 6.98 0.69 1.13 0.09 5.61 -3.29 6.61 -2.79 -2.62 -1.338 0.092 -4.7 0.8 -4.3 0.7 A+ A+ 1712 686514 3 3 692 6.54 6.34 0.59 2.67 0.27 0.12 3.82 3.82 -2.64 -1.60 -1.87 -0.981 0.088 2.4 1.1 2.0 1.1 B- B- 1714 686517 3 3 692 5.25 1.85 2.56 2.49 2.98 0.13 2.36 -1.26 -1.26 -1.26 -1.86 -1.86 -1.87 -1.981 0.088 2.4 1.1 2.0 1.1 B- B- 1714 686517 3 3 692 8.57 0.39 0.62 0.30 8.87 0.12 5.11 -3.38 -2.40 -1.86 5.11 -2.490 0.118 -2.5 0.2 0.9 -2.2 0.6 A- A- 1.72 686570 3 3 692 7.78 0.06 0.07 0.08 0.07 0.12 3.38 3.30 -2.73 -1.38 0.09 -2.1 0.9 -2.2 0.8 A+ A+ 1.72 686562 3 3 692 6.21 1.18 0.088 1.55 6.21 0.17 5.19 -1.70 -2.67 -2.67 -2.91 -0.91 0.088 -1.5 0.9 -2.1 0.9 A- A+ 1.72 686562 3 3 6.92 6.73 6.064 0.074 0.058 0.054 0.054 0.054 0.058	1716	686510	3	3	692	.298	.377	.173	.149	.298	.003	.222	.080	143	228	.222	0.777	0.092	4.7	1.2	5.9	1.5	A+	A-
1719 682508 3 3 692 895 0.39 0.35 895 0.32 0.00 4.81 -3.24 -2.63 4.81 -2.09 -2.895 0.133 -1.9 0.8 -3.2 0.5 A+ A+ A+ A+ A+ A+ A+ A	1717	686511	3	3	692	.718	.081	.101	.718	.097	.003	.590	322	355	.590	226	-1.459	0.094	-4.4	0.8	-4.7	0.7	A+	A-
1720 686515 3 3 692 526 526 529 171 204 526 507 500 -271 -139 -250 500 -0.420 0.085 -1.0 1.0 -1.6 0.9 A A 1721 686516 3 3 692 5698 111 698 669 113 509 601 -329 -601 -329 -262 -1.338 0.092 -4.7 0.8 -4.3 0.7 A A A 1721 686514 3 3 692 5698 111 698 669 173 0.09 514 0.09 514 514 -1.188 -1.845 0.010 -2.0 0.9 -2.8 0.7 A A A 1722 686514 3 3 692 5634 634 0.59 2.67 0.27 0.12 3.82 3.82 -2.64 -1.60 -1.87 -0.981 0.088 2.4 1.1 2.0 1.1 B B B B B B B B B	1718	686472	3	3	692	.529	.529	.173	.191	.107	.000	.485	.485	268	150	264	-0.434	0.085	-1.0	1.0	-0.7	1.0	A-	A+
1721 686516 3 3 692 .698 .111 .698 .069 .133 .009 .601 229 .601 279 .262 -1.338 0.092 .47 0.8 -4.3 0.7 A+ A+ 1722 686514 3 3 692 .788 .072 .098 .777 .072 .098 .777 .072 .098 .277 .072 .072 .072 .012 .382 .264 .160 .187 .098 .008 .027 .012 .382 .264 .160 .187 .098 .048 .04 .188 .1845 .0101 .20 .096 .29 .11 .53 .16 A+ A+ .72 .088 .24 .11 .20 .11 .88 .15 .08 .249 .298 .013 .236 .076 .008 1.032 .0096 .29 .11 .53 .16 A+ A .727	1719	682508	3	3	692	.895	.039	.035	.895	.032	.000	.481	324	263	.481	209	-2.895	0.133	-1.9	0.8	-3.2	0.5	A+	A+
1722 686514 3 3 692 .778 .072 .098 .777 .043 .009 .514 .304 -2.58 .514 -1.88 -1.845 0.101 -2.0 0.9 -2.8 0.7 A-A 1724 686530 3 692 .634 .634 .099 .267 .027 .012 .382 .236 .160 .187 .099 .026 .030 .385 .249 .298 .013 .236 .076 .008 .1032 .099 .29 .11 .53 .16 A-A .1766 .068 .030 .857 .039 .062 .030 .857 .012 .511 .338 .240 .186 .511 .2490 .018 .25 .08 .29 .06 A-A .772 .68659 .3 .692 .786 .064 .074 .053 .786 .023 .600 .273 .354 .247 .600 .1.99 .091	1720	686515	3	3	692	.526	.092	.171	.204	.526	.007	.500	271	139	250	.500	-0.420	0.085	-1.0	1.0	-1.6	0.9	A-	A-
1723 686530 3 3 692 6.64 6.34 0.59 2.67 0.027 0.12 3.82 3.82 -2.64 -1.60 -1.87 -0.981 0.088 2.4 1.1 2.0 1.1 B-	1721	686516	3	3	692	.698	.111	.698	.069	.113	.009	.601	329	.601	279	262	-1.338	0.092	-4.7	8.0	-4.3	0.7	A+	A+
1724 686517 3 3 692 .256 .185 .256 .249 .298 .013 .236 126 .236 076 .008 1.032 .0.096 2.9 1.1 5.3 1.6 A+ A- 1725 682502 3 3 692 .873 .028 .030 .857 .012 .511 .338 .240 .186 .511 -2.490 .018 -2.2 .0.9 -2.2 .0.8 A+ A+ 1726 682495 3 3 692 .736 .064 .074 .053 .786 .023 .600 -2.73 .354 -247 .600 -1.907 .010 -3.9 0.8 4.3 0.6 B A 1729 686562 3 3 692 .211 118 .088 155 .621 .017 .519 .170 .267 .519 .911 .0088 .1.12 .2.0 .1.1	1722	686514	3	3	692	.778	.072	.098	.777	.043	.009	.514	304	258	.514	188	-1.845	0.101	-2.0	0.9	-2.8	0.7	A-	A+
1725 682502 3 3 692 .857 .039 .062 .030 .857 .012 .511 .338 .240 .186 .511 -2.490 .0118 -2.5 0.8 -2.9 0.6 A-A A-1726 682495 3 3 692 .733 .124 .058 .071 .733 .014 .532 .302 .177 .273 .532 .1.548 .0095 .2.1 .0.9 .2.2 0.8 A+A A+A+A+A+A+A+A+A+A+A+A+A+A+A+A+A+A+A+A+	1723	686530	3	3	692	.634	.634	.059	.267	.027	.012	.382	.382	264	160	187	-0.981	0.088	2.4	1.1	2.0	1.1	B-	B-
1726 682495 3 3 692 .733 .124 .058 .071 .733 .014 .532 .302 .177 .273 .532 -1.548 0.095 -2.1 0.9 -2.2 0.8 A+ A+ 1727 686560 3 3 692 .786 .064 .074 .053 .786 .023 .600 -2.73 .354 .247 .600 -1.907 0.102 .3.9 0.8 .4.3 0.6 B- A- 1729 686562 3 3 692 .314 .334 .144 .185 .022 .208 .016 .208 .133 .037 0.686 0.091 5.4 1.2 7.0 1.6 A+ A+ A+ 1.732 686563 3 3 692 .455 .455 .199 .095 .231 .019 .361 .332 .203 .103 .0068 .0091 .54 .1.1 A-	1724	686517	3	3	692	.256	.185	.256	.249	.298	.013	.236	126	.236	076	.008	1.032	0.096	2.9	1.1	5.3	1.6	A+	A-
1727 686570 3 3 692 .786 .064 .074 .053 .786 .023 .600 273 354 247 .600 -1.907 0.102 -3.9 0.8 -4.3 0.6 B-A A-1728 686562 3 3 692 .621 .118 .088 .155 .621 .017 .519 .170 .267 .267 .519 .0911 .0088 -1.5 .09 .2.1 .09 A+A A+A+1729 .686563 3 3 692 .455 .459 .095 .231 .019 .361 .361 .361 .361 .361 .361 .361 .366 .333 .008 .2.8 1.1 .24 1.1 A-A 1731 686564 3 3 .692 .413 .186 .139 .413 .237 .025 .230 .199 .002 .230 .035 .0150 .0086 7.1 1.3 .72	1725	682502	3	3	692	.857	.039	.062	.030	.857	.012	.511	338	240	186	.511	-2.490	0.118	-2.5	0.8	-2.9	0.6	A-	A-
1728 686562 3 3 692 .621 .118 .088 .155 .621 .017 .519 170 267 .519 0911 .0.088 -1.5 0.9 -2.1 0.9 A+ A+ 1729 686563 3 3 692 .314 .334 .146 .185 .022 .208 016 .208 133 037 0.686 0.091 5.4 1.2 7.0 1.6 A+ A- 1731 686565 3 3 692 .455 .455 .199 .995 .231 .019 .361 .361 .321 .203 103 -0.063 .085 .28 1.1 .24 .1.1 A+ A+ 1731 686564 3 3 689 .413 .186 .139 .413 .237 .025 .230 .199 .072 .230 .039 .0.084 .0 .99 .4.0 .84	1726	682495	3	3	692	.733	.124	.058	.071	.733	.014	.532	302	177	273	.532	-1.548	0.095	-2.1	0.9	-2.2	0.8	A+	A+
1729 686563 3 3 692 .314 .334 .314 .146 .185 .022 .208 016 .208 133 037 0.686 0.091 5.4 1.2 7.0 1.6 A+ A- 1730 686565 3 3 692 .455 .455 .199 .095 .231 .019 .361 .361 132 203 103 -0.063 0.085 2.8 1.1 2.4 1.1 A- A+ 1731 686564 3 3 692 .413 .186 .139 .413 .237 .025 .230 .199 .072 .230 .035 .0150 0.086 7.1 1.3 7.2 1.5 A- 1732 686503 3 3 688 .718 .128 .070 .084 .000 .535 216 331 129 .535 -0.392 .0084 -4.0 .09 -4.0	1727	686570	3	3	692	.786	.064	.074	.053	.786	.023	.600	273	354	247	.600	-1.907	0.102	-3.9	0.8	-4.3	0.6	B-	A-
1730 686565 3 3 692 .455 .199 .095 .231 .019 .361 .361 .132 .203 .103 .0063 0.085 2.8 1.1 2.4 1.1 A- A+ 1731 686592 3 3 692 .166 .474 .166 .169 .171 .020 .148 .125 .148 -209 -040 1.678 0.110 2.1 1.1 6.1 2.0 A+ B+ 1732 686564 3 3 692 .413 .186 .139 .413 .237 .025 .230 199 .072 .230 .035 .0.150 .0.086 7.1 1.3 7.2 1.5 A- 1733 685506 3 3 688 .455 .227 .231 .087 .455 .000 .535 216 331 129 .535 .0.392 .0.084 -4.0 0.9 -4.0	1728	686562	3	3	692	.621	.118	.088	.155	.621	.017	.519	170	267	267	.519	-0.911	0.088	-1.5	0.9	-2.1	0.9	A+	A+
1731 686592 3 3 692 .166 .474 .166 .169 .171 .020 .148 .125 .148 .209 .040 1.678 0.110 2.1 1.1 6.1 2.0 A+ B+ 1732 686564 3 3 692 .413 .186 .139 .413 .237 .025 .230 199 .072 .230 .035 0.150 0.086 7.1 1.3 7.2 1.5 A- 1733 682516 3 3 688 .455 .227 .231 .087 .455 .000 .535 216 .331 129 .535 -0.392 0.084 -4.6 0.9 -4.0 0.8 A- 1734 686503 3 3 688 .849 .849 .067 .057 .026 .001 .448 .448 242 .275 208 2612 0.112 .20 0.9 -2.6	1729	686563	3	3	692	.314	.334	.314	.146	.185	.022	.208	016	.208	133	037	0.686	0.091	5.4	1.2	7.0	1.6	A+	A-
1732 686564 3 3 692 .413 .186 .139 .413 .237 .025 .230 199 072 .230 .035 0.150 0.086 7.1 1.3 7.2 1.5 A- A- 1733 682516 3 3 688 .455 .227 .231 .087 .455 .000 .535 216 331 129 .535 -0.392 0.084 -4.6 0.9 -4.0 0.8 A- 1734 686503 3 3 688 .718 .718 .128 .070 .084 .000 .424 .424 292 187 164 -1.711 0.091 -0.9 1.0 -0.8 0.9 A- 1735 686507 3 3 688 .849 .849 .067 .057 .026 .001 .448 .448 242 275 208 -2.612 .0.112 -2.0 .09	1730	686565	3	3	692	.455	.455	.199	.095	.231	.019	.361	.361	132	203	103	-0.063	0.085	2.8	1.1	2.4	1.1	A-	A+
1733 682516 3 3 688 .455 .227 .231 .087 .455 .000 .535 216 331 129 .535 -0.392 0.084 -4.6 0.9 -4.0 0.8 A- 1734 686503 3 3 688 .718 .128 .070 .084 .000 .424 .424 292 187 164 -1.711 0.091 -0.9 1.0 -0.8 0.9 A- 1735 686507 3 3 688 .849 .849 .067 .057 .026 .001 .448 .448 242 275 208 -2.612 0.112 -2.0 0.9 -2.6 0.7 A+ 1736 686506 3 3 688 .267 .350 .179 .267 .203 .000 .198 .077 199 .198 .119 0.585 0.093 3.2 1.2 4.2 1.3 A	1731	686592	3	3	692	.166	.474	.166	.169	.171	.020	.148	.125	.148	209	040	1.678	0.110	2.1	1.1	6.1	2.0	A+	B+
1734 686503 3 688 .718 .718 .128 .070 .084 .000 .424 .424 .292 187 164 -1.711 0.091 -0.9 1.0 -0.8 0.9 A- 1735 686507 3 3 688 .849 .849 .067 .057 .026 .001 .448 .448 242 275 208 -2.612 0.112 -2.0 0.9 -2.6 0.7 A+ 1736 686506 3 3 688 .320 .182 .368 .131 .320 .000 .237 154 .030 193 .237 0.289 0.089 3.5 1.1 4.7 1.3 A- 1737 686505 3 3 688 .267 .350 .179 .267 .203 .000 .198 .077 .199 .198 .119 0.585 0.093 3.2 1.2 4.2 1.3 A- </td <td>1732</td> <td>686564</td> <td>3</td> <td>3</td> <td>692</td> <td>.413</td> <td>.186</td> <td>.139</td> <td>.413</td> <td>.237</td> <td>.025</td> <td>.230</td> <td>199</td> <td>072</td> <td>.230</td> <td>.035</td> <td>0.150</td> <td>0.086</td> <td>7.1</td> <td>1.3</td> <td>7.2</td> <td>1.5</td> <td>A-</td> <td>A-</td>	1732	686564	3	3	692	.413	.186	.139	.413	.237	.025	.230	199	072	.230	.035	0.150	0.086	7.1	1.3	7.2	1.5	A-	A-
1735 686507 3 3 688 .849 .849 .067 .057 .026 .001 .448 .448 242 275 208 -2.612 0.112 -2.0 0.9 -2.6 0.7 A+ 1736 686506 3 3 688 .320 .182 .368 .131 .320 .000 .237 154 .030 193 .237 0.289 0.089 3.5 1.1 4.7 1.3 A- 1737 686505 3 3 688 .267 .350 .179 .267 .203 .000 .198 .077 199 .198 119 0.585 0.093 3.2 1.2 4.2 1.3 A- 1738 686504 3 3 688 .545 .182 .124 .545 .150 .000 .406 194 299 .406 081 -0.822 0.083 0.3 1.0 0.3 1.0 </td <td>1733</td> <td>682516</td> <td>3</td> <td>3</td> <td>688</td> <td>.455</td> <td>.227</td> <td>.231</td> <td>.087</td> <td>.455</td> <td>.000</td> <td>.535</td> <td>216</td> <td>331</td> <td>129</td> <td>.535</td> <td>-0.392</td> <td>0.084</td> <td>-4.6</td> <td>0.9</td> <td>-4.0</td> <td>0.8</td> <td>A-</td> <td></td>	1733	682516	3	3	688	.455	.227	.231	.087	.455	.000	.535	216	331	129	.535	-0.392	0.084	-4.6	0.9	-4.0	0.8	A-	
1736 686506 3 3 688 .320 .182 .368 .131 .320 .000 .237 154 .030 193 .237 0.289 0.089 3.5 1.1 4.7 1.3 A- 1737 686505 3 3 688 .267 .350 .179 .267 .203 .000 .198 .077 199 .198 119 0.585 0.093 3.2 1.2 4.2 1.3 A- 1738 686504 3 3 688 .545 .182 .124 .545 .150 .000 .406 194 299 .406 081 -0.822 0.083 0.3 1.0 0.3 1.0 A+ 1739 682513 3 3 688 .942 .942 .029 .020 .007 .001 .410 .410 264 247 184 -3.762 0.167 -1.0 0.9 -3.2 0.4 A+ 1740 682507 3 3 688 .478 .182 </td <td>1734</td> <td>686503</td> <td>3</td> <td>3</td> <td>688</td> <td>.718</td> <td>.718</td> <td>.128</td> <td>.070</td> <td>.084</td> <td>.000</td> <td>.424</td> <td>.424</td> <td>292</td> <td>187</td> <td>164</td> <td>-1.711</td> <td>0.091</td> <td>-0.9</td> <td>1.0</td> <td>-0.8</td> <td>0.9</td> <td>A-</td> <td></td>	1734	686503	3	3	688	.718	.718	.128	.070	.084	.000	.424	.424	292	187	164	-1.711	0.091	-0.9	1.0	-0.8	0.9	A-	
1737 686505 3 3 688 .267 .350 .179 .267 .203 .000 .198 .077 199 .198 119 0.585 0.093 3.2 1.2 4.2 1.3 A- 1738 686504 3 3 688 .545 .182 .124 .545 .150 .000 .406 194 299 .406 081 -0.822 0.083 0.3 1.0 0.3 1.0 A+ 1739 682513 3 3 688 .942 .942 .029 .020 .007 .001 .410 .410 264 247 184 -3.762 0.167 -1.0 0.9 -3.2 0.4 A- 1740 682507 3 3 688 .821 .041 .128 .010 .821 .000 .202 123 099 202 .202 -2.387 0.106 1.4 1.1 3.4 1.4 A+ 1741 686513 3 3 688 .641 .163	1735	686507	3	3	688	.849	.849	.067	.057	.026	.001	.448	.448	242	275	208	-2.612	0.112	-2.0	0.9	-2.6	0.7	A+	
1738 686504 3 3 688 .545 .182 .124 .545 .150 .000 .406 194 299 .406 081 -0.822 0.083 0.3 1.0 0.3 1.0 A+ 1739 682513 3 3 688 .942 .942 .029 .020 .007 .001 .410 .410 264 247 184 -3.762 0.167 -1.0 0.9 -3.2 0.4 A- 1740 682507 3 3 688 .821 .041 .128 .010 .821 .000 .202 123 099 202 .202 -2.387 0.106 1.4 1.1 3.4 1.4 A+ 1741 686513 3 3 688 .478 .182 .144 .192 .478 .004 .383 160 181 154 .383 -0.503 0.083 0.5 1.0 0.7 1.0 A+ 1742 686527 3 3 688 .641 .1	1736	686506	3	3	688	.320	.182	.368	.131	.320	.000	.237	154	.030	193	.237	0.289	0.089	3.5	1.1	4.7	1.3	A-	
1739 682513 3 3 688 .942 .029 .020 .007 .001 .410 .420 .247 184 -3.762 0.167 -1.0 0.9 -3.2 0.4 A- 1740 682507 3 3 688 .821 .041 .128 .010 .821 .000 .202 123 099 202 .202 -2.387 0.106 1.4 1.1 3.4 1.4 A+ 1741 686513 3 3 688 .478 .182 .144 .192 .478 .004 .383 160 181 154 .383 -0.503 0.083 0.5 1.0 0.7 1.0 A+ 1742 686527 3 3 688 .641 .163 .089 .641 .103 .004 .576 335 237 .576 263 -1.295 0.086 -5.6 0.8 -5.3 0.7 A- <t< td=""><td>1737</td><td>686505</td><td>3</td><td>3</td><td>688</td><td>.267</td><td>.350</td><td>.179</td><td>.267</td><td>.203</td><td>.000</td><td>.198</td><td>.077</td><td>199</td><td>.198</td><td>119</td><td>0.585</td><td>0.093</td><td>3.2</td><td>1.2</td><td>4.2</td><td>1.3</td><td>A-</td><td></td></t<>	1737	686505	3	3	688	.267	.350	.179	.267	.203	.000	.198	.077	199	.198	119	0.585	0.093	3.2	1.2	4.2	1.3	A-	
1740 682507 3 3 688 .821 .041 .128 .010 .821 .000 .202 123 099 202 .202 -2.387 0.106 1.4 1.1 3.4 1.4 A+ 1741 686513 3 3 688 .478 .182 .144 .192 .478 .004 .383 160 181 154 .383 -0.503 0.083 0.5 1.0 0.7 1.0 A+ 1742 686527 3 3 688 .641 .163 .089 .641 .103 .004 .576 335 237 .576 263 -1.295 0.086 -5.6 0.8 -5.3 0.7 A- 1743 686528 3 3 688 .640 .640 .132 .121 .102 .006 .515 .515 213 288 240 -1.287 0.086 -3.2 0.9 -3.0 0.9 A+ 1744 686526 3 3 688 .608	1738	686504	3	3	688	.545	.182	.124	.545	.150	.000	.406	194	299	.406	081	-0.822	0.083	0.3	1.0	0.3	1.0	A+	
1741 686513 3 3 688 .478 .182 .144 .192 .478 .004 .383 160 181 154 .383 -0.503 0.083 0.5 1.0 0.7 1.0 A+ 1742 686527 3 3 688 .641 .163 .089 .641 .103 .004 .576 335 237 .576 263 -1.295 0.086 -5.6 0.8 -5.3 0.7 A- 1743 686528 3 3 688 .640 .640 .132 .121 .102 .006 .515 .515 213 288 240 -1.287 0.086 -3.2 0.9 -3.0 0.9 A+ 1744 686526 3 3 688 .608 .113 .608 .166 .108 .006 .468 276 .468 239 147 -1.126 0.085 -2.2 0.9 -1.3 0.9 A+	1739	682513	3	3	688	.942	.942	.029	.020	.007	.001	.410	.410	264	247	184	-3.762	0.167	-1.0	0.9	-3.2	0.4	A-	
1742 686527 3 3 688 .641 .163 .089 .641 .103 .004 .576 335 237 .576 263 -1.295 0.086 -5.6 0.8 -5.3 0.7 A- 1743 686528 3 3 688 .640 .640 .132 .121 .102 .006 .515 .515 213 288 240 -1.287 0.086 -3.2 0.9 -3.0 0.9 A+ 1744 686526 3 3 688 .608 .113 .608 .166 .108 .006 .468 276 .468 239 147 -1.126 0.085 -2.2 0.9 -1.3 0.9 A+	1740	682507	3	3	688	.821	.041	.128	.010	.821	.000	.202	123	099	202	.202	-2.387	0.106	1.4	1.1	3.4	1.4	A+	
1743 686528 3 3 688 .640 .640 .132 .121 .102 .006 .515 .515 213 288 240 -1.287 0.086 -3.2 0.9 -3.0 0.9 A+ 1744 686526 3 3 688 .608 .113 .608 .166 .108 .006 .468 276 .468 239 147 -1.126 0.085 -2.2 0.9 -1.3 0.9 A+	1741	686513	3	3	688	.478	.182	.144	.192	.478	.004	.383	160	181	154	.383	-0.503	0.083	0.5	1.0	0.7	1.0	A+	
1744 686526 3 3 688 .608 .113 .608 .166 .108 .006 .468276 .468239147 -1.126 0.085 -2.2 0.9 -1.3 0.9 A+	1742	686527	3	3	688	.641	.163	.089	.641	.103	.004	.576	335	237	.576	263	-1.295	0.086	-5.6	0.8	-5.3	0.7	A-	
1744 686526 3 3 688 .608 .113 .608 .166 .108 .006 .468276 .468239147 -1.126 0.085 -2.2 0.9 -1.3 0.9 A+	1743	686528	3	3	688	.640	.640	.132	.121	.102	.006	.515	.515	213	288	240	-1.287	0.086	-3.2	0.9	-3.0	0.9	A+	
	1744	686526	3	3	688	.608	.113	.608	.166	.108	.006	.468	276	.468	239	147	-1.126	0.085	-2.2	0.9	-1.3	0.9	A+	
	1745	686529	3	3	688	.326	.092	.304			.006	.359	201	160		.359	0.258	0.088	-0.1	1.0	1.7	1.1	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1746 682500 3 3 688 .664 .160 .664 .065 .105 .006 .390 .136 .390 .204 .249 .1.416 .0.87 .0.11 .0.01 .1.0 .0.1 .1.1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1748 682094 3 3 688 5.55 073 302 273 5.55 007 343 -278 -321 0.012 3.43 -0.822 0.083 2.2 1.1 2.7 1.1 A 1.74 687070 3 3 688 2.95 2.95 2.95 3.58 1.95 1.42 0.10 2.46 2.46 -2.43 0.63 -0.38 0.425 0.091 3.5 1.2 2.7 1.2 A 1.74 687071 3 3 688 6.40 0.90 0.94 6.40 1.42 0.21 2.11 -2.16 -3.21 4.21 -1.00 -1.287 0.086 -1.2 1.0 -0.6 1.0 B 1.75 687078 3 3 688 2.48 3.48 0.90 1.77 2.73 0.12 3.51 3.51 -2.61 -2.16 -0.17 -0.357 0.084 2.1 1.1 1.6 1.1 A 1.75 1.75 687067 3 3 688 2.55 3.31 3.16 0.233 2.55 0.12 3.31 0.51 -2.67 -1.51 3.31 0.50 0.093 0.6 1.0 1.9 1.1 A 1.75 687069 3 3 688 3.55 1.69 3.55 2.60 2.03 0.13 3.88 0.95 3.58 1.14 1.18 0.105 0.087 0.6 1.0 1.3 1.1 A 1.75 682512 3 3 681 7.96 0.97 0.90 0.16 7.96 0.01 4.12 3.25 -1.72 -1.33 4.12 -2.15 0.105 0.087 0.6 1.0 1.3 1.1 A 1.			Grade	Grade																in			/F	/B
1749 687070 3 3 688 640 090 094 640 164 012 A26 246 243 0.063 -0.38 0.0425 0.094 3.5 1.2 2.7 1.2 A 1750 687068 3 3 688 640 0.90 0.94 640 1.64 0.12 A21 -2.16 -3.21 -4.21 -1.00 -1.287 0.086 -1.2 1.0 -0.6 1.0 B 1750 687068 3 3 688 2.48 A48 A48 0.90 1.77 273 0.12 351 351 -2.61 -2.16 -0.017 -0.557 0.084 2.1 1.1 1.6 1.1 A 1751 687067 3 3 688 2.55 331 1.60 .233 2.55 0.12 331 0.51 .257 -1.51 331 0.602 0.093 0.6 1.0 1.9 1.1 A 1752 687069 3 3 688 .355 1.69 .355 2.50 .203 1.01 .358 .095 .358 .114 -1.185 0.015 0.087 0.06 1.0 1.3 1.1 A 1753 682512 3 3 681 .796 0.97 .090 0.16 .796 0.01 .412 .3.25 .172 -1.33 .412 -2.159 0.103 -0.8 1.0 1.1 3.0 9 A A 1754 686483 3 3 681 .569 .167 .609 1.32 0.91 0.01 .414 .188 .414 -2.24 -1.194 -1.066 0.086 0.3 1.0 1.0 1.0 84 A 1755 686479 3 3 681 .569 .2167 .609 1.32 0.91 0.00 .414 .188 .414 -2.24 -1.219 -1.066 0.086 0.3 1.0 1.0 1.0 84 A 1755 686481 3 3 681 .256 .201 .200 .342 .256 .201 .200 .342 .256 .201 .200 .342 .256 .201 .200 .342 .256 .201 .200 .342 .256 .201 .200 .342 .256 .201 .200 .342 .256 .201 .200 .200 .342 .256 .201 .200 .200 .342 .256 .201 .200																 							A+	
1749 687071 3 3 688 6840 .090 .094 .660 .164 .012 .421 .216 .321 .216 .321 .217 .016 .017 .0.357 .0.086 .1.2 .1.0 .0.6 .1.0 .8 .175 .0867068 .3 .3 .688 .488 .484 .448 .090 .177 .273 .012 .351 .351 .261 .216 .0.17 .0.357 .0.084 .2.1 .1.1 .1.6 .1.1 .4 .175 .687067 .3 .3 .688 .265 .331 .160 .233 .265 .012 .331 .051 .267 .151 .331 .0.602 .0.093 .0.6 .1.0 .1.9 .1.1 .1.4 .175 .0.67069 .3 .3 .688 .796 .097 .090 .016 .796 .001 .412 .325 .172 .1.33 .412 .2.159 .0.103 .088 .0.6 .1.0 .1.3 .1.1 .4 .175 .4.1 .1.1 .4.1 .	-																						A-	igsquare
1750 687068 3 3 688 .448 .448 .090 .177 .273 .012 .351 .351 .265 .216 .216 .017 .0.357 .0.084 .2.1 .1.1 .1.6 .1.1 .A			_	_									.246			038				1.2				igsquare
1751 687067 3 3 688 2.65 331 1.60 2.33 2.65 0.12 3.31 0.51 -2.67 -1.51 3.31 0.602 0.093 0.6 1.0 1.9 1.1 A+ 1.752 687069 3 3 688 7.96 0.097 0.090 0.16 7.96 0.001 4.12 3.35 -1.12 -1.13 4.12 -2.159 0.103 -0.8 1.0 -1.3 0.1 A- 1.754 686483 3 3 681 6.52 1.22 652 1.82 0.03 0.01 4.84 3.25 -1.72 -1.133 4.12 -2.159 0.103 -0.8 1.0 -1.3 0.9 A- A- 1.754 686483 3 3 681 6.52 1.22 652 1.82 0.04 0.01 4.84 3.25 4.88 -2.51 -1.19 -1.288 0.088 -2.0 0.9 -2.1 0.9 A- A- 1.755 686479 3 3 681 6.52 0.12 0.09 3.42 2.55 0.01 3.03 -2.19 -2.23 0.98 3.03 0.762 0.095 0.8 1.0 3.1 1.0 A- A- 1.755 686478 3 3 681 2.56 2.01 2.00 3.42 2.55 0.01 3.03 -2.19 -2.23 0.98 3.03 0.762 0.095 0.8 1.0 3.5 1.3 A- A- 1.755 686480 3 3 681 6.73 0.75 1.17 1.26 673 0.09 4.69 -2.33 3.44 -1.29 4.99 -1.399 0.095 0.8 1.0 3.5 1.3 A- A- 1.755 686482 3 3 681 6.73 0.75 1.17 1.26 673 0.09 4.69 -2.33 3.344 -1.29 4.99 -1.399 0.090 1.7 0.9 1.2 0.9 0.4 4.756 2.056 0.01 0.056 0				_			.090						216			100				1.0			B-	
1752 687069 3 3 688 355 169 355 260 203 0.12 3.58 -0.95 3.58 1.114 -1.85 0.105 0.097 0.06 1.0 1.3 1.1 A 1.75		687068	3	-							.012								2.1	1.1		1.1	A-	
1753 682512 3	1751	687067	3	3	688	.265	.331	.160	.233	.265	.012	.331	.051	267	151	.331	0.602		0.6	1.0	1.9	1.1	A+	
1754 686483 3 3 681 6.652 1.12 6.652 1.82 0.043 0.01 0.488 -3.26 0.488 -3.26 -1.39 -1.288 0.088 -2.0 0.9 -2.1 0.9 A- A- A- A- A- A- A- A	1752	687069	3	3	688	.355	.169	.355	.260	.203	.013	.358	095	.358	114	185	0.105	0.087	0.6	1.0	1.3	1.1	A-	
1755 686479 3	1753	682512	3	3	681	.796	.097	.090	.016	.796	.001	.412	325	172	133	.412	-2.159	0.103	-0.8	1.0	-1.3	0.9	A-	A-
1756 686478 3 3 681 2.56 2.01 2.00 3.42 2.56 0.01 3.03 -2.19 -2.23 0.98 3.03 0.762 0.095 0.8 1.0 3.5 1.3 A A A A A A A A A	1754	686483	3	3	681	.652	.122	.652	.182	.043	.001	.488	326	.488	251	139	-1.288	0.088	-2.0	0.9	-2.1	0.9	A-	A-
1757 886480 3 3 681 .256 .280 .184 .256 .276 .004 .182 .050 .118 .182 .023 .0.762 .0.095 3.1 .1.2 4.6 1.4 A A A A A A A A A	1755	686479	3	3	681	.609	.167	.609	.132	.091	.000	.414	188	.414	224	194	-1.066	0.086	0.3	1.0	-1.0	1.0	B+	A-
1758 686481 3	1756	686478	3	3	681	.256	.201	.200	.342	.256	.001	.303	219	223	.098	.303	0.762	0.095	0.8	1.0	3.5	1.3	A-	A+
1759 686482 3	1757	686480	3	3	681	.256	.280	.184	.256	.276	.004	.182	050	118	.182	023	0.762	0.095	3.1	1.2	4.6	1.4	A-	A+
1760 682506 3	1758	686481	3	3	681	.673	.075	.117	.126	.673	.009	.469	233	344	129	.469	-1.399	0.090	-1.7	0.9	-1.2	0.9	C+	A+
1761 686518 3	1759	686482	3	3	681	.554	.554	.148	.195	.103	.000	.421	.421	210	199	185	-0.787	0.085	0.1	1.0	-0.7	1.0	B+	A+
1762 686519 3 3 681 .413 .107 .282 .413 .185 .013 .410 189 135 .410 162 -0.096 0.086 0.0 1.0 0.4 1.0 A A 1763 686522 3 3 681 .536 .088 .189 .170 .536 .016 .500 290 117 261 .500 -0.701 0.085 -2.7 0.9 -2.8 0.9 A A 1764 686520 3 3 681 .373 .373 .189 .313 .104 .021 .255 .255 .167 .066 193 0.105 0.087 4.2 1.2 4.6 1.3 A A 1.0 .4 A	1760	682506	3	3	681	.759	.759	.090	.047	.104	.000	.384	.384	240	207	170	-1.910	0.097	0.0	1.0	-0.5	1.0	A+	A-
1763 686522 3 3 681 .536 .088 .189 .170 .536 .016 .500 290 117 261 .500 -0.701 0.085 -2.7 0.9 -2.8 0.9 A A 1764 686521 3 3 681 .373 .373 .189 .313 .104 .021 .255 .255 167 .066 193 0.105 0.087 4.2 1.2 4.6 1.3 A+ A 1765 686520 3 3 681 .319 .267 .261 .319 .134 .019 .211 .040 100 .211 137 0.395 0.090 3.8 1.2 5.6 1.4 A+ A 1766 6862499 3 3 681 .847 .044 .797 .032 .109 .018 .401 216 .119 -2.170 0.103 .08 1.0 -0.4	1761	686518	3	3	681	.442	.123	.332	.090	.442	.013	.357	262	.017	269	.357	-0.242	0.085	2.2	1.1	1.5	1.1	A-	A-
1764 686521 3 3 681 .373 .373 .189 .313 .104 .021 .255 .255 167 .066 193 0.105 0.087 4.2 1.2 4.6 1.3 A+ A- 1765 686520 3 3 681 .319 .267 .261 .319 .134 .019 .211 .040 100 .211 137 0.395 0.090 3.8 1.2 5.6 1.4 A+ A- 1766 682499 3 3 681 .847 .841 .066 .029 .016 .558 .558 301 318 210 2568 0.114 -3.4 0.8 -4.4 0.5 A- 1767 682493 3 3 681 .676 .072 .675 .094 .134 .025 .2271 .528 .2271 .528 .2270 .178 -1.415 0.090 -3.4 0.9 <td>1762</td> <td>686519</td> <td>3</td> <td>3</td> <td>681</td> <td>.413</td> <td>.107</td> <td>.282</td> <td>.413</td> <td>.185</td> <td>.013</td> <td>.410</td> <td>189</td> <td>135</td> <td>.410</td> <td>162</td> <td>-0.096</td> <td>0.086</td> <td>0.0</td> <td>1.0</td> <td>0.4</td> <td>1.0</td> <td>A-</td> <td>A+</td>	1762	686519	3	3	681	.413	.107	.282	.413	.185	.013	.410	189	135	.410	162	-0.096	0.086	0.0	1.0	0.4	1.0	A-	A+
1765 686520 3 3 681 .319 .267 .261 .319 .134 .019 .211 .040 100 .211 137 0.395 0.090 3.8 1.2 5.6 1.4 A+ A- 1766 682499 3 3 681 .847 .847 .041 .066 .029 .016 .558 .558 301 318 210 -2.568 0.114 -3.4 0.8 -4.4 0.5 A- 1767 682493 3 3 681 .797 .044 .797 .032 .109 .018 .401 232 .401 164 191 -2.170 0.103 -0.8 1.0 -0.4 1.0 A- 1768 686584 3 3 681 .666 .078 .283 .148 .025 .528 271 .528 297 178 -1.415 0.090 -3.4 0.9 -3.0 0	1763	686522	3	3	681	.536	.088	.189	.170	.536	.016	.500	290	117	261	.500	-0.701	0.085	-2.7	0.9	-2.8	0.9	A-	A+
1766 682499 3 3 681 .847 .041 .066 .029 .016 .558 .558 .301 318 210 -2.568 0.114 -3.4 0.8 -4.4 0.5 A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-	1764	686521	3	3	681	.373	.373	.189	.313	.104	.021	.255	.255	167	.066	193	0.105	0.087	4.2	1.2	4.6	1.3	A+	A+
1767 682493 3 3 681 .797 .044 .797 .032 .109 .018 .401 232 .401 164 191 -2.170 0.103 -0.8 1.0 -0.4 1.0 A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-	1765	686520	3	3	681	.319	.267	.261	.319	.134	.019	.211	.040	100	.211	137	0.395	0.090	3.8	1.2	5.6	1.4	A+	A+
1768 686584 3 3 681 .676 .072 .675 .094 .134 .025 .528 271 .528 297 178 -1.415 0.090 -3.4 0.9 -3.0 0.8 A+ A- 1769 686580 3 3 681 .466 .465 .078 .283 .148 .025 .413 .413 217 110 201 -0.357 0.085 0.3 1.0 0.4 1.0 A- 1770 686583 3 3 681 .269 .166 .269 .140 .402 .023 .141 267 .141 188 .263 0.681 0.094 4.5 1.2 7.6 1.8 A+ A- 1771 686581 3 3 681 .637 .662 .179 .097 .025 .432 .432 147 253 159 -1.210 0.088 -0.3 1.0 -1.3<	1766	682499	3	3	681	.847	.847	.041	.066	.029	.016	.558	.558	301	318	210	-2.568	0.114	-3.4	0.8	-4.4	0.5	A-	A+
1769 686580 3 3 681 .466 .465 .078 .283 .148 .025 .413 .413 217 110 201 -0.357 0.085 0.3 1.0 0.4 1.0 A- A- 1770 686583 3 3 681 .269 .166 .269 .140 .402 .023 .141 267 .141 188 .263 0.681 0.094 4.5 1.2 7.6 1.8 A+ A+ 1771 686581 3 3 681 .361 .110 .294 .361 .209 .026 .228 138 .061 .228 166 0.166 0.088 4.5 1.2 5.1 1.3 A- 1772 686582 3 3 681 .637 .662 .179 .097 .025 .432 .432 147 253 159 -1.210 .0088 -0.3 1.0 -1.3 0.9 A- 1773 661504 3 3 691 .501	1767	682493	3	3	681	.797	.044	.797	.032	.109	.018	.401	232	.401	164	191	-2.170	0.103	-0.8	1.0	-0.4	1.0	A-	A-
1770 686583 3 681 .269 .166 .269 .140 .402 .023 .141 267 .141 188 .263 0.681 0.094 4.5 1.2 7.6 1.8 A+ A- 1771 686581 3 3 681 .361 .110 .294 .361 .209 .026 .228 138 .061 .228 166 0.166 0.088 4.5 1.2 7.6 1.8 A+ A- 1772 686582 3 3 681 .637 .637 .062 .179 .097 .025 .432 .432 147 253 159 -1.210 0.088 4.5 1.2 7.6 1.8 A+ A- 1773 661504 3 3 691 .949 .926 .014 .010 .000 .303 .303 261 110 119 -3.820 0.181 -0.3 1.0 -1.9 <td>1768</td> <td>686584</td> <td>3</td> <td>3</td> <td>681</td> <td>.676</td> <td>.072</td> <td>.675</td> <td>.094</td> <td>.134</td> <td>.025</td> <td>.528</td> <td>271</td> <td>.528</td> <td>297</td> <td>178</td> <td>-1.415</td> <td>0.090</td> <td>-3.4</td> <td>0.9</td> <td>-3.0</td> <td>0.8</td> <td>A+</td> <td>A+</td>	1768	686584	3	3	681	.676	.072	.675	.094	.134	.025	.528	271	.528	297	178	-1.415	0.090	-3.4	0.9	-3.0	0.8	A+	A+
1771 686581 3 3 681 .361 .110 .294 .361 .209 .026 .228 138 .061 .228 166 0.166 0.088 4.5 1.2 5.1 1.3 A- A- 1772 686582 3 3 681 .637 .637 .062 .179 .097 .025 .432 .432 147 253 159 -1.210 0.088 -0.3 1.0 -1.3 0.9 A- B- 1773 661504 3 3 691 .949 .949 .026 .014 .010 .000 .303 .303 261 110 119 -3.820 0.181 -0.3 1.0 -1.9 0.6 A- A- 1774 661505 3 3 691 .501 .333 .501 .098 .067 .001 .443 244 .443 177 219 -0.367 0.085 0.3<	1769	686580	3	3	681	.466	.465	.078	.283	.148	.025	.413	.413	217	110	201	-0.357	0.085	0.3	1.0	0.4	1.0	A-	A+
1772 686582 3 3 681 .637 .637 .062 .179 .097 .025 .432 .432 147 253 159 -1.210 0.088 -0.3 1.0 -1.3 0.9 A- B- 1773 661504 3 3 691 .949 .949 .026 .014 .010 .000 .303 .303 261 110 119 -3.820 0.181 -0.3 1.0 -1.9 0.6 A- A- 1774 661505 3 3 691 .501 .333 .501 .098 .067 .001 .443 244 .443 177 219 -0.367 0.085 0.3 1.0 -0.1 1.0 B- A- 1775 661506 3 3 691 .874 .055 .019 .874 .052 .000 .406 304 111 .406 227 -2.712 0.123 -0.9 0.9 -1.1 0.8 A+ 1776 661507 3 <td< td=""><td>1770</td><td>686583</td><td>3</td><td>3</td><td>681</td><td>.269</td><td>.166</td><td>.269</td><td>.140</td><td>.402</td><td>.023</td><td>.141</td><td>267</td><td>.141</td><td>188</td><td>.263</td><td>0.681</td><td>0.094</td><td>4.5</td><td>1.2</td><td>7.6</td><td>1.8</td><td>A+</td><td>A-</td></td<>	1770	686583	3	3	681	.269	.166	.269	.140	.402	.023	.141	267	.141	188	.263	0.681	0.094	4.5	1.2	7.6	1.8	A+	A-
1773 661504 3 3 691 .949 .949 .026 .014 .010 .000 .303 .303 261 110 119 -3.820 0.181 -0.3 1.0 -1.9 0.6 A- A- 1774 661505 3 3 691 .501 .333 .501 .098 .067 .001 .443 244 .443 177 219 -0.367 0.085 0.3 1.0 -0.1 1.0 B- A- 1775 661506 3 3 691 .874 .055 .019 .874 .052 .000 .406 304 111 .406 227 -2.712 0.123 -0.9 0.9 -1.1 0.8 A+ A+ 1776 661507 3 3 691 .973 .014 .004 .007 .973 .001 .259 188 095 151 .259 -4.500 0.240 -0.5 0.9 -1.9 0.5 A+ 1777 663040 3 <td< td=""><td>1771</td><td>686581</td><td>3</td><td>3</td><td>681</td><td>.361</td><td>.110</td><td>.294</td><td>.361</td><td>.209</td><td>.026</td><td>.228</td><td>138</td><td>.061</td><td>.228</td><td>166</td><td>0.166</td><td>0.088</td><td>4.5</td><td>1.2</td><td>5.1</td><td>1.3</td><td>A-</td><td>A+</td></td<>	1771	686581	3	3	681	.361	.110	.294	.361	.209	.026	.228	138	.061	.228	166	0.166	0.088	4.5	1.2	5.1	1.3	A-	A+
1774 661505 3 3 691 .501 .333 .501 .098 .067 .001 .443 244 .443 177 219 -0.367 0.085 0.3 1.0 -0.1 1.0 B- A- 1775 661506 3 3 691 .874 .055 .019 .874 .052 .000 .406 304 111 .406 227 -2.712 0.123 -0.9 0.9 -1.1 0.8 A+ A- 1776 661507 3 3 691 .973 .014 .004 .007 .973 .001 .259 188 095 151 .259 -4.500 0.240 -0.5 0.9 -1.9 0.5 A+ A- 1777 663040 3 3 691 .262 .327 .262 .068 .340 .003 .276 169 .276 236 .042 .0920 0.095 2.5 1.1 5.8 1.6 A+ A- 1778 663039 3<	1772	686582	3	3	681	.637	.637	.062	.179	.097	.025	.432	.432	147	253	159	-1.210	0.088	-0.3	1.0	-1.3	0.9	A-	B-
1775 661506 3 3 691 .874 .055 .019 .874 .052 .000 .406 304 111 .406 227 -2.712 0.123 -0.9 0.9 -1.1 0.8 A+ A+ 1776 661507 3 3 691 .973 .014 .004 .007 .973 .001 .259 188 095 151 .259 -4.500 0.240 -0.5 0.9 -1.9 0.5 A+ A+ 1777 663040 3 3 691 .262 .327 .262 .068 .340 .003 .276 169 .276 236 .042 0.920 0.095 2.5 1.1 5.8 1.6 A+ A+ 1778 663039 3 3 691 .385 .135 .260 .385 .217 .003 .343 119 216 .343 065 0.222 0.087 2.6 1.1 3.7 1.2 A-	1773	661504	3	3	691	.949	.949	.026	.014	.010	.000	.303	.303	261	110	119	-3.820	0.181	-0.3	1.0	-1.9	0.6	A-	A-
1776 661507 3 3 691 .973 .014 .004 .007 .973 .001 .259 188 095 151 .259 -4.500 0.240 -0.5 0.9 -1.9 0.5 A+ A- 1777 663040 3 3 691 .262 .327 .262 .068 .340 .003 .276 169 .276 236 .042 0.920 0.095 2.5 1.1 5.8 1.6 A+ A- 1778 663039 3 691 .385 .135 .260 .385 .217 .003 .343 119 216 .343 065 0.222 0.087 2.6 1.1 3.7 1.2 A-	1774	661505	3	3	691	.501	.333	.501	.098	.067	.001	.443	244	.443	177	219	-0.367	0.085	0.3	1.0	-0.1	1.0	B-	A-
1777 663040 3 3 691 .262 .327 .262 .068 .340 .003 .276 169 .276 236 .042 0.920 0.095 2.5 1.1 5.8 1.6 A+ A- 1778 663039 3 691 .385 .135 .260 .385 .217 .003 .343 119 216 .343 065 0.222 0.087 2.6 1.1 3.7 1.2 A- A-	1775	661506	3	3	691	.874	.055	.019	.874	.052	.000	.406	304	111	.406	227	-2.712	0.123	-0.9	0.9	-1.1	0.8	A+	A+
1778 663039 3 3 691 .385 .135 .260 .385 .217 .003 .343119216 .343065 0.222 0.087 2.6 1.1 3.7 1.2 A- A-	1776	661507	3	3	691	.973	.014	.004	.007	.973	.001	.259	188	095	151	.259	-4.500	0.240	-0.5	0.9	-1.9	0.5	A+	A-
	1777	663040	3	3	691	.262	.327	.262	.068	.340	.003	.276	169	.276	236	.042	0.920	0.095	2.5	1.1	5.8	1.6	A+	A+
	1778	663039	3	3	691	.385	.135	.260	.385	.217	.003	.343	119	216	.343	065	0.222	0.087	2.6	1.1	3.7	1.2	A-	A-
	1779	663042	3	3	691			.207			.001	.322	157			070	0.102			1.2	4.4		A-	A+
1780 663041 3 3 691 .544 .544 .075 .120 .255 .006 .417 .417 -265 -202 -154 -0.585 0.085 1.1 1.0 1.3 1.1 A- A-	_			3											_						1.3			A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

1781 663038 3	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1782 662755 3 3 691 664 664 078 191 056 070 4.88 4.88 -1.65 -3.02 -1.66 -1.212 0.090 0.08 1.0 0.9 0.9 0.4 A.			Grade	Grade			. ,													in	out		/F	/B
1783 662755 3 3 691 A21 322 152 080 A21 0.14 A92 -2.17 -1.60 -2.18 A92 0.035 0.086 1.8 0.9 0.8 1.0 A A A 1785 662751 3 3 691 .500 .506 .506 .516 1.0 1.1 1.51 .1017 .430 .430 .431 .224 0.353 0.088 3.6 1.1 4.0 1.3 A A A 1785 662751 3 3 .691 .505 .506 .506 .516 1.1 1.15 .017 .430 .430 .434 .420 .174 -0.903 0.087 0.9 1.0 0.4 1.0 A A A A A A A A A	1781	663038				.605	.181	.605	.116	.093	.006	.450	244	.450		172	-0.896		0.2	1.0	0.4	1.0	A-	A-
1784 66275c 3 3 691 350 288 234 360 0.94 0.13 331 -0.25 -1.37 331 -2.24 0.353 0.088 3.6 1.1 4.0 1.3 A+ A- 1785 66275c 3 3 691 .505 .142 .575 .182 .087 .014 .554 -2.84 .544 .217 -0.739 0.087 0.9 1.0 0.4 1.0 A+ A+ A+ 1786 66275c 3 3 691 .439 .085 .149 .149 .085 .149 .149 .085 .149 .149 .149 .085 .149 .1	1782	662754				.664	.664	.078	.191	.056	.010		.458	165	302	164	-1.213		-0.8	1.0	-0.9	0.9	A+	A-
1785 662751 3 3 6691 6605 6606 6116 5110 1511 0.007 4.30 4.30 -1.48 -2.20 -1.74 -1.903 0.0087 0.9 1.0 0.4 1.0 A- A- A- 1786 662752 3 3 6.91 5.75 1.42 5.75 1.82 0.87 0.14 5.54 -2.64 5.54 -2.254 -2.17 -0.739 0.086 -3.3 0.9 -3.1 0.8 A- B- A- 1787 662438 3 3 6.91 5.49 0.85 1.49 3.07 4.38 0.20 4.70 -1.77 -2.74 -1.39 4.70 -0.054 0.086 -0.7 1.0 -0.4 1.0 A- A- A- 4.788 662435 3 3 6.91 5.40 5.40 5.40 5.41 1.13 5.156 0.017 4.78 4.78 4.78 -2.09 -1.96 -1.92 -0.563 0.085 0.4 1.0 0.5 1.0 A- A- A- A- A- A- A- A		662755	3								.014		217				0.035	0.086		0.9	-0.8	1.0	A-	A-
1786 662752 3 3 691 437 438 439 085 149 307 438 020 477		662756	3	3			.298	.234			.013		025			-			3.6	1.1	4.0	1.3	A+	A-
1788 662438 3 3 691 439 .085 .149 .307 .438 .020 .470 .177 .274 .130 .470 .0.054 .0.086 .0.7 1.0 .0.4 1.0 A. A. 1788 662436 3 3 691 .540 .540 .540 .151 .136 .156 .017 .478 .478 .478 .478 .209 .196 .192 .0.563 .0.085 .0.4 .10 .0.5 .10 A. A. 1798 662436 3 3 691 .371 .236 .370 .181 .192 .020 .257 .066 .257 .127 .062 .029 .0.088 5.4 1.2 .57 1.4 A. A. 1799 662437 3 3 .691 .731 .111 .059 .731 .077 .022 .527 .264 .266 .527 .217 .1601 .0.095 .2.3 .0.9 .3.0 0.8 A. 1791 661526 3 3 .1370 .642 .112 .125 .109 .642 .011 .519 .230 .211 .286 .519 .1160 .0.062 .4.5 .0.9 .4.4 .0.8 B. 1792 661508 3 3 .1370 .491 .041 .491 .429 .028 .012 .328 .136 .162 .0.398 .0.060 .57 .1.1 .4.8 1.2 A. 1793 661502 3 3 .679 .844 .844 .072 .027 .054 .003 .159 .159 .159 .013 .218 .073 .2498 .0.112 .16 .1.1 .3.1 .1.4 A. 1794 661522 3 3 .679 .757 .006 .050 .075 .000 .004 .415 .242 .305 .415 .134 .2124 .102 .1.2 .0.9 .1.8 .0.8 A. 1795 663060 3 3 .679 .575 .071 .100 .072 .757 .000 .446 .251 .212 .244 .446 .1.870 .0.06 .1.4 .0.9 .2.2 .0.8 A. 1796 663058 3 3 .679 .559 .122 .529 .159 .187 .000 .430 .1.2 .2.2 .2.24 .446 .1.870 .0.06 .1.4 .0.9 .2.2 .0.8 A. 1798 663058 3 3 .679 .559 .059 .080 .255 .596 .000 .478 .2.25 .2.2	1785	662751	3	3		.606	.606	.116	.110	.151	.017	.430	.430		240	174	-0.903		0.9	1.0	0.4	1.0	A+	A+
1788 662435 3 3 691 .540 .540 .541 .136 .156 .157 .478 .478 .209 .196 .192 .9.563 .0.085 .0.4 .10 .0.5 .10 A. A. 1789 662437 3 3 691 .371 .236 .370 .181 .192 .020 .257 .066 .257 .127 .0602 .0299 .0.088 .54 .12 .577 .1.4 A. A. 1791 661526 3 3 .1370 .642 .112 .115 .109 .642 .011 .519 .230 .211 .286 .519 .1.160 .0.065 .4.5 .0.9 .4.4 .0.8 B. A. 1792 661526 3 3 .1370 .491 .041 .491 .429 .028 .012 .328 .215 .328 .136 .162 .0.398 .0.660 .5.7 .1.1 .4.8 .1.2 A. A. 1793 661502 3 3 .679 .844 .844 .072 .027 .054 .003 .159 .159 .013 .218 .073 .2.498 .0.112 .16 .1.1 .1.1 .1.1 .1.4 A. 1794 661522 3 3 .679 .795 .060 .050 .795 .090 .004 .4.15 .2.42 .305 .4.15 .1.34 .2.124 .1.02 .1.2 .0.9 .1.8 .0.8 A. 1795 663066 3 3 .679 .579 .1.20 .0.72 .575 .000 .4.04 .2.51 .2.12 .2.44 .4.66 .1.870 .0.096 .1.4 .0.9 .2.2 .0.8 A. 1796 663056 3 3 .679 .575 .1.52 .2.21 .5.55 .072 .000 .4.04 .2.224 .4.66 .3.80 .0.096 .1.4 .0.9 .2.2 .0.8 A. 1797 663057 3 3 .679 .575 .1.52 .2.21 .5.55 .072 .000 .4.04 .2.22 .4.46 .2.124 .0.102 .1.2 .0.9 .1.0 .0.6	1786	662752	3	3	691	.575	.142	.575	.182	.087	.014	.554	264	.554	254	217	-0.739	0.086	-3.3	0.9	-3.1	8.0	A-	B-
1789 662436 3 3 691 371 236 370 181 192 020 2.57 -0.66 2.57 -1.17 -0.62 0.299 0.088 5.4 1.2 5.7 1.4 A+	1787	662438	3	3	691	.439	.085	.149	.307	.438	.020	.470	177	274	139	.470	-0.054	0.086	-0.7	1.0	-0.4	1.0	A-	A-
1790 662437 3 3 691 .731 .111 .059 .731 .077 .022 .527 .264 .266 .527 .217 .1.601 .0.095 .2.3 .0.9 .3.0 .0.8 A+ A- A- A- A- A+	1788	662435	3	3	691	.540	.540	.151	.136	.156	.017	.478	.478	209	196	192	-0.563	0.085	-0.4	1.0	-0.5	1.0	A-	A-
1791 661526 3	1789	662436	3	3	691	.371	.236	.370	.181	.192	.020	.257	066	.257	127	062	0.299	0.088	5.4	1.2	5.7	1.4	A+	A+
1792 661508 3 3 1370 .491 .041 .491 .429 .028 .012 .328 .265 .328 .136 .162 .0398 0.060 5.7 1.1 4.8 1.2 A+ A+ 1793 661502 3 3 679 .844 .844 .072 .027 .054 .003 .159 .159 .013 .218 .073 .2.498 .0.112 .16 .11 3.1 1.4 A+ .129 .12	1790	662437	3	3	691	.731	.111	.059	.731	.077	.022	.527	264	266	.527	217	-1.601	0.095	-2.3	0.9	-3.0	0.8	A+	A-
1793 661502 3 3 679 8.44 8.44 0.72 0.027 0.054 0.03 0.054 0.03 0.159 0.159 0.13 0.218 0.073 0.24.98 0.112 1.6 1.1 3.1 1.4 A+ 1.795 0.159	1791	661526	3	3	1370	.642	.112	.125	.109	.642	.011	.519	230	211	286	.519	-1.160	0.062	-4.5	0.9	-4.4	0.8	B+	A-
1794 661522 3	1792	661508	3	3	1370	.491	.041	.491	.429	.028	.012	.328	265	.328	136	162	-0.398	0.060	5.7	1.1	4.8	1.2	A+	A+
1795 663060 3	1793	661502	3	3	679	.844	.844	.072	.027	.054	.003	.159	.159	013	218	073	-2.498	0.112	1.6	1.1	3.1	1.4	A+	
1796 663056 3	1794	661522	3	3	679	.795	.060	.050	.795	.090	.004	.415	242	305	.415	134	-2.124	0.102	-1.2	0.9	-1.8	8.0	A+	
1797 663057 3 3 679 .555 .152 .221 .555 .072 .000 .401 .200 .175 .401 .212 .0.791 .0.085 0.4 1.0 .0.3 1.0 A+ .1798 .063058 3 3 .679 .597 .069 .080 .255 .596 .000 .450 .278 .266 .183 .450 .0.993 .0.085 .0.9 1.0 .0.9 1.0 .0.9 1.0 B- .1799 .063059 3 3 .679 .866 .866 .366 .044 .049 .040 .001 .471 .471 .205 .293 .268 .2.697 .0.119 .2.0 .0.9 .3.5 0.6 A+ .1801 .062914 3 3 .679 .542 .133 .542 .169 .144 .012 .443 .110 .443 .302 .155 .0.727 .0.084 .0.8 1.0 .0.8 1.0 .0.8 1.0 A+ .1801 .062915 3 3 .679 .548 .548 .053 .271 .113 .015 .445 .445 .114 .2.23 .185 .0.755 .0.084 .0.9 1.0 .0.6 1.0 A+ .1803 .062912 3 3 .679 .556 .146 .526 .109 .200 .019 .456 .261 .456 .182 .130 .0.648 .0.84 .1.1	1795	663060	3	3	679	.757	.071	.100	.072	.757	.000	.446	251	212	244	.446	-1.870	0.096	-1.4	0.9	-2.2	8.0	A+	
1798 663058 3 3 679 .597 .069 .080 .255 .596 .000 .450 278 260 183 .450 0.93 0.085 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 1.0 -0.9 -3.5 0.6 A+ 1800 662914 3 3 679 .542 .133 .542 .165 .370 .131 .321 .013 .334 -110 .443 -1.10 .443 -302 -155 -0.727 0.084 -0.8 1.0 -0.8 1.0 -4 1801 662915 3 3 679 .548 .536 .201 .113 .015 .445 .414 .235 .206 .334 .0373 .009 .1.0 .0.6 1.0 A 1803 662915 3	1796	663056	3	3	679	.529	.122	.529	.159	.187	.003	.390	181	.390	214	148	-0.663	0.084	0.6	1.0	0.6	1.0	A-	
1799 663059 3	1797	663057	3	3	679	.555	.152	.221	.555	.072	.000	.401	200	175	.401	212	-0.791	0.085	0.4	1.0	-0.3	1.0	A+	
1800 662914 3 3 679 5.42 .133 .542 .169 .144 .012 .443 110 .443 302 155 -0.727 0.084 -0.8 1.0 -0.8 1.0 A+ 1801 662915 3 3 679 .321 .165 .370 .131 .321 .013 .334 141 035 206 .334 0.373 0.090 1.0 1.0 2.6 1.2 A- 1802 662913 3 3 679 .548 .548 .053 .271 .113 .015 .445 .445 .114 273 .185 -0.755 0.084 -0.9 1.0 .0.6 1.0 A 1803 662916 3 3 679 .526 .144 .052 .109 .000 .019 .456 .288 .288 .020 153 .1176 -0.436 .084 .1 1.0 A <td>1798</td> <td>663058</td> <td>3</td> <td>3</td> <td>679</td> <td>.597</td> <td>.069</td> <td>.080</td> <td>.255</td> <td>.596</td> <td>.000</td> <td>.450</td> <td>278</td> <td>260</td> <td>183</td> <td>.450</td> <td>-0.993</td> <td>0.085</td> <td>-0.9</td> <td>1.0</td> <td>-0.9</td> <td>1.0</td> <td>B-</td> <td></td>	1798	663058	3	3	679	.597	.069	.080	.255	.596	.000	.450	278	260	183	.450	-0.993	0.085	-0.9	1.0	-0.9	1.0	B-	
1801 662915 3 3 679 .321 .165 .370 .131 .321 .013 .334 141 035 206 .334 0.373 0.090 1.0 1.0 2.6 1.2 A- 1802 662913 3 3 679 .548 .548 .053 .271 .113 .015 .445 144 273 185 -0.755 0.084 -0.9 1.0 -0.6 1.0 A- 1803 662912 3 3 679 .526 .146 .526 .109 .200 .019 .456 182 130 -0.648 0.084 -1.3 1.0 -1.6 0.9 A+ 1804 662916 3 3 679 .563 .563 .216 .093 .103 .025 .462 .462 .244 236 107 -0.826 0.085 13 1.0 -1.0 1.0 A+ 1805 </td <td>1799</td> <td>663059</td> <td>3</td> <td>3</td> <td>679</td> <td>.866</td> <td>.866</td> <td>.044</td> <td>.049</td> <td>.040</td> <td>.001</td> <td>.471</td> <td>.471</td> <td>205</td> <td>293</td> <td>268</td> <td>-2.697</td> <td>0.119</td> <td>-2.0</td> <td>0.9</td> <td>-3.5</td> <td>0.6</td> <td>A+</td> <td></td>	1799	663059	3	3	679	.866	.866	.044	.049	.040	.001	.471	.471	205	293	268	-2.697	0.119	-2.0	0.9	-3.5	0.6	A+	
1802 662913 3 679 .548 .548 .053 .271 .113 .015 .445 .445 114 273 -1.85 -0.755 0.084 -0.9 1.0 -0.6 1.0 A- 1803 662912 3 3 679 .526 .146 .526 .109 .200 .019 .456 261 .456 182 130 -0.648 0.084 -1.3 1.0 -1.6 0.9 A+ 1804 662916 3 3 679 .482 .482 .222 .174 .099 .024 .288 .288 020 153 176 -0.436 0.084 4.1 1.1 4.2 1.2 A- 1805 662745 3 3 679 .546 .277 .072 .546 .078 .027 .487 262 208 .487 154 -0.748 0.084 -2.2 0.9 -1.4 0.9	1800	662914	3	3	679	.542	.133	.542	.169	.144	.012	.443	110	.443	302	155	-0.727	0.084	-0.8	1.0	-0.8	1.0	A+	
1803 662912 3 3 679 .526 .146 .526 .109 .200 .019 .456 261 .456 182 130 -0.648 0.084 -1.3 1.0 -1.6 0.9 A+ 1804 662916 3 3 679 .482 .482 .222 .174 .099 .024 .288 .288 020 153 176 -0.436 0.084 4.1 1.1 4.2 1.2 A- 1805 662745 3 3 679 .563 .563 .216 .093 .103 .025 .462 .462 .244 236 107 -0.826 0.085 -1.3 1.0 -1.0 1.0 A- 1806 662746 3 3 679 .546 .277 .072 .546 .078 .027 .570 .570 .271 233 182 -0.408 0.084 -2.2 0.99 -1.4 <t< td=""><td>1801</td><td>662915</td><td>3</td><td>3</td><td>679</td><td>.321</td><td>.165</td><td>.370</td><td>.131</td><td>.321</td><td>.013</td><td>.334</td><td>141</td><td>035</td><td>206</td><td>.334</td><td>0.373</td><td>0.090</td><td>1.0</td><td>1.0</td><td>2.6</td><td>1.2</td><td>A-</td><td></td></t<>	1801	662915	3	3	679	.321	.165	.370	.131	.321	.013	.334	141	035	206	.334	0.373	0.090	1.0	1.0	2.6	1.2	A-	
1804 662916 3 3 679 .482 .482 .222 .174 .099 .024 .288 .288 020 153 176 -0.436 0.084 4.1 1.1 4.2 1.2 A- 1805 662745 3 3 679 .563 .563 .216 .093 .103 .025 .462 .462 244 236 107 -0.826 0.085 -1.3 1.0 -1.0 1.0 A- 1806 662746 3 3 679 .546 .277 .072 .546 .078 .027 .487 262 208 .487 154 -0.748 0.084 -2.2 0.9 -1.4 0.9 A+ 1807 662750 3 3 679 .476 .476 .253 .143 .102 .027 .570 .570 271 233 182 -0.408 0.084 -5.4 0.8 -4.7 <	1802	662913	3	3	679	.548	.548	.053	.271	.113	.015	.445	.445	114	273	185	-0.755	0.084	-0.9	1.0	-0.6	1.0	A-	
1805 662745 3 3 679 .563 .216 .093 .103 .025 .462 .462 244 236 107 -0.826 0.085 -1.3 1.0 -1.0 1.0 A- 1806 662746 3 3 679 .546 .277 .072 .546 .078 .027 .487 262 208 .487 154 -0.748 0.084 -2.2 0.9 -1.4 0.9 A+ 1807 662750 3 3 679 .476 .476 .253 .143 .102 .027 .570 .570 271 233 182 -0.408 0.084 -5.4 0.8 -4.7 0.8 A+ 1808 662749 3 3 679 .695 .090 .695 .081 .108 .027 .508 172 .508 209 314 -1.506 0.090 -3.0 0.9 -2.7 0.8	1803	662912	3	3	679	.526	.146	.526	.109	.200	.019	.456	261	.456	182	130	-0.648	0.084	-1.3	1.0	-1.6	0.9	A+	
1806 662746 3 3 679 .546 .277 .072 .546 .078 .027 .487 262 208 .487 154 -0.748 0.084 -2.2 0.9 -1.4 0.9 A+ 1807 662750 3 3 679 .476 .476 .253 .143 .102 .027 .570 .570 271 233 182 -0.408 0.084 -5.4 0.8 -4.7 0.8 A+ 1808 662749 3 3 679 .695 .090 .695 .081 .108 .027 .508 172 .508 209 314 -1.506 0.090 -3.0 0.9 -2.7 0.8 A+ 1809 662748 3 3 679 .196 .196 .315 .031 .076 141 .046 .076 .069 1.151 0.104 3.6 1.2 6.6 1.8 A- <	1804	662916	3	3	679	.482	.482	.222	.174	.099	.024	.288	.288	020	153	176	-0.436	0.084	4.1	1.1	4.2	1.2	A-	
1807 662750 3 3 679 .476 .476 .253 .143 .102 .027 .570 .570 271 233 182 -0.408 0.084 -5.4 0.8 -4.7 0.8 A+ 1808 662749 3 3 679 .695 .090 .695 .081 .108 .027 .508 172 .508 209 314 -1.506 0.090 -3.0 0.9 -2.7 0.8 A+ 1809 662748 3 3 679 .437 .215 .178 .143 .437 .027 .386 118 205 099 .386 -0.222 0.085 1.1 1.0 1.6 1.1 A- 1810 662747 3 3 679 .196 .262 .196 .315 .031 .076 141 .046 .076 .069 1.151 0.104 3.6 1.2 6.6 1.8 A-<	1805	662745	3	3	679	.563	.563	.216	.093	.103	.025	.462	.462	244	236	107	-0.826	0.085	-1.3	1.0	-1.0	1.0	A-	
1808 662749 3 3 679 .695 .090 .695 .081 .108 .027 .508 172 .508 209 314 -1.506 0.090 -3.0 0.9 -2.7 0.8 A+ 1809 662748 3 3 679 .437 .215 .178 .143 .437 .027 .386 118 205 099 .386 -0.222 0.085 1.1 1.0 1.6 1.1 A- 1810 662747 3 3 679 .196 .196 .262 .196 .315 .031 .076 141 .046 .076 .069 1.151 0.104 3.6 1.2 6.6 1.8 A- 1811 661523 3 3 691 .659 .084 .221 .658 .036 .000 .492 338 255 .492 182 -1.348 0.089 -1.9 0.9 -1.5 0.	1806	662746	3	3	679	.546	.277	.072	.546	.078	.027	.487	262	208	.487	154	-0.748	0.084	-2.2	0.9	-1.4	0.9	A+	
1809 662748 3 3 679 .437 .215 .178 .143 .437 .027 .386 118 205 099 .386 -0.222 0.085 1.1 1.0 1.6 1.1 A- 1810 662747 3 3 679 .196 .196 .262 .196 .315 .031 .076 141 .046 .076 .069 1.151 0.104 3.6 1.2 6.6 1.8 A- 1811 661523 3 3 691 .659 .084 .221 .658 .036 .000 .492 338 255 .492 182 -1.348 0.089 -1.9 0.9 -1.5 0.9 B- A- 1812 661524 3 3 691 .933 .032 .933 .022 .013 .000 .368 199 137 -3.653 0.160 -1.1 0.9 -2.4 0.5 A+ C- 1813 661525 3 3 691 .685 .051 <td>1807</td> <td>662750</td> <td>3</td> <td>3</td> <td>679</td> <td>.476</td> <td>.476</td> <td>.253</td> <td>.143</td> <td>.102</td> <td>.027</td> <td>.570</td> <td>.570</td> <td>271</td> <td>233</td> <td>182</td> <td>-0.408</td> <td>0.084</td> <td>-5.4</td> <td>0.8</td> <td>-4.7</td> <td>0.8</td> <td>A+</td> <td></td>	1807	662750	3	3	679	.476	.476	.253	.143	.102	.027	.570	.570	271	233	182	-0.408	0.084	-5.4	0.8	-4.7	0.8	A+	
1810 662747 3 3 679 .196 .196 .262 .196 .315 .031 .076 141 .046 .076 .069 1.151 0.104 3.6 1.2 6.6 1.8 A- 1811 661523 3 3 691 .659 .084 .221 .658 .036 .000 .492 338 255 .492 182 -1.348 0.089 -1.9 0.9 -1.5 0.9 B- A- 1812 661524 3 3 691 .933 .032 .933 .022 .013 .000 .368 270 .368 199 137 -3.653 0.160 -1.1 0.9 -2.4 0.5 A+ C- 1813 661525 3 3 691 .902 .902 .035 .043 .016 .004 .392 .392 264 186 196 -3.183 0.135 -1.1 0.9 -1.5 0.7 A+ A- 1814 661503 3 3 </td <td>1808</td> <td>662749</td> <td>3</td> <td>3</td> <td>679</td> <td>.695</td> <td>.090</td> <td>.695</td> <td>.081</td> <td>.108</td> <td>.027</td> <td>.508</td> <td>172</td> <td>.508</td> <td>209</td> <td>314</td> <td>-1.506</td> <td>0.090</td> <td>-3.0</td> <td>0.9</td> <td>-2.7</td> <td>0.8</td> <td>A+</td> <td></td>	1808	662749	3	3	679	.695	.090	.695	.081	.108	.027	.508	172	.508	209	314	-1.506	0.090	-3.0	0.9	-2.7	0.8	A+	
1811 661523 3 3 691 .659 .084 .221 .658 .036 .000 .492 338 255 .492 182 -1.348 0.089 -1.9 0.9 -1.5 0.9 B- A- 1812 661524 3 3 691 .933 .032 .933 .022 .013 .000 .368 270 .368 199 137 -3.653 0.160 -1.1 0.9 -2.4 0.5 A+ C- 1813 661525 3 3 691 .902 .902 .035 .043 .016 .004 .392 .392 264 186 196 -3.183 0.135 -1.1 0.9 -1.5 0.7 A+ A- 1814 661503 3 3 691 .685 .051 .161 .685 .103 .001 .552 212 297 .552 324 -1.493 0.091 -3.5 0.9 -3.9 0.7 B+ A-	1809	662748	3	3	679	.437	.215	.178	.143	.437	.027	.386	118	205	099	.386	-0.222	0.085	1.1	1.0	1.6	1.1	A-	
1812 661524 3 3 691 .933 .032 .933 .022 .013 .000 .368 270 .368 199 137 -3.653 0.160 -1.1 0.9 -2.4 0.5 A+ C- 1813 661525 3 3 691 .902 .902 .035 .043 .016 .004 .392 .392 264 186 196 -3.183 0.135 -1.1 0.9 -1.5 0.7 A+ A- 1814 661503 3 3 691 .685 .051 .161 .685 .103 .001 .552 212 297 .552 324 -1.493 0.091 -3.5 0.9 -3.9 0.7 B+ A-	1810	662747	3	3	679	.196	.196	.262	.196	.315	.031	.076	141	.046	.076	.069	1.151	0.104	3.6	1.2	6.6	1.8	A-	
1813 661525 3 3 691 .902 .902 .035 .043 .016 .004 .392 .392 264 186 196 -3.183 0.135 -1.1 0.9 -1.5 0.7 A+ A- 1814 661503 3 3 691 .685 .051 .161 .685 .103 .001 .552 212 297 .552 324 -1.493 0.091 -3.5 0.9 -3.9 0.7 B+ A-	1811	661523	3	3	691	.659	.084	.221	.658	.036	.000	.492	338	255	.492	182	-1.348	0.089	-1.9	0.9	-1.5	0.9	B-	A-
1814 661503 3 3 691 .685 .051 .161 .685 .103 .001 .552212297 .552324 -1.493 0.091 -3.5 0.9 -3.9 0.7 B+ A-	1812	661524	3	3	691	.933	.032	.933	.022	.013	.000	.368	270	.368	199	137	-3.653	0.160	-1.1	0.9	-2.4	0.5	A+	C-
1814 661503 3 3 691 .685 .051 .161 .685 .103 .001 .552212297 .552324 -1.493 0.091 -3.5 0.9 -3.9 0.7 B+ A-	1813	661525	3	3	691	.902	.902	.035	.043	.016	.004	.392	.392	264	186	196	-3.183	0.135	-1.1	0.9	-1.5	0.7	A+	A-
	1814	661503	3	3	691		.051			.103	.001	.552	212	297		324			-3.5	0.9	-3.9	0.7	B+	-
	1815	662981		3	691	.672	.097	.048	.182	.671	.001	.477	304	204	237	.477	-1.420	0.090	-1.5	0.9	-1.4	0.9	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT Crede	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1816	662982	Grade 3	Grade 3	691	.329	.156	.318	.329	.191	.006	.259	108	054	.259	140	0.360	0.090	3.9	1.2	out 5.5	1.4	/F A-	/B A+
1817	662983	3	3	691	.514	.185	.155	.514	.145	.001	.365	182	139	.365	166	-0.600	0.085	2.8	1.1	2.5	1.1	A-	A+
1818	662985	3	3	691	.417	.263	.187	.129	.417	.004	.444	119	217	222	.444	-0.111	0.086	-0.4	1.0	0.1	1.0	A+	A-
1819	662984	3	3	691	.399	.201	.399	.321	.074	.004	.392	188	.392	133	197	-0.021	0.087	1.5	1.1	1.7	1.1	A+	A-
1820	662763	3	3	691	.375	.200	.276	.375	.137	.012	.437	249	042	.437	228	0.108	0.088	-0.4	1.0	0.2	1.0	A+	A+
1821	662762	3	3	691	.441	.185	.201	.155	.441	.017	.456	149	205	194	.456	-0.236	0.086	-0.7	1.0	0.2	1.0	A+	B+
1822	662766	3	3	691	.708	.088	.041	.149	.708	.014	.526	272	219	285	.526	-1.627	0.092	-2.8	0.9	-2.8	0.8	A-	A+
1823	662765	3	3	691	.401	.182	.401	.217	.179	.020	.303	114	.303	165	046	-0.028	0.087	3.8	1.1	4.2	1.3	A+	B+
1824	662764	3	3	691	.538	.538	.171	.148	.122	.022	.521	.521	284	203	179	-0.723	0.085	-2.6	0.9	-2.8	0.9	A+	A+
1825	662446	3	3	691	.269	.421	.269	.181	.101	.027	.265	.038	.265	196	116	0.709	0.095	2.7	1.1	3.8	1.3	A-	A+
1826	662445	3	3	691	.344	.214	.344	.307	.107	.027	.181	204	.181	.152	134	0.272	0.089	6.5	1.3	7.5	1.6	A-	A-
1827	662444	3	3	691	.447	.269	.168	.447	.081	.035	.383	140	146	.383	162	-0.266	0.086	1.9	1.1	3.1	1.2	A-	A-
1828	662443	3	3	691	.505	.139	.139	.185	.505	.032	.504	176	199	243	.504	-0.556	0.085	-2.2	0.9	-0.6	1.0	A-	A-
1829	662448	3	3	691	.207	.253	.221	.284	.207	.035	.092	157	.056	.084	.092	1.124	0.102	4.8	1.3	6.1	1.8	A+	A+
1830	662447	3	3	691	.566	.566	.146	.149	.104	.035	.551	.551	273	226	224	-0.862	0.086	-3.6	0.9	-3.5	8.0	A-	A-
1831	682524	4	4	629	.715	.202	.041	.715	.041	.000	.285	156	187	.285	145	-1.014	0.100	4.6	1.2	2.8	1.3	A+	A-
1832	686493	4	4	629	.876	.033	.041	.048	.876	.002	.489	230	280	301	.489	-2.282	0.130	-2.0	0.8	-3.0	0.5	A+	B-
1833	686497	4	4	629	.795	.060	.795	.040	.103	.002	.507	260	.507	249	300	-1.561	0.110	-1.7	0.9	-2.1	0.7	A+	A-
1834	686494	4	4	629	.801	.092	.075	.032	.801	.000	.477	318	203	255	.477	-1.610	0.111	-1.4	0.9	-1.1	0.8	A+	A-
1835	686599	4	4	629	.188	.353	.188	.134	.321	.005	.119	038	.119	125	.049	2.147	0.115	3.9	1.3	8.2	2.7	A-	A+
1836	686496	4	4	629	.522	.335	.056	.521	.087	.000	.529	248	246	.529	321	0.095	0.093	-1.0	1.0	-0.4	1.0	A-	A-
1837	682530	4	4	629	.615	.024	.121	.615	.237	.003	.511	157	365	.511	234	-0.420	0.095	-0.3	1.0	-0.5	1.0	A+	A+
1838	682537	4	4	629	.785	.081	.785	.054	.075	.005	.574	296	.574	294	302	-1.490	0.108	-3.6	0.8	-3.1	0.6	A-	A+
1839	687450	4	4	629	.795	.072	.070	.795	.051	.013	.500	196	280	.500	272	-1.561	0.110	-1.9	0.9	-1.6	0.8	A-	B-
1840	687444	4	4	629	.518	.049	.518	.145	.275	.013	.510	181	.510	295	208	0.112	0.093	-0.1	1.0	-0.1	1.0	A+	A+
1841	687443	4	4	629	.483	.059	.382	.062	.483	.014	.481	285	182	250	.481	0.302	0.093	0.7	1.0	1.5	1.1	A+	A+
1842	687448	4	4	629	.688	.688	.111	.086	.102	.013	.616	.616	281	260	338	-0.847	0.098	-4.3	0.8	-3.0	0.7	A-	A-
1843	687445	4	4	629	.421	.151	.213	.196	.421	.019	.475	214	077	255	.475	0.641	0.094	0.7	1.0	0.5	1.0	A+	A-
1844	687447	4	4	629	.545	.215	.545	.127	.095	.017	.598	215	.598	247	341	-0.034	0.093	-3.3	0.9	-2.6	8.0	A+	A-
1845	682543	4	4	629	.800	.070	.079	.800	.035	.016	.545	282	255	.545	279	-1.598	0.111	-3.0	0.8	-2.4	0.7	A-	A+
1846	686551	4	4	629	.606	.183	.606	.103	.089	.019	.581	345	.581	222	202	-0.367	0.094	-2.7	0.9	-2.7	0.8	A-	A-
1847	686548	4	4	629	.579	.186	.126	.092	.579	.017	.577	297	191	279	.577	-0.217	0.094	-2.5	0.9	-2.6	0.8	A+	A-
1848	686547	4	4	629	.599	.095	.599	.073	.213	.019	.526	269	.526	196	250	-0.331	0.094	-0.8	1.0	-0.8	0.9	A-	A-
1849	686550	4	4	629	.542	.137	.542	.130	.172	.019	.473	256	.473	344	017	-0.017	0.093	1.2	1.1	0.4	1.0	A+	A+
1850	686549	4	4	629	.552	.552	.116	.116	.197	.019	.418	.418	123	227	175	-0.069	0.093	2.9	1.1	2.5	1.2	A+	A+

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1051	C02F10	Grade	Grade	622	C1.4	050		220	100		25.0	200	25.0			0.116	0.003	in	in	out	out	/F	/B
1851 1852	682519	4	4	622	.614	.050	.614	.228	.106	.002	.356	206	.356 319	219	119	-0.116	0.093 0.121	2.9	1.1	1.9	1.1	Α-	A-
1853	686435 686432	4	4	622 622	.847 .667	.847	.071	.236	.045	.000	.464 .450	.464 226	235	210 268	220 .450	-1.648 -0.406	0.121	-1.2 0.0	0.9 1.0	-2.0 -0.2	0.7	B+	A- A-
1854	686430	4	4		.804	.058	.804				.450					-0.406	0.095	-1.7	0.9	-0.2	1.0	A+	A- A-
1855	686434	4	4	622 622	.804	.061	.804	.103	.032	.000	.499	275 074	.499 241	324 045	192 .245	0.631	0.111	6.5	1.3	6.6	0.8 1.4	A+ A+	A- A-
1856	686431	4	4	622	.521	.237	.130	.521	.069	.000	.441	205	241	.441	287	0.368	0.091	0.3	1.0	0.6	1.0	A+	A- A+
1857	682525	-	4	622	.752		.752	.082					.435			-0.923	0.103		1.0				
1858	682532	4	4	622	.752	.137	.752	.082	.029	.000	.435 .442	272 286	.435	215 234	211 219	-0.923	0.103	-0.2 -1.4	0.9	-0.3 -1.2	1.0 0.7	A+ B-	A- A-
1859	673190	4	4	622	.826		.826	.027	.023					232	219		0.132		1.0	-0.4	_		
1860		-	4	622	.727	.109		.727		.005	.417	225	.417			-1.466 -0.758	0.116	-0.5	0.9		0.9	Α-	A+ B-
1861	686413 686411	4	4	622	.883	.056	.116		.096	.005	.545 .507	248 .507	303 272	.545 289	278	-0.758	0.100	-2.5	0.9	-3.2 -2.5	0.7	A+ ^	В- А+
1862	686453	4	4	622	.744		.744	.040		.003	.515	239	.515	353	267 219	-2.003	0.134	-2.0	0.8			A-	A+ A-
		4	4	_		.043		.084	.125 .182		.375	.375	218	272			0.102	-1.9		-1.9	0.8	A-	
1863 1864	686412 682538	4	4	622 622	.613 .547	.613	.151	.051	.182	.003	.589	285	218	272	101 .589	-0.107 0.237	0.093	2.4 -4.5	1.1 0.8	1.9 -4.3	0.8	A-	A- A+
		4	4	_														_				A-	
1865	686418	4	4	622	.539	.106	.109	.539	.243	.003	.488	144	388	.488	168	0.278	0.091	-1.4	1.0	-0.6	1.0	Α-	Α-
1866	686417	4	4	622	.502	.132	.502	.138	.220	.008	.428	201	.428	349	043	0.467	0.090	0.7	1.0	0.7	1.0	A+	Α-
1867	686486	•		622	.526	.137	.241	.088	.526	.008	.495	115	288	264	.495	0.344	0.091	-1.7	0.9	-1.7	0.9	Α-	Α-
1868	686531	4	4	622	.238	.238	.109	.518	.127	.008	.275	.275	118	079	104	1.939	0.104	1.9	1.1	3.4	1.4	Α-	A-
1869	686415	4	4	622	.510	.510	.220	.138	.124	.008	.242	.242	128	184	.006	0.426	0.091	6.9	1.3	6.3	1.4	A+	Α-
1870	686416	4	4	622	.283	.127	.185	.397	.283	.008	.247	138	121	020	.247	1.649	0.099	2.8	1.1	5.2	1.5	A+	A+
1871	682520	•	4	625	.821	.821	.114	.035	.030	.000	.424	.424	237	262	229	-1.630	0.113	-0.6	1.0	-1.1	0.9	Α-	\vdash
1872	685404	4	4	625	.734	.734	.019	.077	.170	.000	.435	.435	242	274	229	-1.023	0.100	-0.5	1.0	0.3	1.0	A+	$\vdash \vdash \vdash$
1873	685400	4	4	625	.725	.038	.090	.725	.147	.000	.407	204	204	.407	238	-0.964	0.099	0.6	1.0	-0.2	1.0	A+	$\vdash \vdash \vdash$
1874	685402	4		625	.706	.094	.091	.109	.706	.000	.434	212	259	197	.434	-0.848	0.097	0.0	1.0	-1.0	0.9	A+	$\vdash \vdash \vdash$
1875	685401	4	4	625	.682	.163	.109	.682	.045	.002	.447	262	202	.447	237	-0.709	0.095	-0.3	1.0	-0.5	1.0	B+	$\vdash \vdash \vdash$
1876	685403	4	4	625	.416	.416	.141	.146	.298	.000	.236	.236	136	119	059	0.660	0.090	4.9	1.2	6.3	1.4	Α-	$\vdash \vdash$
1877	682526	4	·	625	.902	.032	.030	.902	.035	.000	.499	318	303	.499	218	-2.443	0.143	-2.1	0.8	-2.5	0.6	A+	$\vdash \vdash$
1878	685921	4	4	625	.589	.118	.165	.120	.589	.008	.511	334	195	171	.511	-0.210	0.091	-2.2	0.9	-1.5	0.9	A-	$\vdash \vdash \vdash$
1879	685922	4	4	625	.709	.709	.085	.046	.152	.008	.460	.460	352	150	177	-0.867	0.097	-0.9	1.0	-1.0	0.9	Α-	$\vdash \vdash \vdash$
1880	673227	4	4	625	.459	.326	.459	.096	.110	.008	.475	161	.475	324	161	0.442	0.090	-1.5	1.0	-1.2	0.9	A+	$\vdash \vdash \vdash$
1881	685919	4	4	625	.344	.210	.344	.275	.160	.011	.323	085	.323	125	117	1.038	0.093	1.7	1.1	3.9	1.3	A-	
1882	685920	4	4	625	.622	.134	.141	.622	.093	.010	.561	310	211	.561	257	-0.385	0.092	-3.6	0.9	-3.9	0.8	B-	
1883	682533	4	4	625	.638	.638	.125	.054	.173	.010	.453	.453	179	263	214	-0.471	0.093	-0.4	1.0	-0.5	1.0	A+	\vdash
1884	682539	4	4	625	.926	.021	.926	.018	.022	.013	.450	216	.450	217	260	-2.788	0.161	-1.4	0.8	-2.8	0.5	A-	\vdash
1885	686489	4	4	625	.622	.192	.622	.088	.083	.014	.560	247	.560	283	274	-0.385	0.092	-3.5	0.9	-3.7	0.8	A+	ш

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1000	606100	Grade	Grade		200						212					1 0 00		in	in	out	out	/F	/B
1886	686492	4	4	625	.286	.226	.245	.286	.227	.016	.210	075	116	.210	.024	1.363	0.097	4.4	1.2	4.0	1.4	Α-	\vdash
1887	686574	4	4	625	.515	.216	.058	.195	.515	.016	.305	017	184	200	.305	0.162	0.089	4.3	1.2	4.1	1.2	Α-	\vdash
1888	686491	4	4	625	.536	.170	.072	.536	.206	.016	.437	263	233	.437	088	0.058	0.090	0.0	1.0	0.1	1.0	A-	—
1889	686573	4	4	625	.478	.166	.218	.478	.125	.013	.506	150	220	.506	259	0.346	0.089	-2.5	0.9	-2.3	0.9	A+	—
1890	686490	4	4	625	.395	.395	.221	.296	.072	.016	.116	.116	112	.174	258	0.767	0.091	8.8	1.4	8.2	1.6	A-	<u> </u>
1891	682521	4	4	630	.722	.048	.106	.124	.722	.000	.366	234	179	178	.366	-0.932	0.097	0.6	1.0	0.4	1.0	A+	B-
1892	682518	4	4	630	.779	.130	.779	.073	.017	.000	.525	360	.525	286	169	-1.294	0.104	-2.9	0.9	-3.5	0.7	A+	B-
1893	685406	4	4	630	.773	.103	.044	.076	.773	.003	.454	183	272	293	.454	-1.251	0.103	-1.5	0.9	-1.2	0.9	A+	A+
1894	685405	4	4	630	.570	.570	.054	.051	.322	.003	.459	.459	276	135	284	-0.117	0.089	-1.1	1.0	-0.4	1.0	A+	A+
1895	685409	4	4	630	.579	.184	.043	.579	.190	.003	.392	271	180	.392	126	-0.165	0.089	1.0	1.0	0.5	1.0	A+	A-
1896	685407	4	4	630	.333	.198	.333	.184	.281	.003	.312	160	.312	052	140	1.073	0.093	2.0	1.1	2.6	1.2	A-	A+
1897	685408	4	4	630	.554	.179	.160	.102	.554	.005	.527	332	119	281	.527	-0.038	0.089	-3.3	0.9	-3.2	0.9	A+	A+
1898	682527	4	4	630	.695	.695	.041	.176	.086	.002	.297	.297	185	085	228	-0.776	0.095	2.4	1.1	2.0	1.2	A+	A-
1899	682534	4	4	630	.967	.019	.967	.006	.006	.002	.307	200	.307	136	167	-3.608	0.227	-0.5	0.9	-2.3	0.4	B+	A-
1900	673234	4	4	630	.491	.490	.221	.075	.208	.006	.227	.227	308	204	.190	0.274	0.088	6.1	1.2	7.3	1.4	A-	A-
1901	673236	4	4	630	.779	.097	.038	.779	.081	.005	.312	041	294	.312	190	-1.294	0.104	0.7	1.0	1.3	1.1	B+	A-
1902	673235	4	4	630	.605	.168	.070	.605	.151	.006	.478	159	268	.478	265	-0.293	0.090	-1.7	0.9	-1.4	0.9	A-	A-
1903	673232	4	4	630	.686	.686	.073	.114	.119	.008	.460	.460	254	236	185	-0.722	0.094	-1.4	0.9	-1.5	0.9	A+	A-
1904	686553	4	4	630	.644	.095	.217	.035	.644	.008	.481	317	231	161	.481	-0.499	0.092	-1.9	0.9	-1.6	0.9	A-	A-
1905	682540	4	4	630	.716	.716	.087	.075	.113	.010	.346	.346	188	123	178	-0.895	0.096	1.3	1.1	0.5	1.0	A-	A+
1906	686557	4	4	630	.632	.632	.178	.078	.095	.017	.407	.407	216	169	171	-0.432	0.091	0.3	1.0	0.3	1.0	A+	A-
1907	686561	4	4	630	.479	.151	.210	.479	.143	.017	.403	111	226	.403	132	0.328	0.088	0.4	1.0	1.4	1.1	A-	A-
1908	686560	4	4	630	.532	.181	.532	.130	.140	.017	.429	209	.429	204	126	0.071	0.088	-0.2	1.0	-0.5	1.0	A+	A+
1909	686558	4	4	630	.335	.229	.335	.224	.194	.019	.344	086	.344	119	134	1.065	0.093	1.1	1.0	2.2	1.2	A-	A-
1910	686559	4	4	630	.376	.249	.162	.192	.376	.021	.471	173	194	150	.471	0.846	0.091	-2.2	0.9	-0.9	1.0	A+	A+
1911	682522	4	4	641	.902	.041	.017	.902	.041	.000	.300	216	135	.300	148	-2.215	0.141	-0.1	1.0	0.0	1.0	B+	A-
1912	685918	4	4	641	.805	.023	.805	.092	.080	.000	.443	192	.443	254	269	-1.291	0.109	-0.9	1.0	-1.2	0.9	B+	A+
1913	685917	4	4	641	.389	.388	.119	.189	.303	.002	.316	.316	333	137	.019	1.030	0.091	3.7	1.1	3.1	1.2	A+	A-
1914	685913	4	4	641	.651	.651	.250	.056	.042	.002	.389	.389	231	210	196	-0.321	0.092	1.5	1.1	1.3	1.1	A+	A+
1915	685916	4	4	641	.658	.658	.139	.147	.056	.000	.408	.408	207	172	265	-0.364	0.093	0.9	1.0	0.5	1.0	A-	A-
1916	685914	4	4	641	.342	.289	.254	.342	.112	.003	.244	048	125	.244	118	1.283	0.093	4.2	1.2	5.0	1.4	A-	A+
1917	685915	4	4	641	.711	.090	.119	.080	.711	.000	.499	244	287	234	.499	-0.668	0.097	-1.9	0.9	-1.5	0.9	A+	A+
1918	682528	4	4	641	.613	.042	.114	.613	.231	.000	.439	281	233	.439	198	-0.120	0.091	0.4	1.0	-0.3	1.0	A-	A+
1919	673243	4	4	641	.652	.042	.204	.100	.652	.002	.634	268	401	280	.634	-0.329	0.093	-5.8	0.8	-5.2	0.7	A-	A+
1920	686410	4	4	641	.626	.626	.103	.114	.151	.006	.448	.448	275	270	109	-0.186	0.091	0.0	1.0	-0.4	1.0	A-	A-
1320	000410	· ·	т .	5-1	.520	.020	.100		.131	.000	0	0	, 5	,0	.103	0.100	0.001	5.0	1.0	٥.٦	1.0	- ' '	,,

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	טו	Grade	Grade	14	rvai	F(A)	F(D)	r(c)	F(D)	F (-)	FtDIS	FI(A)	FI(D)	r i(c)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
1921	686409	4	4	641	.376	.376	.243	.109	.267	.005	.279	.279	159	240	.031	1.096	0.091	4.6	1.2	3.9	1.3	A-	A-
1922	686442	4	4	641	.304	.069	.491	.128	.304	.008	.289	285	.045	228	.289	1.495	0.095	2.8	1.1	2.9	1.3	A-	A-
1923	686408	4	4	641	.481	.223	.480	.162	.123	.011	.419	188	.419	233	099	0.558	0.089	0.8	1.0	1.5	1.1	A+	A+
1924	682535	4	4	641	.819	.070	.070	.819	.031	.009	.515	327	342	.515	120	-1.400	0.112	-2.3	0.9	-3.1	0.7	B+	B-
1925	682541	4	4	641	.680	.089	.045	.173	.680	.012	.499	303	228	234	.499	-0.486	0.094	-1.8	0.9	-1.5	0.9	A+	C-
1926	686473	4	4	641	.282	.282	.204	.354	.147	.012	.358	.358	127	108	132	1.624	0.097	0.7	1.0	1.6	1.1	A+	A-
1927	686533	4	4	641	.435	.134	.122	.292	.435	.017	.366	217	253	014	.366	0.787	0.089	2.5	1.1	2.4	1.1	A+	A-
1928	686477	4	4	641	.495	.095	.175	.495	.223	.012	.400	222	260	.400	060	0.487	0.089	1.4	1.1	2.6	1.1	A-	A+
1929	686475	4	4	641	.506	.172	.142	.168	.505	.012	.507	120	274	272	.507	0.432	0.089	-2.1	0.9	-1.7	0.9	A+	A+
1930	686474	4	4	641	.529	.126	.179	.150	.529	.016	.534	209	208	299	.534	0.313	0.089	-2.9	0.9	-1.9	0.9	A+	A+
1931	682523	4	4	627	.759	.759	.048	.080	.113	.000	.490	.490	204	193	360	-1.237	0.102	-1.7	0.9	-2.5	8.0	A-	C-
1932	671734	4	4	627	.557	.077	.557	.309	.057	.000	.438	276	.438	308	007	-0.111	0.089	0.1	1.0	-0.2	1.0	A+	A-
1933	671735	4	4	627	.507	.158	.293	.507	.040	.002	.502	296	236	.502	167	0.136	0.089	-2.2	0.9	-2.2	0.9	A+	B+
1934	686421	4	4	627	.494	.059	.290	.155	.494	.002	.384	218	087	270	.384	0.199	0.089	1.8	1.1	1.4	1.1	A+	A+
1935	686422	4	4	627	.494	.494	.137	.238	.131	.000	.456	.456	283	180	161	0.199	0.089	-0.6	1.0	-0.2	1.0	A+	A-
1936	686424	4	4	627	.793	.793	.064	.081	.062	.000	.505	.505	287	246	279	-1.466	0.107	-2.4	0.9	-1.6	0.8	A+	A-
1937	686423	4	4	627	.501	.207	.501	.113	.177	.002	.360	184	.360	231	076	0.167	0.089	2.5	1.1	1.9	1.1	A-	A+
1938	682529	4	4	627	.700	.700	.123	.121	.054	.002	.357	.357	269	049	248	-0.874	0.096	1.4	1.1	1.2	1.1	A-	A+
1939	686446	4	4	627	.657	.166	.657	.120	.054	.003	.424	250	.424	189	184	-0.633	0.093	0.3	1.0	-0.2	1.0	A+	A+
1940	686452	4	4	627	.327	.056	.233	.327	.380	.005	.227	174	146	.227	.007	1.060	0.094	4.1	1.2	5.0	1.4	A-	A+
1941	673239	4	4	627	.252	.370	.220	.153	.252	.005	.261	.055	272	055	.261	1.501	0.100	2.0	1.1	3.4	1.3	A+	A-
1942	686445	4	4	627	.442	.442	.349	.054	.152	.003	.340	.340	016	257	273	0.461	0.089	2.7	1.1	2.1	1.1	A-	A+
1943	686444	4	4	627	.252	.204	.343	.193	.252	.008	.305	105	035	163	.305	1.501	0.100	1.7	1.1	1.0	1.1	A-	B+
1944	682536	4	4	627	.923	.032	.923	.018	.019	.008	.352	176	.352	207	197	-2.774	0.157	-0.5	0.9	-2.0	0.6	A-	A-
1945	682542	4	4	627	.700	.043	.053	.195	.700	.010	.478	240	214	283	.478	-0.874	0.096	-1.4	0.9	-1.5	0.9	A-	A-
1946	685411	4	4	627	.333	.343	.333	.228	.085	.011	.180	.020	.180	091	164	1.025	0.093	5.2	1.2	6.4	1.5	A-	A-
1947	686180	4	4	627	.491	.204	.491	.112	.182	.011	.461	179	.461	159	253	0.215	0.089	-0.9	1.0	-0.6	1.0	B-	B-
1948	685410	4	4	627	.546	.172	.128	.144	.545	.011	.479	173	232	243	.479	-0.055	0.089	-1.3	1.0	-1.2	0.9	A +	A+
1949	686181	4	4	627	.533	.203	.155	.533	.096	.014	.447	135	216	.447	271	0.009	0.089	-0.3	1.0	-0.3	1.0	B+	A+
1950	685412	4	4	627	.608	.070	.069	.239	.608	.014	.562	215	260	336	.562	-0.371	0.091	-3.9	0.9	-3.6	0.8	A+	A-
1951	661514	4	4	640	.839	.134	.839	.009	.017	.000	.462	399	.462	138	157	-1.867	0.116	-1.8	0.9	-3.1	0.7	A-	
1952	661516	4	4	640	.852	.852	.017	.091	.041	.000	.377	.377	146	209	279	-1.977	0.119	-0.7	0.9	-1.3	0.8	A-	
1953	661517	4	4	640	.942	.016	.025	.016	.942	.002	.310	164	192	179	.310	-3.141	0.177	-0.5	0.9	-1.9	0.6	A+	
1954	662801	4	4	640	.617	.617	.097	.094	.192	.000	.488	.488	235	287	213	-0.470	0.090	-2.0	0.9	-1.8	0.9	A+	
1955	662805	4	4	640	.683	.145	.059	.683	.113	.000	.537	230	290	.537	317	-0.821	0.093	-3.7	0.9	-3.2	0.8	A+	

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
	טו	Grade	Grade	14	rvai	F(A)	F(D)	r(c)	F(D)	F (-)	FtDIS	FI(A)	F1(D)	r I(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
1956	662803	4	4	640	.728	.130	.067	.728	.070	.005	.504	298	263	.504	213	-1.084	0.097	-2.7	0.9	-2.4	0.8	A+	
1957	662804	4	4	640	.161	.161	.114	.641	.083	.002	.082	.082	141	.133	167	2.089	0.115	2.6	1.2	5.3	1.9	A-	
1958	662802	4	4	640	.372	.250	.248	.128	.372	.002	.418	101	179	232	.418	0.757	0.090	-0.1	1.0	0.1	1.0	A+	
1959	662794	4	4	640	.445	.339	.445	.063	.145	.008	.375	089	.375	248	211	0.385	0.088	1.6	1.1	1.8	1.1	A-	
1960	662792	4	4	640	.206	.506	.136	.142	.206	.009	.385	004	193	217	.385	1.739	0.105	-0.9	1.0	0.9	1.1	A-	
1961	662795	4	4	640	.539	.539	.170	.173	.105	.013	.471	.471	132	215	287	-0.077	0.088	-1.6	1.0	-1.4	0.9	A-	
1962	662797	4	4	640	.323	.289	.209	.323	.166	.013	.307	024	147	.307	158	1.016	0.093	2.2	1.1	5.1	1.4	A+	
1963	662793	4	4	640	.364	.364	.319	.214	.088	.016	.299	.299	.042	227	200	0.798	0.091	3.3	1.1	2.6	1.2	A-	
1964	662796	4	4	640	.403	.188	.403	.166	.225	.019	.414	102	.414	131	236	0.596	0.089	0.0	1.0	1.1	1.1	A-	
1965	662432	4	4	1271	.497	.109	.247	.124	.496	.024	.485	209	249	149	.485	0.126	0.062	-2.6	0.9	-2.3	0.9	A+	
1966	662434	4	4	1271	.230	.230	.107	.429	.208	.027	.069	.069	078	.048	011	1.581	0.072	7.3	1.3	9.3	1.8	B-	
1967	662433	4	4	1271	.639	.044	.256	.035	.639	.025	.471	235	253	242	.471	-0.593	0.065	-2.4	0.9	-2.3	0.9	A+	
1968	662504	4	4	1264	.131	.399	.131	.404	.047	.020	.111	.028	.111	.056	288	2.464	0.089	2.4	1.1	7.3	2.0	A+	
1969	662503	4	4	1264	.347	.172	.317	.146	.347	.019	.409	134	112	213	.409	0.967	0.065	-0.3	1.0	1.4	1.1	A-	
1970	662505	4	4	1264	.290	.335	.165	.189	.290	.021	.383	070	115	200	.383	1.282	0.068	-0.5	1.0	2.5	1.2	A-	
1971	661518	4	4	624	.950	.034	.950	.014	.000	.002	.240	221	.240	082	.000	-3.165	0.191	-0.1	1.0	-0.7	0.8	A+	
1972	661519	4	4	624	.923	.923	.043	.014	.019	.000	.395	.395	269	225	173	-2.660	0.157	-1.2	0.9	-2.3	0.6	B+	
1973	661520	4	4	624	.724	.079	.171	.724	.026	.000	.395	238	238	.395	145	-0.919	0.098	0.3	1.0	-0.3	1.0	A-	
1974	662811	4	4	624	.370	.168	.204	.255	.370	.003	.409	162	103	209	.409	0.919	0.092	0.1	1.0	0.8	1.1	A+	
1975	662809	4	4	624	.716	.716	.077	.095	.111	.002	.510	.510	261	207	313	-0.871	0.097	-2.6	0.9	-2.1	0.8	A-	
1976	662810	4	4	624	.244	.300	.346	.111	.244	.000	.322	172	.051	267	.322	1.655	0.102	1.1	1.1	1.8	1.2	A-	
1977	662807	4	4	624	.708	.130	.708	.107	.054	.000	.478	295	.478	212	231	-0.824	0.097	-1.8	0.9	-1.9	0.9	A-	
1978	662808	4	4	624	.487	.325	.072	.487	.111	.005	.303	043	233	.303	205	0.326	0.089	4.2	1.2	3.3	1.2	A+	
1979	662481	4	4	624	.364	.213	.252	.167	.364	.005	.332	149	063	174	.332	0.953	0.092	2.8	1.1	2.2	1.1	A-	
1980	662480	4	4	624	.651	.651	.098	.128	.112	.011	.497	.497	243	210	267	-0.502	0.093	-2.3	0.9	-1.4	0.9	A-	
1981	662482	4	4	624	.521	.521	.114	.082	.277	.006	.365	.365	258	179	092	0.159	0.089	2.3	1.1	2.6	1.1	A-	
1982	662479	4	4	624	.633	.106	.633	.144	.111	.006	.547	259	.547	260	264	-0.409	0.092	-3.6	0.9	-3.3	8.0	A-	
1983	662770	4	4	624	.596	.072	.596	.268	.054	.010	.410	233	.410	197	190	-0.218	0.090	0.7	1.0	0.2	1.0	A+	
1984	662769	4	4	624	.551	.090	.074	.551	.274	.011	.319	250	270	.319	013	0.008	0.089	3.6	1.1	3.7	1.2	A-	
1985	662768	4	4	624	.561	.123	.199	.106	.561	.011	.488	292	197	177	.488	-0.040	0.090	-1.8	0.9	-1.0	1.0	A+	
1986	662767	4	4	624	.285	.170	.192	.285	.338	.014	.279	135	219	.279	.057	1.394	0.098	1.9	1.1	3.4	1.3	A+	
1987	661511	4	4	1257	.593	.308	.070	.593	.023	.006	.446	259	254	.446	182	-0.278	0.064	0.8	1.0	0.5	1.0	A-	A-
1988	661509	4	4	633	.670	.240	.670	.024	.065	.002	.499	391	.499	169	169	-0.779	0.095	-1.1	1.0	-2.0	0.9	B+	
1989	661510	4	4	633	.777	.777	.065	.136	.021	.002	.324	.324	109	248	168	-1.451	0.105	1.5	1.1	2.0	1.2	A+	
1990	662740	4	4	633	.727	.103	.066	.727	.104	.000	.486	275	301	.486	191	-1.117	0.099	-1.3	0.9	-0.7	0.9	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
i.e.		Grade	Grade			. (, ,		. (0)		٠,,	1 (13)				(5)			in	in	out	out	/F	/B
1991	662742	4	4	633	.749	.055	.749	.038	.156	.002	.452	214	.452	237	281	-1.258	0.102	-0.7	1.0	-0.7	0.9	B-	
1992	662744	4	4	633	.314	.314	.166	.267	.251	.002	.171	.171	145	013	044	1.122	0.096	6.2	1.3	6.8	1.7	A+	
1993	662743	4	4	633	.264	.156	.447	.133	.264	.000	.253	203	.095	251	.253	1.433	0.101	3.6	1.2	4.8	1.5	A+	
1994	662741	4	4	633	.649	.649	.123	.087	.139	.002	.545	.545	188	311	310	-0.664	0.094	-2.6	0.9	-2.8	0.8	A+	
1995	662772	4	4	633	.714	.130	.062	.714	.088	.006	.534	242	324	.534	254	-1.039	0.098	-2.5	0.9	-2.5	0.8	A-	
1996	662771	4	4	633	.871	.039	.870	.044	.039	.006	.504	280	.504	303	217	-2.229	0.127	-2.2	0.8	-3.1	0.6	A+	
1997	662773	4	4	633	.386	.185	.385	.275	.148	.006	.283	054	.283	103	170	0.723	0.092	4.5	1.2	4.7	1.3	A-	
1998	662774	4	4	633	.559	.270	.096	.068	.559	.006	.545	245	230	333	.545	-0.182	0.091	-2.7	0.9	-2.7	0.9	A+	
1999	662451	4	4	633	.621	.196	.621	.103	.070	.011	.568	191	.568	366	290	-0.508	0.092	-3.4	0.9	-3.3	0.8	A-	
2000	662450	4	4	633	.346	.120	.390	.126	.346	.017	.343	207	.036	273	.343	0.940	0.094	2.7	1.1	2.9	1.2	A+	
2001	662449	4	4	633	.792	.791	.052	.066	.070	.021	.571	.571	265	263	335	-1.553	0.108	-3.5	0.8	-3.7	0.6	A-	
2002	662452	4	4	633	.461	.163	.182	.175	.461	.019	.410	176	134	182	.410	0.323	0.090	1.6	1.1	1.6	1.1	A+	
2003	662760	4	4	1264	.650	.169	.089	.650	.075	.016	.498	209	254	.498	263	-0.667	0.066	-3.2	0.9	-3.6	8.0	A+	A+
2004	662759	4	4	1264	.703	.160	.052	.703	.070	.015	.548	268	283	.548	276	-0.967	0.068	-5.4	8.0	-5.3	0.7	A+	A-
2005	662757	4	4	1264	.184	.184	.280	.193	.327	.016	.252	.252	032	117	042	1.957	0.079	1.3	1.1	4.7	1.5	A+	A+
2006	662758	4	4	1264	.343	.188	.343	.213	.237	.019	.379	168	.379	141	084	0.934	0.066	1.0	1.0	3.0	1.2	A-	A-
2007	661512	4	4	631	.891	.014	.041	.054	.891	.000	.355	147	114	313	.355	-2.396	0.135	-0.9	0.9	-0.2	1.0	A+	
2008	661513	4	4	631	.900	.900	.024	.041	.035	.000	.385	.385	219	196	234	-2.509	0.140	-1.0	0.9	-2.3	0.6	A+	
2009	661515	4	4	631	.712	.074	.712	.122	.089	.003	.330	101	.330	193	199	-1.009	0.097	1.7	1.1	1.8	1.1	A+	
2010	662999	4	4	631	.675	.675	.135	.157	.032	.002	.365	.365	183	217	159	-0.801	0.094	1.5	1.1	1.1	1.1	A-	
2011	663001	4	4	631	.296	.114	.433	.154	.296	.003	.298	240	.015	180	.298	1.168	0.096	2.2	1.1	3.3	1.3	A+	
2012	663002	4	4	631	.506	.506	.122	.208	.162	.003	.443	.443	140	240	200	0.074	0.089	-0.1	1.0	-0.1	1.0	A+	
2013	662997	4	4	631	.328	.151	.260	.328	.257	.005	.419	113	243	.419	093	0.988	0.094	-0.5	1.0	0.8	1.1	A+	
2014	663000	4	4	631	.217	.181	.217	.222	.379	.002	.180	164	.180	289	.232	1.670	0.105	2.9	1.2	4.8	1.6	B+	
2015	662998	4	4	631	.399	.255	.399	.211	.132	.003	.409	137	.409	238	111	0.608	0.090	0.6	1.0	1.1	1.1	B-	
2016	662492	4	4	631	.643	.179	.643	.106	.051	.021	.562	283	.562	311	191	-0.628	0.092	-4.1	0.9	-3.6	8.0	B+	
2017	662494	4	4	631	.645	.645	.078	.187	.068	.022	.587	.587	219	324	279	-0.637	0.092	-4.8	0.8	-4.6	0.7	A-	
2018	662491	4	4	631	.715	.060	.715	.146	.054	.025	.523	249	.523	268	253	-1.028	0.097	-3.0	0.9	-2.9	0.8	A+	
2019	662493	4	4	631	.346	.295	.158	.345	.177	.024	.259	.046	247	.259	073	0.893	0.093	3.9	1.2	4.7	1.3	A+	
2020	661521	5	5	440	.825	.089	.825	.070	.016	.000	.503	310	.503	320	170	-1.622	0.137	-2.0	0.9	-2.7	0.6	A-	
2021	661535	5	5	403	.913	.060	.913	.010	.017	.000	.385	302	.385	164	159	-2.461	0.185	-0.9	0.9	-2.3	0.5	A+	
2022	661539	5	5	407	.700	.076	.059	.165	.700	.000	.464	283	342	154	.464	-0.777	0.120	-1.5	0.9	-1.6	0.9	A+	
2023	661543	5	5	415	.841	.046	.841	.027	.087	.000	.272	219	.272	231	058	-1.572	0.145	0.7	1.1	0.5	1.1	B+	
2024	661574	5	5	408	.753	.752	.071	.105	.071	.000	.434	.434	319	218	149	-1.012	0.126	-0.9	0.9	-1.2	0.9	A+	
2025	661578	5	5	416	.808	.149	.808	.031	.012	.000	.422	334	.422	197	119	-1.340	0.135	-0.9	0.9	-1.3	0.8	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	IN	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
2026	661537	5	5	368	.840	.840	.087	.035	.038	.000	.384	.384	242	298	093	-1.625	0.154	-0.5	1.0	-1.0	0.8	A-	
2027	661541	5	5	409	.804	.042	.804	.134	.020	.000	.310	258	.310	122	215	-1.434	0.135	0.5	1.0	0.6	1.1	A+	
2028	661544	5	5	406	.803	.803	.108	.079	.010	.000	.436	.436	291	287	061	-1.398	0.136	-0.9	0.9	-1.7	0.8	A+	
2029	661572	5	5	414	.742	.742	.053	.041	.164	.000	.429	.429	327	147	230	-1.021	0.124	-0.5	1.0	-0.9	0.9	A-	
2030	661576	5	5	430	.909	.044	.909	.028	.019	.000	.434	295	.434	260	157	-2.377	0.177	-1.2	0.9	-2.6	0.5	A-	A-
2031	661580	5	5	441	.635	.082	.086	.197	.635	.000	.526	152	405	246	.526	-0.327	0.111	-2.8	0.9	-2.6	0.8	A+	
2032	673452	5	5	1067	.306	.149	.374	.172	.306	.000	.194	236	.123	172	.194	1.396	0.072	4.3	1.1	5.5	1.3	A+	A+
2033	673466	5	5	1017	.563	.186	.151	.563	.099	.000	.307	029	196	.307	236	0.104	0.070	3.2	1.1	2.6	1.1	A+	A-
2034	673479	5	5	1899	.530	.273	.530	.127	.071	.000	.326	098	.326	201	204	0.229	0.051	2.8	1.1	3.2	1.1	A+	A-
2035	673493	5	5	1019	.604	.604	.191	.108	.097	.000	.449	.449	162	304	208	-0.106	0.071	-2.2	0.9	-2.3	0.9	A+	A+
2036	673506	5	5	1080	.673	.168	.673	.106	.053	.000	.471	215	.471	239	298	-0.507	0.072	-3.1	0.9	-2.1	0.9	A-	A+
2037	673516	5	5	1044	.313	.090	.195	.313	.401	.000	.077	208	168	.077	.184	1.314	0.072	7.3	1.2	9.3	1.6	A+	A-
2038	673518	5	5	2004	.641	.216	.058	.641	.084	.000	.429	248	167	.429	233	-0.333	0.051	-1.6	1.0	-2.5	0.9	A+	A-
2039	673519	5	5	1173	.582	.109	.219	.090	.582	.000	.474	249	147	334	.474	-0.075	0.066	-3.7	0.9	-3.6	0.9	A+	A-
2040	673520	5	5	2249	.557	.217	.130	.097	.557	.000	.508	267	252	195	.508	0.065	0.047	-6.8	0.9	-6.6	0.9	A+	A-
2041	673521	5	5	1099	.514	.514	.180	.209	.096	.000	.329	.329	164	068	251	0.238	0.067	2.4	1.1	2.4	1.1	A+	A-
2042	673522	5	5	2253	.768	.075	.110	.768	.046	.000	.497	303	282	.497	198	-1.131	0.055	-4.4	0.9	-6.3	0.7	B+	A-
2043	673523	5	5	1151	.374	.374	.119	.119	.388	.000	.321	.321	277	167	024	0.967	0.067	1.8	1.1	3.1	1.1	A+	A-
2044	673524	5	5	1138	.384	.326	.178	.384	.112	.000	.247	.040	141	.247	270	0.925	0.067	4.5	1.1	6.5	1.3	A+	A+
2045	673533	5	5	1130	.410	.158	.224	.208	.410	.000	.364	161	087	206	.364	0.804	0.067	0.2	1.0	3.0	1.1	A+	A-
2046	673544	5	5	1129	.502	.185	.161	.502	.151	.000	.402	172	231	.402	137	0.331	0.066	0.2	1.0	8.0	1.0	A+	A+
2047	673557	5	5	1223	.697	.697	.182	.085	.037	.000	.449	.449	241	292	172	-0.686	0.069	-1.8	0.9	-2.2	0.9	A+	A-
2048	673583	5	5	1073	.693	.693	.092	.144	.070	.000	.387	.387	327	085	212	-0.611	0.073	-0.6	1.0	0.1	1.0	A+	
2049	673609	5	5	1175	.504	.129	.214	.153	.504	.000	.392	190	139	208	.392	0.325	0.065	0.2	1.0	1.6	1.1	A+	A+
2050	673635	5	5	1144	.555	.555	.216	.068	.161	.000	.270	.270	.012	274	190	0.074	0.067	5.1	1.1	6.1	1.2	A+	A-
2051	673646	5	5	1150	.707	.090	.707	.060	.143	.000	.417	163	.417	240	246	-0.782	0.072	-0.9	1.0	-1.0	1.0	A-	A-
2052	673672	5	5	1067	.346	.205	.346	.199	.250	.000	.096	.084	.096	253	.049	1.139	0.070	8.1	1.2	8.5	1.5	A-	A+
2053	673681	5	5	1159	.566	.235	.566	.108	.091	.000	.349	056	.349	304	191	0.055	0.066	1.4	1.0	2.2	1.1	A-	A-
2054	673684	5	5	1917	.599	.131	.104	.599	.166	.000	.396	092	268	.396	218	-0.153	0.052	0.3	1.0	0.1	1.0	A-	A-
2055	673688	5	5	1120	.315	.264	.279	.315	.141	.000	.174	.008	033	.174	200	1.329	0.070	4.3	1.1	8.2	1.5	A+	
2056	673689	5	5	1031	.681	.062	.123	.134	.681	.000	.439	180	207	273	.439	-0.571	0.074	-1.6	1.0	-1.9	0.9	A-	C-
2057	673690	5	5	1125	.466	.193	.172	.170	.466	.000	.384	113	206	184	.384	0.534	0.066	-0.8	1.0	0.7	1.0	A-	A-
2058	673692	5	5	1070	.456	.293	.456	.156	.095	.000	.323	114	.323	222	096	0.577	0.068	1.8	1.0	2.8	1.1	A+	A+
2059	673693	5	5	1944	.452	.056	.452	.059	.433	.000	.107	237	.107	307	.149	0.591	0.050	9.9	1.3	9.9	1.4	A-	A-
2060	673694	5	5	1090	.673	.106	.673	.144	.076	.000	.469	208	.469	279	217	-0.465	0.071	-2.7	0.9	-3.8	0.8	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

2061 673695 5	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2006 673730 5 5 1990 504 357 082 504 056 0.00 310 -0.90 -2.46 310 -1.91 0.379 0.050 4.2 1.1 4.1 1.1 A. A. A. 2006 673730 5 5 1199 3.94 3.55 1.67 0.84 3.94 0.00 3.81 0.03 -3.65 -1.66 3.81 0.855 0.065 -1.0 1.0 0.5 1.0 A. A. A. 2006 673732 5 5 1142 436 1.46 2.07 436 2.11 0.00 2.19 -2.21 0.00 2.19 -0.077 0.636 0.066 6.0 1.2 6.6 1.3 A. A. A. 2005 682544 5 5 4.29 3.12 4.20 1.21 3.12 1.47 0.00 1.85 -1.04 -1.40 1.86 0.30 1.325 0.113 2.7 1.1 3.7 1.3 A. 2.066 682545 5 5 4.23 2.74 4.26 1.80 2.74 1.21 0.00 1.82 0.08 1.82 0.08 1.82 0.08 1.52 0.08 3.82 4.85 1.85 1.85 1.80 3.80 3.80 0.8			Grade	Grade															in	in	out	out	/F	/B
2063 673730 5 5 1199 394 355 167 084 394 0.00 381 0.03 -365 -186 381 0.855 0.065 -10 1.0 0.5 1.0 A- A- A- 2064 673732 5 5 1142 .436 .146 .207 .436 .211 .000 .129 -221 .002 .219 .077 0.636 0.066 6.0 1.2 6.6 1.3 A+ A- 2065 682544 5 5 5 429 .312 .420 .121 .132 .147 .000 .186 .104 .140 .186 .030 1.325 0.113 2.7 1.1 3.7 1.3 A- 2066 682545 5 5 423 .274 .426 .880 .080 .055 .065 .000 .447 .349 .447 .242 .118 .1401 .018 .23 .1.1 4.6 .1.5 C- 2066 682546 5 5 414 .565 .188 .121 .126 .565 .000 .447 .349 .447 .242 .118 .1401 .013 .1.4 .0.9 .1.4 .0.9 .1.4 .0.8 .0.0																								
2066 63732 5 5 1142 436 146 207 436 211 000 219 -221 002 219 -077 0.636 0.066 6.0 1.2 6.6 1.3 A+ A- A- 2065 682544 5 5 429 312 420 1.21 312 147 000 1.86 -104 -140 1.86 0.30 1.325 0.113 2.77 1.1 3.7 1.3 A- 2066 682545 5 5 423 3.74 426 1.80 2.74 1.21 000 1.82 -0.82 -1.25 1.82 -0.60 1.514 0.118 2.3 1.1 4.6 1.5 C- 2067 682546 5 5 415 800 0.80 0.80 0.95 0.65 0.00 0.47 -249 4.72 -242 1.18 1.401 0.134 1.4 0.9 1.4 0.8 A- 2068 682547 5 5 414 5.65 1.88 1.21 1.26 5.65 0.00 0.47 -244 -202 4.87 0.008 0.012 1.5 0.9 -2.0 0.9 C- 2069 682548 5 5 421 4.68 4.01 0.62 0.69 4.68 0.00 3.82 -169 -2.29 -2.27 3.82 0.561 0.108 0.0 1.0 0.6 1.0 A- 2070 682550 5 5 4.03 3.93 0.33 3.37 3.37 1.52 0.82 0.00 1.11 1.11 0.16 -3.33 0.09 1.134 0.118 4.2 1.2 4.9 1.5 B- 2071 682550 5 5 4.03 3.96 0.35 9.35 0.17 0.12 0.00 3.99 -2.62 3.99 -2.39 -2.39 -1.49 0.111 0.9 0.9 -2.5 0.4 A+ 2072 6.82551 5 5 4.31 4.69 3.90 0.56 4.69 0.96 0.00 0.30 -1.30 -2.89 3.05 0.80 0.567 0.106 2.1 1.1 2.3 1.1 A- A- 2073 682552 5 5 4.05 4.09 4.09 3.09 0.56 4.09 0.96 0.00 0.30 -1.30 -2.89 3.05 0.80 0.567 0.106 2.1 1.1 2.3 1.1 A- A- 2075 682555 5 5 4.05 4.09 4.09 3.09 3.09 3.09 3.09 3.59 -2.43 -2.246 -3.441 -3.02 4.011 0.15 0.07 1.0 A- 2075 682555 5 5 4.05 4.09 4.09 3.09 3.09 3.09 3.09 3.39 3	-																							
2006 682544 5 5 429 3.32 4.20 1.21 3.12 1.47 0.00 1.86 -1.04 -1.40 1.86 0.30 1.325 0.113 2.7 1.1 3.7 1.3 A - 2.066 682545 5 5 423 2.74 4.26 1.88 2.74 1.12 0.00 1.52 -0.28 -1.25 1.82 0.60 1.514 0.118 2.3 1.4 4.6 1.5 C 2.076 682546 5 5 415 8.00 0.80 8.00 0.55 0.65 0.00 447 -3.49 4.47 -2.42 1.18 1.401 0.134 1.4 0.9 1.1 4.6 1.5 C 2.08 682547 5 5 414 5.65 1.88 1.21 1.26 5.65 0.00 447 -3.49 4.47 -2.42 1.18 1.401 0.134 1.4 0.9 1.1 4.6 1.5 C 2.08 682548 5 5 414 5.65 1.88 1.21 1.26 5.65 0.00 4.47 -3.49 4.47 -2.42 4.87 0.008 0.112 1.5 0.9 2.0 0.9 C 2.09 6.25 6.2																				_			A+	
2066 682546 5 5 423 274 426 180 274 121 000 142 -028 -125 182 -060 1.514 0.118 2.3 1.1 4.6 1.5 C 2067 682546 5 5 415 800 .080 .800 .055 .065 .000 .447 -349 .447 -242 -118 -1.401 0.134 -1.4 0.9 -1.4 0.8 A 2068 682547 5 5 414 .565 .188 .121 .126 .565 .000 .447 -346 -241 -202 .487 0.008 0.112 -1.5 0.9 -2.0 0.9 C 2069 682548 5 5 421 .468 .401 .062 .069 .468 .000 .382 .169 -209 .227 .382 .0561 0.108 0.0 1.0 0.6 1.0 A 2070 682549 5 5 388 .329 .329 .437 .152 .082 .000 .121 .111 .016 .233 .069 .1194 .0118 .42 .12 .49 .15 B 2071 682550 5 5 403 .935 .935 .017 .012 .000 .399 -262 .399 -239 .169 -2.749 0.211 .0.9 0.9 -2.5 0.4 A 4 2073 682552 5 5 441 .846 .390 .056 .469 .086 .000 .355 .330 .289 .305 .080 0.567 0.106 .21 1.1 .2.3 1.1 A A A 2073 682552 5 5 442 .821 .821 .050 .021 .108 .000 .431 .431 .351 .222 .246 .441 .0137 .17 .0.9 .2.9 .0.7 A A 2074 .202																							A+	Α-
2067 682546 5 5 415 .800 .800 .800 .805 .065 .000 .447 .349 .447 .242 .118 .1.401 .0.134 .1.4 .0.9 .1.4 .0.8 A	-																							igwdot
2088 682547 5 5 414 .565 .188 .121 .126 .565 .000 .487 .246 .241 .202 .487 .0008 .0.112 .1.5 .0.9 .2.0 .0.9 .C		682545					.426					.182	028			060			2.3	1.1	4.6		C-	<u> </u>
2069 682548 5 5 421 468 401 0.62 0.69 4.68 0.00 0.382 -1.69 -2.29 -2.27 3.82 0.561 0.108 0.0 1.0 0.6 1.0 A 1.0 1													349				_		-1.4				_	
2070 682549 5 5 389 329 329 437 1.52 0.82 0.00 0.121 1.121 0.016 0.233 0.069 1.194 0.118 4.2 1.2 4.9 1.5 B 2071 682550 5 5 403 936 0.035 935 0.017 0.012 0.00 3.99 -2.62 3.99 -2.39 -1.69 -2.749 0.211 0.09 0.9 -2.5 0.4 A+ 2073 682551 5 5 4.31 4.69 3.90 0.56 4.69 0.86 0.00 3.00 3.90 -3.62 3.99 3.239 3.080 0.567 0.106 2.1 1.1 2.3 1.1 A A- 2073 682552 5 5 4.24 8.21 8.21 0.50 0.21 1.08 0.00 4.81 4.81 -3.51 -2.22 -2.46 -1.441 0.137 -1.7 0.9 -2.9 0.7 A+ 2074 6.82553 5 5 4.05 4.69 0.96 3.99 0.38 -3.63 -3.22 -2.46 -1.441 0.137 -1.7 0.9 -2.9 0.7 A+ 2074 6.82553 5 5 4.05 4.69 0.90 3.94 0.90 0.338 -2.53 -1.32 -2.46 3.58 0.900 0.124 0.1 1.0 0.0 1.0 B- A- 2075 6.82554 5 5 4.16 4.90 1.90 1.93 4.90 1.80 0.00 3.99 -2.43 -1.72 3.91 -1.06 0.351 0.110 0.5 1.0 0.7 1.0 A- 2076 6.82555 5 5 3.92 6.617 6.617 1.10 1.43 1.30 0.00 2.66 2.66 -2.66 -2.11 -1.70 -0.02 -0.374 0.116 3.5 1.2 2.9 1.2 A- 2077 6.82556 5 5 4.15 6.84 2.19 6.84 0.51 0.06 0.359 -2.43 3.59 -1.85 -1.25 0.575 0.117 0.9 1.1 0.1 1.0 A- 2083 0.86557 5 5 3.81 7.38 7.38 0.76 7.17 0.16 0.00 4.96 4.99	2068	682547	5	5	414	.565	.188	.121	.126	.565	.000	.487	246	241	202	.487	0.008	0.112	-1.5	0.9	-2.0	0.9	C-	
2071 682550 5 5 403 .936 .035 .935 .017 .012 .000 .399 .262 .399 .239 .169 .2.749 .0.211 .0.9 .0.9 .2.5 .0.4 A+ .0.2072 682551 5 5 .431 .469 .390 .056 .469 .086 .000 .305 .1.310 .2.89 .305 .0.80 .0.567 .0.106 .2.1 .1.1 .2.3 .1.1 A- A- .2.0073 682552 5 5 .424 .821 .821 .821 .805 .0.21 .0.108 .0.00 .4.14 .4.13 .4.15 .1.7 .1.7 .0.9 .2.9 0.7 A+ .2.074 682553 5 5 .405 .746 .0.52 .156 .0.47 .746 .0.00 .3.58 .2.53 .1.32 .2.246 .3.58 .0.900 .0.124 .0.1 .1.0 .0.0 .1.0 .0.0 .1.0 .0.0	2069	682548	5	5	421	.468	.401	.062	.069	.468	.000	.382	169	209	227	.382	0.561	0.108	0.0	1.0	0.6	1.0	A-	
2072 682551 5 5 431 .469 .390 .056 .469 .086 .000 .305 .130 289 .305 .080 0.567 0.106 2.1 1.1 2.3 1.1 A A- 2074 682555 5 5 424 .821 .821 .090 .021 .108 .000 .481 .481 .358 .0900 .0124 .01 .00 .0	2070	682549	5	5	389	.329	.329	.437	.152	.082	.000	.121	.121	.016	233	.069	1.194	0.118	4.2	1.2	4.9	1.5	B-	
2073 682552 5 5 424 821 821 821 825 0.021 1.108 0.00 481 481 -351 -222 -246 -1.441 0.137 -1.7 0.9 -2.9 0.7 A+	2071	682550	5	5	403	.936	.035	.935	.017	.012	.000	.399	262	.399	239	169	-2.749	0.211	-0.9	0.9	-2.5	0.4	A+	
2074 682553 5 5 405 .746 .052 .156 .047 .746 .000 .358 .253 .132 .246 .358 .0.900 .0.124 .0.1 1.0 0.0 1.0 B- A- 2075 682556 5 5 416 .490 .190 .139 .490 .180 .000 .391 .243 .172 .391 .106 .0.351 0.110 0.5 1.0 0.7 1.0 A- 2076 682555 5 5 .392 .617 .617 .110 .143 .130 .000 .266 .266 .211 .1.70 .0.12 .0.374 .0.116 .3.5 1.2 2.9 1.2 A- 2077 682556 5 5 .415 .684 .219 .684 .051 .046 .000 .359 .243 .359 .185 .125 .0.575 0.117 .0.9 1.1 0.1 1.0 A- 2078 682557 5 5 .381 .738 .	2072	682551	5	5	431	.469	.390	.056	.469	.086	.000	.305	130	289	.305	080	0.567	0.106	2.1	1.1	2.3	1.1	A-	A-
2075 682554 5 5 416 490 190 139 490 180 0.00 391 -243 -172 391 -106 0.351 0.110 0.5 1.0 0.7 1.0 A-	2073	682552	5	5	424	.821	.821	.050	.021	.108	.000	.481	.481	351	222	246	-1.441	0.137	-1.7	0.9	-2.9	0.7	A+	<u> </u>
2076 682555 5 392 .617 .617 .110 .143 .130 .000 .266 .266 .211 .170 .012 -0.374 0.116 3.5 1.2 2.9 1.2 A 2077 682556 5 5 415 .684 .219 .684 .051 .046 .000 .359 .243 .359 .185 .125 -0.575 0.117 0.9 1.1 0.1 1.0 A 2079 682557 5 5 381 .738 .788 .076 .171 .016 .000 .499 .479 .271 .287 .178 -0.852 0.129 .1.3 0.9 -0.9 0.9 A 2079 682558 5 390 .636 .636 .041 .031 .000 .406 .267 .128 -1.459 .0138 .04 .10 .1.2 .0.8 .4 .208 .625 .000 .406	2074	682553	5	5	405	.746	.052	.156	.047	.746	.000	.358	253	132	246	.358	-0.900	0.124	0.1	1.0	0.0	1.0	B-	A-
2077 682556 5 5 415 .684 .219 .684 .051 .046 .000 .359 .243 .359 .185 .125 -0.575 0.117 0.9 1.1 0.1 1.0 A- 2078 682557 5 5 381 .738 .738 .076 .171 .016 .000 .459 .459 .271 -287 178 -0.852 0.129 -1.3 0.9 -0.9 0.9 A- 2080 682558 5 5 390 .636 .636 .029 .001 .406 .246 .406 128 -1.459 .013 .04 1.0 .12 .8 .1459 .013 .011 1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .1.1 .0.5 .1.0 .4 .0.2 .280 .2625 .2075 .128 .1.4 .0.31 .0.0 .4	2075	682554	5	5	416	.490	.190	.139	.490	.180	.000	.391	243	172	.391	106	0.351	0.110	0.5	1.0	0.7	1.0	A-	
2078 682557 5 381 .738 .738 .076 .171 .016 .000 .459 .459 .271 287 178 -0.852 0.129 -1.3 0.9 -0.9 0.9 A- 2079 682558 5 5 390 .636 .636 .292 .041 .031 .000 .349 .349 -1.77 281 .184 -0.312 0.117 1.1 1.1 0.5 1.0 B+ 2080 682559 5 5 406 .805 .064 .025 .000 .406 267 128 -1.459 0.138 -0.4 1.0 -1.2 0.8 A+ 2082 682560 5 5 427 .773 .70 .00 .406 .326 179 112 -1.177 0.126 -0.7 1.0 -1.2 0.9 A- 2082 682561 5 5 440 .821 .820	2076	682555	5	5	392	.617	.617	.110	.143	.130	.000	.266	.266	211	170	012	-0.374	0.116	3.5	1.2	2.9	1.2	A-	
2079 682558 5 5 390 .636 .636 .292 .041 .031 .000 .349 .177 281 184 -0.312 0.117 1.1 1.1 0.5 1.0 B+ 2080 682559 5 406 .805 .106 .805 .064 .025 .000 .406 .267 128 -1.459 0.138 -0.4 1.0 -1.2 .08 A+ 2081 682560 5 5 427 .773 .773 .08 .059 .061 .000 .406 .406 .326 -179 112 -1.177 0.126 -0.7 1.0 -1.2 0.9 A- 2082 682561 5 5 395 .879 .066 .878 .043 .013 .000 .404 .280 .166 .201 -1.552 .0134 -1.0 .09 .1.3 .84 2084 682563 5 5	2077	682556	5	5	415	.684	.219	.684	.051	.046	.000	.359	243	.359	185	125	-0.575	0.117	0.9	1.1	0.1	1.0	A-	
2080 682559 5 406 .805 .106 .805 .064 .025 .000 .406 246 .406 .267 128 -1.459 0.138 .0.4 1.0 -1.2 0.8 A+ 2081 682560 5 5 427 .773 .773 .108 .059 .061 .000 .406 326 179 112 -1.177 0.126 -0.7 1.0 -1.2 0.9 A- 2082 682561 5 5 395 .879 .066 .878 .043 .013 .000 .283 191 .283 137 155 -2.055 0.164 .00 1.0 .06 1.1 A- 2084 682562 5 5 440 .821 .820 .107 .039 .034 .000 .404 .280 .166 201 -1.552 0.134 -1.0 .09 -1.3 .08 4.2 .286 <td< td=""><td>2078</td><td>682557</td><td>5</td><td>5</td><td>381</td><td>.738</td><td>.738</td><td>.076</td><td>.171</td><td>.016</td><td>.000</td><td>.459</td><td>.459</td><td>271</td><td>287</td><td>178</td><td>-0.852</td><td>0.129</td><td>-1.3</td><td>0.9</td><td>-0.9</td><td>0.9</td><td>A-</td><td></td></td<>	2078	682557	5	5	381	.738	.738	.076	.171	.016	.000	.459	.459	271	287	178	-0.852	0.129	-1.3	0.9	-0.9	0.9	A-	
2081 682560 5 5 427 .773 .773 .108 .059 .061 .000 .406 .326 179 112 -1.177 0.126 -0.7 1.0 -1.2 0.9 A- 2082 682561 5 5 395 .879 .066 .878 .043 .013 .000 .283 191 .283 137 155 -2.055 0.164 0.0 1.0 0.6 1.1 A- 2083 682562 5 5 440 .821 .820 .107 .039 .034 .000 .404 .404 280 166 201 -1.552 0.134 -1.0 0.9 -1.3 0.8 A+ 2084 682563 5 5 410 .620 .046 .112 .222 .620 .000 .493 209 262 271 .493 -0.260 0.113 -2.2 0.9 -2.4 0.9 <td< td=""><td>2079</td><td>682558</td><td>5</td><td>5</td><td>390</td><td>.636</td><td>.636</td><td>.292</td><td>.041</td><td>.031</td><td>.000</td><td>.349</td><td>.349</td><td>177</td><td>281</td><td>184</td><td>-0.312</td><td>0.117</td><td>1.1</td><td>1.1</td><td>0.5</td><td>1.0</td><td>B+</td><td></td></td<>	2079	682558	5	5	390	.636	.636	.292	.041	.031	.000	.349	.349	177	281	184	-0.312	0.117	1.1	1.1	0.5	1.0	B+	
2082 682561 5 5 395 .879 .066 .878 .043 .013 .000 .283 191 .283 137 155 -2.055 0.164 0.0 1.0 0.6 1.1 A- 2083 682562 5 5 440 .821 .820 .107 .039 .034 .000 .404 .404 280 166 201 -1.552 0.134 -1.0 0.9 -1.3 0.8 A+ 2084 682563 5 5 451 .674 .197 .674 .098 .031 .000 .568 237 166 -0.518 0.111 -3.7 0.8 -4.2 0.7 A+ 2085 682564 5 5 410 .620 .046 .112 .222 .620 .000 .373 250 231 .373 074 -0.968 0.123 0.3 1.0 -0.2 1.0 A4	2080	682559	5	5	406	.805	.106	.805	.064	.025	.000	.406	246	.406	267	128	-1.459	0.138	-0.4	1.0	-1.2	8.0	A+	
2083 682562 5 5 440 821 820 107 039 034 000 404 404 -280 -166 -201 -1.552 0.134 -1.0 0.9 -1.3 0.8 A+ 2084 682563 5 5 451 6.74 1.97 6.74 0.98 0.31 0.00 5.68 -420 5.68 -237 -1.66 -0.518 0.111 -3.7 0.8 -4.2 0.7 A+ 2085 682564 5 5 410 6.20 0.46 1.12 0.22 6.20 0.00 4.93 -2.09 -2.62 -2.71 4.93 -0.260 0.113 -2.2 0.9 -2.4 0.9 B+ 2086 682565 5 5 420 7.743 1.69 0.76 7.743 0.12 0.00 3.73 -2.50 -2.31 3.73 -0.74 -0.968 0.123 0.3 1.0 -0.2 1.0 A+ 2087 682566 5 5 389 8.46 8.46 0.26 0.41 0.87 0.00 3.33 3.33 -2.58 -3.43 -0.40 -1.689 0.152 -0.2 1.0 0.3 1.0 A- 2088 682567 5 5 410 0.551 1.12 1.80 0.551 1.156 0.00 0.236 -1.86 -0.58 0.236 -1.00 0.034 0.109 3.0 1.1 2.6 1.1 A- 2089 682568 5 5 397 0.665 0.239 0.40 0.055 0.665 0.00 4.78 -2.36 -3.01 -2.88 4.78 -0.513 0.118 -1.6 0.9 -2.0 0.9 A- 2090 682569 5 5 433 8.89 8.89 0.51 0.28 0.32 0.00 4.19 4.19 -2.25 -2.267 -1.83 -2.084 0.164 -1.0 0.9 -2.0 0.7 B+ 2091 686596 5 5 997 3.51 3.51 0.249 0.234 1.66 0.00 0.262 0.262 -0.034 -1.60 -1.16 1.140 0.072 2.7 1.1 4.44 1.2 A- A- 2092 686608 5 5 995 0.51 0.51 0.11 1.15 0.134 0.241 0.00 0.444 0.444 -3.00 -3.01 -3.11 0.614 -0.338 0.073 -7.9 0.8 8.0 0.7 B+ A- 2094 686610 5 5 961 0.574 0.574 0.574 0.574 0.574 0.00 0.486 0.486 0.486 -1.57 -2.67 -2.74 -0.037 0.073 -3.3 0.9 -3.3 0.9 A+ C-	2081	682560	5	5	427	.773	.773	.108	.059	.061	.000	.406	.406	326	179	112	-1.177	0.126	-0.7	1.0	-1.2	0.9	A-	
2084 682563 5 451 .674 .197 .674 .098 .031 .000 .568 420 .568 237 166 -0.518 0.111 -3.7 0.8 -4.2 0.7 A+ 2085 682564 5 5 410 .620 .046 .112 .222 .620 .000 .493 209 262 271 .493 -0.260 0.113 -2.2 0.9 -2.4 0.9 B+ 2086 682565 5 5 420 .743 .169 .076 .743 .012 .000 .373 250 231 .373 074 -0.968 0.123 0.3 1.0 -0.2 1.0 A+ 2087 682566 5 5 389 .846 .846 .026 .041 .087 .000 .333 .333 258 343 040 -1.689 0.152 -0.2 1.0 0.3 1.0	2082	682561	5	5	395	.879	.066	.878	.043	.013	.000	.283	191	.283	137	155	-2.055	0.164	0.0	1.0	0.6	1.1	A-	
2085 682564 5 5 410 .620 .046 .112 .222 .620 .000 .493 209 262 271 .493 -0.260 0.113 -2.2 0.9 -2.4 0.9 B+ 2086 682565 5 5 420 .743 .169 .076 .743 .012 .000 .373 250 231 .373 074 -0.968 0.123 0.3 1.0 -0.2 1.0 A+ 2087 682566 5 5 389 .846 .026 .041 .087 .000 .333 .333 258 343 040 -1.689 0.152 -0.2 1.0 0.3 1.0 A- 2088 682567 5 410 .551 .112 .180 .551 .156 .000 .236 186 058 .236 100 0.034 0.109 3.0 1.1 2.6 1.1 A-	2083	682562	5	5	440	.821	.820	.107	.039	.034	.000	.404	.404	280	166	201	-1.552	0.134	-1.0	0.9	-1.3	0.8	A+	
2086 682565 5 420 .743 .169 .076 .743 .012 .000 .373 250 231 .373 074 0968 0.123 0.3 1.0 -0.2 1.0 A+ 2087 682566 5 5 389 .846 .846 .026 .041 .087 .000 .333 .333 258 343 040 -1.689 0.152 -0.2 1.0 0.3 1.0 A- 2088 682567 5 5 410 .551 .112 .180 .551 .156 .000 .236 186 058 .236 100 .0034 0.109 3.0 1.1 2.6 1.1 A- 2089 682568 5 5 397 .665 .239 .040 .055 .665 .000 .478 236 301 288 .478 -0.513 0.118 -1.6 0.9 -2.0 0.9 <t< td=""><td>2084</td><td>682563</td><td>5</td><td>5</td><td>451</td><td>.674</td><td>.197</td><td>.674</td><td>.098</td><td>.031</td><td>.000</td><td>.568</td><td>420</td><td>.568</td><td>237</td><td>166</td><td>-0.518</td><td>0.111</td><td>-3.7</td><td>0.8</td><td>-4.2</td><td>0.7</td><td>A+</td><td></td></t<>	2084	682563	5	5	451	.674	.197	.674	.098	.031	.000	.568	420	.568	237	166	-0.518	0.111	-3.7	0.8	-4.2	0.7	A+	
2087 682566 5 389 .846 .846 .026 .041 .087 .000 .333 .333 258 343 040 -1.689 0.152 -0.2 1.0 0.3 1.0 A- 2088 682567 5 5 410 .551 .112 .180 .551 .156 .000 .236 186 058 .236 100 0.034 0.109 3.0 1.1 2.6 1.1 A- 2089 682568 5 5 397 .665 .239 .040 .055 .665 .000 .478 236 301 288 .478 -0.513 0.118 -1.6 0.9 -2.0 0.9 A- 2090 682569 5 5 433 .889 .889 .051 .028 .032 .000 .419 .419 252 267 183 -2.084 0.164 -1.0 0.9 -2.0 0.7 <	2085	682564	5	5	410	.620	.046	.112	.222	.620	.000	.493	209	262	271	.493	-0.260	0.113	-2.2	0.9	-2.4	0.9	B+	
2088 682567 5 5 410 .551 .112 .180 .551 .156 .000 .236 186 058 .236 100 0.034 0.109 3.0 1.1 2.6 1.1 A- 2089 682568 5 5 397 .665 .239 .040 .055 .665 .000 .478 236 301 288 .478 -0.513 0.118 -1.6 0.9 -2.0 0.9 A- 2090 682569 5 5 433 .889 .889 .051 .028 .032 .000 .419 .419 252 267 183 -2.084 0.164 -1.0 0.9 -2.0 0.7 B+ 2091 686596 5 5 997 .351 .351 .249 .234 .166 .000 .262 .262 034 160 116 1.140 0.072 2.7 1.1 4.4 1	2086	682565	5	5	420	.743	.169	.076	.743	.012	.000	.373	250	231	.373	074	-0.968	0.123	0.3	1.0	-0.2	1.0	A+	
2089 682568 5 397 .665 .239 .040 .055 .665 .000 .478 236 301 288 .478 -0.513 0.118 -1.6 0.9 -2.0 0.9 A- 2090 682569 5 5 433 .889 .889 .051 .028 .032 .000 .419 .419 252 267 183 -2.084 0.164 -1.0 0.9 -2.0 0.7 B+ 2091 686596 5 5 997 .351 .351 .249 .234 .166 .000 .262 .262 034 160 116 1.140 0.072 2.7 1.1 4.4 1.2 A- 2092 686608 5 5 1022 .635 .144 .134 .087 .635 .000 .614 300 311 .614 -0.338 0.073 -7.9 0.8 -8.0 0.7 B+	2087	682566	5	5	389	.846	.846	.026	.041	.087	.000	.333	.333	258	343	040	-1.689	0.152	-0.2	1.0	0.3	1.0	A-	
2090 682569 5 433 .889 .889 .051 .028 .032 .000 .419 .419 252 267 183 -2.084 0.164 -1.0 0.9 -2.0 0.7 B+ 2091 686596 5 5 997 .351 .351 .249 .234 .166 .000 .262 .262 034 160 116 1.140 0.072 2.7 1.1 4.4 1.2 A- A- 2092 686608 5 5 1022 .635 .144 .134 .087 .635 .000 .614 300 301 311 .614 -0.338 0.073 -7.9 0.8 -8.0 0.7 B+ A- 2093 686609 5 5 995 .511 .511 .115 .134 .241 .000 .444 .444 308 277 069 0.285 0.071 -1.6 1.0 <td< td=""><td>2088</td><td>682567</td><td>5</td><td>5</td><td>410</td><td>.551</td><td>.112</td><td>.180</td><td>.551</td><td>.156</td><td>.000</td><td>.236</td><td>186</td><td>058</td><td>.236</td><td>100</td><td>0.034</td><td>0.109</td><td>3.0</td><td>1.1</td><td>2.6</td><td>1.1</td><td>A-</td><td></td></td<>	2088	682567	5	5	410	.551	.112	.180	.551	.156	.000	.236	186	058	.236	100	0.034	0.109	3.0	1.1	2.6	1.1	A-	
2091 686596 5 997 .351 .249 .234 .166 .000 .262 .262 034 160 116 1.140 0.072 2.7 1.1 4.4 1.2 A- A- 2092 686608 5 5 1022 .635 .144 .134 .087 .635 .000 .614 300 301 311 .614 -0.338 0.073 -7.9 0.8 -8.0 0.7 B+ A- 2093 686609 5 5 995 .511 .511 .115 .134 .241 .000 .444 .444 308 277 069 0.285 0.071 -1.6 1.0 -1.8 0.9 A- 2094 686610 5 5 961 .574 .574 .165 .125 .135 .000 .486 -486 157 267 274 -0.037 0.073 -3.3 0.9 -3.3 <td< td=""><td>2089</td><td>682568</td><td>5</td><td>5</td><td>397</td><td>.665</td><td>.239</td><td>.040</td><td>.055</td><td>.665</td><td>.000</td><td>.478</td><td>236</td><td>301</td><td>288</td><td>.478</td><td>-0.513</td><td>0.118</td><td>-1.6</td><td>0.9</td><td>-2.0</td><td>0.9</td><td>A-</td><td></td></td<>	2089	682568	5	5	397	.665	.239	.040	.055	.665	.000	.478	236	301	288	.478	-0.513	0.118	-1.6	0.9	-2.0	0.9	A-	
2092 686608 5 5 1022 .635 .144 .134 .087 .635 .000 .614 300 311 .614 -0.338 0.073 -7.9 0.8 -8.0 0.7 B+ A- 2093 686609 5 5 995 .511 .511 .115 .134 .241 .000 .444 .444 308 277 069 0.285 0.071 -1.6 1.0 -1.8 0.9 A- 2094 686610 5 5 961 .574 .574 .165 .125 .135 .000 .486 .486 157 267 274 -0.037 0.073 -3.3 0.9 -3.3 0.9 A+ C-	2090	682569	5	5	433	.889	.889	.051	.028	.032	.000	.419	.419	252	267	183	-2.084	0.164	-1.0	0.9	-2.0	0.7	B+	
2092 686608 5 5 1022 .635 .144 .134 .087 .635 .000 .614 300 311 .614 -0.338 0.073 -7.9 0.8 -8.0 0.7 B+ A- 2093 686609 5 5 995 .511 .511 .115 .134 .241 .000 .444 .444 308 277 069 0.285 0.071 -1.6 1.0 -1.8 0.9 A- A- 2094 686610 5 5 961 .574 .574 .165 .125 .135 .000 .486 .486 157 267 274 -0.037 0.073 -3.3 0.9 -3.3 0.9 A+ C-	2091	686596	5	5	997	.351	.351	.249	.234	.166	.000	.262	.262	034	160	116	1.140	0.072	2.7	1.1	4.4	1.2	A-	A-
2094 686610 5 5 961 .574 .574 .165 .125 .135 .000 .486 .486157267274 -0.037 0.073 -3.3 0.9 -3.3 0.9 A+ C-	2092	686608	5	5	1022	.635	.144	.134	.087	.635	.000	.614	300	301	311	.614	-0.338	0.073	-7.9	0.8	-8.0	0.7	B+	A-
2094 686610 5 5 961 .574 .574 .165 .125 .135 .000 .486 .486157267274 -0.037 0.073 -3.3 0.9 -3.3 0.9 A+ C-	2093	686609	5	5	995	.511	.511	.115	.134	.241	.000	.444	.444	308	277	069	0.285	0.071	-1.6	1.0	-1.8	0.9	A-	A-
	2094	686610	5	5			.574	.165			.000	.486	.486		267	274	-0.037		-3.3	0.9	-3.3		A+	
				5						.521					_									

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

2096 886612 5 5 939 5.44 5.44 2.01 1.31 1.24 .000 .420 .420 .129 .244 .229 0.113 .073 .05 1.0 .03 1.0 .1 .4 .4 .209 .266 .257 .258 .0076 .066 .349 .05 .0 .03 1.0 .4 .4 .209 .258 .266 .257 .258 .0076 .066 .257 .258 .0076 .066 .257 .258 .0076 .066 .257 .258 .0076 .066 .257 .258 .0076 .066 .257 .258 .0076 .258 .258 .0076 .258 .258 .2076 .258 .258 .2076 .258 .258 .2076 .258 .258 .258 .2076 .258 .258 .258 .2076 .258 .25	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2098 686614 5 5 5 1086 5.88 5.88 194 113 104 1000 491 491 -206 -257 -258 -0076 0.068 -3.9 0.9 -4.4 0.8 A+	_		Grade	Grade			. ,													in			/F	/B
2099 686615 5 5 1071 400 290 400 157 153 300 257 022 257 174 202 0.870 0.069 3.6 1.1 5.8 1.3 A 2099 686616 5 5 1074 460 1.69 3.05 4.60 0.65 0.00 426 -227 -3.12 -264 4.36 -0.133 0.070 -1.4 1.0 1.8 0.9 A 1.0 1.0 686618 5 5 1214 547 110 547 -2.14 1.29 0.00 3.68 1.58 3.68 -2.47 -0.97 0.175 0.064 1.3 1.0 1.4 1.1 1.8 0.9 A 1.0 1.8 0.00 1.																							A+	Α-
2009 686616 5 5 1074 460 169 303 460 065 000 426 -227 -165 4.26 -2.29 0.570 0.068 2.3 0.9 -1.1 1.0 A 1.0 1																				0.9			A+	
2101 686618 5 5 1056 6.601 .112 .078 .209 .601 .000 .436 .072 .332 .264 .436 .0133 .0.70 .1.4 1.0 .1.8 0.9 A	_	686615									.000									1.1	5.8	1.3	A-	<u> </u>
2101 686618 5 5 1124 5.57 110 5.47 214 129 0.00 3.68 1.58 3.68 -2.47 -0.07 0.175 0.064 1.3 1.0 1.4 1.1 A+ A- A- 2102 686619 5 5 1145 3.40 1.77 3.40 1.92 1.90 0.00 2.94 -0.95 2.24 -1.12 -1.67 0.675 0.066 3.6 1.1 4.4 1.2 A- A- 2104 686621 5 5 1113 3.06 3.65 3.06 3.67 3.06 3.75 3.00 2.51 3.04 3.22 -2.33 0.477 0.071 6.4 0.8 6.2 0.7 A+ 2104 686621 5 5 1113 3.05 3.06 3.75 3.08 2.23 0.288 0.28 0.28 0.98 0.99 0.068 3.5 1.1 5.6 1.3 A+ A- 2.06 68622 5 5 1113 3.75 3.06 3.75 3.00 2.53 0.288 0.08 2.53 -2.288 0.58 0.99 0.068 3.5 1.1 5.6 1.3 A+ A- 2.06 686623 5 5 2.238 6.61 6.61 1.1 1.29 0.88 0.00 4.87 4.87 -2.24 -2.23 -2.66 0.590 0.050 4.5 0.9 5.0 0.8 A- B- 2.07 6.07		686616					.169				.000								-2.3	0.9	-		A-	
2102 686619 5 5 1154 3.00 2.82 3.00 2.56 1.62 0.00 1.40 0.031 1.40 0.099 0.18 1.426 0.070 6.0 1.2 7.6 1.5 A- A- 2103 686620 5 5 1145 4.40 1.77 4.40 1.92 1.90 0.00 2.94 0.055 2.94 -1.12 -1.67 0.675 0.066 3.6 1.1 4.4 1.2 A- A- 2103 686621 5 5 1113 6.69 6.68 1.01 1.8 1.13 0.00 5.71 5.71 3.04 -3.22 2.33 0.477 0.071 6.4 0.8 6.2 0.7 A- B- 2105 686622 5 5 1103 3.75 3.06 3.75 0.84 2.35 0.00 2.53 0.38 2.53 -2.88 0.088 0.999 0.068 3.5 1.1 5.6 1.3 A+ A- 2.06 6.86623 5 5 2.238 6.81 6.81 1.01 1.12 0.88 0.00 4.67 -2.27 -2.270 4.67 -1.82 -0.376 0.071 1.18 0.9 2.8 0.9 A- A- 2.08 0.08	2100	686617					.112				.000					.436				1.0	-1.8		A-	
2103 686620 5 5 1145 A40 1.77 A40 1.92 1.90 .000 .294 .095 .294 .112 .167 0.675 0.666 3.6 1.1 A4 1.2 A A A A A A A A A	2101	686618	5	5	1214	.547	.110	.547	.214	.129	.000	.368	158	.368	247	097	0.175		1.3	1.0	1.4	1.1	A+	A-
2104 686621 5 5 5 1113 669 668 .101 .118 .113 .000 .571 .571 .304 .322 .233 .0.477 .0.071 .6.4 0.8 .6.2 0.7 A+ B- 2105 686622 5 5 5 1103 .375 .306 .375 .084 .235 .308 .253 .288 .058 .0.999 .0.68 .3.5 .1.1 .5.6 .1.3 A+ A+ A+ A+ .2.54 .2.23 .2.66 .0.590 .0.68 .3.5 .1.1 .5.6 .1.3 A+ A+ .2.54 .2.23 .2.68 .0.58 .0.999 .0.68 .3.5 .1.1 .5.6 .1.3 A+ A+ .2.54 .2.23 .2.68 .0.58 .0.999 .0.68 .3.5 .1.1 .5.6 .0.9 .5.0 .0.8 A+ .2.54 .2.23 .2.68 .0.58 .0.995 .0.50 .0.50 .0.8 A+ .2.54 .2.23 .2.68 .0.58 .0.995 .0.58 .0.995 .0.84 .2.54 .2.23 .2.28 .2.23 .2.23 .2.23 .2.23 .2.24 .2.23 .2.24	2102	686619	5	5	1154	.300	.282	.300	.256	.162	.000	.140	031	.140	099	018	1.426		6.0	1.2	7.6	1.5	A-	A+
2105 686622 5 5 1103 3.75 3.06 3.75 0.84 2.25 0.00 2.25 0.38 2.25 0.288 0.058 0.999 0.068 3.5 1.1 5.6 1.3 A+	2103	686620	5	5	1145	.440	.177	.440	.192	.190	.000	.294	095	.294	112	167	0.675	0.066	3.6	1.1	4.4	1.2	A-	A+
2106 686623 5 5 2238 6.81 6.81 6.81 1.01 1.29 0.88 0.00 4.87 4.87 -2.24 -2.23 -2.66 -0.590 0.050 -4.5 0.9 -5.0 0.8 A-	2104	686621	5	5	1113	.669	.668	.101	.118	.113	.000	.571	.571	304	322	233	-0.477	0.071	-6.4	0.8	-6.2	0.7	A+	B-
2107 687039 5 5 1066 6.637 1.63 1.13 6.37 0.68 0.00 4.67 -2.37 -2.70 4.67 -1.82 -0.376 0.071 -1.8 0.9 -2.8 0.9 A+	2105	686622	5	5	1103	.375	.306	.375	.084	.235	.000	.253	038	.253	288	058	0.999	0.068	3.5	1.1	5.6	1.3	A+	A+
2108 687040 5 5 1011 .481 .481 .102 .150 .267 .000 .382 .382 .223 .245 .081 0.407 0.071 1.3 1.0 1.2 1.1 A+ B-	2106	686623	5	5	2238	.681	.681	.101	.129	.088	.000	.487	.487	254	223	266	-0.590	0.050	-4.5	0.9	-5.0	0.8	A-	B-
2110 687042 5 5 1019 .221 .274 .333 .173 .221 .000 .196 .040 .010 .180 .196 1.860 .0.81 1.9 1.1 4.0 1.3 A+	2107	687039	5	5	1066	.637	.163	.131	.637	.068	.000	.467	237	270	.467	182	-0.376	0.071	-1.8	0.9	-2.8	0.9	A+	A+
2110 687043 5 5 997 .463 .244 .121 .172 .463 .000 .188 .122 .301 .127 .188 0.547 0.070 7.0 1.2 7.1 1.3 A+ .211 .687044 5 5 990 .516 .516 .251 .166 .068 .000 .383 .383 .111 .198 .278 0.289 0.070 0.3 1.0 0.2 1.0 A+ .211 .687045 5 5 1003 .401 .401 .113 .161 .326 .000 .251 .251 .273 .191 .071 .0812 0.072 .5.8 1.2 4.9 1.2 A- A+ .2113 .687046 5 5 990 .568 .568 .144 .145 .142 .000 .475 .475 .184 .299 .188 .0.036 0.072 .2.3 0.9 .18 0.9 A- A+ .2114 .687047 5 5 973 .617 .103 .617 .137 .144 .000 .475 .243 .475 .239 .215 .0.287 0.074 .1.9 0.9 .2.3 0.9 A- A+ .2116 .687048 5 5 1114 .583 .583 .191 .112 .114 .000 .422 .422 .132 .277 .217 .0.093 .0.68 .0.2 .1.0 .0.3 1.0 A+ .2116 .687049 5 5 1068 .435 .144 .199 .434 .223 .000 .238 .238 .141 .035 .106 .1.48 .0.073 .4.2 1.1 .4.4 1.3 A- .2118 .687051 5 5 972 .433 .193 .153 .220 .433 .000 .285 .109 .183 .0.077 .285 .0.617 .0.072 .3.9 1.1 .4.4 1.2 A- .2119 .687053 5 5 .973 .515 .242 .515 .144 .100 .000 .406 .150 .406 .208 .218 .0.208 .0.072 .1 .0 .0.3 1.0 A+ .2121 .687054 5 5 .868 .559 .659 .074 .191 .076 .000 .433 .144 .311 .126 .234 .219 .463 .0.072 .3.1 .1 .4 .4 .1 .4 .4 .2 .2 .2 .2 .2 .2	2108	687040	5	5	1011	.481	.481	.102	.150	.267	.000	.382	.382	223	245	081	0.407	0.071	1.3	1.0	1.2	1.1	A+	B-
2111 687044 5 5 990 .516 .516 .251 .166 .068 .000 .383 .383 111 .198 278 .0289 .0.070 0.3 1.0 0.2 1.0 A+ 2112 687045 5 5 1003 .401 .411 .113 .161 .326 .000 .251 .251 .273 .191 .071 .0812 .0072 .5.8 1.2 4.9 1.2 A- A+ 2114 687047 5 5 990 .668 .164 .142 .000 .475 .478 .239 .215 -0.036 .0072 -2.3 .0.9 -A- A+ 2114 687049 5 5 1114 .583 .583 .191 .112 .114 .000 .422 .422 .132 .277 .217 -0.093 .068 .02 .10 .03 .1 .44 .14 .000	2109	687042	5	5	1019	.221	.274	.333	.173	.221	.000	.196	040	.010	180	.196	1.860	0.081	1.9	1.1	4.0	1.3	A+	
2112 687045 5 5 1003 .401 .411 .161 .326 .000 .251 .251 .273 .191 .071 0.812 0.072 5.8 1.2 4.9 1.2 A-A+ 2113 687046 5 5 990 .568 .568 .144 .145 .142 .000 .475 .184 .299 .188 -0.036 0.072 -2.3 0.9 -1.8 0.9 A-A+ 2114 687048 5 5 973 .617 .103 .617 .000 .475 .223 .227 .215 -0.287 0.074 -1.9 .09 -2.3 .09 A-A 2116 687049 5 5 1068 .435 .144 .199 .434 .223 .000 .232 .2266 .218 .232 .149 .0646 .0.069 6.1 1.2 6.8 1.3 A- 2117 687050 5	2110	687043	5	5	997	.463	.244	.121	.172	.463	.000	.188	.122	301	127	.188	0.547	0.070	7.0	1.2	7.1	1.3	A+	
2113 687046 5 5 990 .568 .568 .144 .145 .142 .000 .475 .475 184 299 188 -0.036 0.072 -2.3 0.9 -1.8 0.9 A-A+ 2114 687047 5 5 973 .617 .103 .617 .137 .144 .000 .475 243 .475 239 215 -0.287 0.074 -1.9 0.9 -2.3 0.9 A+A 2115 687048 5 5 1114 .583 .583 .191 .112 .114 .000 .232 .2256 .218 .232 .149 .0.646 .0.696 6.1 1.2 .68 .13 A- 2117 687050 5 5 1013 .336 .336 .152 .253 .260 .000 .238 .238 .141 .035 .106 1.148 0.003 .43 .00 .238 <t< td=""><td>2111</td><td>687044</td><td>5</td><td>5</td><td>990</td><td>.516</td><td>.516</td><td>.251</td><td>.166</td><td>.068</td><td>.000</td><td>.383</td><td>.383</td><td>111</td><td>198</td><td>278</td><td>0.289</td><td>0.070</td><td>0.3</td><td>1.0</td><td>0.2</td><td>1.0</td><td>A+</td><td></td></t<>	2111	687044	5	5	990	.516	.516	.251	.166	.068	.000	.383	.383	111	198	278	0.289	0.070	0.3	1.0	0.2	1.0	A+	
2114 687047 5 5 5 973 .617 .103 .617 .137 .144 .000 .475243 .475239 .215 -0.287 0.074 .1.9 0.9 -2.3 0.9 A+ A- 2115 687048 5 5 5 1114 .583 .583 .191 .112 .114 .000 .422 .422 .132277 .217 -0.093 0.068 .0.2 1.0 -0.3 1.0 A+ A- 2116 687049 5 5 1068 .435 .144 .199 .434 .223 .000 .232 .256 .218 .232 .149 0.646 0.069 .6.1 1.2 6.8 1.3 A- 2117 687050 5 5 1013 .336 .336 .152 .253 .260 .000 .238 .238 .141 .035 .106 1.148 0.073 .4.2 1.1 4.4 1.3 A- 2118 687051 5 5 972 .433 .193 .153 .220 .433 .000 .285 .109 .183 .077 .285 0.617 0.072 .3.9 1.1 4.8 1.2 A- 2119 687052 5 5 973 .515 .242 .515 .144 .100 .000 .406 .150 .406 .208 .218 0.208 0.072 0.1 1.0 .0.3 1.0 A+ 2120 687053 5 5 1868 .659 .659 .074 .191 .076 .000 .343 .343 .242 .074 .264 .0.441 0.054 1.9 1.1 2.2 1.1 A- 2123 687059 5 5 1067 .425 .333 .140 .425 .103 .000 .281 .344 .167 .414 .311 .126 0.317 0.067 .1.3 1.0 .0.5 1.0 A- 2124 687060 5 5 5 1081 .597 .597 .084 .116 .204 .000 .298 .298 .306 .244 .042 .0.181 0.069 .2.7 1.1 5.0 1.2 A+ 2124 687060 5 5 5 1084 .608 .608 .121 .163 .108 .000 .572 .572 .312 .297 .219 .0.291 .0.69 .6.8 0.8 6.9 0.7 A+ 2126 687063 5 5 5 1008 .450 .176 .205 .169 .450 .000 .432 .183 .295 .439 .295 .439 .207 .0.071 .1.7 1.0 0.1 1.0 0.1 1.0 A+ 2121 687066 5 5 989 .637 .109 .126 .637 .127 .000 .432 .183 .295 .449 .249 .0.466 .0.056 .3.7 0.9 -5.1 0.8 A- 2128 687065 5 5 1008 .455 .109 .718 .139 .718 .097 .046 .000 .477 .2.72 .477 .2.50 .2.24 .0.86 .0.056 .3.7 0.9 -5.1 0.8 A- 2128 687065 5 5 968 .457 .213 .161 .169 .457 .000 .309 .005 .005 .005 .005 .005 .005 .005 .0	2112	687045	5	5	1003	.401	.401	.113	.161	.326	.000	.251	.251	273	191	.071	0.812	0.072	5.8	1.2	4.9	1.2	A-	A+
2115 687048 5 5 1114 .583 .583 .191 .112 .114 .000 .422 .422 132 277 217 -0.093 .0.68 -0.2 1.0 -0.3 1.0 A+ A- 2116 687049 5 5 1068 .435 .144 .199 .434 .223 .000 .232 .256 -218 .232 .149 .0.646 0.069 6.1 1.2 6.8 1.3 A- 2117 687050 5 5 1013 .336 .336 .152 .253 .260 .000 .285 109 183 .077 .285 .0.617 .0.072 .39 1.1 4.4 1.3 A- 2118 687052 5 5 973 .515 .242 .515 .144 .100 .000 .466 .183 .077 .285 .0.617 .0.072 .0.1 1.0 .0 .4 <td>2113</td> <td>687046</td> <td>5</td> <td>5</td> <td>990</td> <td>.568</td> <td>.568</td> <td>.144</td> <td>.145</td> <td>.142</td> <td>.000</td> <td>.475</td> <td>.475</td> <td>184</td> <td>299</td> <td>188</td> <td>-0.036</td> <td>0.072</td> <td>-2.3</td> <td>0.9</td> <td>-1.8</td> <td>0.9</td> <td>A-</td> <td>A+</td>	2113	687046	5	5	990	.568	.568	.144	.145	.142	.000	.475	.475	184	299	188	-0.036	0.072	-2.3	0.9	-1.8	0.9	A-	A+
2116 687049 5 5 1068 .435 .144 .199 .434 .223 .000 .232 .256 .218 .232 .149 0.646 0.069 6.1 1.2 6.8 1.3 A- 2117 687050 5 5 1013 .336 .356 .152 .253 .260 .000 .238 .238 141 035 106 1.148 0.073 4.2 1.1 4.4 1.3 A- 2118 687051 5 5 972 .433 .193 .153 .220 .433 .000 .285 109 183 077 .285 0.617 0.072 .39 1.1 4.8 1.2 A- 2119 687052 5 5 973 .515 .242 .515 .144 .100 .000 .466 208 218 .0208 0.072 .31 .09 -1.1 1.0 .4	2114	687047	5	5	973	.617	.103	.617	.137	.144	.000	.475	243	.475	239	215	-0.287	0.074	-1.9	0.9	-2.3	0.9	A+	A-
2117 687050 5 5 1013 .336 .152 .253 .260 .000 .238 .238 141 035 106 1.148 0.073 4.2 1.1 4.4 1.3 A- 2118 687051 5 5 972 .433 .193 .153 .220 .433 .000 .285 109 183 077 .285 0.617 0.072 3.9 1.1 4.8 1.2 A- 2119 687052 5 5 973 .515 .242 .515 .144 .100 .000 .406 150 .406 208 218 0.208 0.072 0.1 1.0 -0.3 1.0 A+ 2120 687053 5 5 960 .463 .156 .179 .202 .463 .000 .463 146 234 219 .463 0.459 0.072 -3.1 0.9 -1.1 1.0 A+ </td <td>2115</td> <td>687048</td> <td>5</td> <td>5</td> <td>1114</td> <td>.583</td> <td>.583</td> <td>.191</td> <td>.112</td> <td>.114</td> <td>.000</td> <td>.422</td> <td>.422</td> <td>132</td> <td>277</td> <td>217</td> <td>-0.093</td> <td>0.068</td> <td>-0.2</td> <td>1.0</td> <td>-0.3</td> <td>1.0</td> <td>A+</td> <td>A-</td>	2115	687048	5	5	1114	.583	.583	.191	.112	.114	.000	.422	.422	132	277	217	-0.093	0.068	-0.2	1.0	-0.3	1.0	A+	A-
2118 687051 5 972 .433 .193 .153 .220 .433 .000 .285 109 183 077 .285 0.617 0.072 3.9 1.1 4.8 1.2 A- 2119 687052 5 5 973 .515 .242 .515 .144 .100 .000 .406 208 218 0.208 0.072 .01 1.0 -0.3 1.0 A+ 2120 687053 5 5 960 .463 .156 .179 .202 .463 .000 .463 146 234 219 .463 0.459 0.072 -3.1 0.9 -1.1 1.0 A+ 2121 687054 5 5 1868 .659 .659 .074 .191 .076 .000 .343 .343 242 074 264 -0.441 0.054 1.9 1.1 2.2 1.1 A- 2122 </td <td>2116</td> <td>687049</td> <td>5</td> <td>5</td> <td>1068</td> <td>.435</td> <td>.144</td> <td>.199</td> <td>.434</td> <td>.223</td> <td>.000</td> <td>.232</td> <td>256</td> <td>218</td> <td>.232</td> <td>.149</td> <td>0.646</td> <td>0.069</td> <td>6.1</td> <td>1.2</td> <td>6.8</td> <td>1.3</td> <td>A-</td> <td></td>	2116	687049	5	5	1068	.435	.144	.199	.434	.223	.000	.232	256	218	.232	.149	0.646	0.069	6.1	1.2	6.8	1.3	A-	
2119 687052 5 5 973 5.15 .242 .515 .144 .100 .000 .406 208 218 0.208 0.072 0.1 1.0 -0.3 1.0 A+ 2120 687053 5 5 960 .463 .156 .179 .202 .463 .000 .463 218 0.208 0.072 0.1 1.0 -0.3 1.0 A+ 2121 687054 5 5 1868 .659 .659 .074 .191 .076 .000 .343 .343 242 074 264 -0.441 0.054 1.9 1.1 2.2 1.1 A- B- 2122 687058 5 5 1101 .499 .159 .499 .096 .246 .000 .414 167 .414 311 126 0.317 0.067 -1.3 1.0 -0.5 1.0 A- A+ 2123 687059 <td>2117</td> <td>687050</td> <td>5</td> <td>5</td> <td>1013</td> <td>.336</td> <td>.336</td> <td>.152</td> <td>.253</td> <td>.260</td> <td>.000</td> <td>.238</td> <td>.238</td> <td>141</td> <td>035</td> <td>106</td> <td>1.148</td> <td>0.073</td> <td>4.2</td> <td>1.1</td> <td>4.4</td> <td>1.3</td> <td>A-</td> <td></td>	2117	687050	5	5	1013	.336	.336	.152	.253	.260	.000	.238	.238	141	035	106	1.148	0.073	4.2	1.1	4.4	1.3	A-	
2120 687053 5 960 .463 .156 .179 .202 .463 .000 .463 146 234 219 .463 .0.459 0.072 -3.1 0.9 -1.1 1.0 A+ 2121 687054 5 5 1868 .659 .659 .074 .191 .076 .000 .343 .343 242 074 264 -0.441 0.054 1.9 1.1 2.2 1.1 A- B- 2122 687058 5 5 1101 .499 .159 .499 .096 .246 .000 .414 167 .414 311 126 0.317 0.067 -1.3 1.0 -0.5 1.0 A- A+ 2123 687059 5 5 1067 .425 .333 .140 .425 .103 .000 .261 .045 221 .261 240 0.672 0.068 4.2 1.1 <td< td=""><td>2118</td><td>687051</td><td>5</td><td>5</td><td>972</td><td>.433</td><td>.193</td><td>.153</td><td>.220</td><td>.433</td><td>.000</td><td>.285</td><td>109</td><td>183</td><td>077</td><td>.285</td><td>0.617</td><td>0.072</td><td>3.9</td><td>1.1</td><td>4.8</td><td>1.2</td><td>A-</td><td></td></td<>	2118	687051	5	5	972	.433	.193	.153	.220	.433	.000	.285	109	183	077	.285	0.617	0.072	3.9	1.1	4.8	1.2	A-	
2121 687054 5 5 1868 .659 .659 .074 .191 .076 .000 .343 .343 242 074 264 -0.441 0.054 1.9 1.1 2.2 1.1 A- B- 2122 687058 5 5 1101 .499 .159 .499 .096 .246 .000 .414 167 .414 311 126 0.317 0.067 -1.3 1.0 -0.5 1.0 A- A+ 2123 687059 5 5 1067 .425 .333 .140 .425 .103 .000 .261 .045 221 .261 240 0.672 0.068 4.2 1.1 4.6 1.2 A+ A- 2124 687060 5 5 1081 .597 .084 .116 .204 .000 .298 .298 306 244 .042 -0.181 .0069 2.7 1.1 </td <td>2119</td> <td>687052</td> <td>5</td> <td>5</td> <td>973</td> <td>.515</td> <td>.242</td> <td>.515</td> <td>.144</td> <td>.100</td> <td>.000</td> <td>.406</td> <td>150</td> <td>.406</td> <td>208</td> <td>218</td> <td>0.208</td> <td>0.072</td> <td>0.1</td> <td>1.0</td> <td>-0.3</td> <td>1.0</td> <td>A+</td> <td></td>	2119	687052	5	5	973	.515	.242	.515	.144	.100	.000	.406	150	.406	208	218	0.208	0.072	0.1	1.0	-0.3	1.0	A+	
2122 687058 5 1101 .499 .159 .499 .096 .246 .000 .414 167 .414 311 126 0.317 0.067 -1.3 1.0 -0.5 1.0 A- A+ 2123 687059 5 5 1067 .425 .333 .140 .425 .103 .000 .261 .045 221 .261 240 0.672 0.068 4.2 1.1 4.6 1.2 A+ A- 2124 687060 5 5 1081 .597 .597 .084 .116 .204 .000 .298 .298 306 244 .042 -0.181 0.069 2.7 1.1 5.0 1.2 A+ A- 2125 687062 5 5 1084 .608 .608 .121 .163 .108 .000 .572 .572 312 297 219 -0.291 0.069 -6.8 0	2120	687053	5	5	960	.463	.156	.179	.202	.463	.000	.463	146	234	219	.463	0.459	0.072	-3.1	0.9	-1.1	1.0	A+	
2123 687059 5 5 1067 .425 .333 .140 .425 .103 .000 .261 .045 221 .261 240 0.672 0.068 4.2 1.1 4.6 1.2 A+ A- 2124 687060 5 5 1081 .597 .597 .084 .116 .204 .000 .298 .298 306 244 .042 -0.181 0.069 2.7 1.1 5.0 1.2 A+ A- 2125 687062 5 5 1084 .608 .608 .121 .163 .108 .000 .572 .572 312 297 219 -0.291 0.069 -6.8 0.8 -6.9 0.7 A+ A- 2126 687063 5 5 1008 .450 .169 .450 .000 .432 164 161 234 .432 0.512 0.071 -1.7 1.0 0.1 </td <td>2121</td> <td>687054</td> <td>5</td> <td>5</td> <td>1868</td> <td>.659</td> <td>.659</td> <td>.074</td> <td>.191</td> <td>.076</td> <td>.000</td> <td>.343</td> <td>.343</td> <td>242</td> <td>074</td> <td>264</td> <td>-0.441</td> <td>0.054</td> <td>1.9</td> <td>1.1</td> <td>2.2</td> <td>1.1</td> <td>A-</td> <td>B-</td>	2121	687054	5	5	1868	.659	.659	.074	.191	.076	.000	.343	.343	242	074	264	-0.441	0.054	1.9	1.1	2.2	1.1	A-	B-
2124 687060 5 5 1081 .597 .597 .084 .116 .204 .000 .298 .298 306 244 .042 -0.181 0.069 2.7 1.1 5.0 1.2 A+ A- 2125 687062 5 5 1084 .608 .608 .121 .163 .108 .000 .572 .572 312 297 219 -0.291 0.069 -6.8 0.8 -6.9 0.7 A+ A- 2126 687063 5 5 1008 .450 .176 .205 .169 .450 .000 .432 164 161 234 .432 0.512 0.071 -1.7 1.0 0.1 1.0 A+ A+ 2127 687064 5 5 989 .637 .109 .126 .637 .127 .000 .493 183 295 .493 247 -0.464 0.074 -3	2122	687058	5	5	1101	.499	.159	.499	.096	.246	.000	.414	167	.414	311	126	0.317	0.067	-1.3	1.0	-0.5	1.0	A-	A+
2125 687062 5 5 1084 .608 .608 .121 .163 .108 .000 .572 .572 312 297 219 -0.291 0.069 -6.8 0.8 -6.9 0.7 A+ A- 2126 687063 5 1008 .450 .176 .205 .169 .450 .000 .432 164 161 234 .432 0.512 0.071 -1.7 1.0 0.1 1.0 A+ A+ 2127 687064 5 5 989 .637 .109 .126 .637 .127 .000 .493 183 295 .493 247 -0.464 0.074 -3.3 0.9 -3.5 0.8 A+ A- 2128 687065 5 1901 .718 .139 .718 .097 .046 .000 .477 272 .477 250 224 -0.846 0.056 -3.7 0.9 -5.1 0.8 A- 2129 687066 5 5 968	2123	687059	5	5	1067	.425	.333	.140	.425	.103	.000	.261	.045	221	.261	240	0.672	0.068	4.2	1.1	4.6	1.2	A+	A-
2126 687063 5 5 1008 .450 .176 .205 .169 .450 .000 .432 164 161 234 .432 0.512 0.071 -1.7 1.0 0.1 1.0 A+ A+ 2127 687064 5 989 .637 .109 .126 .637 .127 .000 .493 183 295 .493 247 -0.464 0.074 -3.3 0.9 -3.5 0.8 A+ A- 2128 687065 5 1901 .718 .139 .718 .097 .046 .000 .477 272 .477 250 224 -0.846 0.056 -3.7 0.9 -5.1 0.8 A- 2129 687066 5 968 .457 .213 .161 .169 .457 .000 .309 095 049 259 .309 0.466 0.072 3.1 1.1 4.4 1.2 A+ A-	2124	687060	5	5	1081	.597	.597	.084	.116	.204	.000	.298	.298	306	244	.042	-0.181	0.069	2.7	1.1	5.0	1.2	A+	A-
2127 687064 5 5 989 .637 .109 .126 .637 .127 .000 .493 183 295 .493 247 -0.464 0.074 -3.3 0.9 -3.5 0.8 A+ A- 2128 687065 5 5 1901 .718 .139 .718 .097 .046 .000 .477 272 .477 250 224 -0.846 0.056 -3.7 0.9 -5.1 0.8 A- 2129 687066 5 5 968 .457 .213 .161 .169 .457 .000 .309 095 049 259 .309 0.466 0.072 3.1 1.1 4.4 1.2 A+ A-	2125	687062	5	5	1084	.608	.608	.121	.163	.108	.000	.572	.572	312	297	219	-0.291	0.069	-6.8	0.8	-6.9	0.7	A+	A-
2128 687065 5 1901 .718 .139 .718 .097 .046 .000 .477 272 .477 250 224 -0.846 0.056 -3.7 0.9 -5.1 0.8 A- A- 2129 687066 5 968 .457 .213 .161 .169 .457 .000 .309 095 049 259 .309 0.466 0.072 3.1 1.1 4.4 1.2 A+ A-	2126	687063	5	5	1008	.450	.176	.205	.169	.450	.000	.432	164	161	234	.432	0.512	0.071	-1.7	1.0	0.1	1.0	A+	A+
2129 687066 5 5 968 .457 .213 .161 .169 .457 .000 .309095049259 .309 0.466 0.072 3.1 1.1 4.4 1.2 A+ A-	2127	687064	5	5	989	.637	.109	.126	.637	.127	.000	.493	183	295	.493	247	-0.464	0.074	-3.3	0.9	-3.5	0.8	A+	A-
2129 687066 5 5 968 .457 .213 .161 .169 .457 .000 .309095049259 .309 0.466 0.072 3.1 1.1 4.4 1.2 A+ A-	2128	687065	5	5	1901	.718	.139	.718	.097	.046	.000	.477	272	.477	250	224	-0.846	0.056	-3.7	0.9	-5.1	0.8	A-	A-
	-	687066	5	5		.457		.161		.457	.000	.309		049		.309	0.466		3.1	1.1	4.4			-
2130 687250 5 5 1131 .679 .679 .117 .100 .104 .000 .527 .527 .313 284 197 -0.609 0.071 -4.4 0.9 -5.0 0.8 A+ A-	2130	687250	5	5	1131	.679	.679	.117	.100	.104	.000	.527	.527	313	284	197	-0.609	0.071	-4.4	0.9	-5.0	0.8		A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

2132 6	687252 687432	Grade	Grade	N			PIKI	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2132 6		_			PVal	P(A)	P(B)	1 (0)		· (-)			11(0)	1 1(0)	11(0)		_	in	in	out	out	/F	/B
+ + + + + + + + + + + + + + + + + + +	627/22	5	5	2188	.741	.095	.741	.105	.059	.000	.492	278	.492	276	210	-0.958	0.054	-4.4	0.9	-5.3	0.8	A+	A-
2122	007432	5	5	1015	.752	.752	.122	.072	.054	.000	.561	.561	284	288	331	-0.980	0.080	-5.3	0.8	-5.5	0.7	A-	B-
2133 6	687433	5	5	1009	.387	.387	.193	.114	.306	.000	.232	.232	115	226	.009	0.928	0.071	4.1	1.1	5.9	1.3	A-	A+
_	687434	5	5	1042	.222	.381	.306	.091	.222	.000	.222	.126	136	316	.222	1.912	0.080	0.8	1.0	5.3	1.5	A+	A-
2135 6	687435	5	5	1113	.219	.179	.504	.219	.098	.000	.031	092	.210	.031	277	1.825	0.077	4.9	1.2	9.6	1.9	A-	A+
2136	687436	5	5	1113	.516	.516	.111	.276	.097	.000	.302	.302	224	072	164	0.235	0.066	3.4	1.1	4.4	1.2	A+	A-
2137 6	687437	5	5	1105	.400	.234	.164	.202	.400	.000	.355	092	176	174	.355	0.802	0.067	-0.2	1.0	2.8	1.1	A+	A-
2138 6	687440	5	5	1094	.475	.152	.475	.156	.217	.000	.183	164	.183	144	.047	0.436	0.067	7.8	1.2	7.8	1.3	A-	A-
2139	687441	5	5	1031	.519	.519	.177	.193	.112	.000	.315	.315	234	107	084	0.255	0.069	2.6	1.1	2.8	1.1	A+	A-
2140 6	687442	5	5	1033	.492	.197	.148	.164	.492	.000	.411	156	233	164	.411	0.379	0.069	-1.8	1.0	-0.3	1.0	A+	A-
2141 6	687453	5	5	1069	.374	.514	.062	.374	.050	.000	.234	.005	315	.234	183	1.001	0.069	3.8	1.1	5.8	1.3	A+	B+
2142	687454	5	5	1046	.508	.508	.173	.089	.230	.000	.242	.242	163	306	.066	0.340	0.068	5.8	1.2	5.2	1.2	A+	A-
2143	687455	5	5	1018	.656	.155	.656	.103	.085	.000	.510	151	.510	314	330	-0.421	0.073	-3.9	0.9	-4.3	0.8	A+	A+
2144 6	687456	5	5	1016	.681	.094	.096	.128	.681	.000	.480	262	261	210	.480	-0.565	0.074	-3.1	0.9	-3.0	0.9	A+	A+
2145 6	687457	5	5	1922	.365	.543	.067	.365	.025	.000	.168	.039	285	.168	185	1.053	0.052	8.2	1.2	9.9	1.4	A+	B-
2146	687458	5	5	1025	.669	.087	.162	.669	.082	.000	.423	212	178	.423	269	-0.499	0.073	-1.0	1.0	-1.7	0.9	A+	A+
2147 6	687459	5	5	1015	.614	.189	.614	.100	.098	.000	.376	109	.376	247	223	-0.210	0.071	0.5	1.0	0.4	1.0	A+	A-
2148 6	687460	5	5	1043	.458	.255	.129	.458	.157	.000	.392	056	284	.392	208	0.613	0.069	-1.1	1.0	0.8	1.0	A+	A-
2149 6	687898	5	5	1078	.498	.498	.289	.141	.071	.000	.358	.358	164	229	097	0.407	0.068	1.8	1.1	2.2	1.1	A+	A+
2150 6	687899	5	5	1013	.396	.281	.182	.396	.141	.000	.319	113	216	.319	062	0.915	0.071	1.8	1.1	4.4	1.2	A+	A+
2151 6	687900	5	5	1004	.423	.112	.423	.259	.206	.000	.291	245	.291	028	135	0.768	0.071	3.9	1.1	4.3	1.2	A-	A-
2152 6	687901	5	5	986	.229	.181	.276	.314	.229	.000	.151	172	029	.034	.151	1.859	0.082	3.1	1.1	7.3	1.7	A+	A-
2153 6	687902	5	5	1854	.587	.172	.159	.587	.083	.000	.495	239	252	.495	222	-0.099	0.053	-4.1	0.9	-4.0	0.9	A+	A-
2154 7	741071	6	6	2761	.653	.120	.184	.653	.043	.000	.323	299	052	.323	179	-0.156	0.044	3.7	1.1	4.2	1.1	A-	A-
2155 7	741068	6	6	2761	.419	.419	.192	.127	.263	.000	.215	.215	036	216	045	1.028	0.043	9.9	1.2	9.9	1.3	A-	A-
2156 7	741070	6	6	2761	.763	.084	.044	.109	.763	.000	.364	219	245	140	.364	-0.816	0.049	0.8	1.0	-0.2	1.0	A+	A-
2157 7	741067	6	6	2761	.420	.217	.209	.154	.420	.000	.299	201	068	103	.299	1.022	0.042	4.7	1.1	5.9	1.2	A-	A-
2158 7	741069	6	6	2761	.568	.161	.568	.171	.100	.000	.427	099	.427	232	293	0.289	0.043	-1.6	1.0	-1.6	1.0	A+	A-
2159 7	740356	6	6	2767	.626	.172	.626	.123	.079	.000	.376	263	.376	164	106	-0.026	0.044	1.4	1.0	0.1	1.0	A-	A-
2160 7	740358	6	6	2767	.458	.180	.165	.197	.458	.000	.408	082	261	187	.408	0.821	0.042	-2.9	1.0	0.7	1.0	A+	A+
2161 7	740354	6	6	2767	.714	.073	.110	.103	.714	.000	.549	288	273	288	.549	-0.517	0.047	-7.9	0.8	-9.4	0.7	A-	A-
2162 7	740357	6	6	2767	.489	.172	.258	.489	.081	.000	.291	102	073	.291	274	0.664	0.042	5.9	1.1	6.6	1.2	A+	A+
2163 7	740355	6	6	2767	.455	.455	.206	.156	.183	.000	.348	.348	216	225	010	0.832	0.042	1.4	1.0	4.0	1.1	A-	A+
2164 7	741189	6	6	2714	.724	.724	.113	.104	.059	.000	.472	.472	260	239	235	-0.553	0.048	-3.4	0.9	-4.4	0.9	A-	A-
2165 7	741193	6	6	2714	.656	.108	.656	.070	.165	.000	.472	209	.472	270	243	-0.161	0.045	-3.3	0.9	-4.5	0.9	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	IU	Grade	Grade	14	rvai	r(A)	F(D)	r(c)	F(D)	F (-)	FtDIS	FI(A)	FI(D)	r I(C)	FI(D)	ivicas	IVISL	in	in	out	out	/F	/B
2166	741188	6	6	2714	.507	.190	.208	.507	.095	.000	.303	115	150	.303	157	0.607	0.043	5.8	1.1	6.4	1.2	A+	A-
2167	741192	6	6	2714	.408	.190	.408	.213	.189	.000	.201	129	.201	114	004	1.101	0.043	9.9	1.2	9.9	1.4	A+	A-
2168	741190	6	6	2714	.525	.249	.145	.082	.525	.000	.373	037	262	285	.373	0.521	0.043	1.5	1.0	2.6	1.1	A+	A-
2169	741074	6	6	2732	.545	.146	.545	.247	.061	.000	.207	251	.207	.034	123	0.348	0.043	9.9	1.2	9.9	1.3	A-	A+
2170	741077	6	6	2732	.209	.083	.181	.209	.526	.000	.147	117	170	.147	.076	2.168	0.050	2.9	1.1	9.9	1.9	A-	A-
2171	741075	6	6	2732	.592	.592	.101	.162	.144	.000	.468	.468	314	205	169	0.110	0.043	-3.5	0.9	-4.0	0.9	A-	A-
2172	741073	6	6	2732	.253	.231	.327	.189	.253	.000	.088	033	.103	186	.088	1.881	0.048	8.1	1.2	9.9	1.8	A-	A-
2173	741078	6	6	2732	.305	.305	.204	.190	.302	.000	.103	.103	178	183	.208	1.579	0.045	9.9	1.2	9.9	1.7	A-	A-
2174	741083	6	6	2826	.513	.276	.084	.513	.127	.000	.301	067	252	.301	153	0.559	0.042	7.3	1.1	7.9	1.2	A+	A-
2175	741085	6	6	2826	.592	.115	.116	.177	.592	.000	.510	210	237	282	.510	0.160	0.043	-6.1	0.9	-5.9	0.9	B+	A+
2176	741080	6	6	2826	.562	.562	.152	.195	.091	.000	.391	.391	200	149	220	0.313	0.043	0.9	1.0	2.9	1.1	A+	A+
2177	741081	6	6	2826	.446	.446	.196	.283	.074	.000	.284	.284	162	008	279	0.896	0.042	7.2	1.1	9.4	1.3	A-	A-
2178	741082	6	6	2826	.638	.074	.638	.190	.098	.000	.455	199	.455	195	303	-0.088	0.044	-2.2	1.0	-2.0	0.9	A-	A-
2179	740321	6	6	2790	.550	.550	.182	.217	.051	.000	.125	.125	.004	039	216	0.380	0.042	9.9	1.3	9.9	1.4	A+	A-
2180	740319	6	6	2790	.390	.146	.377	.086	.390	.000	.210	142	.046	266	.210	1.170	0.043	9.1	1.2	9.9	1.3	A+	A-
2181	740318	6	6	2790	.812	.070	.812	.044	.075	.000	.475	267	.475	273	235	-1.168	0.053	-4.1	0.9	-4.3	8.0	A+	A-
2182	740316	6	6	2790	.389	.350	.150	.112	.389	.000	.334	064	174	224	.334	1.177	0.043	1.5	1.0	5.3	1.2	A+	A-
2183	740317	6	6	2790	.200	.114	.603	.200	.084	.000	061	225	.341	061	257	2.268	0.050	8.6	1.3	9.9	2.5	A+	A+
2184	739547	6	6	2846	.726	.726	.131	.076	.068	.000	.496	.496	198	320	278	-0.555	0.047	-5.3	0.9	-4.9	0.8	B+	A-
2185	739543	6	6	2846	.552	.552	.184	.132	.132	.000	.290	.290	161	114	128	0.392	0.042	7.5	1.1	6.9	1.2	A+	A+
2186	739546	6	6	2846	.787	.081	.077	.787	.055	.000	.491	249	292	.491	243	-0.966	0.050	-4.8	0.9	-5.9	0.8	A+	A-
2187	739542	6	6	2846	.572	.187	.076	.165	.572	.000	.389	158	228	189	.389	0.292	0.042	0.7	1.0	1.2	1.0	A+	A+
2188	739544	6	6	2846	.553	.214	.553	.154	.078	.000	.475	146	.475	255	314	0.385	0.042	-5.0	0.9	-4.4	0.9	A+	A-
2189	739552	6	6	2700	.807	.807	.067	.085	.041	.000	.549	.549	300	313	273	-1.168	0.054	-6.6	0.8	-8.7	0.6	A-	A-
2190	739551	6	6	2700	.555	.184	.555	.140	.121	.000	.443	164	.443	268	194	0.329	0.043	-2.1	1.0	-2.0	1.0	A-	A-
2191	739549	6	6	2700	.300	.300	.098	.185	.417	.000	.159	.159	254	149	.123	1.634	0.046	8.6	1.2	9.9	1.5	A-	A+
2192	739548	6	6	2700	.749	.176	.039	.749	.036	.000	.294	140	169	.294	223	-0.759	0.049	4.3	1.1	3.7	1.2	A-	C-
2193	739550	6	6	2700	.433	.153	.189	.225	.433	.000	.240	055	056	185	.240	0.935	0.043	8.6	1.2	9.9	1.3	A+	A-
2194	737516	6	6	2780	.527	.178	.234	.527	.061	.000	.370	172	140	.370	250	0.469	0.042	2.4	1.0	3.1	1.1	A+	A-
2195	737515	6	6	2780	.812	.050	.812	.064	.074	.000	.505	287	.505	312	223	-1.195	0.053	-5.5	0.8	-5.7	0.7	A+	A-
2196	737514	6	6	2780	.658	.658	.175	.091	.076	.000	.373	.373	151	221	211	-0.210	0.045	2.1	1.0	1.0	1.0	A-	A-
2197	737517	6	6	2780	.465	.237	.167	.131	.465	.000	.397	087	198	258	.397	0.779	0.042	-1.0	1.0	2.7	1.1	A+	A+
2198	737518	6	6	2780	.489	.095	.171	.488	.246	.000	.223	219	.005	.223	114	0.663	0.042	9.9	1.2	9.9	1.3	A+	A+
2199	740074	6	6	2805	.445	.445	.110	.366	.080	.000	.205	.205	293	.064	153	0.890	0.042	9.9	1.2	9.9	1.3	A-	A-
2200	740075	6	6	2805	.613	.099	.098	.190	.613	.000	.378	202	143	207	.378	0.045	0.043	1.8	1.0	0.8	1.0	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

2201 740076 6 6 2805 837 036 837 051 0.76 0.00 4.42 -2.13 4.42 -2.41 -2.65 -1.386 0.056 -3.0 0.9 3.9 0.8 A A -2.203 740073 6 6 6 2805 4.10 4.10 1.156 2.55 1.79 0.00 2.26 2.26 -2.26 -2.20 -2.016 1.061 0.042 8.0 1.1 9.7 1.2 4.4 A -2.203 740073 6 6 2.805 4.72 2.32 1.45 4.72 1.51 0.00 2.62 0.25 -2.15 2.26 -2.26 -2.05 -3.0 0.95 0.75 0	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2202 740078 6 6 2805 A10 A10 156 255 179 0.00 226 226 226 2.04 -0.072 -0.016 1.061 0.042 9.5 1.2 9.7 1.3 A* A*	2224		Grade	Grade	200=														in	in	out	out	/F	/B
2203 740073 6 6 2805 A72 232 145 A72 151 0.00 262 -0.25 -1.57 2.62 -1.82 0.753 0.042 8.0 1.1 97 1.2 A-																								
2204 741218 6	-																							
2005 741215 6 6 2816 454 162 453 116 269 000 275 -200 275 -280 060 0.837 0.042 7.3 1.1 8.2 1.2 A- A- 2207 741217 6 6 6 2816 511 1.38 1.39 3.83 1.09 3.83 1.09 3.83 1.09 3.83 1.09 3.83 1.09 1.03 1.04 1.05																								
2206 741215 6 6 2816 5838 140 338 139 383 0.00 2.45 -1.39 0.47 -2.68 2.45 1.193 0.043 7.3 1.1 9.5 1.3 A+ A+ A+ A+ A+ A+ A+ A				_												-								-
2207 741217 6 6 2816 5.51 1.38 2.09 5.51 1.42 2.00 4.57 -1.89 1.77 4.57 -2.61 0.554 0.002 4.3 0.9 -2.2 1.0 A. A-	-		_	-																				-
Table Tabl		_	_	-												1 1					-		A+	
2209 740161 6 6 2838 3416 0.602 3416 0.79 343 0.000 1.80 -2.85 1.80 -2.67 1.05 1.026 0.042 9.9 1.2 9.9 1.4 A. A+ 2211 740159 6 6 2838 4.82 1.44 4.82 2.33 1.40 0.000 2.12 -1.70 2.12 -0.90 0.023 0.695 0.042 9.9 1.2 9.9 1.3 A. A+ A+ 2.211 740160 6 6 6 2838 5.02 5.02 1.84 1.22 1.92 0.00 3.05 3.05 1.45 -1.58 1.13 0.598 0.042 5.6 1.1 6.5 1.2 A. A+ 2.213 740160 6 6 2838 7.74 0.80 0.85 7.74 0.61 0.00 5.08 -2.36 -2.65 5.08 3.11 -0.916 0.049 5.2 0.9 7.2 0.7 A. B- 2.214 737328 6 6 2773 2.54 2.54 1.90 2.37 3.20 0.00 1.11 1.11 0.013 -1.45 0.38 1.936 0.047 8.3 1.2 9.9 1.7 A. A- 2.215 737331 6 6 2773 4.61 0.75 0.86 6.31 0.00 0.72 0.00 5.51 0.276 0.290 0.35 0.92 0.048 5.4 0.9 6.1 0.8 A+ A+ 2.216 737333 6 6 2773 4.64 1.29 2.28 1.80 4.64 0.00 4.11 -2.20 -2.35 0.438 4.11 0.808 0.042 1.8 1.0 2.0 1.1 A. A+ 2.216 737330 6 6 2773 4.64 1.29 2.28 1.80 4.64 0.00 4.11 -2.30 -1.34 -1.88 4.11 0.808 0.042 1.8 1.0 2.0 1.1 A. A+ 2.218 737332 6 6 2773 5.45 5.45 5.68 6.8 2.28 1.59 0.00 4.18 4.18 4.11 0.808 0.042 1.8 1.0 2.0 1.1 A. A+ 2.218 737332 6 6 2773 5.45 5.45 5.65 5.66 0.39 0.00 4.12 4.14 3.43 -2.28 -1.28 0.00 0.043 0.7 1.0 0.0 1.0 A. A- 2.217 73130 6 6 2773 5.45 5.45 5.65 5.68 2.28 1.59 0.00 4.18 4.18 4.11 0.808 0.042 1.8 1.0 2.0 1.1 A- A+ 2.218 737332 6 6 2773 5.45 5.45 5.65 5.68 2.28 1.59 0.00 4.18 4.18 4.18 4.11 0.808 0.042 1.8 4.10 0.0 1.0 A- A- 2.217 73130 6 6 2773 5.45 5.45 5.65 5.68 2.28 1.59 0.00 4.18 4.18 4.18 4.18 4.18 4.11 0																							A-	
2210 740159 6 6 2838 .482 .144 .482 .233 .140 .000 .212 .170 .212 .090 .023 .0.695 .0.042 9.9 .1.2 9.9 .1.3 A A .211 740164 6 6 2838 .650 .081 .104 .165 .650 .000 .506 .252 .314 .207 .506 .0.164 .0.044 .5.9 .0.9 .5.7 .0.9 A A .221 .740160 6 6 6 2838 .774 .081 .084 .122 .192 .000 .305 .145 .158 .113 .0.598 .0.042 .5.6 .1.1 .6.5 .1.2 A A .221 .740163 6 6 2773 .254 .254 .190 .237 .320 .000 .112 .112 .013 .145 .038 .1.936 .0.047 .8.3 .1.2 .9.9 .1.7 A A .2216 .737331 6 6 2773 .631 .0.59 .0.98 .631 .212 .000 .435 .276 .290 .435 .144 .0.043 .0.044 .1.2 .1.0 .1.9 .1.0 A A .2217 .737332 6 6 2773 .464 .129 .228 .180 .464 .000 .411 .230 .134 .188 .141 .0.808 .0.042 .1.8 .1.0 .2.0 .1.1 A A .2218 .737332 6 6 2773 .464 .129 .228 .180 .464 .000 .411 .230 .134 .188 .411 .0.808 .0.044 .1.2 .1.0 .1.9 .1.0 A A .2219 .737332 6 6 2773 .464 .129 .228 .180 .464 .000 .411 .230 .134 .188 .411 .0.808 .0.042 .1.8 .1.0 .2.0 .1.1 A A .2219 .7.1 .2.1			_	-				.216														1.3	A-	A+
2211 740164 6 6 2838 .650 .081 .104 .165 .650 .000 .506 .252 .314 .207 .506 .0.164 .0.044 .5.9 .0.9 .5.7 .0.9 A+ A- .2212 .740160 6 6 2838 .502 .502 .134 .122 .192 .000 .305 .305 .145 .158 .113 .0.598 .0.042 .5.6 .1.1 .6.5 .1.2 A- A- .2213 .740163 6 6 6 .2838 .774 .080 .085 .774 .061 .000 .508 .236 .265 .508 .311 .0.916 .0.049 .5.2 0.9 .7.2 0.7. A- B- .2214 .737328 6 6 2773 .254 .254 .190 .237 .320 .000 .112 .112 .013 .145 .038 .1.36 .0.047 8.3 .1.2 .9.9 1.7 A- A- .2215 .737331 6 6 2773 .742 .116 .742 .070 .072 .000 .511 .274 .511 .309 .219 .0.692 .0.048 .5.4 .0.9 .6.1 .0.8 A+ A+ .2217 .737333 6 6 2.773 .464 .129 .228 .180 .464 .000 .411 .230 .134 .188 .411 .0.808 .0.042 .1.8 1.0 .2.0 .1.1 A- A- .2218 .737332 6 6 2.773 .545 .545 .068 .228 .159 .000 .418 .418 .248 .158 .192 .0.400 .0.043 .0.77 .1.0 .0.0 .1.0 A- A- .2219 .741124 6 6 2.773 .826 .826 .075 .060 .039 .000 .452 .452 .221 .287 .232 .1.287 .0.055 .33 .0.9 .4.9 .0.7 A- A- .2221 .741127 6 6 2.773 .545 .556 .186 .113 .000 .339 .339 .221 .217 .226 .0.254 .0.043 .1.4 .1.4 .1.1 .1.1 .4.0 .1.1 .4.0 .1.4 .4.2 .1.2	2209	740161	6	6			.062	.416	.079	.443	.000		285	.180	267	.105	1.026		9.9	1.2	9.9	1.4	A-	A+
2212 740160 6 6 2838 .502 .502 .184 .192 .000 .305 .305 .145 .158 .113 0.598 0.042 .56 1.1 6.5 1.2 A- A+ 2214 737328 6 6 2838 .774 .080 .085 .774 .061 .000 .508 .236 .265 .508 .311 .0.916 .0049 .52 .09 .7.2 .07 .A- A- 2215 737331 6 6 2773 .631 .059 .098 .631 .212 .000 .435 .276 .290 .435 .144 .0.043 .0.04 .1.2 1.0 .1.9 1.0 .0.9 .0.0 .0.0 .435 .276 .290 .435 .1.44 .0.043 .0.04 .1.8 .1.0 .2.0 .1.1 .4.8 .4.1 .2.2 .0.0 .0.043 .0.7 .1.0 .0.0 <	2210	740159	6													023				1.2			A-	A+
2213 740163 6 6 2838 .774 .080 .085 .774 .061 .000 .508 .236 .265 .508 .311 -0.916 0.049 -5.2 0.9 -7.2 0.7 A- B- 2214 737328 6 6 2773 .742 .116 .742 .070 .072 .000 .111 .112 .013 .145 .038 1.936 0.047 8.3 1.2 9.9 1.7 A- A- 2216 737331 6 6 2773 .631 .059 .098 .631 .212 .000 .435 144 -0.043 .0044 -1.2 .0 .1 .4 A- .2217 737330 6 6 2773 .545 .545 .068 .228 .189 .000 .411 .230 .134 .141 .080 .0042 .18 1.0 .2.0 1.1 .4 .4 .2221	2211	740164	6	6	2838	.650	.081	.104	.165	.650	.000	.506	252	314	207	.506	-0.164	0.044	-5.9	0.9	-5.7	0.9	A+	A-
2214 737328 6 6 2773 .254 .190 .237 .320 .000 .112 .112 .013 -1.45 .038 1.936 0.047 8.3 1.2 9.9 1.7 A- A- 2216 737331 6 6 2773 .631 .059 .098 .631 .212 .000 .435 -276 .290 .435 -144 -0.043 .004 -1.2 1.0 .19 1.0 .0	2212	740160	6	6	2838	.502	.502	.184	.122	.192	.000	.305	.305	145	158	113	0.598	0.042	5.6	1.1	6.5	1.2	A-	A+
2215 737331 6 6 2773 .742 .116 .742 .070 .072 .000 .511 .274 .511 .309 .219 -0.692 .0.08 -5.4 0.9 -6.1 0.8 A+ A+ 2216 737333 6 6 2773 .644 .129 .228 .180 .464 .000 .435 .276 .290 .435 .144 .0.03 .0.044 .1.2 1.0 -1.9 1.0 A- A- 2218 737332 6 6 2773 .545 .566 .828 .159 .000 .418 .418 .284 .158 .192 .0400 .004 .70 .0	2213	740163	6	6	2838	.774	.080	.085	.774	.061	.000	.508	236	265	.508	311	-0.916	0.049	-5.2	0.9	-7.2	0.7	A-	B-
2216 737333 6 6 2773 .631 .059 .098 .631 .212 .000 .435 .276 .290 .435 .144 -0.043 .0.04 -1.2 1.0 -1.9 1.0 A- A- 2217 737330 6 6 2773 .464 .129 .228 .180 .464 .000 .411 .230 .134 .188 .411 .0.808 .0.042 -1.8 1.0 2.0 1.1 A- A+ 2219 741124 6 6 2733 .826 .826 .075 .060 .039 .000 .452 .452 .221 .287 .030 .041 .003 .44 .343 .259 .073 .0641 .0043 .41 .1.1 .40 .4 .4 .243 .259 .073 .0641 .0043 .4 .1.1 .4 .4 .2220 .741126 6 6 .2733 .856	2214	737328	6	6	2773	.254	.254	.190	.237	.320	.000	.112	.112	013	145	.038	1.936	0.047	8.3	1.2	9.9	1.7	A-	A-
2217 737330 6 6 2773 .464 .129 .228 .180 .464 .000 .411 .230 .134 .188 .411 0.808 0.042 -1.8 1.0 2.0 1.1 A- A+ 2218 737332 6 6 2773 .545 .545 .068 .228 .159 .000 .418 .418 .284 .158 .192 .0400 .003 -0.7 1.0 .0 1.0 A- 2210 741124 6 6 6 2733 .826 .826 .075 .000 .343 .144 .343 .259 .073 .0641 .003 .41 .1.0 .0 .1 A+ 2221 741127 6 6 2733 .556 .576 .125 .186 .113 .000 .483 .271 .227 .2226 .0.254 .0.043 1.4 1.0 1.1 .A A+	2215	737331	6	6	2773	.742	.116	.742	.070	.072	.000	.511	274	.511	309	219	-0.692	0.048	-5.4	0.9	-6.1	0.8	A+	A+
2218 737332 6 6 2773 .545 .545 .068 .228 .159 .000 .418 .418 284 158 192 0.400 0.043 -0.7 1.0 0.0 1.0 A- 2219 741124 6 6 6 2733 .499 .196 .499 .126 .179 .000 .343 144 .343 259 073 .0641 .0043 4.1 1.1 4.0 1.1 A+ A+ 2221 741126 6 6 2733 .826 .826 .075 .060 .039 .000 .452 .221 287 232 -1.287 .0505 -3.3 .09 -4.9 .0.7 A+ A+ 2221 741127 6 6 2733 .582 .118 .153 .582 .146 .000 .483 .271 .271 .483 150 .0222 .0043 .4 .10 <td>2216</td> <td>737333</td> <td>6</td> <td>6</td> <td>2773</td> <td>.631</td> <td>.059</td> <td>.098</td> <td>.631</td> <td>.212</td> <td>.000</td> <td>.435</td> <td>276</td> <td>290</td> <td>.435</td> <td>144</td> <td>-0.043</td> <td>0.044</td> <td>-1.2</td> <td>1.0</td> <td>-1.9</td> <td>1.0</td> <td>A-</td> <td>A-</td>	2216	737333	6	6	2773	.631	.059	.098	.631	.212	.000	.435	276	290	.435	144	-0.043	0.044	-1.2	1.0	-1.9	1.0	A-	A-
2219 741124 6 6 2733 .499 .196 .499 .126 .179 .000 .343 144 .343 259 073 .0.641 0.043 4.1 1.1 4.0 1.1 A+ A+ 2220 741126 6 6 2733 .826 .826 .075 .060 .039 .000 .452 .452 221 287 232 -1.287 0.055 33 0.9 -4.9 0.7 A+ A- 2221 741127 6 6 6 2733 .556 .576 .125 .186 .113 .000 .393 .393 .221 -127 226 0.254 0.043 1.4 1.0 1.1 1.0 A+ 2222 741125 6 6 2733 .582 .118 .153 .582 .146 .000 .483 271 .483 150 .0222 .0043 .56 1.1 .67 </td <td>2217</td> <td>737330</td> <td>6</td> <td>6</td> <td>2773</td> <td>.464</td> <td>.129</td> <td>.228</td> <td>.180</td> <td>.464</td> <td>.000</td> <td>.411</td> <td>230</td> <td>134</td> <td>188</td> <td>.411</td> <td>0.808</td> <td>0.042</td> <td>-1.8</td> <td>1.0</td> <td>2.0</td> <td>1.1</td> <td>A-</td> <td>A+</td>	2217	737330	6	6	2773	.464	.129	.228	.180	.464	.000	.411	230	134	188	.411	0.808	0.042	-1.8	1.0	2.0	1.1	A-	A+
2220 741126 6 6 2733 .826 .826 .075 .060 .039 .000 .452 .452 221 -2.232 -1.287 .0.055 -3.3 0.9 -4.9 0.7 A+ A- 2221 741127 6 6 2733 .576 .576 .125 .186 .113 .000 .393 .393 221 -1.127 226 0.254 0.043 1.4 1.0 1.1 1.0 A+ A- 2222 741128 6 6 2733 .582 .118 .153 .582 .146 .000 .483 271 .271 .483 150 0.022 .0.043 -4.8 0.9 -5.0 0.9 A-A A+ 2223 741128 6 6 2733 .582 .146 .000 .314 .102 .151 .110 .000 .314 .102 .152 .314 .126 .0469 .0	2218	737332	6	6	2773	.545	.545	.068	.228	.159	.000	.418	.418	284	158	192	0.400	0.043	-0.7	1.0	0.0	1.0	A-	A-
2221 741127 6 6 2733 .576 .576 .125 .186 .113 .000 .393 .221 127 226 0.254 0.043 1.4 1.0 1.1 1.0 A+ A- 2222 741125 6 6 2733 .582 .118 .153 .582 .146 .000 .483 271 271 .483 150 0.222 0.043 -4.8 0.9 -5.0 0.9 A- A+ 2223 741128 6 6 2733 .534 .183 .162 .533 .121 .000 .314 102 152 .314 186 0.469 0.043 5.6 1.1 6.7 1.2 A+ A+ 2224 741326 6 6 2708 .511 .179 .511 .101 .209 .000 .362 256 068 0.565 0.043 2.0 1.0 3.0 1.1	2219	741124	6	6	2733	.499	.196	.499	.126	.179	.000	.343	144	.343	259	073	0.641	0.043	4.1	1.1	4.0	1.1	A+	A+
2222 741125 6 6 2733 .582 .118 .153 .582 .146 .000 .483 271 .483 150 0.222 0.043 -4.8 0.9 -5.0 0.9 A- A+ 2223 741128 6 6 2733 .534 .183 .162 .533 .121 .000 .314 102 152 .314 186 0.469 0.043 5.6 1.1 6.7 1.2 A+ A+ 2224 741326 6 6 2708 .743 .056 .121 .080 .743 .000 .513 277 266 272 .513 -0.694 0.049 -5.9 0.9 -6.0 0.8 A+ A- 2225 741325 6 6 2708 .591 .191 .101 .209 .000 .362 256 .068 0.565 0.043 2.0 1.0 3.0 1.1 A+	2220	741126	6	6	2733	.826	.826	.075	.060	.039	.000	.452	.452	221	287	232	-1.287	0.055	-3.3	0.9	-4.9	0.7	A+	A-
2223 741128 6 6 2733 .534 .183 .162 .533 .121 .000 .314 102 152 .314 186 0.469 0.043 5.6 1.1 6.7 1.2 A+ A+ 2224 741326 6 6 2708 .743 .056 .121 .080 .743 .000 .513 277 266 272 .513 -0.694 0.049 -5.9 0.9 -6.0 0.8 A+ A- 2225 741325 6 6 2708 .511 .179 .511 .101 .209 .000 .362 200 .362 256 068 0.565 0.043 2.0 1.0 3.0 1.1 A+ A+ 2226 741324 6 6 2708 .346 .151 .152 .251 .446 .000 .359 195 202 084 .359 0.889 0.043 1.1	2221	741127	6	6	2733	.576	.576	.125	.186	.113	.000	.393	.393	221	127	226	0.254	0.043	1.4	1.0	1.1	1.0	A+	A-
2224 741326 6 6 2708 .743 .056 .121 .080 .743 .000 .513 277 266 272 .513 -0.694 0.049 -5.9 0.9 -6.0 0.8 A+ A- 2225 741325 6 6 2708 .511 .179 .511 .101 .209 .000 .362 200 .362 256 068 0.565 0.043 2.0 1.0 3.0 1.1 A+ A+ 2226 741324 6 6 2708 .396 .199 .233 .395 .172 .000 .238 163 .015 .238 152 1.143 0.043 7.8 1.1 9.1 1.3 A+ A+ 2227 741327 6 6 2708 .446 .151 .152 .251 .446 .000 .352 .352 258 087 162 0.610 0.043 2.7<	2222	741125	6	6	2733	.582	.118	.153	.582	.146	.000	.483	271	271	.483	150	0.222	0.043	-4.8	0.9	-5.0	0.9	A-	A+
2225 741325 6 6 2708 .511 .179 .511 .101 .209 .000 .362 200 .362 256 068 0.565 0.043 2.0 1.0 3.0 1.1 A+ A+ 2226 741324 6 6 2708 .396 .199 .233 .395 .172 .000 .238 163 .015 .238 152 1.143 0.043 7.8 1.1 9.1 1.3 A+ A+ 2227 741327 6 6 2708 .446 .151 .152 .251 .446 .000 .359 195 202 084 .359 0.889 0.043 1.1 1.0 4.2 1.1 A+ A+ 2228 741328 6 6 2708 .502 .502 .109 .234 .155 .000 .352 .258 087 162 0.610 0.043 2.7 1.0	2223	741128	6	6	2733	.534	.183	.162	.533	.121	.000	.314	102	152	.314	186	0.469	0.043	5.6	1.1	6.7	1.2	A+	A+
2226 741324 6 6 2708 .396 .199 .233 .395 .172 .000 .238 163 .015 .238 152 1.143 0.043 7.8 1.1 9.1 1.3 A+ A+ 2227 741327 6 6 2708 .446 .151 .152 .251 .446 .000 .359 195 202 084 .359 0.889 0.043 1.1 1.0 4.2 1.1 A+ A+ 2228 741328 6 6 2708 .502 .502 .109 .234 .155 .000 .352 .352 258 087 162 0.610 0.043 2.7 1.0 3.9 1.1 A+ A+ 2229 740150 6 6 2690 .660 .097 .154 .659 .090 .000 .454 322 208 .454 156 -0.265 0.046 -2.3 1.0 -3.5 0.9 A+ A+ 2230 740147 6 </td <td>2224</td> <td>741326</td> <td>6</td> <td>6</td> <td>2708</td> <td>.743</td> <td>.056</td> <td>.121</td> <td>.080</td> <td>.743</td> <td>.000</td> <td>.513</td> <td>277</td> <td>266</td> <td>272</td> <td>.513</td> <td>-0.694</td> <td>0.049</td> <td>-5.9</td> <td>0.9</td> <td>-6.0</td> <td>0.8</td> <td>A+</td> <td>A-</td>	2224	741326	6	6	2708	.743	.056	.121	.080	.743	.000	.513	277	266	272	.513	-0.694	0.049	-5.9	0.9	-6.0	0.8	A+	A-
2227 741327 6 6 2708 .446 .151 .152 .251 .446 .000 .359 195 202 084 .359 0.889 0.043 1.1 1.0 4.2 1.1 A+ A+ 2228 741328 6 6 2708 .502 .502 .109 .234 .155 .000 .352 .352 258 087 162 0.610 0.043 2.7 1.0 3.9 1.1 A+ A+ 2229 740150 6 6 2690 .660 .097 .154 .659 .090 .000 .454 322 208 .454 156 -0.265 0.046 -2.3 1.0 -3.5 0.9 A+ A+ 2230 740147 6 6 2690 .340 .112 .306 .242 .000 .167 .167 248 013 .012 1.381 0.045 9.9 1.2 </td <td>2225</td> <td>741325</td> <td>6</td> <td>6</td> <td>2708</td> <td>.511</td> <td>.179</td> <td>.511</td> <td>.101</td> <td>.209</td> <td>.000</td> <td>.362</td> <td>200</td> <td>.362</td> <td>256</td> <td>068</td> <td>0.565</td> <td>0.043</td> <td>2.0</td> <td>1.0</td> <td>3.0</td> <td>1.1</td> <td>A+</td> <td>A+</td>	2225	741325	6	6	2708	.511	.179	.511	.101	.209	.000	.362	200	.362	256	068	0.565	0.043	2.0	1.0	3.0	1.1	A+	A+
2228 741328 6 6 2708 .502 .502 .109 .234 .155 .000 .352 .352 258 087 162 0.610 0.043 2.7 1.0 3.9 1.1 A+ A- 2229 740150 6 6 2690 .660 .097 .154 .659 .090 .000 .454 322 208 .454 156 -0.265 0.046 -2.3 1.0 -3.5 0.9 A+ A+ 2230 740147 6 6 2690 .340 .340 .112 .306 .242 .000 .167 .167 248 013 .012 1.381 0.045 9.9 1.2 9.9 1.5 A+ A+ 2231 740151 6 6 2690 .648 .094 .648 .122 .136 .000 .463 294 165 -0.201 0.045 -2.4 1.0 -4.0 0.9 A+ A+ 2232 740152 6 6 2690 <td>2226</td> <td>741324</td> <td>6</td> <td>6</td> <td>2708</td> <td>.396</td> <td>.199</td> <td>.233</td> <td>.395</td> <td>.172</td> <td>.000</td> <td>.238</td> <td>163</td> <td>.015</td> <td>.238</td> <td>152</td> <td>1.143</td> <td>0.043</td> <td>7.8</td> <td>1.1</td> <td>9.1</td> <td>1.3</td> <td>A+</td> <td>A+</td>	2226	741324	6	6	2708	.396	.199	.233	.395	.172	.000	.238	163	.015	.238	152	1.143	0.043	7.8	1.1	9.1	1.3	A+	A+
2229 740150 6 6 2690 .660 .097 .154 .659 .090 .000 .454 322 208 .454 156 -0.265 0.046 -2.3 1.0 -3.5 0.9 A+ A+ 2230 740147 6 6 2690 .340 .340 .112 .306 .242 .000 .167 .167 248 013 .012 1.381 0.045 9.9 1.2 9.9 1.5 A+ A+ 2231 740151 6 6 2690 .648 .094 .648 .122 .136 .000 .463 235 .463 294 165 -0.201 0.045 -2.4 1.0 -4.0 0.9 A+ A+ 2232 740152 6 6 2690 .548 .145 .143 .163 .548 .000 .533 218 285 240 .533 0.325 0.043 -8.6 0.9 -7.7 0.8 B+ A+ 2234 741338 <t< td=""><td>2227</td><td>741327</td><td>6</td><td>6</td><td>2708</td><td>.446</td><td>.151</td><td>.152</td><td>.251</td><td>.446</td><td>.000</td><td>.359</td><td>195</td><td>202</td><td>084</td><td>.359</td><td>0.889</td><td>0.043</td><td>1.1</td><td>1.0</td><td>4.2</td><td>1.1</td><td>A+</td><td>A+</td></t<>	2227	741327	6	6	2708	.446	.151	.152	.251	.446	.000	.359	195	202	084	.359	0.889	0.043	1.1	1.0	4.2	1.1	A+	A+
2230 740147 6 6 2690 .340 .340 .112 .306 .242 .000 .167 .167 248 013 .012 1.381 0.045 9.9 1.2 9.9 1.5 A+ A+ 2231 740151 6 6 2690 .648 .094 .648 .122 .136 .000 .463 235 .463 294 165 -0.201 0.045 -2.4 1.0 -4.0 0.9 A+ A+ 2232 740152 6 6 2690 .548 .145 .143 .163 .548 .000 .533 218 285 240 .533 0.325 0.043 -8.6 0.9 -7.7 0.8 B+ A+ 2233 741338 6 6 2780 .519 .053 .351 .068 .000 .290 .290 281 052 208 0.516 0.042 7.9 1.1 6.8 1.2 C- B- 2234 741337 6 6 <td>2228</td> <td>741328</td> <td>6</td> <td>6</td> <td>2708</td> <td>.502</td> <td>.502</td> <td>.109</td> <td>.234</td> <td>.155</td> <td>.000</td> <td>.352</td> <td>.352</td> <td>258</td> <td>087</td> <td>162</td> <td>0.610</td> <td>0.043</td> <td>2.7</td> <td>1.0</td> <td>3.9</td> <td>1.1</td> <td>A+</td> <td>A-</td>	2228	741328	6	6	2708	.502	.502	.109	.234	.155	.000	.352	.352	258	087	162	0.610	0.043	2.7	1.0	3.9	1.1	A+	A-
2231 740151 6 6 2690 .648 .094 .648 .122 .136 .000 .463 235 .463 294 165 -0.201 0.045 -2.4 1.0 -4.0 0.9 A+ A+ 2232 740152 6 6 2690 .548 .145 .143 .163 .548 .000 .533 218 285 240 .533 0.325 0.043 -8.6 0.9 -7.7 0.8 B+ A+ 2233 741338 6 6 2780 .519 .519 .063 .351 .068 .000 .290 281 052 208 0.516 0.042 7.9 1.1 6.8 1.2 C- B- 2234 741337 6 6 2780 .866 .044 .036 .866 .054 .000 .484 246 275 .484 279 -1.685 0.060 -4.2 0.9 -6.9 0.6 A- B-	2229	740150	6	6	2690	.660	.097	.154	.659	.090	.000	.454	322	208	.454	156	-0.265	0.046	-2.3	1.0	-3.5	0.9	A+	A+
2232 740152 6 6 2690 .548 .145 .143 .163 .548 .000 .533 218 285 240 .533 0.325 0.043 -8.6 0.9 -7.7 0.8 B+ A+ 2233 741338 6 6 2780 .519 .053 .351 .068 .000 .290 .290 281 052 208 0.516 0.042 7.9 1.1 6.8 1.2 C- B- 2234 741337 6 6 2780 .866 .044 .036 .866 .054 .000 .484 246 275 .484 279 -1.685 0.060 -4.2 0.9 -6.9 0.6 A- B-	2230	740147	6	6	2690	.340	.340	.112	.306	.242	.000	.167	.167	248	013	.012	1.381	0.045	9.9	1.2	9.9	1.5	A+	A+
2232 740152 6 6 2690 .548 .145 .143 .163 .548 .000 .533 218 285 240 .533 0.325 0.043 -8.6 0.9 -7.7 0.8 B+ A+ 2233 741338 6 6 2780 .519 .519 .063 .351 .068 .000 .290 281 052 208 0.516 0.042 7.9 1.1 6.8 1.2 C- B- 2234 741337 6 6 2780 .866 .044 .036 .866 .054 .000 .484 246 275 .484 279 -1.685 0.060 -4.2 0.9 -6.9 0.6 A- B-	2231	740151	6	6	2690	.648	.094	.648	.122	.136	.000	.463	235	.463	294	165	-0.201	0.045	-2.4	1.0	-4.0	0.9	A+	A+
2233 741338 6 6 2780 .519 .519 .063 .351 .068 .000 .290 .290 281 052 208 0.516 0.042 7.9 1.1 6.8 1.2 C- B- 2234 741337 6 6 2780 .866 .044 .036 .866 .054 .000 .484 246 275 .484 279 -1.685 0.060 -4.2 0.9 -6.9 0.6 A- B-	2232	740152	6	6	2690	.548	.145	.143	.163	.548	.000	.533	218	285	240	.533	0.325	0.043	-8.6	0.9	-7.7	0.8	B+	A+
2234 741337 6 6 2780 .866 .044 .036 .866 .054 .000 .484246275 .484279 -1.685 0.060 -4.2 0.9 -6.9 0.6 A- B-	2233	741338	6	6	2780	.519	.519	.063	.351	.068	.000	.290	.290	281	052	208	0.516	0.042	7.9	1.1	6.8	1.2	C-	B-
		741337	6	6	2780			.036			.000					279				0.9	-6.9		A-	B-
			6	6										_								0.8		_

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT Crede	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2236	741339	Grade 6	Grade 6	2780	.530	.265	.130	.530	.074	.000	.335	073	164	.335	303	0.461	0.042	4.4	1.1	out 5.5	0ut 1.1	/F A-	/B A-
2237	741340	6	6	2780	.449	.153	.449	.123	.275	.000	.362	111	.362	299	094	0.461	0.042	1.4	1.0	3.8	1.1	A-	A-
2238	741362	6	6	2821	.491	.137	.491	.289	.083	.000	.337	220	.337	102	168	0.673	0.042	4.0	1.1	5.7	1.1	A-	A-
2239	741363	6	6	2821	.800	.051	.092	.800	.057	.000	.542	303	300	.542	273	-1.097	0.052	-6.4	0.8	-8.2	0.6	Α-	Α-
2240	741361	6	6	2821	.566	.566	.135	.158	.140	.000	.475	.475	310	205	158	0.297	0.043	-4.6	0.9	-3.6	0.9	A+	Α-
2241	741364	6	6	2821	.364	.233	.364	.211	.192	.000	.333	093	.333	175	125	1.317	0.043	0.4	1.0	7.2	1.2	A+	A-
2242	741360	6	6	2821	.404	.404	.285	.202	.110	.000	.344	.344	128	115	207	1.111	0.042	1.6	1.0	4.9	1.1	A+	A-
2243	741351	6	6	2686	.486	.485	.220	.111	.183	.000	.275	.275	100	247	048	0.679	0.043	7.7	1.1	7.9	1.2	A-	A-
2244	741352	6	6	2686	.392	.158	.136	.313	.392	.000	.227	104	227	.011	.227	1.146	0.044	9.0	1.2	9.9	1.3	A+	A-
2245	741353	6	6	2686	.417	.255	.207	.417	.121	.000	.255	032	181	.255	118	1.019	0.043	7.7	1.1	9.7	1.3	A-	A+
2246	741349	6	6	2686	.370	.370	.251	.171	.208	.000	.303	.303	042	188	141	1.259	0.044	3.1	1.1	7.2	1.2	A-	A-
2247	741350	6	6	2686	.604	.109	.201	.086	.604	.000	.463	206	192	303	.463	0.082	0.044	-3.2	0.9	-3.9	0.9	A-	A-
2248	741507	6	6	2788	.770	.053	.770	.104	.072	.000	.442	204	.442	234	266	-0.852	0.049	-2.3	0.9	-4.4	0.8	A-	A-
2249	741504	6	6	2788	.349	.171	.283	.197	.349	.000	.331	139	136	112	.331	1.385	0.043	-0.5	1.0	5.9	1.2	A-	A+
2250	741505	6	6	2788	.637	.637	.159	.113	.091	.000	.477	.477	264	232	208	-0.063	0.044	-4.6	0.9	-5.4	0.9	A-	A+
2251	741506	6	6	2788	.487	.159	.197	.487	.156	.000	.360	110	118	.360	255	0.692	0.042	1.5	1.0	2.9	1.1	A-	A-
2252	741503	6	6	2788	.463	.130	.463	.249	.158	.000	.198	178	.198	099	.011	0.813	0.042	9.9	1.2	9.9	1.3	A-	A-
2253	741540	6	6	2821	.543	.218	.093	.543	.146	.000	.373	065	302	.373	200	0.382	0.042	2.0	1.0	3.1	1.1	A+	A-
2254	741536	6	6	2821	.411	.151	.161	.278	.410	.000	.250	258	217	.110	.250	1.040	0.042	8.2	1.1	9.2	1.3	A+	A-
2255	741537	6	6	2821	.616	.133	.114	.136	.616	.000	.373	157	208	180	.373	0.003	0.043	2.4	1.1	1.8	1.1	A+	A+
2256	741535	6	6	2821	.630	.124	.630	.166	.081	.000	.436	230	.436	214	204	-0.069	0.044	-1.3	1.0	-2.3	0.9	A+	A-
2257	741539	6	6	2821	.355	.185	.355	.224	.236	.000	.155	061	.155	167	.045	1.326	0.043	9.9	1.2	9.9	1.5	A+	A+
2258	740263	7	7	2020	.397	.090	.156	.357	.397	.000	.328	290	127	066	.328	1.332	0.050	2.8	1.1	5.3	1.2	A-	A-
2259	740266	7	7	2020	.699	.699	.116	.095	.091	.000	.475	.475	205	291	234	-0.253	0.055	-2.4	0.9	-4.1	0.8	A+	A-
2260	740264	7	7	2020	.734	.075	.124	.734	.068	.000	.510	269	257	.510	279	-0.471	0.056	-4.1	0.9	-4.8	0.8	B+	B-
2261	740265	7	7	2020	.639	.084	.639	.167	.110	.000	.546	271	.546	222	334	0.090	0.052	-6.4	0.9	-6.8	0.8	A+	A-
2262	740262	7	7	2020	.468	.200	.468	.247	.086	.000	.238	.003	.238	148	200	0.971	0.050	9.5	1.2	9.6	1.3	A+	A+
2263	740157	7	7	1925	.759	.122	.060	.059	.759	.000	.533	309	286	251	.533	-0.673	0.060	-4.8	0.9	-5.2	0.8	A+	A-
2264	740156	7	7	1925	.656	.188	.086	.656	.071	.000	.414	142	248	.414	281	-0.037	0.054	0.7	1.0	-0.9	1.0	A+	A-
2265	740158	7	7	1925	.674	.079	.170	.077	.674	.000	.502	325	189	288	.502	-0.140	0.055	-4.0	0.9	-3.0	0.9	B+	A+
2266	740154	7	7	1925	.518	.518	.089	.176	.217	.000	.396	.396	259	179	136	0.688	0.051	1.0	1.0	1.8	1.1	A+	A-
2267	740153	7	7	1925	.356	.276	.356	.155	.214	.000	.166	.026	.166	242	009	1.517	0.053	8.4	1.2	9.9	1.7	A+	A-
2268	740344	7	7	1971	.646	.103	.161	.089	.646	.000	.590	293	296	295	.590	0.053	0.053	-8.7	0.8	-8.9	0.7	A+	A-
2269	740345	7	7	1971	.400	.363	.136	.400	.100	.000	.103	.159	192	.103	202	1.311	0.051	9.9	1.3	9.9	1.6	A-	A-
2270	740342	7	7	1971	.251	.186	.447	.116	.251	.000	.140	147	.158	256	.140	2.135	0.056	4.2	1.1	9.9	1.8	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
_		Grade	Grade		1 741		. (5)			. ()								in	in	out	out	/F	/B
2271	740339	7	7	1971	.576	.576	.100	.203	.120	.000	.396	.396	288	087	228	0.428	0.051	0.8	1.0	1.2	1.0	A-	A+
2272	740340	7	7	1971	.596	.124	.596	.136	.144	.000	.496	181	.496	277	253	0.326	0.052	-4.3	0.9	-4.2	0.9	A-	A-
2273	740562	7	7	1983	.775	.775	.074	.047	.103	.000	.499	.499	287	324	211	-0.769	0.060	-3.8	0.9	-3.6	0.8	A+	A-
2274	740566	7	7	1983	.522	.175	.522	.152	.150	.000	.332	101	.332	226	130	0.682	0.051	4.3	1.1	6.0	1.2	A+	A-
2275	740567	7	7	1983	.573	.100	.148	.179	.573	.000	.461	308	233	139	.461	0.422	0.051	-2.3	1.0	-2.1	0.9	A+	A-
2276	740563	7	7	1983	.788	.068	.788	.069	.076	.000	.548	255	.548	303	315	-0.861	0.061	-5.2	0.8	-7.0	0.6	A+	A-
2277	740565	7	7	1983	.526	.245	.093	.526	.136	.000	.335	072	332	.335	115	0.665	0.051	4.9	1.1	4.5	1.1	A+	A-
2278	741320	7	7	2009	.494	.494	.178	.201	.127	.000	.409	.409	148	233	164	0.841	0.050	-0.4	1.0	0.5	1.0	A+	A+
2279	741321	7	7	2009	.747	.074	.085	.095	.747	.000	.582	310	311	292	.582	-0.555	0.057	-7.1	8.0	-8.4	0.6	A+	A+
2280	741322	7	7	2009	.802	.044	.802	.057	.097	.000	.537	268	.537	275	323	-0.949	0.062	-5.2	0.8	-6.4	0.7	A+	B-
2281	741319	7	7	2009	.283	.283	.105	.344	.269	.000	.097	.097	190	.001	.032	1.943	0.054	9.0	1.2	9.9	1.7	A-	A+
2282	741318	7	7	2009	.484	.176	.237	.484	.102	.000	.342	151	153	.342	159	0.888	0.050	3.3	1.1	4.9	1.2	A+	A+
2283	740816	7	7	2008	.654	.145	.119	.654	.082	.000	.476	155	326	.476	241	-0.013	0.053	-2.0	1.0	-2.7	0.9	A+	A+
2284	740814	7	7	2008	.429	.336	.429	.122	.114	.000	.264	.034	.264	269	186	1.158	0.050	7.8	1.2	8.1	1.3	A+	A-
2285	740811	7	7	2008	.531	.531	.235	.141	.092	.000	.357	.357	.004	273	293	0.641	0.050	3.7	1.1	4.5	1.1	A+	A-
2286	740812	7	7	2008	.497	.169	.152	.181	.497	.000	.416	144	278	142	.416	0.815	0.050	-0.3	1.0	2.2	1.1	A+	A-
2287	740815	7	7	2008	.606	.188	.606	.128	.078	.000	.440	085	.440	288	319	0.255	0.052	-0.7	1.0	-0.2	1.0	A+	A-
2288	740348	7	7	2000	.422	.158	.349	.072	.422	.000	.278	162	023	263	.278	1.185	0.050	6.3	1.1	7.1	1.2	A+	A+
2289	740347	7	7	2000	.773	.071	.102	.773	.055	.000	.560	325	337	.560	218	-0.754	0.060	-6.0	0.8	-7.0	0.7	B+	A-
2290	740352	7	7	2000	.534	.534	.093	.181	.193	.000	.390	.390	207	162	182	0.622	0.050	1.2	1.0	1.8	1.1	A+	A+
2291	740349	7	7	2000	.606	.118	.606	.129	.147	.000	.388	134	.388	264	163	0.249	0.052	1.9	1.0	2.2	1.1	A+	A+
2292	740350	7	7	2000	.567	.567	.107	.130	.197	.000	.475	.475	277	225	186	0.453	0.051	-3.4	0.9	-3.0	0.9	A+	A-
2293	737327	7	7	2032	.653	.251	.050	.653	.045	.000	.254	019	297	.254	231	0.001	0.053	8.3	1.2	7.6	1.3	A-	A-
2294	737322	7	7	2032	.579	.579	.183	.156	.082	.000	.393	.393	159	204	214	0.401	0.051	1.8	1.0	2.6	1.1	A-	A-
2295	737326	7	7	2032	.645	.645	.188	.091	.076	.000	.489	.489	189	320	256	0.045	0.052	-3.1	0.9	-2.9	0.9	A-	B-
2296	737324	7	7	2032	.649	.103	.649	.103	.144	.000	.545	206	.545	332	273	0.023	0.053	-5.7	0.9	-6.2	8.0	B+	A+
2297	737323	7	7	2032	.698	.077	.137	.698	.088	.000	.563	300	262	.563	313	-0.264	0.055	-6.4	8.0	-7.3	0.7	B+	A-
2298	737754	7	7	2030	.677	.677	.119	.162	.041	.000	.366	.366	108	284	159	-0.177	0.053	2.6	1.1	2.8	1.1	A-	A-
2299	737752	7	7	2030	.408	.148	.185	.408	.260	.000	.267	161	242	.267	.046	1.226	0.050	5.9	1.1	8.8	1.3	A+	A-
2300	737753	7	7	2030	.452	.310	.126	.113	.452	.000	.357	070	237	212	.357	1.003	0.050	0.9	1.0	6.1	1.2	A+	A-
2301	737755	7	7	2030	.472	.124	.272	.132	.472	.000	.308	176	032	240	.308	0.902	0.050	5.0	1.1	7.0	1.2	A+	A+
2302	737757	7	7	2030	.445	.211	.445	.185	.159	.000	.179	094	.179	101	032	1.036	0.050	9.9	1.2	9.9	1.4	A+	A-
2303	739556	7	7	1992	.369	.059	.482	.089	.369	.000	.230	246	.063	296	.230	1.500	0.051	7.7	1.2	8.9	1.4	A-	A+
2304	739557	7	7	1992	.643	.643	.068	.144	.146	.000	.486	.486	269	242	227	0.079	0.053	-2.1	1.0	-3.1	0.9	A-	A+
2305	739559	7	7	1992	.746	.098	.746	.081	.075	.000	.588	261	.588	358	307	-0.549	0.058	-6.6	0.8	-7.9	0.7	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
_		Grade	Grade						. ,									in	in	out	out	/F	/B
2306	739555	7	7	1992	.482	.294	.140	.482	.084	.000	.315	042	145	.315	316	0.921	0.050	5.5	1.1	6.7	1.2	A+	A+
2307	739554	7	7	1992	.614	.101	.613	.108	.178	.000	.519	247	.519	312	213	0.239	0.052	-4.6	0.9	-4.8	0.9	A+	A+
2308	740757	7	7	2095	.811	.811	.067	.062	.060	.000	.548	.548	301	334	247	-1.053	0.062	-5.3	0.8	-7.1	0.6	A+	A+
2309	740756	7	7	2095	.771	.067	.088	.073	.771	.000	.509	217	249	341	.509	-0.752	0.058	-3.7	0.9	-4.8	0.8	B+	A+
2310	740754	7	7	2095	.509	.509	.260	.179	.052	.000	.341	.341	072	184	309	0.761	0.049	5.2	1.1	5.2	1.2	A-	A-
2311	740759	7	7	2095	.583	.136	.583	.187	.094	.000	.503	136	.503	276	321	0.377	0.050	-3.6	0.9	-4.0	0.9	A+	A+
2312	740755	7	7	2095	.600	.128	.185	.088	.600	.000	.582	315	246	299	.582	0.290	0.051	-8.8	0.8	-8.0	0.8	A+	A-
2313	737520	7	7	2116	.779	.065	.094	.779	.062	.000	.510	263	305	.510	240	-0.811	0.058	-3.9	0.9	-5.5	0.7	A-	A-
2314	737525	7	7	2116	.495	.170	.495	.264	.071	.000	.254	262	.254	.050	196	0.809	0.049	8.8	1.2	9.4	1.3	A+	A-
2315	737522	7	7	2116	.265	.099	.128	.509	.265	.000	.103	214	218	.182	.103	2.035	0.053	7.0	1.2	9.9	2.0	A-	A+
2316	737521	7	7	2116	.519	.519	.138	.184	.159	.000	.454	.454	170	199	249	0.689	0.049	-2.6	1.0	-0.8	1.0	A+	A-
2317	737726	7	7	2116	.296	.296	.288	.200	.216	.000	.123	.123	.002	125	018	1.852	0.052	9.1	1.2	9.9	1.8	A-	A+
2318	741152	7	7	1963	.905	.905	.033	.034	.029	.000	.505	.505	291	289	265	-2.019	0.083	-3.9	0.8	-7.0	0.4	A+	A-
2319	741156	7	7	1963	.645	.114	.117	.645	.124	.000	.440	228	243	.440	182	0.025	0.053	0.0	1.0	-1.2	1.0	A-	A-
2320	741155	7	7	1963	.645	.062	.645	.161	.131	.000	.431	198	.431	211	239	0.025	0.053	0.1	1.0	-0.2	1.0	A+	A+
2321	741154	7	7	1963	.647	.137	.101	.115	.647	.000	.508	265	291	200	.508	0.017	0.054	-3.8	0.9	-4.1	0.9	A+	A+
2322	741153	7	7	1963	.398	.398	.128	.225	.249	.000	.217	.217	293	161	.137	1.307	0.051	9.0	1.2	9.9	1.4	A+	A-
2323	741093	7	7	1923	.302	.480	.153	.066	.302	.000	.268	.081	225	333	.268	1.836	0.055	2.8	1.1	7.4	1.4	A+	A-
2324	741094	7	7	1923	.732	.094	.120	.732	.054	.000	.539	297	326	.539	205	-0.476	0.058	-5.3	0.9	-6.3	0.7	A+	B-
2325	741095	7	7	1923	.653	.653	.086	.111	.150	.000	.550	.550	285	229	308	-0.002	0.054	-6.4	0.9	-6.8	8.0	A+	A-
2326	741092	7	7	1923	.441	.161	.203	.441	.196	.000	.330	130	119	.330	171	1.096	0.051	3.3	1.1	7.0	1.2	A+	A+
2327	741097	7	7	1923	.554	.284	.554	.091	.071	.000	.428	116	.428	297	291	0.524	0.052	-0.3	1.0	-0.4	1.0	A+	A-
2328	741285	7	7	1996	.374	.175	.309	.374	.142	.000	.205	151	086	.205	005	1.466	0.051	8.7	1.2	9.9	1.5	A-	B-
2329	741288	7	7	1996	.744	.055	.743	.100	.102	.000	.431	206	.431	273	197	-0.538	0.058	-0.1	1.0	-1.3	0.9	A-	A-
2330	741286	7	7	1996	.687	.110	.094	.109	.687	.000	.528	231	274	297	.528	-0.183	0.055	-4.2	0.9	-5.6	0.8	A+	A-
2331	741289	7	7	1996	.667	.091	.076	.166	.667	.000	.489	212	267	266	.489	-0.068	0.054	-2.6	0.9	-3.9	0.9	A+	A-
2332	741287	7	7	1996	.439	.439	.207	.215	.139	.000	.345	.345	312	091	021	1.133	0.051	2.6	1.1	5.6	1.2	A-	A+
2333	741622	7	7	2074	.438	.282	.438	.140	.139	.000	.151	.103	.151	176	173	1.153	0.049	9.9	1.3	9.9	1.5	A+	A+
2334	741620	7	7	2074	.426	.426	.172	.225	.177	.000	.333	.333	234	039	157	1.216	0.049	3.1	1.1	3.9	1.1	A+	A+
2335	741623	7	7	2074	.464	.226	.157	.464	.154	.000	.391	093	269	.391	161	1.025	0.049	-0.4	1.0	3.7	1.1	A+	A+
2336	741619	7	7	2074	.630	.177	.080	.630	.113	.000	.458	165	293	.458	248	0.176	0.051	-1.9	1.0	-2.5	0.9	A+	A-
2337	741618	7	7	2074	.379	.313	.176	.132	.379	.000	.344	023	190	248	.344	1.454	0.050	0.8	1.0	3.5	1.1	A+	A-
2338	741679	7	7	2020	.745	.141	.745	.065	.050	.000	.534	349	.534	277	199	-0.533	0.057	-4.5	0.9	-6.1	0.7	A-	A-
2339	741677	7	7	2020	.550	.213	.550	.059	.177	.000	.426	193	.426	312	155	0.571	0.050	-0.1	1.0	0.6	1.0	A-	A-
2340	741678	7	7	2020	.649	.649	.092	.109	.150	.000	.478	.478	332	311	098	0.043	0.053	-2.7	0.9	-1.9	0.9	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade									. ,			, ,			in	in	out	out	/F	/B
2341	741675	7	7	2020	.215	.104	.417	.263	.215	.000	011	180	.239	133	011	2.395	0.058	8.1	1.3	9.9	2.5	A+	A-
2342	741680	7	7	2020	.302	.301	.229	.288	.181	.000	.073	.073	136	016	.080	1.862	0.053	9.9	1.3	9.9	1.8	A-	A-
2343	741683	7	7	2038	.683	.683	.104	.173	.040	.000	.475	.475	331	221	186	-0.178	0.053	-2.5	0.9	-3.2	0.9	A+	A+
2344	741684	7	7	2038	.636	.084	.199	.636	.081	.000	.304	176	074	.304	248	0.086	0.052	5.9	1.1	4.6	1.2	A-	A-
2345	741686	7	7	2038	.740	.740	.073	.154	.033	.000	.448	.448	351	183	220	-0.530	0.056	-1.6	1.0	-1.3	0.9	A+	A+
2346	741682	7	7	2038	.659	.097	.658	.154	.091	.000	.481	202	.481	218	314	-0.039	0.052	-3.0	0.9	-3.9	0.9	A+	A+
2347	741681	7	7	2038	.610	.142	.610	.180	.069	.000	.487	218	.487	237	278	0.226	0.051	-3.5	0.9	-4.2	0.9	A+	A-
2348	741358	7	7	1974	.615	.270	.068	.614	.048	.000	.429	168	317	.429	257	0.240	0.052	0.2	1.0	-0.3	1.0	A+	A-
2349	741357	7	7	1974	.660	.660	.108	.129	.102	.000	.466	.466	203	240	255	-0.012	0.054	-2.1	1.0	-1.6	0.9	B+	A-
2350	741356	7	7	1974	.425	.425	.162	.257	.156	.000	.232	.232	156	093	045	1.213	0.051	8.5	1.2	9.9	1.4	A+	A-
2351	741355	7	7	1974	.348	.284	.188	.348	.180	.000	.152	.077	139	.152	139	1.613	0.052	9.6	1.2	9.9	1.7	A-	A-
2352	741354	7	7	1974	.661	.138	.102	.099	.661	.000	.456	181	204	306	.456	-0.014	0.054	-1.3	1.0	-2.4	0.9	A+	A+
2353	741826	7	7	2019	.479	.478	.122	.205	.195	.000	.320	.320	201	143	092	0.908	0.049	3.7	1.1	5.4	1.2	A-	A-
2354	741824	7	7	2019	.319	.399	.063	.219	.318	.000	.204	101	308	.071	.204	1.726	0.052	5.8	1.1	8.6	1.4	B-	A+
2355	741825	7	7	2019	.534	.185	.534	.118	.163	.000	.251	089	.251	246	030	0.633	0.050	7.6	1.2	8.8	1.3	A-	A-
2356	741822	7	7	2019	.617	.175	.098	.110	.617	.000	.468	183	274	243	.468	0.207	0.051	-2.8	0.9	-3.4	0.9	A+	A+
2357	741823	7	7	2019	.395	.301	.179	.395	.125	.000	.133	.084	112	.133	184	1.323	0.050	9.9	1.2	9.9	1.5	A+	A+
2358	741696	7	7	2122	.768	.091	.768	.090	.051	.000	.440	248	.440	212	244	-0.685	0.057	-0.9	1.0	-2.9	0.9	A+	A+
2359	741694	7	7	2122	.478	.478	.323	.145	.055	.000	.268	.268	033	236	155	0.942	0.049	8.2	1.2	8.8	1.3	A-	A+
2360	741695	7	7	2122	.831	.831	.043	.066	.061	.000	.553	.553	267	317	313	-1.169	0.064	-5.7	0.8	-8.0	0.5	A-	A+
2361	741693	7	7	2122	.674	.139	.106	.674	.081	.000	.452	157	274	.452	269	-0.094	0.052	-1.1	1.0	-2.9	0.9	A+	A-
2362	741698	7	7	2122	.702	.070	.107	.702	.120	.000	.519	262	259	.519	277	-0.258	0.053	-4.4	0.9	-5.8	0.8	A+	A-
2363	737001	8	8	4103	.616	.616	.108	.160	.116	.000	.498	.498	328	218	190	0.480	0.037	-3.8	0.9	-3.8	0.9	A-	A-
2364	737002	8	8	4103	.721	.090	.721	.117	.071	.000	.534	296	.534	299	227	-0.144	0.040	-5.5	0.9	-6.7	0.8	A+	A+
2365	737000	8	8	4103	.834	.047	.055	.834	.065	.000	.573	324	314	.573	299	-0.995	0.047	-7.8	0.8	-9.9	0.5	A+	A-
2366	736999	8	8	4103	.619	.192	.619	.099	.090	.000	.385	088	.385	293	226	0.466	0.037	4.5	1.1	5.2	1.1	A+	A+
2367	737006	8	8	4245	.351	.535	.051	.063	.351	.000	.113	.193	279	366	.113	1.876	0.036	9.9	1.3	9.9	1.8	A+	A-
2368	737005	8	8	4245	.590	.183	.139	.088	.590	.000	.422	114	270	247	.422	0.645	0.035	1.1	1.0	2.0	1.0	A+	A+
2369	737009	8	8	4245	.686	.056	.097	.686	.161	.000	.397	321	225	.397	119	0.101	0.038	2.3	1.0	4.6	1.1	A+	A+
2370	737007	8	8	4245	.465	.341	.131	.465	.063	.000	.231	.042	195	.231	285	1.287	0.035	9.9	1.2	9.9	1.4	B+	A-
2371	737004	8	8	4245	.653	.653	.066	.107	.175	.000	.493	.493	294	235	236	0.297	0.037	-3.9	0.9	-3.8	0.9	A-	A-
2372	740361	8	8	4194	.702	.127	.130	.702	.042	.000	.507	270	271	.507	255	-0.024	0.039	-3.1	0.9	-6.2	0.8	A-	B-
2373	740365	8	8	4194	.503	.086	.153	.258	.503	.000	.490	248	275	175	.490	1.073	0.035	-6.4	0.9	-2.7	0.9	A-	A-
2374	740364	8	8	4194	.473	.147	.179	.473	.201	.000	.267	178	169	.267	015	1.222	0.035	9.9	1.2	9.9	1.4	A+	A-
2375	740362	8	8	4194	.587	.134	.587	.098	.180	.000	.430	218	.430	251	164	0.634	0.036	0.9	1.0	1.5	1.0	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

2376 740360 8	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
2377 74024 8	_	10	Grade	Grade		ı vai			' (C)	1 (5)	1 (-)	i tbis	11(A)	11(0)	1 1(0)	11(0)				in		out	/F	/B
2378 740244 8 8 8 4253 685	2376	740360	8	8		.545	.545	.192	.085		.000	.417	.417		319		0.856	0.035	1.3	1.0		1.1	A+	A+
2379 740239 8	2377	740243	8	8		.841	.079	.051	.841	.029	.000	.462		306	.462	284	-1.074		-2.8	0.9	-3.9		A-	A-
2380 740241 8	2378	740244	8	8		.685	.685	.175	.098		.000	.511	.511	278	307		0.062		-4.7	0.9	-5.4	0.9	A-	B-
2381 740/242 8		740239					.161													1.3		1.7	A-	A+
2382 737746 8	2380	740241	8	8		.404	.214	.403	.178	.204	.000		048	.287	231	082	1.557			1.1	9.9	1.4	A-	A-
2383 737749 8	2381	740242	8	8	4253	.541	.541	.151	.130	.178	.000	.505	.505	138	265	296	0.855	0.035	-7.2	0.9	-4.5	0.9	A-	A-
2384 737751 8	2382	737746	8	8	4103	.567	.146	.143	.144	.567	.000	.345	178	082	225	.345	0.733	0.036	6.2	1.1	7.0	1.2	A+	A+
2385 737747 8	2383	737749	8	8	4103	.703	.086	.703	.087	.124	.000	.440	244	.440	334	117	-0.029	0.039	-0.6	1.0	-1.1	1.0	A+	A-
2386 737748 8 8 4103 .512 .085 .247 .156 .512 .000 .354 .276 021 .252 .354 1.015 0.035 4.7 1.1 6.8 1.2 A+ A- 2388 739758 8 8 4266 .856 .054 .037 .053 .850 .000 .499	2384	737751	8	8	4103	.611	.611	.111	.101	.177	.000	.466	.466	282	336	099	0.498	0.036	-2.8	1.0	-2.2	1.0	A+	A-
2387 739757 8 8 4266 .856 .054 .037 .053 .856 .000 .499 .276 .313 .240 .499 -1.213 .0.048 -5.0 .09 -5.7 .0.7 A+ A- 2388 739758 8 8 4266 .704 .094 .110 .000 .532 .532 .193 .307 .311 -0.047 .008 .09 -0.0 .04 .03 .09 .1.2 .09 .1.4 .A .A .2392 .739556 8 8 4235 .615 .000 .000 .339 .182	2385	737747	8	8	4103	.643	.119	.643	.097	.141	.000	.497	264	.497	306	178	0.323	0.037	-4.1	0.9	-4.9	0.9	A+	A+
2388 739758 8 8 4266 .704 .704 .092 .094 .110 .000 .532 .532 .532 .307 .311 -0.047 .0038 -5.8 0.9 -6.8 0.8 A+ A+ 2390 739755 8 8 4266 .466 .092 .084 .466 .358 .000 .227 .2281 .227 .081 .1244 .035 .99 1.2 .99 1.4 A- A- 2391 739754 8 8 4266 .584 .140 .109 .166 .588 .000 .462 .229 .241 .196 .462 .0.636 .035 .20 .10 .00 .03 .39 .182 .339 .096 .251 .0512 .0036 .73 .11 .65 .12 .A- A- .2393 .739562 8 8 4235 .316 .316 .200 .379 .111	2386	737748	8	8	4103	.512	.085	.247	.156	.512	.000	.354	276	021	252	.354	1.015	0.035	4.7	1.1	6.8	1.2	A+	A-
2389 739756 8	2387	739757	8	8	4266	.856	.054	.037	.053	.856	.000	.499	276	313	240	.499	-1.213	0.048	-5.0	0.9	-5.7	0.7	A+	A-
2390 739755 8	2388	739758	8	8	4266	.704	.704	.092	.094	.110	.000	.532	.532	193	307	311	-0.047	0.038	-5.8	0.9	-6.8	8.0	A+	A+
2391 739754 8	2389	739756	8	8	4266	.710	.098	.119	.073	.710	.000	.431	180	195	305	.431	-0.087	0.038	0.9	1.0	-0.6	1.0	A+	A-
2392 739565 8	2390	739755	8	8	4266	.466	.092	.084	.466	.358	.000	.227	281	257	.227	.081	1.244	0.035	9.9	1.2	9.9	1.4	A-	A-
2393 739562 8 8 4235 .418 .118 .302 .418 .163 .000 .272 -2.17 136 .272 005 1.522 0.035 8.1 1.1 9.9 1.4 A- A+ 2394 739563 8 8 4235 .316 .316 .203 .370 .111 .000 .140 .140 -1.39 .118 -212 2.059 0.036 9.9 1.2 9.9 1.6 A+ A+ 2395 739564 8 8 4235 .363 .139 .356 .0604 .128 .069 .000 .425 -127 .425 .261 .275 .0.568 .0036 0.1 .1 1.0 .1 .0 .4 <td>2391</td> <td>739754</td> <td>8</td> <td>8</td> <td>4266</td> <td>.584</td> <td>.140</td> <td>.109</td> <td>.166</td> <td>.584</td> <td>.000</td> <td>.462</td> <td>229</td> <td>241</td> <td>196</td> <td>.462</td> <td>0.636</td> <td>0.035</td> <td>-2.0</td> <td>1.0</td> <td>-0.9</td> <td>1.0</td> <td>A+</td> <td>A-</td>	2391	739754	8	8	4266	.584	.140	.109	.166	.584	.000	.462	229	241	196	.462	0.636	0.035	-2.0	1.0	-0.9	1.0	A+	A-
2394 739563 8 8 4235 .316 .316 .203 .370 .111 .000 .140 .139 .118 .212 2.059 0.036 9.9 1.2 9.9 1.6 A+ A+ 2395 739564 8 8 4235 .356 .363 .139 .356 .143 .000 .170 .139 .232 .170 194 1.843 0.035 9.9 1.2 9.9 1.7 A- 2396 739561 8 8 4214 .658 .062 .083 .000 .456 .210 .456 .201 .456 .309 .212 0.257 0.037 -0.9 1.0 .4 A+ A+ 2398 740082 8 8 4214 .652 .652 .073 .167 .108 .000 .413 .413 .412 0.229 0.037 1.0 .0.6 .04 .4 .4 .4	2392	739565	8	8	4235	.615	.080	.615	.200	.105	.000	.339	182	.339	096	251	0.512	0.036	7.3	1.1	6.5	1.2	A-	A-
2395 739564 8 8 4235 .356 .363 .139 .356 .143 .000 .170 .139 232 .170 194 1.843 0.035 9.9 1.2 9.9 1.7 A- A- 2396 739561 8 8 4235 .604 .198 .604 .128 .069 .000 .425 127 .425 261 275 0.568 0.036 0.1 1.0 1.1 1.0 A+ A+ 2397 740082 8 8 4214 .658 .197 .658 .062 .083 .000 .456 210 .456 309 212 0.257 0.037 -0.9 1.0 -0.2 1.0 A+ A+ 2398 740080 8 8 4214 .652 .652 .073 .167 .108 .000 .413 .413 .326 .181 142 .0292 .0037 1.0 <td>2393</td> <td>739562</td> <td>8</td> <td>8</td> <td>4235</td> <td>.418</td> <td>.118</td> <td>.302</td> <td>.418</td> <td>.163</td> <td>.000</td> <td>.272</td> <td>217</td> <td>136</td> <td>.272</td> <td>005</td> <td>1.522</td> <td>0.035</td> <td>8.1</td> <td>1.1</td> <td>9.9</td> <td>1.4</td> <td>A-</td> <td>A+</td>	2393	739562	8	8	4235	.418	.118	.302	.418	.163	.000	.272	217	136	.272	005	1.522	0.035	8.1	1.1	9.9	1.4	A-	A+
2396 739561 8 8 4235 .604 .128 .069 .000 .425 261 275 0.568 0.036 0.1 1.0 1.1 1.0 A+ A+ 2397 740082 8 8 4214 .658 .197 .658 .062 .083 .000 .456 210 .456 309 212 0.257 0.037 -0.9 1.0 -2.2 1.0 A+ A+ 2398 740080 8 8 4214 .652 .652 .073 .167 .108 .000 .413 .413 326 181 142 0.292 0.037 1.9 1.0 0.6 1.0 A+ A+ 2399 740081 8 8 4214 .897 .494 .087 .040 .000 .175 .088 .175 288 251 1.125 0.035 9.9 1.3 9.9 1.5 A- A+	2394	739563	8	8	4235	.316	.316	.203	.370	.111	.000	.140	.140	139	.118	212	2.059	0.036	9.9	1.2	9.9	1.6	A+	A+
2397 740082 8 8 4214 .658 .197 .658 .062 .083 .000 .456 210 .456 309 212 .0.257 .0.037 -0.9 1.0 -2.2 1.0 A+ A+ 2398 740080 8 8 4214 .652 .652 .073 .167 .108 .000 .413 .413 326 181 142 0.292 0.037 1.9 1.0 0.6 1.0 A+ A+ 2399 740081 8 8 4214 .827 .046 .076 .051 .000 .573 .573 283 303 351 -0.908 0.046 -8.4 0.8 -9.9 0.6 A+ A+ 2400 740083 8 8 4214 .247 .075 .407 .271 .000 .066 070 271 .147 .066 2.311 .0.038 9.9 1.3 9	2395	739564	8	8	4235	.356	.363	.139	.356	.143	.000	.170	.139	232	.170	194	1.843	0.035	9.9	1.2	9.9	1.7	A-	A-
2398 740080 8 8 4214 .652 .652 .073 .167 .108 .000 .413 .413 .326 181 142 0.292 0.037 1.9 1.0 0.6 1.0 A+ A+ 2399 740081 8 8 4214 .827 .827 .046 .076 .051 .000 .573 .573 283 303 351 -0.908 0.046 -8.4 0.8 -9.9 0.6 A+ A- 2400 740083 8 8 4214 .494 .379 .494 .087 .040 .000 .175 .088 .175 288 251 1.125 0.035 9.9 1.3 9.9 1.5 A- A+ 2401 740311 8 8 4214 .271 .247 .075 .407 .271 .000 .066 070 271 .147 .066 2.311 0.038 9.9 <td>2396</td> <td>739561</td> <td>8</td> <td>8</td> <td>4235</td> <td>.604</td> <td>.198</td> <td>.604</td> <td>.128</td> <td>.069</td> <td>.000</td> <td>.425</td> <td>127</td> <td>.425</td> <td>261</td> <td>275</td> <td>0.568</td> <td>0.036</td> <td>0.1</td> <td>1.0</td> <td>1.1</td> <td>1.0</td> <td>A+</td> <td>A+</td>	2396	739561	8	8	4235	.604	.198	.604	.128	.069	.000	.425	127	.425	261	275	0.568	0.036	0.1	1.0	1.1	1.0	A+	A+
2399 740081 8 8 4214 .827 .827 .046 .076 .051 .000 .573 .283 .303 .351 -0.908 0.046 -8.4 0.8 -9.9 0.6 A+ A- 2400 740083 8 8 4214 .494 .379 .494 .087 .040 .000 .175 .088 .175 288 251 1.125 0.035 9.9 1.3 9.9 1.5 A- A+ 2401 740079 8 8 4214 .271 .247 .075 .407 .271 .000 .066 070 271 .147 .066 2.311 .0038 9.9 1.3 9.9 2.1 A+ A+ 2402 740311 8 8 4077 .547 .106 .134 .213 .547 .000 .401 275 233 088 .401 0.864 0.036 1.3 1.0	2397	740082	8	8	4214	.658	.197	.658	.062	.083	.000	.456	210	.456	309	212	0.257	0.037	-0.9	1.0	-2.2	1.0	A+	A+
2400 740083 8 8 4214 .494 .379 .494 .087 .040 .000 .175 .088 .175 288 251 1.125 0.035 9.9 1.3 9.9 1.5 A- A+ 2401 740079 8 8 4214 .271 .247 .075 .407 .271 .000 .066 070 271 .147 .066 2.311 0.038 9.9 1.3 9.9 2.1 A+ A- 2402 740311 8 8 4077 .304 .308 .253 .135 .304 .000 .243 .005 119 182 .243 2.124 0.037 5.4 1.1 9.9 1.5 A- A+ 2403 740309 8 8 4077 .547 .106 .134 .213 .547 .000 .401 275 233 088 .401 0.864 0.036 1.3	2398	740080	8	8	4214	.652	.652	.073	.167	.108	.000	.413	.413	326	181	142	0.292	0.037	1.9	1.0	0.6	1.0	A+	A+
2401 740079 8 8 4214 .271 .247 .075 .407 .271 .000 .066 070 271 .147 .066 2.311 0.038 9.9 1.3 9.9 2.1 A+ A- 2402 740311 8 8 4077 .304 .308 .253 .135 .304 .000 .243 .005 119 182 .243 2.124 0.037 5.4 1.1 9.9 1.5 A- A+ 2403 740309 8 8 4077 .547 .106 .134 .213 .547 .000 .401 275 233 088 .401 0.864 0.036 1.3 1.0 3.6 1.1 A- A+ 2404 740307 8 8 4077 .608 .136 .090 .166 .608 .000 .383 209 225 137 .383 0.545 0.036 4.1	2399	740081	8	8	4214	.827	.827	.046	.076	.051	.000	.573	.573	283	303	351	-0.908	0.046	-8.4	0.8	-9.9	0.6	A+	A-
2402 740311 8 8 4077 .304 .308 .253 .135 .304 .000 .243 .005 119 182 .243 2.124 0.037 5.4 1.1 9.9 1.5 A- A+ 2403 740309 8 8 4077 .547 .106 .134 .213 .547 .000 .401 275 233 088 .401 0.864 0.036 1.3 1.0 3.6 1.1 A- A+ 2404 740307 8 8 4077 .608 .136 .090 .166 .608 .000 .383 209 225 137 .383 0.545 0.036 4.1 1.1 3.6 1.1 A- 2405 740310 8 8 4077 .660 .660 .088 .173 .079 .000 .424 .424 308 185 160 0.259 0.037 0.9 1.0 <td>2400</td> <td>740083</td> <td>8</td> <td>8</td> <td>4214</td> <td>.494</td> <td>.379</td> <td>.494</td> <td>.087</td> <td>.040</td> <td>.000</td> <td>.175</td> <td>.088</td> <td>.175</td> <td>288</td> <td>251</td> <td>1.125</td> <td>0.035</td> <td>9.9</td> <td>1.3</td> <td>9.9</td> <td>1.5</td> <td>A-</td> <td>A+</td>	2400	740083	8	8	4214	.494	.379	.494	.087	.040	.000	.175	.088	.175	288	251	1.125	0.035	9.9	1.3	9.9	1.5	A-	A+
2403 740309 8 8 4077 .547 .106 .134 .213 .547 .000 .401 275 233 088 .401 0.864 0.036 1.3 1.0 3.6 1.1 A- A+ 2404 740307 8 8 4077 .608 .136 .090 .166 .608 .000 .383 209 225 137 .383 0.545 0.036 4.1 1.1 3.6 1.1 A- A- 2405 740310 8 8 4077 .660 .660 .088 .173 .079 .000 .424 .424 308 185 160 0.259 0.037 0.9 1.0 -0.3 1.0 A+ A- 2406 740306 8 8 4077 .622 .063 .221 .622 .094 .000 .368 264 128 .368 211 0.468 0.037 4.8 </td <td>2401</td> <td>740079</td> <td>8</td> <td>8</td> <td>4214</td> <td>.271</td> <td>.247</td> <td>.075</td> <td>.407</td> <td>.271</td> <td>.000</td> <td>.066</td> <td>070</td> <td>271</td> <td>.147</td> <td>.066</td> <td>2.311</td> <td>0.038</td> <td>9.9</td> <td>1.3</td> <td>9.9</td> <td>2.1</td> <td>A+</td> <td>A-</td>	2401	740079	8	8	4214	.271	.247	.075	.407	.271	.000	.066	070	271	.147	.066	2.311	0.038	9.9	1.3	9.9	2.1	A+	A-
2404 740307 8 8 4077 .608 .136 .090 .166 .608 .000 .383 209 225 137 .383 0.545 0.036 4.1 1.1 3.6 1.1 A- A- 2405 740310 8 8 4077 .660 .660 .088 .173 .079 .000 .424 .424 308 185 160 0.259 0.037 0.9 1.0 -0.3 1.0 A+ A- 2406 740306 8 8 4077 .622 .063 .221 .622 .094 .000 .368 264 128 .368 211 0.468 0.037 4.8 1.1 4.4 1.1 A- A- 2407 739761 8 8 4122 .748 .123 .099 .748 .031 .000 .474 230 290 .474 254 -0.326 0.041 -1.9	2402	740311	8	8	4077	.304	.308	.253	.135	.304	.000	.243	.005	119	182	.243	2.124	0.037	5.4	1.1	9.9	1.5	A-	A+
2405 740310 8 8 4077 .660 .660 .088 .173 .079 .000 .424 .424 308 185 160 0.259 0.037 0.9 1.0 -0.3 1.0 A+ A- 2406 740306 8 8 4077 .622 .063 .221 .622 .094 .000 .368 264 128 .368 211 0.468 0.037 4.8 1.1 4.4 1.1 A- A- 2407 739761 8 8 4122 .748 .123 .099 .748 .031 .000 .474 230 290 .474 254 -0.326 0.041 -1.9 1.0 -3.6 0.9 A+ A- 2408 739759 8 8 4122 .195 .625 .195 .080 .100 .000 821 269 325 135 2.799 0.042 9.9 1.3 9.9 3.1 A- 2409 739760 8 8 4122	2403	740309	8	8	4077	.547	.106	.134	.213	.547	.000	.401	275	233	088	.401	0.864	0.036	1.3	1.0	3.6	1.1	A-	A+
2406 740306 8 8 4077 .622 .063 .221 .622 .094 .000 .368 264 128 .368 211 0.468 0.037 4.8 1.1 4.4 1.1 A- A- 2407 739761 8 8 4122 .748 .123 .099 .748 .031 .000 .474 230 290 .474 254 -0.326 0.041 -1.9 1.0 -3.6 0.9 A+ A- 2408 739759 8 8 4122 .195 .625 .195 .080 .100 .000 069 .322 069 325 135 2.799 0.042 9.9 1.3 9.9 3.1 A- 2409 739760 8 8 4122 .703 .127 .054 .703 .116 .000 .481 227 238 .481 282 -0.038 0.039 -2.0 1.0 -4.4 0.9 B+ A+	2404	740307	8	8	4077	.608	.136	.090	.166	.608	.000	.383	209	225	137	.383	0.545	0.036	4.1	1.1	3.6	1.1	A-	A-
2407 739761 8 8 4122 .748 .123 .099 .748 .031 .000 .474 230 290 .474 254 -0.326 0.041 -1.9 1.0 -3.6 0.9 A+ A- 2408 739759 8 8 4122 .195 .625 .195 .080 .100 .000 069 .322 069 325 135 2.799 0.042 9.9 1.3 9.9 3.1 A- 2409 739760 8 8 4122 .703 .127 .054 .703 .116 .000 .481 227 238 .481 282 -0.038 0.039 -2.0 1.0 -4.4 0.9 B+ A+	2405	740310	8	8	4077	.660	.660	.088	.173	.079	.000	.424	.424	308	185	160	0.259	0.037	0.9	1.0	-0.3	1.0	A+	A-
2408 739759 8 8 4122 .195 .625 .195 .080 .100 .000 069 .322 069 325 135 2.799 0.042 9.9 1.3 9.9 3.1 A- 2409 739760 8 8 4122 .703 .127 .054 .703 .116 .000 .481 227 238 .481 282 -0.038 0.039 -2.0 1.0 -4.4 0.9 B+ A+	2406	740306	8	8	4077	.622	.063	.221	.622	.094	.000	.368	264	128	.368	211	0.468	0.037	4.8	1.1	4.4	1.1	A-	A-
2409 739760 8 8 4122 .703 .127 .054 .703 .116 .000 .481227238 .481282 -0.038 0.039 -2.0 1.0 -4.4 0.9 B+ A+	2407	739761	8	8	4122	.748	.123	.099	.748	.031	.000	.474	230	290	.474	254	-0.326	0.041	-1.9	1.0	-3.6	0.9	A+	A-
2409 739760 8 8 4122 .703 .127 .054 .703 .116 .000 .481227238 .481282 -0.038 0.039 -2.0 1.0 -4.4 0.9 B+ A+	2408	739759	8	8	4122	.195	.625	.195	.080	.100	.000	069	.322	069	325	135	2.799	0.042	9.9	1.3	9.9	3.1	A-	A-
	2409	739760	8	8	4122	.703	.127	.054	.703	.116	.000	.481	227	238	.481	282	-0.038	0.039	-2.0	1.0	-4.4	0.9	B+	A+
	2410	739762	8	8	4122	.726	.040	.078	.156	.726	.000	.583	275	307	341	.583	-0.179		-9.1	0.8	-9.9	0.7	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2411	720764	Grade	Grade	4122	405			202	146		226					1 155	0.025	in	in	out	out	/F	/B
2411	739764	8	8	4122	.485	.485	.086	.283	.146	.000	.336	.336	321	053	154	1.155	0.035	6.1	1.1	9.9	1.2	Α-	A+
2412	741513 741511	8	8	4247 4247	.647 .649	.056	.157	.647	.139 .649	.000	.384	274 324	212 163	.384	126	0.302	0.037 0.037	3.5 0.2	1.1	4.7	1.1	A+	A+
	741511	8	8	4247	.352	.053	.247 .199	.051	.360	.000	.438	.293	163	299	.438	0.294 1.848	0.037	4.3		9.9	1.0	A+	Α-
2414 2415	741514	8	8	4247	.566	.352	.199	.110	.566	.000	.405	209	267	235	.405	0.742	0.035	2.4	1.1	3.1	1.4	Α-	A- A+
2415	741310	8	8	4142	.787	.088	.787	.053	.073	.000	.469	268	.469	233	209	-0.595	0.033	-1.9	1.0	-3.9	0.9	A+ ^	A+ A-
2417	741334	8	8	4142	.449	.198	.200		.449	.000	.288	060		208	.288		0.045	9.4	1.1	9.9		Α-	
2417	741332	8	8	4142	.662	.662	.200	.153	.134	.000	.411	.411	111 301	208	125	1.345 0.221	0.035	2.6	1.1	1.4	1.3	A+	A+ A+
2418	741335	8	8	4142	.718	.718	.071	.086	.105	.000	.521	.521	295	285	123	-0.120	0.037		0.9	-6.2	0.8	A+	
2419	741335	8	8	4142	.718	.718	.337	.327	.166	.000	.170	050	.048	.170	224	1.983	0.039	-4.6 9.9	1.2	9.9	1.7	A+	A+ ^
2420	741331	8	8	4142	.327	.387	.267	.272	.074	.000	.256	.256	053	105	224	1.661	0.035	9.9	1.1	9.9	1.7	A-	Α-
2421	741130	8	8	4176	.764	.088	.068	.764	.080	.000	.506	269	257	.506	273	-0.437	0.033	-4.2	0.9	-6.7	0.8	A-	Α-
2422	741133	8	8	4176	.820	.062	.820	.048	.070	.000	.512	272	.512	307	257	-0.437	0.041	-5.0	0.9	-7.7	0.8	A-	A- B-
2423	741132	8	8	4176	.691	.002	.133	.048	.691	.000	.543	264	279	287	.543	0.043	0.043	-7.0	0.9	-8.5	0.7	A- A+	A-
		8	8	4176	.326	.138	.133	.326		.000	.075		058	.075	.177	1.986	0.036	9.9		9.9	2.0		
2425	741135 741721	8	8	4228	.404	.097	.261	.404	.275	.000	.252	258 212	050	.075	092	1.555	0.035	8.8	1.3	9.9	1.4	A+ A+	A- A-
2420	741721	8	8	4228	.404	.165	.352	.061	.421	.000	.358	212	030	303	.358	1.464	0.035	1.7	1.0	5.7	1.1	A+	A- A+
2427	741723	8	8	4228	.600	.600	.332	.146	.119	.000	.336	.459	189	274	197	0.546	0.036	-1.7	1.0	-1.6	1.0		A+ A-
2428	741722	8	8	4228	.410	.204	.133	.215	.119	.000	.459	093	.347	274	197	1.523	0.035	1.6	1.0	8.7	1.0	A- A+	A- A-
2429	741725	8	8	4228	.422	.213	.186	.421	.171	.000	.230	100	198	.230	.011	1.463	0.035	9.9	1.0	9.9	1.4		
2430	741723	8	8	4228	.385	.213	.122	.316	.385	.000	.382	136	198	126	.382	1.686	0.035	-2.3	1.0	6.0	1.2	A+ A-	A+ A-
2431	741531	8	8	4294	.605	.139	.605	.152	.104	.000	.421	217	.421	120	197	0.563	0.035	0.2	1.0	0.5	1.0	A-	A- A-
2432	741531	8	8	4294	.782	.096	.054	.782	.069	.000	.473	217	280	.473	197	-0.518	0.033	-2.9	0.9	-4.7	0.8	А- В-	B-
2433	741534	8	8	4294	.442	.442	.143	.231	.183	.000	.359	.359	273	075	132	1.397	0.041	2.3	1.0	6.4	1.2	A-	A-
2435	741534	8	8	4294	.513	.513	.145	.186	.156	.000	.325	.325	273	162	008	1.039	0.034	6.8	1.1	9.0	1.2	A-	A-
2436	741523	8	8	4230	.915	.029	.023	.033	.915	.000	.451	224	237	294	.451	-1.924	0.060	-3.5	0.9	-6.4	0.6	A+	A-
2437	741674	8	8	4230	.685	.189	.089	.038	.685	.000	.467	236	262	264	.467	0.075	0.038	-1.2	1.0	-2.8	0.9	A-	A+
2438	741671	8	8	4230	.546	.546	.177	.148	.129	.000	.437	.437	202	242	164	0.838	0.035	-0.9	1.0	0.8	1.0	A-	A+
2439	741671	8	8	4230	.499	.217	.499	.159	.125	.000	.286	027	.286	183	196	1.081	0.035	9.9	1.2	9.9	1.3	A-	A-
2440	741673	8	8	4230	.238	.575	.238	.099	.087	.000	.110	.215	.110	312	213	2.493	0.039	8.0	1.2	9.9	2.2	A-	A-
2441	741073	8	8	4196	.880	.880	.044	.035	.041	.000	.516	.516	272	284	300	-1.451	0.052	-5.6	0.8	-9.0	0.5	A+	A-
2441	741496	8	8	4196	.745	.060	.075	.121	.745	.000	.515	255	333	235	.515	-0.292	0.032	-5.7	0.8	-2.3	0.9	A+	A- A-
2442	741490	8	8	4196	.659	.000	.078	.659	.164	.000	.500	294	285	.500	197	0.243	0.040	-3.3	0.9	-4.4	0.9	A-	A-
2444	741497	8	8	4196	.710	.095	.710	.095	.099	.000	.597	331	.597	300	287	-0.068	0.037	-9.9	0.9	-9.9	0.7	A-	A-
2444	741502	8	8	4196	.445	.093	.445	.233	.109	.000	.254	131	.254	122	067	1.388	0.035	9.9	1.2	9.9	1.4	A+	A+
2443	741301	0	0	4130	.443	.214	.443	.233	.109	.000	.234	131	.234	122	007	1.300	0.055	5.5	1.2	5.5	1.4	Αт	ΑŦ

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

2446 741628 8	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
2448 741625 8 8 4280 671 064 671 152 113 000 488 -277 488 -251 -225 0.149 0.037 3.2 0.9 -24 0.9 A+ A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-A-			Grade																		out		/F	•
2448 741629 8																							Α-	A-
2490 741627 8 8 8 4280 6.54 1.00 1.79 634 0.08 0.00 4.26 -239 -1.43 4.26 -281 0.358 0.036 1.9 1.0 1.3 1.0 A- A- A- A- A- A- A- A	-																						A+	A-
2450 741527 8 8 4280 6.66 6.66 6.66 712 325 0.98 .000 .531 .531 .524 .274 .279 0.178 0.037 .6.0 0.9 .6.5 0.8 A- A- A- 2451 742019 8 8 4187 .578 .518 .176 .518 .231 .075 .000 .366 .150 .366 .181 .187 .099 0.035 .4.4 .1.1 6.2 1.1 A+ A+ A+ 2453 742019 8 8 4187 .778 .052 .118 .052 .778 .000 .521 .210 .244 .361 .089 0.841 .0.35 .52 .1.1 6.5 1.1 A+ A+ 2453 742015 8 8 4187 .778 .052 .118 .052 .778 .000 .521 .320 .244 .302 .521 .0.515 .0.042 .5.7 .5.7 .5.9 .6.8 .8.4 A+ A+ .4.4 .	2448										.000									1.1		1.1	A-	A-
2451 742014 8							.100													1.0			A+	A+
2452 742019 8	_	741627	-																-6.0	0.9			A+	A-
2453 742015 8 8 8 4187 .778 .052 .118 .052 .778 .000 .521 .320 .244 .302 .521 .0.515 .0.042 .5.7 .0.9 .6.8 .0.8 A+ A+ .2454 .742018 B 8 4187 .587 .587 .087 .0.9 .1.15 .107 .000 .486 .225 .486 .2.58 .1.17 .0.303 .0.37 .3.5 .0.9 .4.5 .0.9 A- A- .4.5 .4.5 .4.5 .4.5 .4.5 .2.5 .4.5	2451	742014	8	8		.518	.176	.518	.231	.075	.000	.366	150	.366	181	187	0.999		4.4	1.1	6.2	1.1	A+	A+
2454 742016 8	2452	742019	8	8		.549	.113	.159	.549	.178	.000	.361	211	214	.361	089	0.841	0.035	5.2	1.1	6.5	1.1	A+	A+
2455 742018 8 8 4187 587	2453	742015	8	8	4187	.778	.052	.118	.052	.778	.000	.521	320	244	302	.521	-0.515	0.042	-5.7	0.9	-6.8	8.0	A+	A+
2456 741689 8	2454	742016	8	8	4187	.649	.099	.649	.145	.107	.000	.486	290	.486	258	177	0.303	0.037	-3.5	0.9	-4.5	0.9	A-	A+
2457 741687 8 8 8 4134 668 .062 .194 .668 .076 .000 .423 .334 .186 .423 .171 0.188 0.038 1.3 1.0 0.8 1.0 A+ A- 2458 741692 8 8 8 4134 .403 .272 .403 .224 .101 .000 .272 .048 .272 .216 .215 1.587 0.035 9.2 1.1 9.9 1.4 A+ A- 2460 741691 8 8 8 4134 .692 .109 .075 .125 .692 .000 .468 .149 .314 .264 .468 0.042 0.038 1.8 1.0 1.8 1.0 A+ A- 2461 741713 8 8 4059 .689 .689 .689 .103 .078 130 .000 .405 .405 .318 .310 .023 0.027 0.039 2.7 1.1 1.0 9. 7.3 0.8 A+ A- 2462 741715 8 8 4059 .694 .694 .124 .614 .198 .064 .000 .420 .214 .420 .198 .224 0.458 0.037 1.4 1.0 0.8 1.0 A- A- 2463 741716 8 8 4059 .634 .140 .119 .634 .107 .000 .440 .219 .213 .440 .218 0.344 0.037 0.7 1.0 0.4 1.0 A- A- 2464 741718 8 8 .4059 .516 .123 .143 .218 .516 .000 .389 .179 .112 .233 .389 0.977 0.036 2.1 1.0 5.0 1.1 A- A- 2465 739746 Lit Lit 3678 .536 .082 .636 .180 .103 .000 .452 .166 .388 .277 .3784 .114 .000 .000 .452 .166 .388 .277 .388 .0.405 0.039 0.7 1.1 1.0 5.0 1.1 A- A- 2467 739745 Lit Lit 3678 .588 .134 .158 .136 .430 .277 .000 .452 .166 .188 .276 .425 0.097 0.037 .2.4 1.0 0.3 1.0 A- A- 2469 739744 Lit Lit 3678 .588 .134 .158 .136 .430 .277 .000 .452 .166 .188 .276 .452 0.097 0.037 .2.4 1.0 0.3 1.0 A- A- 2469 739744 Lit Lit 3678 .588 .134 .158 .136 .430 .277 .000 .428 .219 .138 .224 0.458 0.039 1.4 1.0 0.3 1.0 A- A- 2467 739745 Lit Lit 3678 .455 .555 .555 .555 .175 .187 .000 .446 .446 .294 .240 .444 0.010 .0038 .0.9 1.0 .38 1.1 A- A- 2467 739744 Lit Lit 3678 .588 .134 .158 .136 .430 .277 .000 .446 .466 .224 .240 .144 0.010 .0038 .0.8 1.0 0.03 1.0 A- A- 2470 739743 Lit Lit 3678 .450 .552 .552 .072 .159 .187 .000 .446 .466 .294 .240 .144 0.070 .0038 .0.8 1.0 0.03 1.0 A- A- 2471 739744 Lit Lit 3678 .455 .555 .582 .582 .072 .159 .187 .000 .446 .466 .294 .240 .144 0.070 .0038 .0.8 1.0 0.3 1.0 A- A- 2472 740066 Lit Lit 3486 .574 .574 .156 .094 .167 .000 .344 .446 .229 .240 .144 0.070 .0038 .0.8 1.0 0.3 1.0 A- A- 2473 740066 Lit Lit 3486 .558 .111 .184 .147 .558 .000 .482 .219 .176 .288 .482 0.783 0.039 .9.9 1.2 9.9 1.2 9.9 1.4 A- 2476 740063 Lit Li	2455	742018	8	8	4187	.587	.587	.087	.209	.116	.000	.426	.426	227	161	250	0.642	0.036	0.4	1.0	1.3	1.0	A-	A+
2458 741692 8	2456	741689	8	8	4134	.788	.126	.788	.046	.040	.000	.456	221	.456	303	251	-0.605	0.043	-1.6	1.0	-2.8	0.9	A+	A-
2459 741688 8 8 4134 .692 .109 .075 .125 .692 .000 .468 .149 .314 .264 .468 0.042 .038 -1.8 1.0 -1.8 1.0 A+ A- 2460 741691 8 8 4134 .752 .077 .115 .752 .057 .000 .526 .247 .268 .526 .328 .0343 .0041 -5.1 .09 .73 .0.8 A+ A- 2462 741715 8 8 4059 .614 .124 .614 .198 .064 .000 .420 214 .420 .198 .224 .0458 .037 1.4 1.0 .08 1.0 .4 .4 .214 .420 .198 .224 .0458 .037 1.4 1.0 .0.8 .4 .4 .4 .4 .20 .1 .4 .4 .4 .2 .4 .0	2457	741687	8	8	4134	.668	.062	.194	.668	.076	.000	.423	334	186	.423	171	0.188	0.038	1.3	1.0	0.8	1.0	A+	A-
2460 741691 8 8 4134 .752 .077 .115 .752 .057 .000 .526 .247 .268 .526 .328 -0.343 0.041 .51 0.9 -7.3 0.8 A+ A- 2461 741713 8 8 4059 .689 .689 .103 .078 .130 .000 .405 .405 .033 .027 0.039 2.7 1.1 1.0 1.0 A+ A+ 2462 741716 8 8 4059 .634 .101 .119 .634 .107 .000 .40 .219 .213 .40 .037 .1 .0 .0 .40 .21 .213 .44 .0 .21 .0 .0 .0 .0 .21 .21 .0 .0 .0 .0 .21 .0 .0 .0 .0 .21 .0 .0 .0 .0 .2 .1 .0	2458	741692	8	8	4134	.403	.272	.403	.224	.101	.000	.272	.048	.272	216	215	1.587	0.035	9.2	1.1	9.9	1.4	A+	A+
2461 741713 8 8 4059 .689 .689 .103 .078 .130 .000 .405 .318 .310 .023 0.027 0.039 2.7 1.1 1.0 1.0 A+ A+ 2462 741715 8 8 4059 .614 .124 .614 .198 .664 .000 .420 .214 .420 .198 .224 .0458 .037 1.4 .10 .08 1.0 A+ A+ 2463 741716 8 8 4059 .516 .123 .143 .107 .000 .406 .219 -2.11 .440 .218 .0344 .003 .07 1.0 .0.4 .0.4 .218 .344 .037 .0036 .0.9 1.0 3.8 1.1 A A 2466 739746 Lit Lit .366 .082 .636 .180 .103 .000 .482 .176 .133 .0406	2459	741688	8	8	4134	.692	.109	.075	.125	.692	.000	.468	149	314	264	.468	0.042	0.038	-1.8	1.0	-1.8	1.0	A+	A-
2462 741715 8 8 4059 .614 .124 .614 .198 .064 .000 .420 214 .420 198 224 .0458 0.037 1.4 1.0 0.8 1.0 A- A+ 2463 741716 8 8 4059 .634 .104 .119 .634 .107 .000 .440 .219 .213 .440 .218 0.344 0.037 0.7 1.0 .0.4 1.0 A- A+ 2465 741714 8 8 4059 .535 .535 .535 .535 .535 .535 .535 .535 .535 .535 .535 .542 .119 .636 .180 .103 .000 .406 .406 .235 .247 .038 .876 .036 .82 .636 .180 .103 .000 .432 .166 .188 .276 .452 .0907 .0.037 .2.4 1.0 .0	2460	741691	8	8	4134	.752	.077	.115	.752	.057	.000	.526	247	268	.526	328	-0.343	0.041	-5.1	0.9	-7.3	8.0	A+	A-
2463 741716 8 8 4059 .634 .140 .119 .634 .107 .000 .440 219 213 .440 218 0.344 0.037 0.7 1.0 -0.4 1.0 A- A+ 2464 741718 8 8 4059 .516 .123 .143 .218 .516 .000 .389 179 112 233 .389 0.977 0.036 2.1 1.0 5.0 1.1 A- A+ 2465 741714 8 8 4059 .535 .535 .203 .114 .148 .000 .406 .235 .247 .083 .0876 0.036 0.9 1.0 3.8 1.1 A- A+ 2467 739745 Lit Lit 3678 .582 .158 .120 .588 .000 .418 .191 .189 .221 .418 0.666 0.038 1.4 1.0 2.8	2461	741713	8	8	4059	.689	.689	.103	.078	.130	.000	.405	.405	318	310	023	0.027	0.039	2.7	1.1	1.0	1.0	A+	A+
2464 741718 8 8 4059 .516 .123 .143 .218 .516 .000 .389 179 112 233 .389 0.977 0.036 2.1 1.0 5.0 1.1 A- A+ 2465 741714 8 8 4059 .535 .535 .203 .114 .148 .000 .406 .406 235 247 083 0.876 0.036 0.9 1.0 3.8 1.1 A- A+ 2466 739746 Lit Lit 3678 .636 .082 .636 .180 .103 .000 .378 .270 .378 .177 133 0.406 0.039 4.7 1.1 3.9 1.1 A- A+ 2467 739745 Lit Lit Lit 3678 .588 .134 .158 .120 .588 .000 .418 .191 188 .221 .418 0.038 .4 </td <td>2462</td> <td>741715</td> <td>8</td> <td>8</td> <td>4059</td> <td>.614</td> <td>.124</td> <td>.614</td> <td>.198</td> <td>.064</td> <td>.000</td> <td>.420</td> <td>214</td> <td>.420</td> <td>198</td> <td>224</td> <td>0.458</td> <td>0.037</td> <td>1.4</td> <td>1.0</td> <td>0.8</td> <td>1.0</td> <td>A-</td> <td>A+</td>	2462	741715	8	8	4059	.614	.124	.614	.198	.064	.000	.420	214	.420	198	224	0.458	0.037	1.4	1.0	0.8	1.0	A-	A+
2465 741714 8 8 4059 .535 .535 .203 .114 .148 .000 .406 .235 .247 .083 0.876 0.036 0.9 1.0 3.8 1.1 A- A+ 2466 739746 Lit Lit 3678 .636 .082 .636 .180 .103 .000 .378 270 .378 177 133 0.406 0.039 4.7 1.1 3.9 1.1 A- 2467 739745 Lit Lit Lit 3678 .542 .159 .162 .137 .542 .000 .452 166 188 276 .452 0.907 0.037 -2.4 1.0 -0.3 1.0 A+ A+ 2469 739743 Lit Lit Lit 3678 .430 .158 .120 .588 .000 .418 .191 189 .221 .418 0.037 .99 1.2	2463	741716	8	8	4059	.634	.140	.119	.634	.107	.000	.440	219	213	.440	218	0.344	0.037	0.7	1.0	-0.4	1.0	A-	A+
2466 739746 Lit Lit 3678 .636 .082 .636 .180 .103 .000 .378 270 .378 177 133 0.406 0.039 4.7 1.1 3.9 1.1 A- 2467 739745 Lit Lit 3678 .542 .159 .162 .137 .542 .000 .452 166 188 276 .452 0.907 0.037 24 1.0 -0.3 1.0 A+ A+ 2468 739744 Lit Lit 3678 .588 .134 .158 .120 .588 .000 .418 191 189 .221 .418 0.666 0.038 1.4 1.0 2.8 1.1 A+ A- 2469 739742 Lit Lit Lit 3678 .430 .158 .136 .430 .277 .000 .238 152 .226 .238 .056 1.481 0.037	2464	741718	8	8	4059	.516	.123	.143	.218	.516	.000	.389	179	112	233	.389	0.977	0.036	2.1	1.0	5.0	1.1	A-	A+
2467 739745 Lit Lit 3678 .542 .159 .162 .137 .542 .000 .452 166 188 276 .452 0.907 0.037 -2.4 1.0 -0.3 1.0 A+ A+ 2468 739744 Lit Lit 3678 .588 .134 .158 .120 .588 .000 .418 191 189 221 .418 0.666 0.038 1.4 1.0 2.8 1.1 A+ A- 2469 739742 Lit Lit 3678 .430 .158 .136 .430 .277 .000 .238 .152 .256 .238 .056 1.481 0.037 9.9 1.2 9.9 1.5 A- 2470 739743 Lit Lit Lit 3678 .455 .455 .144 .258 .142 .000 .363 .363 .182 .164 .129 1.349 0.037	2465	741714	8	8	4059	.535	.535	.203	.114	.148	.000	.406	.406	235	247	083	0.876	0.036	0.9	1.0	3.8	1.1	A-	A+
2468 739744 Lit Lit 3678 .588 .134 .158 .120 .588 .000 .418 191 189 221 .418 0.666 0.038 1.4 1.0 2.8 1.1 A+ A- 2469 739742 Lit Lit Lit 3678 .430 .158 .136 .430 .277 .000 .238 152 256 .238 .056 1.481 0.037 9.9 1.2 9.9 1.5 A- 2470 739743 Lit Lit Lit 3678 .582 .582 .072 .159 .187 .000 .446 .446 294 240 144 0.701 0.038 -0.8 1.0 0.3 1.0 A- A+ 2471 739741 Lit Lit Lit .368 .555 .144 .258 .142 .000 .363 .363 182 164 129 1.349	2466	739746	Lit	Lit	3678	.636	.082	.636	.180	.103	.000	.378	270	.378	177	133	0.406	0.039	4.7	1.1	3.9	1.1	A-	A-
2469 739742 Lit Lit 3678 .430 .158 .136 .430 .277 .000 .238 .152 .256 .238 .056 1.481 0.037 9.9 1.2 9.9 1.5 A- A- 2470 739743 Lit Lit 3678 .582 .582 .072 .159 .187 .000 .446 .446 240 144 0.701 0.038 08 1.0 0.3 1.0 A- A+ 2471 739741 Lit Lit 3678 .455 .455 .144 .258 .142 .000 .363 .363 182 164 129 1.349 0.037 2.8 1.0 7.1 1.2 A- A+ 2472 740065 Lit Lit 3486 .574 .574 .165 .094 .167 .000 .344 .344 108 304 110 0.702 0.039 6.3	2467	739745	Lit	Lit	3678	.542	.159	.162	.137	.542	.000	.452	166	188	276	.452	0.907	0.037	-2.4	1.0	-0.3	1.0	A+	A+
2470 739743 Lit Lit 3678 .582 .582 .072 .159 .187 .000 .446 .446 240 144 0.701 0.038 -0.8 1.0 0.3 1.0 A- A+ 2471 739741 Lit Lit <td>2468</td> <td>739744</td> <td>Lit</td> <td>Lit</td> <td>3678</td> <td>.588</td> <td>.134</td> <td>.158</td> <td>.120</td> <td>.588</td> <td>.000</td> <td>.418</td> <td>191</td> <td>189</td> <td>221</td> <td>.418</td> <td>0.666</td> <td>0.038</td> <td>1.4</td> <td>1.0</td> <td>2.8</td> <td>1.1</td> <td>A+</td> <td>A-</td>	2468	739744	Lit	Lit	3678	.588	.134	.158	.120	.588	.000	.418	191	189	221	.418	0.666	0.038	1.4	1.0	2.8	1.1	A+	A-
2471 739741 Lit Lit 3678 .455 .144 .258 .142 .000 .363 .363 164 129 1.349 0.037 2.8 1.0 7.1 1.2 A- A+ 2472 740065 Lit Lit 3486 .574 .574 .165 .094 .167 .000 .344 .344 108 304 110 0.702 0.039 6.3 1.1 7.0 1.2 A- A+ 2473 740062 Lit Lit Lit 3486 .235 .098 .235 .550 .117 .000 .077 194 .077 .171 186 2.520 0.043 8.7 1.2 9.9 2.2 A+ A+ 2474 740066 Lit Lit 3486 .352 .179 .268 .352 .201 .000 .140 168 .023 .140 032 1.842 0.039 9.9	2469	739742	Lit	Lit	3678	.430	.158	.136	.430	.277	.000	.238	152	256	.238	.056	1.481	0.037	9.9	1.2	9.9	1.5	A-	A-
2472 740065 Lit Lit 3486 .574 .574 .165 .094 .167 .000 .344 .344 108 304 110 0.702 0.039 6.3 1.1 7.0 1.2 A- A+ 2473 740062 Lit Lit 3486 .235 .098 .235 .550 .117 .000 .077 194 .077 .171 186 2.520 0.043 8.7 1.2 9.9 2.2 A+ A+ 2474 740066 Lit Lit 3486 .558 .111 .184 .147 .558 .000 .482 219 176 289 .482 0.783 0.039 -3.9 0.9 -3.2 0.9 A+ A- 2475 740064 Lit Lit 3486 .352 .179 .268 .352 .201 .000 .140 168 .023 .140 032 1.842 0.039	2470	739743	Lit	Lit	3678	.582	.582	.072	.159	.187	.000	.446	.446	294	240	144	0.701	0.038	-0.8	1.0	0.3	1.0	A-	A+
2473 740062 Lit Lit 3486 .235 .098 .235 .550 .117 .000 .077 194 .077 .171 186 2.520 0.043 8.7 1.2 9.9 2.2 A+ A+ 2474 740066 Lit Lit 3486 .558 .111 .184 .147 .558 .000 .482 219 176 289 .482 0.783 0.039 -3.9 0.9 -3.2 0.9 A+ A- 2475 740064 Lit Lit 3486 .352 .179 .268 .352 .201 .000 .140 168 .023 .140 032 1.842 0.039 9.9 1.2 9.9 1.6 A+ A- 2476 740063 Lit Lit 3486 .675 .097 .135 .093 .675 .000 .492 189 237 322 .492 0.144 0.041	2471	739741	Lit	Lit	3678	.455	.455	.144	.258	.142	.000	.363	.363	182	164	129	1.349	0.037	2.8	1.0	7.1	1.2	A-	A+
2474 740066 Lit Lit 3486 .558 .111 .184 .147 .558 .000 .482 219 176 289 .482 0.783 0.039 -3.9 0.9 -3.2 0.9 A+ A- 2475 740064 Lit Lit 3486 .352 .179 .268 .352 .201 .000 .140 168 .023 .140 032 1.842 0.039 9.9 1.2 9.9 1.6 A+ A- 2476 740063 Lit Lit 3486 .675 .097 .135 .093 .675 .000 .492 189 237 322 .492 0.144 0.041 -3.1 0.9 -3.9 0.9 A- 2477 740061 Lit Lit 3486 .456 .136 .258 .456 .151 .000 .230 168 .032 .230 198 1.306 0.038 9.9	2472	740065	Lit	Lit	3486	.574	.574	.165	.094	.167	.000	.344	.344	108	304	110	0.702	0.039	6.3	1.1	7.0	1.2	A-	A+
2475 740064 Lit Lit 3486 .352 .179 .268 .352 .201 .000 .140 168 .023 .140 032 1.842 0.039 9.9 1.2 9.9 1.6 A+ A- 2476 740063 Lit Lit 3486 .675 .097 .135 .093 .675 .000 .492 189 237 322 .492 0.144 0.041 -3.1 0.9 -3.9 0.9 A- A- 2477 740061 Lit Lit 3486 .456 .136 .258 .456 .151 .000 .230 168 .032 .230 198 1.306 0.038 9.9 1.2 9.9 1.4 A- 2478 737740 Lit Lit 3546 .485 .303 .115 .097 .485 .000 .297 034 207 226 .297 1.212 0.038 9.5	2473	740062	Lit	Lit	3486	.235	.098	.235	.550	.117	.000	.077	194	.077	.171	186	2.520	0.043	8.7	1.2	9.9	2.2	A+	A+
2476 740063 Lit Lit 3486 .675 .097 .135 .093 .675 .000 .492 189 237 322 .492 0.144 0.041 -3.1 0.9 -3.9 0.9 A- A- 2477 740061 Lit Lit 3486 .456 .136 .258 .456 .151 .000 .230 168 .032 .230 198 1.306 0.038 9.9 1.2 9.9 1.4 A- A- 2478 737740 Lit Lit 3546 .485 .303 .115 .097 .485 .000 .297 034 207 226 .297 1.212 0.038 9.5 1.1 9.0 1.2 A+ A+ 2479 737745 Lit Lit 3546 .743 .047 .044 .167 .743 .000 .489 286 292 251 .489 -0.230 0.044	2474	740066	Lit	Lit	3486	.558	.111	.184	.147	.558	.000	.482	219	176	289	.482	0.783	0.039	-3.9	0.9	-3.2	0.9	A+	A-
2477 740061 Lit Lit 3486 .456 .136 .258 .456 .151 .000 .230 168 .032 .230 198 1.306 0.038 9.9 1.2 9.9 1.4 A- 2478 737740 Lit Lit 3546 .485 .303 .115 .097 .485 .000 .297 034 207 226 .297 1.212 0.038 9.5 1.1 9.0 1.2 A+ A+ 2479 737745 Lit Lit 3546 .743 .044 .167 .743 .000 .489 286 292 251 .489 -0.230 0.044 -2.6 0.9 -3.5 0.9 A+ A-	2475	740064	Lit	Lit	3486	.352	.179	.268	.352	.201	.000	.140	168	.023	.140	032	1.842	0.039	9.9	1.2	9.9	1.6	A+	A-
2478 737740 Lit Lit 3546 .485 .303 .115 .097 .485 .000 .297 034 207 226 .297 1.212 0.038 9.5 1.1 9.0 1.2 A+ A+ 2479 737745 Lit Lit 3546 .743 .044 .167 .743 .000 .489 286 292 251 .489 -0.230 0.044 -2.6 0.9 -3.5 0.9 A+ A-	2476	740063	Lit	Lit	3486	.675	.097	.135	.093	.675	.000	.492	189	237	322	.492	0.144	0.041	-3.1	0.9	-3.9	0.9	A-	A-
2479 737745 Lit Lit 3546 .743 .047 .044 .167 .743 .000 .489286292251 .489 -0.230 0.044 -2.6 0.9 -3.5 0.9 A+ A-	2477	740061	Lit	Lit	3486	.456	.136	.258	.456	.151	.000	.230	168	.032	.230	198	1.306	0.038	9.9	1.2	9.9	1.4	A-	A-
2479 737745 Lit Lit 3546 .743 .047 .044 .167 .743 .000 .489286292251 .489 -0.230 0.044 -2.6 0.9 -3.5 0.9 A+ A-	2478	737740	Lit	Lit	3546	.485	.303	.115	.097	.485	.000	.297	034	207	226	.297	1.212	0.038	9.5	1.1	9.0	1.2	A+	A+
	2479	737745	Lit	Lit			.047	.044			.000		286			.489	-0.230			0.9	-3.5		A+	A-
	2480	737743	Lit	Lit	3546	.540	.240	.539	.177	.044	.000	.235	036	.235	137	241	0.935	0.038	9.9	1.2	9.9	1.4	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2481	737744	Grade Lit	Grade Lit	3546	.198	.198	.464	.208	.130	.000	.126	.126	.183	229	144	2.822	0.045	in 4.1	1.1	out 9.9	2.3	/F A-	/B A+
2481	737744	Lit	Lit	3546	.668	.125	.668	.148	.058	.000	.483	239	.483	250	253	0.237	0.043	-1.9	1.0	-3.9	0.9	A-	A-
2482	737742	Lit	Lit	3546	.642	.123	.168	.642	.068	.000	.416	153	198	.416	299	0.237	0.041	1.7	1.0	1.8	1.1	A+	A- A-
2484	739751	Lit	Lit	3632	.575	.068	.137	.220	.575	.000	.572	266	276	292	.572	0.744	0.038	-9.9	0.8	-9.9	0.8	A+	A-
2485	739752	Lit	Lit	3632	.329	.329	.122	.387	.162	.000	.332	.332	244	.009	218	2.017	0.039	0.2	1.0	9.5	1.4	A+	A-
2486	739750	Lit	Lit	3632	.520	.520	.260	.164	.056	.000	.424	.424	125	269	251	1.031	0.038	-0.4	1.0	2.1	1.1	A-	A-
2487	739749	Lit	Lit	3632	.526	.100	.526	.210	.164	.000	.317	161	.317	200	078	0.995	0.038	8.1	1.1	9.2	1.2	A+	A+
2488	739748	Lit	Lit	3632	.546	.094	.546	.205	.156	.000	.396	232	.396	247	082	0.895	0.038	2.0	1.0	4.3	1.1	A+	A+
2489	739747	Lit	Lit	3632	.335	.222	.118	.335	.326	.000	.135	110	269	.135	.147	1.985	0.039	9.9	1.2	9.9	1.7	Α-	A+
2490	741062	Lit	Lit	3618	.345	.258	.140	.345	.257	.000	.205	.045	287	.205	041	1.866	0.039	9.9	1.2	9.9	1.7	A+	Α-
2491	741061	Lit	Lit	3618	.506	.158	.144	.192	.506	.000	.374	094	215	197	.374	1.036	0.038	3.3	1.1	6.4	1.2	Α-	Α-
2492	741063	Lit	Lit	3618	.435	.244	.435	.170	.151	.000	.242	021	.242	196	106	1.398	0.038	9.9	1.2	9.9	1.4	A-	A-
2493	741064	Lit	Lit	3618	.546	.148	.114	.546	.191	.000	.368	163	240	.368	124	0.830	0.038	4.7	1.1	6.5	1.2	A-	A-
2494	741066	Lit	Lit	3618	.286	.286	.504	.098	.111	.000	.064	.064	.197	285	136	2.196	0.040	9.9	1.3	9.9	2.1	A+	A+
2495	741065	Lit	Lit	3618	.649	.130	.649	.117	.104	.000	.461	112	.461	362	215	0.276	0.040	-0.7	1.0	-1.5	1.0	A+	A+
2496	739533	Lit	Lit	3590	.268	.223	.324	.185	.268	.000	.115	.000	.053	195	.115	2.351	0.041	9.9	1.2	9.9	2.0	A+	A+
2497	739535	Lit	Lit	3590	.618	.136	.134	.618	.112	.000	.390	172	243	.390	150	0.495	0.039	3.5	1.1	3.3	1.1	A+	A-
2498	739530	Lit	Lit	3590	.606	.136	.144	.114	.606	.000	.473	201	174	318	.473	0.559	0.039	-2.4	1.0	-1.8	1.0	A+	A-
2499	739531	Lit	Lit	3590	.520	.520	.088	.196	.196	.000	.339	.339	310	141	064	1.013	0.038	6.4	1.1	8.1	1.2	A+	A+
2500	739532	Lit	Lit	3590	.675	.073	.675	.107	.145	.000	.485	279	.485	303	172	0.172	0.041	-2.8	1.0	-2.9	0.9	A+	A-
2501	739534	Lit	Lit	3590	.420	.148	.176	.420	.257	.000	.142	152	153	.142	.096	1.520	0.038	9.9	1.3	9.9	1.6	A+	A+
2502	739538	Lit	Lit	3632	.553	.553	.251	.136	.060	.000	.242	.242	155	006	215	0.894	0.037	9.9	1.2	9.9	1.3	A-	A-
2503	739536	Lit	Lit	3632	.664	.664	.116	.158	.062	.000	.394	.394	204	173	239	0.300	0.040	2.0	1.0	2.7	1.1	A+	A-
2504	739537	Lit	Lit	3632	.604	.072	.211	.604	.113	.000	.317	179	130	.317	175	0.633	0.038	7.2	1.1	7.7	1.2	A+	A-
2505	739539	Lit	Lit	3632	.358	.262	.358	.113	.267	.000	.147	035	.147	200	.018	1.877	0.038	9.9	1.2	9.9	1.6	A-	A-
2506	739540	Lit	Lit	3632	.347	.369	.141	.143	.347	.000	.148	.079	122	188	.148	1.936	0.038	9.9	1.2	9.9	1.8	A-	A-
2507	739541	Lit	Lit	3632	.430	.449	.430	.073	.048	.000	.117	.182	.117	312	313	1.511	0.037	9.9	1.3	9.9	1.6	A-	A-
2508	740067	Lit	Lit	3640	.624	.624	.082	.129	.164	.000	.490	.490	251	285	195	0.440	0.039	-3.0	1.0	-4.3	0.9	A+	A+
2509	740069	Lit	Lit	3640	.573	.573	.130	.170	.127	.000	.346	.346	140	261	078	0.714	0.038	6.8	1.1	7.2	1.2	A-	A+
2510	740072	Lit	Lit	3640	.602	.138	.184	.602	.077	.000	.421	214	184	.421	230	0.562	0.039	1.2	1.0	1.3	1.0	A-	A-
2511	740068	Lit	Lit	3640	.533	.102	.213	.152	.533	.000	.363	186	132	197	.363	0.927	0.038	4.6	1.1	7.4	1.2	A+	A+
2512	740070	Lit	Lit	3640	.477	.202	.148	.477	.173	.000	.329	115	155	.329	166	1.212	0.037	6.4	1.1	9.9	1.3	A+	A+
2513	740071	Lit	Lit	3640	.603	.138	.108	.151	.602	.000	.414	147	263	196	.414	0.558	0.039	1.9	1.0	2.1	1.1	A+	A+
2514	741492	Lit	Lit	3621	.719	.097	.719	.120	.063	.000	.485	232	.485	276	245	-0.094	0.042	-2.2	1.0	-4.8	0.9	A-	A-
2515	741494	Lit	Lit	3621	.431	.227	.255	.431	.088	.000	.337	.003	213	.337	267	1.457	0.037	3.5	1.1	8.0	1.2	B-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Table Tabl	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2517 741495 Uit Uit 3621 329 123 329 245 303 300 189 -258 189 -121 104 199 10.039 95 1.2 9.9 1.6 A. A.			Grade	Grade	0.004													0.000	in	in	out	out	/F	/B
2518 741495 Lir			-																					
2512 741919 Lift Lift 3621 359 358 280 0.87 274 0.00 0.81 0.81 0.92 1.18 0.02 1.83 0.038 9.9 1.3 9.9 1.8 A+ A-																								
Section Fig. Fig.			-																					
Section Sect			_																		-			
Section Sect																								
2523 741195 Lit Lit 3698 5.55 5.65 1.17 1.85 1.32 .000 .434 .434 .436 .161 .243 .203 0.77 0.038 0.7 1.0 0.5 1.0 A-			_																					
2524 741196 Lit Lit 3698 5.38 2.59 0.92 5.38 1.11 0.00 3.55 0.064 -3.06 3.55 -1.93 0.931 0.037 4.9 1.1 6.5 1.2 A- A- A- A- A- A- A- A			_																		-			_
2525 741195 Lit		_	-																					
2526 741089 Lit Lit 3586 .425 .148 .159 .268 .425 .000 .437 .234 .297 .055 .437 1.499 0.038 -4.1 0.9 1.9 1.1 A+ A- A- A+ A+ A+ A+ A+			-																				A-	
2527 741087 Lit Lit 3586 .577 .092 .113 .577 .218 .000 .361 .236 .141 .361 .159 0.717 0.038 5.4 .1.1 5.9 .1.1 A- A- A- A- B-			Lit	Lit			.147												-0.1				A+	A-
2528 741090 Lit Lit 3586 .653 .653 .115 .128 .104 .000 .532 .532 .242 .279 .271 0.298 0.040 -5.8 0.9 -6.9 0.8 A-A-2529 2529 741086 Lit Lit 3586 .294 .085 .547 .294 .074 .000 .121 .331 .194 .121 .2529 2.205 .0.040 -9.9 1.2 9.9 2.0 A-A-2530 2531 737019 Lit Lit 3565 .796 .009 .661 .133 .110 .000 .626 .333 .380 .303 .626 .0.044 .9.9 .0.8 .9.9 .0.2 .0.8 .9.9 .1.2 .9.9 .0.3 .4.4 A-A-3.3 .2.201 .0.33 .3.80 .3.03 .626 .0.34 .0.44 .2.20 .0.8 .9.9 .1.2 .9.9 .1.3 A+A-3.4 .2.20 .			Lit	Lit																0.9		1.1	A+	A-
2529 741086	2527	741087	Lit	Lit	3586	.577	.092	.113	.577	.218	.000		236	141	.361	159	0.717	0.038	5.4	1.1	5.9	1.1	A-	A+
2530 741091 Lit Lit 3586 .661 .096 .661 .133 .110 .000 .555 .244 .555 .291 .295 0.253 0.040 .7.3 0.9 8.3 0.8 A-	2528	741090	Lit	Lit	3586		.653	.115			.000	.532	.532	242	279	271	0.298	0.040	-5.8	0.9	-6.9	0.8	A-	A-
2531 737019 Lit Lit 3565 .756 .093 .079 .072 .756 .000 .626 .303 .380 .303 .626 .0.345 .0.044 .9.9 0.8 .9.9 0.6 .8+ .8- .552 .737020 Lit Lit .3565 .493 .241 .075 .493 .191 .000 .269 .076 .294 .269 .063 .1.149 .0.038 .9.9 1.2 .9.9 1.3 .4+ .4- .2534 .737017 Lit Lit .3565 .604 .604 .162 .115 .120 .000 .412 .412 .46 .240 .219 .0.572 .0.039 .2.3 1.0 .2.2 .1.1 .4- .4- .2534 .737017 Lit Lit .3565 .739 .098 .103 .739 .060 .000 .518 .221 .329 .518 .261 .0.231 .0.043 .4.3 0.9 .6.4 0.8 .4+ .4- .2536 .737018 Lit Lit .3565 .557 .557 .234 .084 .126 .000 .281 .281 .004 .2.79 .194 .0.824 .0.038 .9.9 1.2 .9.9 1.3 .4+ .4- .2536 .737016 Lit Lit .3565 .541 .119 .541 .139 .202 .000 .435 .203 .435 .220 .187 .0.907 .0.038 .0.5 1.0 1.5 1.0 .4+ .4- .2537 .740302 Lit Lit .3588 .634 .158 .100 .108 .634 .000 .532 .193 .362 .249 .532 .0419 .0.040 .6.6 0.9 -6.3 0.9 .6.3 0.9 .4+ .4- .2540 .740303 Lit Lit .3588 .568 .107 .568 .178 .146 .000 .418 .172 .418 .192 .227 .0.774 .0.038 .9.9 1.3 .9.9 1.5 .4- .4- .2541 .740299 Lit Lit .3588 .495 .223 .181 .101 .495 .000 .290 .063 .054 .324 .290 .152 .0.038 .9.4 .1.1 .9.9 1.3 .4+ .4- .2541 .740299 Lit Lit .3588 .495 .223 .181 .101 .495 .000 .290 .063 .054 .324 .290 .152 .0.038 .9.4 .1.1 .9.9 1.3 .4+ .4- .2541 .740299 Lit Lit .3588 .367 .159 .086 .637 .118 .000 .468 .1.150 .2.83 .468 .2.82 .0.400 .0.038 .4+ .1.1 .9.9 .1.3 .4+ .4- .2545 .740085 Lit Lit .3627 .373 .145 .422 .373 .060 .000 .325 .182 .405 .223 .188 .0.558 .0.038 .1.5 .1.0 .1.1	2529	741086	Lit	Lit	3586	.294	.085	.547	.294	.074	.000	.121	301	.194	.121	259	2.205	0.040	9.9	1.2	9.9	2.0	A-	A-
2532 737020 Lit Lit 3565 .493 .241 .075 .493 .191 .000 .269 076 294 .269 063 1.149 .0038 9.9 1.2 9.9 1.3 A+ A- 2533 737021 Lit Lit Lit 3565 .604 .604 .162 .115 .120 .000 .412 .412 146 240 .219 .0572 .0039 2.3 1.0 2.2 1.1 A- A+ 2535 737018 Lit Lit 3565 .557 .557 .324 .084 1.266 .000 .281	2530	741091	Lit	Lit	3586	.661	.096	.661	.133	.110	.000	.555	244	.555	291	295	0.253	0.040	-7.3	0.9	-8.3	8.0	A-	A-
2533 737021 Lit Lit 3565 .604 .604 .162 .115 .120 .000 .412 .412 .146 .240 .219 0.572 0.039 2.3 1.0 2.2 1.1 A-	2531	737019	Lit	Lit	3565	.756	.093	.079	.072	.756	.000	.626	303	380	303	.626	-0.345	0.044	-9.9	0.8	-9.9	0.6	B+	B-
2534 737017 Lit Lit 3565 .739 .098 .103 .739 .060 .000 .518 221 329 .518 261 -0.231 0.043 -4.3 0.9 -6.4 0.8 A+ A- 2535 737018 Lit Lit 3565 .557 .557 .234 .084 .126 .000 .281 .281 .004 279 .194 0.824 0.038 9.9 1.2 9.9 1.3 A+ A+ 2537 740302 Lit Lit 3588 .799 .799 .049 .102 .050 .000 .363 .236 220 187 .0907 .0.038 -0.5 1.0 1.5 1.0 A+ A- 2538 740301 Lit Lit 3588 .634 .188 .100 .108 .634 .000 .532 193 .362 249 .532 .0419 .004 .66	2532	737020	Lit	Lit	3565	.493	.241	.075	.493	.191	.000	.269	076	294	.269	063	1.149	0.038	9.9	1.2	9.9	1.3	A+	A-
2535 737018 Lit Lit 3565 .557 .557 .234 .084 .126 .000 .281 .281 .004 -279 194 .0824 .038 9.9 1.2 9.9 1.3 A+ A+ 2536 737016 Lit Lit 3565 .541 .119 .541 .139 .202 .000 .435 203 .435 200 -0.659 .0047 2.2 1.1 3.9 1.2 A+ A+ 2537 740302 Lit Lit 3588 .634 .158 .100 .008 .634 .000 .532 .193 .362 .249 .532 .0419 .0040 -6.6 .09 -6.3 .08 A+ A+ A- 2538 740301 Lit Lit .3588 .568 .107 .568 .178 .146 .000 .418 .172 .418 .192 .227 .0774 .0038 <t< td=""><td>2533</td><td>737021</td><td>Lit</td><td>Lit</td><td>3565</td><td>.604</td><td>.604</td><td>.162</td><td>.115</td><td>.120</td><td>.000</td><td>.412</td><td>.412</td><td>146</td><td>240</td><td>219</td><td>0.572</td><td>0.039</td><td>2.3</td><td>1.0</td><td>2.2</td><td>1.1</td><td>A-</td><td>A+</td></t<>	2533	737021	Lit	Lit	3565	.604	.604	.162	.115	.120	.000	.412	.412	146	240	219	0.572	0.039	2.3	1.0	2.2	1.1	A-	A+
2536 737016 Lit Lit Lit 3565 .541 .119 .541 .139 .202 .000 .435 220 187 0.907 0.038 -0.5 1.0 1.5 1.0 A+ A- 2537 740302 Lit Lit 3588 .799 .799 .049 .102 .050 .000 .363 .363 249 220 -0.659 0.047 2.2 1.1 3.9 1.2 A+ A- 2538 740301 Lit Lit 3588 .634 .158 .100 .108 .634 .000 .362 193 .362 249 .532 0.419 0.040 -6.6 0.9 -6.3 0.8 A+ A- 2540 740304 Lit Lit 3588 .495 .223 .181 .101 .495 .000 .290 063 054 324 .290 1.152 0.038 9.4 1.1	2534	737017	Lit	Lit	3565	.739	.098	.103	.739	.060	.000	.518	221	329	.518	261	-0.231	0.043	-4.3	0.9	-6.4	0.8	A+	A-
2537 740302 Lit Lit 3588 .799 .799 .049 .102 .050 .000 .363 .363 .294 126 200 -0.659 0.047 2.2 1.1 3.9 1.2 A+ A- 2538 740301 Lit Lit 3588 .634 .158 .100 .108 .634 .000 .532 193 362 249 .532 0.419 0.040 -6.6 0.9 -6.3 0.8 A+ A- 2539 740303 Lit Lit 3588 .568 .107 .568 .178 .146 .000 .418 172 .418 192 227 0.774 0.038 1.4 1.0 1.9 1.0 A+ A- 2540 740304 Lit Lit 3588 .495 .223 .181 .101 .495 .000 .290 .063 .054 324 .290 1.152 0.038	2535	737018	Lit	Lit	3565	.557	.557	.234	.084	.126	.000	.281	.281	.004	279	194	0.824	0.038	9.9	1.2	9.9	1.3	A+	A+
2538 740301 Lit Lit 3588 .634 .158 .100 .108 .634 .000 .532 193 362 249 .532 0.419 0.040 -6.6 0.9 -6.3 0.8 A+ A- 2539 740303 Lit Lit 3588 .568 .107 .568 .178 .146 .000 .418 172 .418 192 227 0.774 0.038 1.4 1.0 1.9 1.0 A+ A- 2540 740304 Lit Lit 3588 .475 .293 .475 .166 .065 .000 .194 038 .194 101 170 1.252 0.038 9.9 1.3 9.9 1.5 A- 2541 740299 Lit Lit Lit 3588 .495 .223 .181 .001 .495 .000 .290 063 054 324 .290 1.152 0.038	2536	737016	Lit	Lit	3565	.541	.119	.541	.139	.202	.000	.435	203	.435	220	187	0.907	0.038	-0.5	1.0	1.5	1.0	A+	A-
2539 740303 Lit Lit 3588 .568 .107 .568 .178 .146 .000 .418 172 .418 192 227 0.774 0.038 1.4 1.0 1.9 1.0 A+ A- 2540 740304 Lit Lit 3588 .475 .293 .475 .166 .065 .000 .194 038 .194 101 170 1.252 0.038 9.9 1.3 9.9 1.5 A- 2541 740299 Lit Lit 3588 .495 .223 .181 .101 .495 .000 .290 063 054 324 .290 1.152 0.038 9.4 1.1 9.9 1.3 A+ A- 2542 740300 Lit Lit 3588 .637 .118 .000 .468 150 283 .468 282 .0400 .0400 .04 .282 .184 1.767	2537	740302	Lit	Lit	3588	.799	.799	.049	.102	.050	.000	.363	.363	294	126	200	-0.659	0.047	2.2	1.1	3.9	1.2	A+	A-
2540 740304 Lit Lit 3588 .475 .293 .475 .166 .065 .000 .194 038 .194 101 170 1.252 0.038 9.9 1.3 9.9 1.5 A- A- 2541 740299 Lit Lit Lit 3588 .495 .223 .181 .101 .495 .000 .290 063 054 324 .290 1.152 0.038 9.4 1.1 9.9 1.3 A+ A- 2542 740300 Lit Lit 3588 .637 .159 .086 .637 .118 .000 .468 150 283 .468 282 0.400 0.040 -1.8 1.0 -1.7 1.0 A+ A+ 2543 740086 Lit Lit 3627 .373 .442 .373 .060 .000 .282 267 .004 .282 184 1.767 0.038	2538	740301	Lit	Lit	3588	.634	.158	.100	.108	.634	.000	.532	193	362	249	.532	0.419	0.040	-6.6	0.9	-6.3	8.0	A+	A-
2541 740299 Lit Lit 3588 .495 .223 .181 .101 .495 .000 .290 063 054 324 .290 1.152 0.038 9.4 1.1 9.9 1.3 A+ A- 2542 740300 Lit Lit 3588 .637 .159 .086 .637 .118 .000 .468 150 283 .468 282 0.400 0.040 -1.8 1.0 -1.7 1.0 A+ A+ 2543 740086 Lit Lit 3627 .373 .442 .373 .060 .000 .282 267 .004 .282 184 1.767 0.038 4.4 1.1 9.9 1.5 A- A+ 2544 740090 Lit Lit 3627 .609 .170 .608 .128 .093 .000 .405 182 .405 223 188 0.558 0.038 1.5	2539	740303	Lit	Lit	3588	.568	.107	.568	.178	.146	.000	.418	172	.418	192	227	0.774	0.038	1.4	1.0	1.9	1.0	A+	A-
2542 740300 Lit Lit 3588 .637 .159 .086 .637 .118 .000 .468 150 283 .468 282 0.400 0.040 -1.8 1.0 -1.7 1.0 A+ A+ 2543 740086 Lit Lit 3627 .373 .145 .422 .373 .060 .000 .282 267 .004 .282 184 1.767 0.038 4.4 1.1 9.9 1.5 A- A+ 2544 740090 Lit Lit 3627 .609 .170 .608 .128 .093 .000 .405 182 .405 223 188 0.558 0.038 1.5 1.0 2.1 1.1 A- 2545 740085 Lit Lit Lit .3627 .308 .376 .308 .181 .135 .000 .147 .138 .147 208 159 2.120 0.039	2540	740304	Lit	Lit	3588	.475	.293	.475	.166	.065	.000	.194	038	.194	101	170	1.252	0.038	9.9	1.3	9.9	1.5	A-	A-
2543 740086 Lit Lit 3627 .373 .145 .422 .373 .060 .000 .282 267 .004 .282 184 1.767 0.038 4.4 1.1 9.9 1.5 A- A+ 2544 740090 Lit Lit Lit 3627 .609 .170 .608 .128 .093 .000 .405 223 188 0.558 0.038 1.5 1.0 2.1 1.1 A- A- 2545 740085 Lit Lit Lit 3627 .308 .376 .308 .181 .135 .000 .147 .138 .147 208 159 2.120 0.039 9.9 1.2 9.9 1.7 A+ A- 2546 740088 Lit Lit Lit .3627 .441 .140 .316 .000 .332 .332 161 208 123 .359 1.417 0.037	2541	740299	Lit	Lit	3588	.495	.223	.181	.101	.495	.000	.290	063	054	324	.290	1.152	0.038	9.4	1.1	9.9	1.3	A+	A-
2544 740090 Lit Lit 3627 .609 .170 .608 .128 .093 .000 .405 182 .405 223 188 0.558 0.038 1.5 1.0 2.1 1.1 A- 2545 740085 Lit Lit Lit 3627 .308 .376 .308 .181 .135 .000 .147 .138 .147 208 159 2.120 0.039 9.9 1.2 9.9 1.7 A+ A- 2546 740088 Lit Lit 3627 .441 .144 .110 .305 .441 .000 .359 161 208 123 .359 1.417 0.037 1.2 1.0 8.0 1.2 A- B- 2547 740089 Lit Lit Lit 3627 .448 .448 .195 .140 .216 .000 .332 .332 146 203 089 1.381	2542	740300	Lit	Lit	3588	.637	.159	.086	.637	.118	.000	.468	150	283	.468	282	0.400	0.040	-1.8	1.0	-1.7	1.0	A+	A+
2545 740085 Lit Lit 3627 .308 .376 .308 .181 .135 .000 .147 .138 .147 208 159 2.120 0.039 9.9 1.2 9.9 1.7 A+ A- 2546 740088 Lit Lit 3627 .441 .144 .110 .305 .441 .000 .359 161 208 123 .359 1.417 0.037 1.2 1.0 8.0 1.2 A- B- 2547 740089 Lit Lit 3627 .448 .448 .195 .140 .216 .000 .332 .332 146 203 089 1.381 0.037 4.1 1.1 8.9 1.2 A- A+ 2548 740087 Lit Lit 3646 .637 .101 .192 .070 .637 .000 .300 .300 206 105 053 1.637 0.038	2543	740086	Lit	Lit	3627	.373	.145	.422	.373	.060	.000	.282	267	.004	.282	184	1.767	0.038	4.4	1.1	9.9	1.5	A-	A+
2546 740088 Lit Lit 3627 .441 .144 .110 .305 .441 .000 .359 161 208 123 .359 1.417 0.037 1.2 1.0 8.0 1.2 A- B- 2547 740089 Lit Lit 3627 .448 .448 .195 .140 .216 .000 .332 .332 146 203 089 1.381 0.037 4.1 1.1 8.9 1.2 A- A+ 2548 740087 Lit Lit 3627 .398 .398 .197 .280 .125 .000 .300 .300 206 105 053 1.637 0.038 4.6 1.1 9.9 1.3 A- 2549 741201 Lit Lit 3646 .637 .101 .192 .070 .637 .000 .416 261 124 285 .416 0.406 0.039 2.1	2544	740090	Lit	Lit	3627	.609	.170	.608	.128	.093	.000	.405	182	.405	223	188	0.558	0.038	1.5	1.0	2.1	1.1	A-	A-
2547 740089 Lit Lit 3627 .448 .448 .195 .140 .216 .000 .332 .332 146 203 089 1.381 0.037 4.1 1.1 8.9 1.2 A- A+ 2548 740087 Lit Lit 3627 .398 .398 .197 .280 .125 .000 .300 206 105 053 1.637 0.038 4.6 1.1 9.9 1.3 A- A- 2549 741201 Lit Lit 3646 .637 .101 .192 .070 .637 .000 .416 261 124 285 .416 0.406 0.039 2.1 1.0 1.6 1.0 A+ A-	2545	740085	Lit	Lit	3627	.308	.376	.308	.181	.135	.000	.147	.138	.147	208	159	2.120	0.039	9.9	1.2	9.9	1.7	A+	A-
2548 740087 Lit Lit 3627 .398 .398 .197 .280 .125 .000 .300 .300206105053 1.637 0.038 4.6 1.1 9.9 1.3 A- A- 2549 741201 Lit Lit 3646 .637 .101 .192 .070 .637 .000 .416261124285 .416 0.406 0.039 2.1 1.0 1.6 1.0 A+ A-	2546	740088	Lit	Lit	3627	.441	.144	.110	.305	.441	.000	.359	161	208	123	.359	1.417	0.037	1.2	1.0	8.0	1.2	A-	B-
2549 741201 Lit Lit 3646 .637 .101 .192 .070 .637 .000 .416261124285 .416 0.406 0.039 2.1 1.0 1.6 1.0 A+ A-	2547	740089	Lit	Lit	3627	.448	.448	.195	.140	.216	.000	.332	.332	146	203	089	1.381	0.037	4.1	1.1	8.9	1.2	A-	A+
	2548	740087	Lit	Lit	3627	.398	.398	.197	.280	.125	.000	.300	.300	206	105	053	1.637	0.038	4.6	1.1	9.9	1.3	A-	A-
	2549	741201	Lit	Lit	3646	.637	.101	.192	.070	.637	.000	.416	261	124	285	.416	0.406	0.039	2.1	1.0	1.6	1.0	A+	A-
2550 741204 Lit Lit 3646 .755 .057 .138 .050 .755 .000 .496 245 246 329 .496 -0.329 0.044 -2.8 0.9 -4.6 0.8 B+ A-	2550	741204	Lit	Lit	3646	.755	.057	.138	.050	.755	.000	.496	245	246	329	.496	-0.329	0.044	-2.8	0.9	-4.6	0.8	B+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade	2515													0.010	in	in	out	out	/F	/B
2551	741200	Lit	Lit	3646	.722	.058	.722	.092	.129	.000	.477	293	.477	301	175	-0.102	0.042	-2.0	1.0	-2.9	0.9	B+	Α-
2552	741205	Lit	Lit	3646	.590	.590	.117	.084	.208	.000	.468	.468	277	262	167	0.662	0.038	-2.1	1.0	-1.4	1.0	A+	A-
2553	741203	Lit	Lit	3646	.321	.321	.239	.053	.388	.000	.169	.169	068	315	.042	2.063	0.039	9.9	1.2	9.9	1.7	A+	A+
2554	741202	Lit	Lit	3646	.476	.203	.144	.476	.178	.000	.256	170	270	.256	.092	1.254	0.037	9.9	1.2	9.9	1.4	A+	Α-
2555	741344	Lit	Lit	3629	.538	.142	.236	.083	.538	.000	.526	207	287	246	.526	0.904	0.038	-8.8	0.9	-5.8	0.9	A+	Α-
2556	741342	Lit	Lit	3629	.609	.083	.109	.199	.609	.000	.402	168	181	234	.402	0.534	0.039	2.0	1.0	2.6	1.1	B+	Α-
2557	741346	Lit	Lit	3629	.560	.560	.162	.217	.061	.000	.325	.325	254	020	250	0.791	0.038	7.3	1.1	8.8	1.2	A+	A+
2558	741343	Lit	Lit	3629	.245	.403	.245	.152	.200	.000	.110	.115	.110	275	013	2.473	0.042	8.6	1.2	9.9	2.0	A-	A-
2559	741347	Lit	Lit	3629	.330	.132	.330	.330	.208	.000	.148	192	.148	.014	027	1.975	0.039	9.9	1.2	9.9	1.8	A-	A+
2560	741345	Lit	Lit	3629	.608	.136	.140	.608	.117	.000	.351	104	206	.351	200	0.539	0.039	5.7	1.1	5.8	1.2	A+	A-
2561	742521	Lit	Lit	3702	.642	.642	.142	.186	.030	.000	.370	.370	330	087	166	0.392	0.039	4.1	1.1	4.0	1.1	A-	A-
2562	742518	Lit	Lit	3702	.675	.675	.140	.084	.101	.000	.481	.481	157	264	324	0.202	0.040	-2.8	1.0	-3.1	0.9	A-	A-
2563	742519	Lit	Lit	3702	.768	.076	.096	.768	.060	.000	.530	251	301	.530	289	-0.394	0.044	-5.0	0.9	-7.8	0.7	A+	A-
2564	742520	Lit	Lit	3702	.282	.375	.282	.141	.202	.000	019	.150	019	175	007	2.272	0.040	9.9	1.4	9.9	2.1	A-	A-
2565	742523	Lit	Lit	3702	.245	.592	.056	.107	.245	.000	.026	.301	272	312	.026	2.496	0.041	9.9	1.2	9.9	2.4	A-	A-
2566	742522	Lit	Lit	3702	.622	.140	.622	.103	.134	.000	.383	079	.383	310	188	0.501	0.038	3.3	1.1	3.4	1.1	A+	A+
2567	742529	Lit	Lit	3602	.610	.097	.146	.148	.610	.000	.426	225	207	192	.426	0.541	0.039	0.3	1.0	0.5	1.0	A+	A-
2568	742524	Lit	Lit	3602	.577	.577	.076	.298	.049	.000	.170	.170	324	.103	207	0.717	0.038	9.9	1.3	9.9	1.5	A+	A-
2569	742525	Lit	Lit	3602	.618	.107	.117	.618	.158	.000	.390	212	126	.390	230	0.495	0.039	2.9	1.1	2.3	1.1	A-	A-
2570	742526	Lit	Lit	3602	.521	.090	.521	.143	.246	.000	.271	207	.271	197	016	1.000	0.038	9.9	1.2	9.9	1.3	A-	A-
2571	742528	Lit	Lit	3602	.480	.480	.141	.289	.090	.000	.307	.307	145	079	235	1.208	0.037	7.6	1.1	9.6	1.2	A+	A-
2572	742527	Lit	Lit	3602	.611	.198	.084	.611	.106	.000	.343	067	255	.343	225	0.533	0.039	5.7	1.1	5.8	1.2	A+	A+
2573	742006	Lit	Lit	3555	.628	.165	.097	.628	.110	.000	.354	253	213	.354	046	0.448	0.040	6.1	1.1	6.2	1.2	A-	A-
2574	742007	Lit	Lit	3555	.591	.099	.591	.209	.100	.000	.395	210	.395	133	257	0.647	0.039	3.8	1.1	2.9	1.1	A-	A-
2575	742003	Lit	Lit	3555	.643	.643	.162	.066	.129	.000	.408	.408	161	315	172	0.360	0.040	2.4	1.1	2.7	1.1	A-	A-
2576	742002	Lit	Lit	3555	.747	.054	.747	.129	.070	.000	.521	301	.521	231	318	-0.287	0.044	-5.1	0.9	-3.9	0.9	A+	A-
2577	742004	Lit	Lit	3555	.712	.712	.116	.116	.057	.000	.516	.516	274	288	235	-0.055	0.042	-4.1	0.9	-5.4	8.0	A-	A-
2578	742005	Lit	Lit	3555	.748	.082	.086	.084	.748	.000	.554	254	297	315	.554	-0.291	0.044	-6.1	0.9	-7.7	0.7	A+	A-
2579	742011	Lit	Lit	3667	.497	.275	.497	.077	.151	.000	.258	.061	.258	320	198	1.140	0.037	9.9	1.2	9.9	1.3	A+	A+
2580	742008	Lit	Lit	3667	.553	.178	.102	.167	.553	.000	.294	090	208	131	.294	0.859	0.037	9.5	1.2	9.4	1.2	A+	A+
2581	742009	Lit	Lit	3667	.698	.130	.097	.698	.076	.000	.420	204	246	.420	194	0.059	0.041	1.1	1.0	-0.3	1.0	A+	A+
2582	742012	Lit	Lit	3667	.626	.626	.134	.087	.154	.000	.493	.493	211	297	230	0.473	0.039	-4.0	0.9	-4.6	0.9	A+	A+
2583	742013	Lit	Lit	3667	.395	.098	.182	.395	.325	.000	.093	171	089	.093	.084	1.655	0.037	9.9	1.3	9.9	1.7	A-	A+
2584	742010	Lit	Lit	3667	.387	.091	.078	.445	.387	.000	.152	277	320	.183	.152	1.697	0.037	9.9	1.3	9.9	1.5	A+	A+
2585	742025	Lit	Lit	3708	.800	.070	.074	.056	.800	.000	.561	272	305	328	.561	-0.648	0.046	-6.5	0.8	-9.0	0.6	A+	A-

Table B-3 (continued). Reading/Literature Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	D\/al	D/A)	D/D)	D/C)	D/D)	D()	D+D:a	DT(A)	DT/D)	DT(C)	DT/D)	Mass	NACE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	Grade	IN	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
2586	742024	Lit	Lit	3708	.754	.111	.754	.063	.072	.000	.498	251	.498	299	245	-0.305	0.043	-3.2	0.9	-4.7	0.8	A+	A+
2587	742020	Lit	Lit	3708	.214	.383	.227	.214	.177	.000	.046	.055	.036	.046	159	2.723	0.043	8.3	1.2	9.9	2.5	A+	A+
2588	742021	Lit	Lit	3708	.330	.280	.283	.330	.108	.000	.098	023	.008	.098	127	2.023	0.038	9.9	1.3	9.9	1.9	A+	A-
2589	742023	Lit	Lit	3708	.527	.086	.188	.199	.527	.000	.290	239	073	123	.290	1.002	0.037	9.8	1.2	9.9	1.3	B+	A+
2590	742022	Lit	Lit	3708	.676	.125	.676	.105	.094	.000	.486	252	.486	218	265	0.190	0.040	-2.5	1.0	-3.3	0.9	A+	A-

Items with reference line numbers 1-1201 were field tested during the stand-alone field test administered in fall 2010. Items with reference line numbers 1202-1372 were field tested during the embedded field test administered in spring 2013. Items with reference line numbers 1372-2153 were field tested during the field test administered in fall 2013. Items with reference line numbers 2154-2590 were field tested during the embedded field test administered during the 2015-2016 school year.

SCIENCE MULTIPLE-CHOICE ITEMS

Table B-4. Science Multiple-Choice Item Statistics

Table B-4. Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1	615336	3	5599	.828	.828	.039	.055	.076	.002	.359	.359	203	261	100	-2.713	0.039	in 0.9	in 1.0	-0.1	1.0	/F A-	/B A-
2	615326	3	816	.814	.038	.814	.092	.056	.002	.320	136	.320	201	169	-2.713	0.039	1.3	1.1	1.0	1.1	A- A+	A-
3	615352	3	5599	.531	.127	.531	.254	.085	.003	.306	151	.306	080	202	-0.933	0.039	9.9	1.1	9.9	1.2	A-	A-
4	615346	3	797	.816	.132	.816	.021	.025	.006	.456	260	.456	234	197	-2.724	0.103	-1.0	0.9	-1.6	0.8	A-	C-
5	615328	3	797	.812	.812	.038	.083	.062	.006	.391	.391	185	201	152	-2.703	0.103	0.5	1.0	-0.8	0.9	A+	A-
6	615337	3	794	.752	.121	.752	.039	.086	.003	.399	250	.399	132	183	-2.151	0.090	0.5	1.0	-0.7	1.0	Α-	C-
7	615343	3	794	.833	.038	.115	.011	.833	.004	.427	183	287	142	.427	-2.730	0.103	-0.7	1.0	-1.7	0.8	A+	A+
8	615344	3	794	.767	.767	.033	.136	.062	.003	.444	.444	231	247	200	-2.235	0.092	-1.2	0.9	-1.5	0.9	A+	A-
9	615338	3	802	.880	.880	.072	.018	.025	.005	.427	.427	231	205	218	-3.177	0.118	-0.8	0.9	-1.7	0.8	A-	
10	615353	3	802	.480	.125	.299	.092	.480	.004	.348	136	121	197	.348	-0.634	0.078	3.2	1.1	3.1	1.1	A-	
11	615329	3	802	.801	.029	.046	.801	.121	.004	.239	115	138	.239	095	-2.442	0.097	3.2	1.2	3.9	1.4	A+	
12	615340	3	800	.571	.265	.046	.116	.571	.001	.442	238	161	226	.442	-1.125	0.079	-0.5	1.0	-0.9	1.0	A+	A-
13	615330	3	800	.739	.124	.739	.080	.054	.004	.443	303	.443	244	070	-2.065	0.089	-0.9	1.0	-1.1	0.9	A-	B-
14	615348	3	800	.695	.695	.090	.043	.166	.006	.542	.542	254	258	299	-1.795	0.085	-4.3	0.8	-4.1	0.8	A+	B+
15	615341	3	796	.250	.112	.250	.421	.217	.000	.173	151	.173	013	051	0.480	0.088	2.9	1.1	5.1	1.5	A+	
16	615349	3	796	.480	.108	.335	.077	.480	.000	.411	281	178	129	.411	-0.756	0.077	0.0	1.0	0.5	1.0	A-	
17	615350	3	796	.472	.226	.116	.185	.472	.001	.426	230	227	109	.426	-0.716	0.077	-0.8	1.0	0.2	1.0	A+	
18	615332	3	796	.633	.067	.104	.195	.633	.001	.417	350	185	140	.417	-1.513	0.080	-0.4	1.0	-0.4	1.0	A+	
19	615342	3	794	.893	.052	.032	.021	.893	.003	.338	197	146	180	.338	-3.365	0.126	-0.2	1.0	-0.6	0.9	A+	A-
20	615335	3	794	.664	.059	.074	.664	.199	.004	.426	192	248	.426	199	-1.699	0.082	-0.9	1.0	-0.9	1.0	B-	A-
21	615351	3	794	.533	.123	.533	.131	.209	.004	.455	247	.455	235	135	-1.021	0.077	-3.3	0.9	-3.1	0.9	A+	A-
22	615333	3	794	.358	.238	.244	.151	.358	.009	.315	063	141	123	.315	-0.164	0.080	0.5	1.0	1.7	1.1	A+	B+
23	615331	3	794	.754	.754	.087	.092	.057	.010	.453	.453	213	201	238	-2.183	0.091	-1.4	0.9	-1.0	0.9	A+	A-
24	615347	3	802	.739	.739	.084	.126	.047	.004	.459	.459	233	267	151	-2.019	0.089	-0.8	1.0	-1.7	0.9	A+	
25	615339	3	800	.594	.594	.131	.195	.075	.005	.378	.378	159	205	154	-1.257	0.080	1.4	1.0	1.6	1.1	A+	A+
26	615325	3	794	.621	.621	.141	.049	.185	.004	.263	.263	096	134	150	-1.436	0.079	3.2	1.1	3.2	1.2	A+	A+
27	615327	3	794	.863	.863	.029	.064	.040	.004	.273	.273	130	101	157	-3.029	0.112	1.5	1.1	1.8	1.3	B+	A-
28	615334	3	802	.626	.160	.133	.626	.075	.006	.458	185	227	.458	221	-1.376	0.081	-0.8	1.0	-1.1	0.9	A+	\perp
29	615405	3	816	.950	.950	.023	.011	.015	.001	.212	.212	177	074	108	-4.701	0.204	-0.1	1.0	-1.4	0.6	A+	
30	615377	3	5599	.851	.049	.851	.054	.044	.002	.441	266	.441	227	185	-2.918	0.041	-3.2	0.9	-5.3	0.8	A+	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
21	C1F2O1	Grade	FF00	905		005	001	022	004	202	224	202	101	102	2 441	0.040	in	in	out	out	/F	/B
31	615391 615389	3	5599 816	.895 .344	.018	.895 .199	.061	.022	.004	.382	221 170	.382 132	191 147	192 .380	-3.441 0.224	0.048	-1.4 0.4	1.0	-2.1	0.9 1.0	Α-	A-
33	615403	3	797	.484	.303	.199	.484	.102	.003	.346	302	132	.346	162	-0.662	0.086	2.3	1.0	0.4 2.6	1.1	A+ A-	A+
34	615393	3	797	.679	.679	.045	.242	.032	.003	.457	.457	013	271	189	-0.002	0.083	-1.1	1.0	-1.7	0.9	A- A-	A+
35	615386	3	794	.356	.218	.175	.246	.356	.005	.304	121	135	070	.304	-0.083	0.083	2.3	1.1	3.7	1.2	A+	A-
36	615398	3	794	.623	.241	.066	.623	.064	.006	.443	231	309	.443	078	-1.422	0.081	-0.5	1.0	-1.0	1.0	A+	A+
37	615394	3	802	.450	.335	.128	.084	.450	.003	.424	204	105	236	.424	-0.491	0.078	-0.2	1.0	0.0	1.0	A-	
38	615387	3	802	.544	.137	.106	.544	.211	.003	.259	176	122	.259	042	-0.939	0.078	6.2	1.2	5.9	1.3	A-	
39	615375	3	802	.758	.120	.091	.025	.758	.006	.385	248	147	147	.385	-2.152	0.091	0.9	1.0	1.1	1.1	Α-	
40	615399	3	802	.854	.047	.854	.036	.055	.008	.487	239	.487	232	263	-2.931	0.110	-2.2	0.9	-2.4	0.7	A-	
41	615396	3	800	.315	.291	.244	.149	.315	.001	.283	094	121	083	.283	0.187	0.083	2.8	1.1	3.5	1.2	A-	A+
42	615388	3	800	.450	.223	.216	.450	.110	.001	.355	143	127	.355	183	-0.527	0.078	2.3	1.1	2.1	1.1	A+	A+
43	615402	3	800	.971	.014	.971	.001	.009	.005	.292	130	.292	038	183	-5.319	0.281	-0.1	1.0	-1.6	0.5	A+	B-
44	617120	3	796	.851	.036	.025	.851	.087	.001	.363	145	249	.363	215	-2.929	0.107	-0.2	1.0	-0.9	0.9	A-	
45	615390	3	796	.602	.602	.114	.155	.129	.000	.433	.433	153	211	258	-1.330	0.079	-1.2	1.0	-0.9	1.0	A-	
46	615378	3	796	.241	.281	.168	.241	.308	.001	.287	.013	114	.287	183	0.534	0.089	0.3	1.0	2.7	1.2	A-	
47	615401	3	796	.499	.204	.133	.499	.161	.004	.410	254	203	.410	082	-0.848	0.077	-0.2	1.0	0.4	1.0	A-	
48	615397	3	794	.855	.086	.033	.025	.855	.001	.470	300	231	209	.470	-2.989	0.111	-1.7	0.9	-2.3	0.8	A-	A-
49	615392	3	794	.490	.490	.331	.061	.117	.001	.328	.328	084	254	175	-0.837	0.077	2.0	1.1	2.1	1.1	B-	A-
50	615379	3	796	.255	.060	.338	.255	.347	.000	.284	242	145	.284	.005	0.425	0.087	1.3	1.1	2.6	1.2	A-	
51	615395	3	802	.519	.061	.246	.172	.519	.003	.333	129	078	233	.333	-0.816	0.078	3.4	1.1	3.4	1.2	A-	
52	615385	3	794	.408	.076	.438	.408	.071	.008	.327	179	093	.327	192	-0.441	0.078	1.2	1.0	2.6	1.1	A-	A+
53	615400	3	794	.227	.227	.105	.419	.241	.009	.244	.244	225	.121	168	0.554	0.091	1.3	1.1	3.4	1.3	A+	A+
54	615376	3	800	.616	.158	.148	.616	.074	.005	.418	115	288	.418	169	-1.350	0.080	0.4	1.0	0.2	1.0	A+	A+
55	615316	3	5599	.654	.094	.169	.081	.654	.003	.510	256	261	219	.510	-1.576	0.031	-8.5	0.9	-7.8	0.8	A+	A-
56	615310	3	5599	.882	.882	.038	.039	.038	.003	.480	.480	262	257	220	-3.270	0.046	-4.6	0.9	-8.0	0.6	A+	A-
57	615321	3	5599	.918	.037	.013	.027	.918	.005	.477	295	206	229	.477	-3.799	0.055	-4.2	0.8	-9.1	0.5	A+	B-
58	615320	3	1594	.636	.636	.170	.100	.092	.002	.300	.300	164	206	036	-1.456	0.057	5.4	1.1	5.1	1.2	A+	A+
59	617273	3	1590	.736	.736	.116	.062	.084	.003	.448	.448	278	183	202	-2.056	0.062	-1.7	1.0	-2.6	0.9	A+	A+
60	615317	3	802	.914	.008	.069	.006	.914	.004	.368	133	249	170	.368	-3.605	0.136	-0.2	1.0	-1.2	0.8	A-	
61	615318	3	800	.546	.093	.086	.273	.546	.003	.439	264	236	147	.439	-0.985	0.078	-1.2	1.0	-0.4	1.0	A-	A-
62	615309	3	800	.761	.761	.046	.104	.085	.004	.505	.505	283	269	221	-2.186	0.091	-2.9	0.9	-2.8	0.8	A-	A-
63	615323	3	800	.656	.281	.656	.009	.051	.003	.267	180	.267	125	107	-1.557	0.082	4.5	1.2	4.1	1.3	A-	A+
64	615311	3	796	.694	.098	.118	.694	.089	.001	.449	302	309	.449	061	-1.825	0.084	-1.4	1.0	-1.6	0.9	A+	igsquare
65	615313	3	794	.719	.074	.150	.055	.719	.001	.304	201	098	180	.304	-1.989	0.086	1.9	1.1	2.0	1.1	A-	A+

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
	C1F212	Grade	704	722		151	027	722	000	400	276	220	217	400	2.104	0.000	in	in	out	out	/F	/B
66	615312 615315	3	794 796	.733 .310	.073	.151	.037	.733	.006	.486	276 080	239 036	217 .205	.486	-2.104 0.097	0.088	-2.8 4.8	0.9 1.2	-2.8 4.6	0.8	A+	A-
67 68	615314	3	802	.641	.111	.446	.641	.044	.003	.405	080	184	.405	144 142	-1.446	0.083	0.8	1.0	0.9	1.3	A-	
69	615324	3	794	.455	.455	.214	.204	.122	.004	.280	.280	162	079	080	-0.572	0.081	4.5	1.1	5.7	1.3	A-	A+
70	615319	3	816	.590	.590	.165	.098	.143	.003	.506	.506	218	211	293	-1.137	0.078	-3.0	0.9	-2.2	0.9	A-	
71	617274	3	802	.526	.340	.074	.056	.526	.004	.336	119	181	207	.336	-0.855	0.078	3.6	1.1	3.3	1.2	A+	\vdash
72	615322	3	1593	.374	.186	.232	.374	.206	.002	.363	148	098	.363	163	-0.156	0.058	1.0	1.0	1.6	1.1	A-	A-
73	615358	3	5599	.953	.029	.006	.011	.953	.002	.381	252	150	174	.381	-4.489	0.072	-2.0	0.9	-6.6	0.5	A+	B-
74	615360	3	5599	.332	.087	.264	.314	.332	.003	.360	102	232	060	.360	0.090	0.031	1.2	1.0	3.8	1.1	A+	A-
75	615374	3	816	.925	.025	.016	.925	.034	.000	.245	213	131	.245	084	-3.846	0.147	-0.4	1.0	-0.8	0.8	A+	
76	615373	3	5599	.683	.075	.683	.089	.147	.006	.395	145	.395	185	220	-1.740	0.032	1.4	1.0	0.2	1.0	A+	A+
77	615355	3	797	.753	.084	.053	.103	.753	.008	.450	184	191	245	.450	-2.259	0.093	-0.6	1.0	-0.4	1.0	A+	A-
78	615357	3	794	.455	.306	.042	.455	.194	.004	.428	236	167	.428	149	-0.590	0.078	-1.2	1.0	0.2	1.0	A-	A-
79	615366	3	794	.902	.902	.026	.049	.020	.003	.391	.391	253	170	177	-3.468	0.129	-0.6	0.9	-1.6	0.8	A+	A+
80	615372	3	794	.840	.048	.054	.840	.053	.005	.464	198	256	.464	222	-2.828	0.106	-1.7	0.9	-1.4	0.8	A-	C-
81	615356	3	794	.271	.271	.233	.183	.309	.005	.194	.194	199	134	.145	0.394	0.087	4.3	1.2	3.8	1.3	A-	A-
82	615359	3	802	.560	.560	.201	.039	.197	.004	.403	.403	269	192	097	-1.021	0.079	1.0	1.0	1.0	1.0	A+	
83	615381	3	802	.907	.032	.032	.026	.907	.003	.442	212	250	206	.442	-3.482	0.130	-1.5	0.9	-1.8	0.7	A-	
84	615367	3	800	.809	.809	.025	.029	.136	.001	.445	.445	253	269	243	-2.535	0.098	-1.5	0.9	-1.9	0.8	A+	A-
85	615354	3	800	.735	.163	.026	.073	.735	.004	.412	212	215	217	.412	-2.010	0.088	-0.2	1.0	-0.1	1.0	A-	A-
86	615364	3	796	.511	.511	.173	.212	.103	.000	.271	.271	178	036	177	-0.895	0.077	4.8	1.1	4.9	1.2	A+	
87	615369	3	796	.682	.106	.188	.682	.023	.001	.360	266	201	.360	048	-1.769	0.083	1.2	1.1	1.0	1.1	A+	
88	615365	3	794	.802	.105	.802	.049	.042	.003	.353	311	.353	051	134	-2.536	0.097	0.2	1.0	-0.2	1.0	A-	A-
89	615371	3	794	.791	.791	.030	.160	.018	.001	.240	.240	126	106	226	-2.426	0.094	2.3	1.1	1.6	1.1	A-	A-
90	615363	3	1594	.256	.359	.136	.256	.245	.004	.215	086	155	.215	.030	0.484	0.062	2.6	1.1	5.6	1.3	A+	A+
91	615368	3	794	.199	.325	.161	.199	.310	.005	.062	.121	154	.062	020	0.813	0.096	3.0	1.2	4.6	1.5	A+	A+
92	617095	4	1114	.686	.199	.065	.686	.046	.005	.359	245	158	.359	103	-1.357	0.070	0.1	1.0	-0.3	1.0	A-	A+
93	617099	4	541	.638	.153	.638	.109	.096	.004	.413	276	.413	174	079	-1.123	0.097	-0.9	1.0	-1.1	0.9	C+	
94	617084	4	541	.442	.442	.098	.375	.080	.006	.286	.286	209	056	131	-0.299	0.093	2.2	1.1	1.8	1.1	A+	
95	617096	4	1103	.638	.099	.075	.638	.181	.006	.433	276	156	.433	197	-1.136	0.067	-3.3	0.9	-2.2	0.9	A-	B-
96	617101	4	544	.371	.156	.257	.211	.371	.004	.350	122	073	179	.350	0.085	0.095	-0.2	1.0	0.4	1.0	A-	B+
97	617091	4	541	.671	.091	.671	.085	.148	.006	.462	304	.462	180	180	-1.340	0.102	-1.6	0.9	-1.7	0.9	C+	\sqcup
98	617105	4	541	.778	.778	.072	.054	.092	.004	.448	.448	213	209	232	-1.980	0.114	-1.0	0.9	-1.8	0.8	A+	
99	617085	4	5980	.922	.022	.020	.922	.034	.003	.351	189	173	.351	159	-3.399	0.052	-1.4	0.9	-4.8	0.7	A-	A-
100	617093	4	5980	.768	.768	.021	.090	.117	.004	.463	.463	174	250	255	-1.911	0.033	-6.0	0.9	-7.2	0.8	A-	B-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
101	617106	Grade 4	541	.824	.089	.009	.824	.074	.004	.389	268	153	.389	157	-2.379	0.125	in -0.7	in 1.0	-0.9	0.9	/F A+	/B
102	617094	4	1080	.465	.044	.431	.465	.055	.004	.442	212	227	.442	204	-0.320	0.067	-2.6	0.9	-2.3	0.9	A-	B-
103	617107	4	539	.520	.520	.152	.067	.262	.000	.323	.323	167	259	083	-0.587	0.007	2.3	1.1	1.9	1.1	A+	
104	617108	4	552	.654	.140	.654	.098	.105	.004	.367	144	.367	201	159	-1.262	0.099	0.1	1.0	0.2	1.0	A+	
105	617083	4	562	.790	.790	.027	.037	.146	.000	.329	.329	203	216	171	-1.889	0.110	0.0	1.0	0.1	1.0	A-	A-
106	617109	4	562	.973	.007	.973	.013	.007	.000	.235	087	.235	181	126	-4.453	0.282	-0.1	1.0	-1.4	0.5	A+	A-
107	617097	4	541	.630	.630	.024	.292	.052	.002	.395	.395	076	272	195	-1.161	0.095	-1.6	0.9	-0.7	1.0	C+	
108	617110	4	541	.634	.081	.189	.634	.089	.007	.395	172	274	.395	064	-1.217	0.095	-1.1	1.0	-1.3	0.9	A-	
109	617086	4	541	.882	.882	.041	.026	.046	.006	.453	.453	203	241	197	-2.807	0.142	-1.3	0.9	-2.0	0.7	A+	
110	617111	4	541	.828	.031	.828	.085	.048	.007	.412	222	.412	157	184	-2.311	0.122	-0.9	0.9	-0.7	0.9	A+	
111	617100	4	539	.915	.032	.039	.915	.011	.004	.333	213	118	.333	170	-3.294	0.163	-0.3	1.0	-0.9	0.8	A-	
112	617104	4	539	.338	.338	.213	.260	.187	.002	.152	.152	184	.021	.016	0.251	0.098	4.5	1.2	5.1	1.4	A+	
113	617087	4	539	.922	.011	.052	.922	.011	.004	.305	117	138	.305	210	-3.469	0.173	-0.3	1.0	-0.6	0.9	A+	
114	617119	4	539	.714	.714	.186	.028	.065	.007	.467	.467	241	222	258	-1.653	0.104	-1.7	0.9	-1.6	0.9	A+	
115	617088	4	544	.478	.478	.066	.085	.368	.004	.311	.311	207	097	118	-0.433	0.092	2.0	1.1	1.9	1.1	A-	A-
116	617113	4	544	.460	.221	.460	.215	.101	.004	.463	316	.463	110	116	-0.347	0.092	-3.0	0.9	-2.4	0.9	A-	A-
117	617118	4	544	.210	.131	.327	.320	.210	.013	.108	164	020	.076	.108	0.966	0.111	2.3	1.1	3.6	1.4	A+	A-
118	617117	4	541	.634	.139	.634	.087	.139	.002	.429	157	.429	270	218	-1.150	0.096	-1.2	1.0	-1.5	0.9	A+	
119	617114	4	541	.771	.100	.056	.074	.771	.000	.446	253	255	204	.446	-1.903	0.109	-1.8	0.9	-2.6	8.0	A+	
120	617103	4	539	.679	.056	.679	.200	.059	.006	.402	201	.402	195	142	-1.420	0.101	0.2	1.0	-0.2	1.0	A+	
121	617090	4	539	.518	.045	.161	.518	.269	.007	.397	216	151	.397	131	-0.611	0.094	-0.2	1.0	-0.1	1.0	A-	
122	617115	4	539	.570	.323	.052	.048	.570	.007	.338	113	153	189	.338	-0.863	0.095	2.0	1.1	2.7	1.1	A-	
123	617116	4	539	.629	.629	.095	.080	.187	.009	.518	.518	223	244	193	-1.165	0.098	-3.2	0.9	-3.3	8.0	A+	
124	617092	4	541	.719	.070	.061	.719	.144	.006	.352	173	178	.352	159	-1.614	0.106	0.8	1.0	-0.3	1.0	B+	
125	617102	4	541	.142	.083	.340	.433	.142	.002	.176	235	.078	067	.176	1.663	0.134	1.0	1.1	1.6	1.2	B-	
126	617112	4	539	.442	.130	.317	.108	.442	.004	.412	209	111	213	.412	-0.268	0.094	-1.0	1.0	0.2	1.0	A-	
127	617089	4	541	.595	.028	.336	.039	.595	.002	.238	111	118	219	.238	-0.949	0.095	4.0	1.1	3.5	1.2	A+	
128	617244	4	562	.383	.383	.151	.306	.157	.004	.311	.311	190	078	121	0.186	0.093	1.7	1.1	2.1	1.1	A-	A+
129	617249	4	544	.465	.090	.210	.465	.230	.006	.382	148	256	.382	057	-0.378	0.092	-0.3	1.0	0.1	1.0	A-	A+
130	617245	4	541	.364	.344	.063	.224	.364	.006	.310	217	032	054	.310	0.073	0.095	0.6	1.0	1.4	1.1	A-	
131	617255	4	541	.573	.255	.573	.056	.111	.006	.289	138	.289	163	076	-0.810	0.094	2.8	1.1	2.1	1.1	A-	\square
132	617253	4	562	.399	.183	.399	.167	.249	.002	.174	100	.174	140	.016	0.119	0.093	4.7	1.2	5.9	1.3	A+	A+
133	617258	4	541	.704	.061	.192	.704	.041	.002	.430	213	234	.430	211	-1.503	0.104	-0.9	1.0	-1.4	0.9	A-	\sqcup
134	617248	4	5980	.437	.229	.030	.300	.437	.004	.416	191	198	172	.416	-0.180	0.028	-3.6	1.0	-3.1	1.0	A+	A-
135	617250	4	5980	.899	.899	.019	.039	.040	.004	.296	.296	146	127	144	-3.065	0.046	0.4	1.0	-1.0	0.9	A-	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
136	617269	Grade 4	541	.418	.366	.083	.129	.418	.004	.364	062	234	204	.364	-0.011	0.097	0.3	in 1.0	out 0.4	1.0	/F A-	/B
137	617269	4	541	.246	.373	.237	.246	.137	.004	.204	087	055	.204	004	0.969	0.097	2.5	1.0	2.2	1.3	A+	
138	617264	4	541	.826	.019	.826	.076	.070	.007	.375	148	.375	216	156	-2.436	0.111	-0.2	1.0	0.4	1.1	A-	
139	617270	4	541	.531	.177	.203	.531	.080	.009	.398	221	171	.398	074	-0.614	0.097	0.5	1.0	0.8	1.0	A-	\vdash
140	617265	4	539	.366	.087	.260	.366	.280	.007	.201	164	.027	.201	136	0.151	0.098	4.1	1.2	5.2	1.4	A+	
141	617261	4	552	.286	.496	.286	.067	.147	.004	.296	043	.296	148	183	0.721	0.106	1.4	1.1	1.8	1.2	A+	
142	617266	4	552	.788	.788	.071	.118	.020	.004	.390	.390	175	242	146	-2.093	0.114	-0.8	1.0	-1.5	0.8	A-	
143	617272	4	552	.404	.147	.228	.404	.216	.005	.435	188	189	.435	122	0.045	0.098	-1.0	1.0	-0.5	1.0	B-	
144	617275	4	562	.548	.548	.146	.061	.244	.002	.395	.395	248	177	150	-0.593	0.091	-0.9	1.0	-0.7	1.0	A+	A+
145	617254	4	541	.887	.046	.037	.887	.024	.006	.362	176	214	.362	135	-2.928	0.145	-0.7	0.9	-1.5	0.8	A+	
146	617276	4	541	.381	.324	.141	.381	.146	.009	.234	.022	198	.234	104	-0.025	0.095	3.1	1.1	3.5	1.2	A-	
147	617277	4	541	.632	.098	.632	.076	.185	.009	.309	083	.309	079	178	-1.110	0.097	2.1	1.1	2.2	1.1	A+	
148	617256	4	539	.674	.059	.674	.232	.033	.002	.326	182	.326	131	238	-1.420	0.100	1.4	1.1	1.2	1.1	A-	
149	617247	4	539	.887	.035	.887	.041	.033	.004	.307	221	.307	133	075	-2.966	0.145	0.4	1.0	-0.3	0.9	A+	
150	617267	4	541	.930	.030	.930	.026	.015	.000	.272	152	.272	172	137	-3.383	0.173	-0.2	1.0	-1.6	0.7	A+	
151	617251	4	541	.762	.113	.762	.094	.031	.000	.326	169	.326	205	146	-1.855	0.108	0.4	1.0	-0.1	1.0	B+	
152	617268	4	539	.687	.015	.687	.130	.161	.007	.411	155	.411	146	225	-1.451	0.101	-0.1	1.0	-1.0	0.9	A-	
153	617252	4	539	.729	.063	.126	.074	.729	.007	.390	213	087	201	.390	-1.722	0.106	0.3	1.0	0.7	1.1	B+	
154	617246	4	541	.433	.102	.213	.433	.246	.007	.439	087	323	.439	060	-0.143	0.094	-2.0	0.9	-1.6	0.9	A-	
155	617259	4	541	.410	.144	.211	.410	.229	.006	.285	179	171	.285	.012	0.012	0.098	3.1	1.1	4.0	1.3	A+	
156	617257	4	544	.579	.254	.053	.107	.579	.007	.421	146	176	274	.421	-0.911	0.094	-1.5	1.0	-1.0	1.0	A+	A+
157	617271	4	539	.518	.308	.518	.108	.067	.000	.393	137	.393	233	246	-0.577	0.095	-0.4	1.0	-0.5	1.0	B-	
158	617260	4	539	.245	.097	.213	.442	.245	.004	.133	172	154	.122	.133	0.845	0.108	2.2	1.1	2.1	1.2	A-	
159	617061	4	1101	.606	.606	.232	.116	.041	.006	.334	.334	117	161	192	-0.968	0.067	2.1	1.1	2.0	1.1	B+	A-
160	615621	4	1080	.184	.184	.038	.326	.446	.006	.155	.155	189	101	.106	1.197	0.084	1.8	1.1	4.2	1.4	A+	A+
161	615625	4	544	.708	.029	.066	.708	.191	.006	.373	207	222	.373	149	-1.575	0.102	0.1	1.0	-0.2	1.0	A-	A-
162	615632	4	539	.610	.121	.147	.121	.610	.002	.463	212	230	195	.463	-1.075	0.096	-1.9	0.9	-2.1	0.9	A+	
163	615627	4	539	.289	.468	.030	.206	.289	.007	.203	.003	063	106	.203	0.537	0.102	2.8	1.1	3.5	1.3	A+	
164	617071	4	539	.356	.215	.098	.323	.356	.007	.208	215	.009	.007	.208	0.134	0.097	4.0	1.2	4.0	1.3	B+	
165	615630	4	5980	.437	.399	.027	.437	.134	.004	.264	080	161	.264	153	-0.181	0.028	9.9	1.1	9.8	1.2	A+	A-
166	615624	4	5980	.884	.009	.064	.040	.884	.005	.290	102	198	089	.290	-2.909	0.044	0.4	1.0	0.0	1.0	A-	A-
167	615636	4	5980	.363	.363	.138	.335	.157	.008	.305	.305	212	091	034	0.178	0.029	4.9	1.1	5.3	1.1	A+	A+
168	615628	4	562	.875	.023	.091	.011	.875	.000	.338	204	230	145	.338	-2.586	0.134	-0.5	1.0	-1.1	0.8	B+	A-
169	615620	4	562	.781	.781	.135	.032	.052	.000	.291	.291	120	203	196	-1.829	0.108	0.7	1.0	0.3	1.0	A+	A-
170	617067	4	562	.648	.046	.648	.265	.041	.000	.338	232	.338	165	202	-1.071	0.094	0.5	1.0	0.5	1.0	A-	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z -	MS-	M	W
171	615629	Grade 4	541	.747	.013	.747	.229	.009	.002	.229	136	.229	151	093	-1.789	0.104	in 1.6	in 1.1	out 1.2	0ut 1.1	/F A+	/B
172	617063	4	541	.551	.013	.551	.229	.118	.002	.381	136	.381	151	093	-0.813	0.104	-0.7	1.0	-0.8	1.0	A+	
173	617076	4	541	.407	.181	.124	.281	.407	.007	.356	174	218	041	.356	-0.813	0.092	0.7	1.0	-0.8	1.0	A+	
174	615631	4	541	.348	.081	.129	.348	.438	.004	.224	153	219	.224	.062	0.281	0.097	3.6	1.1	3.8	1.3	A-	
175	615622	4	541	.677	.137	.044	.677	.133	.009	.345	149	264	.345	093	-1.345	0.100	0.5	1.0	1.3	1.1	A-	
176	617064	4	541	.848	.046	.848	.037	.061	.007	.456	175	.456	214	220	-2.485	0.128	-1.2	0.9	-2.3	0.7	A-	
177	617077	4	541	.423	.320	.423	.068	.181	.007	.335	046	.335	233	133	-0.099	0.094	1.1	1.0	1.9	1.1	A-	
178	615623	4	539	.920	.030	.920	.020	.028	.002	.444	196	.444	193	291	-3.382	0.168	-1.2	0.9	-2.7	0.5	A+	
179	615635	4	539	.677	.206	.050	.063	.677	.004	.365	132	231	206	.365	-1.428	0.100	0.6	1.0	0.7	1.0	A+	
180	615633	4	544	.728	.048	.728	.136	.086	.002	.367	162	.367	081	319	-1.674	0.103	-0.3	1.0	0.0	1.0	A+	A-
181	615637	4	544	.621	.074	.621	.204	.097	.004	.368	152	.368	110	251	-1.124	0.095	0.2	1.0	0.4	1.0	A+	A-
182	617065	4	544	.737	.175	.737	.033	.052	.004	.431	276	.431	220	117	-1.739	0.105	-1.1	0.9	-1.4	0.9	A-	A-
183	617081	4	544	.410	.153	.410	.204	.228	.006	.260	161	.260	268	.140	-0.125	0.093	2.7	1.1	3.3	1.2	A+	B-
184	615634	4	541	.734	.734	.142	.081	.043	.000	.325	.325	169	210	134	-1.664	0.104	0.3	1.0	-0.3	1.0	A-	
185	615626	4	541	.793	.011	.141	.056	.793	.000	.299	097	180	211	.299	-2.038	0.112	0.2	1.0	0.4	1.0	A-	
186	615638	4	541	.484	.139	.484	.257	.118	.002	.349	198	.349	164	103	-0.436	0.093	1.3	1.0	1.2	1.1	A-	
187	617073	4	541	.732	.732	.107	.068	.092	.000	.423	.423	230	181	244	-1.664	0.104	-1.6	0.9	-1.6	0.9	A-	
188	617082	4	541	.329	.248	.329	.113	.309	.002	.299	117	.299	142	095	0.353	0.099	1.8	1.1	2.3	1.2	A-	
189	617098	4	541	.612	.612	.129	.026	.233	.000	.405	.405	236	230	193	-1.034	0.095	-0.7	1.0	-0.3	1.0	C-	
190	617066	4	539	.763	.117	.058	.763	.054	.009	.434	211	179	.434	149	-1.931	0.111	-0.6	1.0	-0.7	0.9	A-	
191	617060	4	539	.534	.134	.534	.195	.132	.006	.368	201	.368	052	218	-0.686	0.094	0.8	1.0	1.2	1.1	A+	
192	617074	4	539	.625	.223	.035	.110	.625	.007	.455	207	179	196	.455	-1.143	0.097	-1.3	1.0	-1.2	0.9	A+	
193	617068	4	541	.614	.035	.614	.301	.044	.006	.321	218	.321	166	115	-1.111	0.094	0.8	1.0	0.8	1.0	A+	
194	617075	4	562	.514	.514	.134	.253	.094	.005	.348	.348	243	125	105	-0.441	0.091	0.9	1.0	1.5	1.1	A-	A-
195	617072	4	544	.472	.158	.193	.472	.171	.006	.406	242	218	.406	021	-0.412	0.092	-1.1	1.0	-0.8	1.0	A-	A+
196	617080	4	539	.234	.058	.520	.234	.186	.004	.015	207	.118	.015	001	0.829	0.108	3.9	1.2	7.0	1.8	A-	
197	617070	4	541	.702	.129	.085	.702	.076	.007	.444	257	145	.444	161	-1.478	0.102	-1.3	0.9	-1.5	0.9	A-	
198	617229	4	541	.760	.022	.142	.760	.070	.006	.453	165	269	.453	216	-1.818	0.108	-1.7	0.9	-2.4	0.8	A+	
199	617239	4	1083	.457	.147	.236	.457	.156	.004	.502	233	187	.502	192	-0.334	0.066	-5.9	0.9	-4.4	0.9	B-	A+
200	617233	4	541	.710	.037	.080	.174	.710	.000	.443	207	174	303	.443	-1.557	0.102	-1.9	0.9	-2.1	0.8	A+	
201	617238	4	5980	.325	.357	.221	.325	.093	.004	.437	194	173	.437	083	0.390	0.030	-6.3	0.9	-3.2	0.9	B-	A-
202	617243	4	5980	.943	.019	.019	.943	.016	.004	.369	153	187	.369	181	-3.849	0.062	-1.9	0.9	-6.4	0.5	A+	A-
203	617232	4	5980	.723	.134	.723	.108	.030	.006	.408	288	.408	108	191	-1.643	0.031	-2.4	1.0	-2.2	1.0	A+	A+
204	617227	4	1101	.800	.023	.096	.078	.800	.003	.406	171	264	186	.406	-2.085	0.081	-1.5	0.9	-1.4	0.9	A+	B-
205	617235	4	1103	.776	.174	.038	.776	.012	.000	.374	304	174	.374	068	-1.866	0.077	-1.0	1.0	-1.4	0.9	A-	C-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Cuada	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
206	617228	Grade 4	1082	.534	.016	.214	.534	.230	.006	.256	199	162	.256	028	-0.677	0.066	in 5.5	in 1.1	out 4.5	out 1.2	/F A-	/B A+
207	617236	4	541	.501	.501	.170	.155	.170	.004	.261	.261	175	103	037	-0.569	0.092	2.7	1.1	2.4	1.1	A+	7
208	617230	4	1080	.442	.166	.442	.291	.098	.004	.329	156	.329	100	152	-0.286	0.066	1.4	1.0	1.1	1.0	A-	A+
209	617241	4	1080	.806	.806	.074	.107	.011	.003	.252	.252	222	052	092	-2.184	0.083	1.7	1.1	2.7	1.2	A-	A+
210	617242	4	539	.777	.777	.117	.084	.015	.007	.445	.445	236	223	065	-2.025	0.113	-0.9	0.9	-1.3	0.9	A-	
211	617231	4	1106	.756	.097	.082	.756	.062	.003	.370	168	226	.370	149	-1.764	0.075	-0.6	1.0	-0.2	1.0	A+	A-
212	617237	4	541	.529	.529	.111	.307	.048	.006	.416	.416	118	265	101	-0.598	0.093	-1.0	1.0	-0.7	1.0	A+	
213	617240	4	544	.410	.092	.360	.410	.134	.004	.281	188	083	.281	071	-0.112	0.093	2.5	1.1	2.4	1.1	A-	A+
214	617234	4	539	.531	.097	.286	.078	.531	.009	.404	054	189	212	.404	-0.675	0.094	-0.4	1.0	-0.4	1.0	A+	
215	617311	5	614	.660	.660	.067	.081	.181	.011	.407	.407	190	163	181	-1.224	0.092	-0.7	1.0	-0.9	1.0	A-	A+
216	615950	5	619	.659	.105	.659	.126	.105	.005	.439	246	.439	216	177	-1.224	0.090	-2.1	0.9	-2.0	0.9	C+	
217	617504	5	633	.254	.562	.254	.070	.109	.005	.247	.019	.247	185	195	0.793	0.095	0.5	1.0	0.9	1.1	A+	
218	615943	5	633	.570	.046	.218	.570	.156	.010	.418	201	255	.418	110	-0.713	0.085	-2.3	0.9	-2.8	0.9	A-	
219	617502	5	619	.446	.084	.357	.446	.108	.005	.396	152	211	.396	151	-0.215	0.086	-0.9	1.0	-0.7	1.0	A-	
220	615948	5	5562	.254	.313	.080	.350	.254	.004	.170	.047	181	083	.170	0.839	0.033	6.8	1.1	8.2	1.2	A-	A-
221	617322	5	609	.348	.348	.174	.191	.286	.002	.289	.289	155	181	010	0.350	0.092	0.7	1.0	0.5	1.0	A-	
222	617314	5	5562	.305	.305	.389	.154	.147	.006	.360	.360	178	119	066	0.543	0.031	-2.0	1.0	-0.5	1.0	A-	A+
223	616318	5	608	.806	.806	.082	.059	.049	.003	.463	.463	348	216	123	-2.147	0.112	-1.0	0.9	-1.7	0.8	A-	B-
224	617503	5	615	.740	.036	.132	.091	.740	.002	.447	194	285	221	.447	-1.662	0.098	-1.3	0.9	-1.9	0.9	B+	A-
225	615951	5	615	.688	.688	.138	.098	.067	.010	.374	.374	216	158	133	-1.385	0.094	-0.7	1.0	0.5	1.0	A+	A-
226	617313	5	614	.476	.145	.181	.476	.189	.010	.442	104	202	.442	202	-0.323	0.087	-2.3	0.9	-2.0	0.9	B+	A+
227	615954	5	614	.684	.054	.068	.187	.684	.007	.545	223	300	258	.545	-1.337	0.093	-4.2	0.8	-4.5	8.0	A+	B-
228	617505	5	614	.604	.604	.160	.121	.104	.011	.431	.431	261	142	109	-0.938	0.089	-1.3	1.0	-1.4	0.9	A+	A-
229	617730	5	619	.250	.247	.330	.171	.250	.002	.247	088	093	066	.247	0.796	0.098	1.1	1.1	2.0	1.2	B-	
230	617315	5	619	.606	.606	.110	.081	.200	.003	.415	.415	169	271	172	-0.954	0.088	-1.3	1.0	-1.9	0.9	A+	
231	615955	5	619	.448	.448	.131	.187	.229	.005	.343	.343	135	172	119	-0.221	0.086	0.8	1.0	0.8	1.0	A-	
232	615944	5	619	.475	.475	.102	.372	.049	.003	.457	.457	233	251	138	-0.345	0.086	-2.9	0.9	-2.8	0.9	A+	
233	617316	5	633	.313	.313	.182	.297	.205	.003	.343	.343	105	171	100	0.484	0.089	-1.3	1.0	-0.9	1.0	A+	
234	617727	5	633	.743	.030	.163	.062	.743	.003	.428	176	224	277	.428	-1.560	0.095	-2.1	0.9	-2.3	0.9	A-	
235	615945	5	633	.706	.706	.134	.049	.106	.005	.357	.357	157	277	131	-1.366	0.091	-0.9	1.0	-0.6	1.0	A+	
236	617320	5	611	.339	.339	.519	.041	.102	.000	.424	.424	326	099	060	0.354	0.090	-2.2	0.9	-1.8	0.9	A+	B-
237	615952	5	611	.705	.705	.113	.105	.074	.003	.429	.429	171	272	197	-1.387	0.093	-2.3	0.9	-1.7	0.9	B+	A-
238	617317	5	638	.408	.268	.408	.216	.107	.002	.302	080	.302	211	079	0.075	0.085	1.4	1.0	2.0	1.1	A-	B+
239	615953	5	638	.484	.135	.176	.484	.204	.002	.393	226	087	.393	211	-0.279	0.084	-1.2	1.0	-1.3	1.0	B-	A-
240	617321	5	638	.690	.114	.690	.082	.113	.002	.459	232	.459	267	198	-1.254	0.090	-2.9	0.9	-2.9	0.8	A+	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
241	615949	Grade 5	633	.218	.384	.193	.218	.199	.006	.125	.099	155	.125	056	1.012	0.099	1.7	in 1.1	out 3.3	out 1.3	/F A-	/B
242	615946	5	619	.338	.136	.338	.207	.317	.003	.320	196	.320	187	003	0.313	0.090	0.8	1.0	0.8	1.0	A-	
243	617318	5	633	.352	.346	.352	.120	.175	.006	.217	165	.217	099	.025	0.282	0.087	1.8	1.1	2.6	1.1	A-	
244	617729	5	1225	.331	.189	.311	.165	.331	.005	.331	260	036	053	.331	0.389	0.064	0.3	1.0	1.0	1.0	A+	B-
245	617312	5	638	.397	.193	.232	.172	.397	.006	.274	094	181	043	.274	0.119	0.086	2.2	1.1	2.1	1.1	A-	A+
246	615962	5	609	.726	.138	.726	.062	.071	.003	.421	213	.421	267	174	-1.545	0.098	-1.4	0.9	-0.7	0.9	A+	
247	617330	5	638	.495	.113	.248	.141	.495	.003	.532	180	371	138	.532	-0.334	0.084	-6.1	0.8	-5.3	0.8	A+	A-
248	617338	5	619	.624	.134	.079	.624	.160	.003	.449	142	244	.449	267	-1.037	0.088	-2.6	0.9	-2.6	0.9	A-	
249	615965	5	614	.412	.108	.083	.412	.393	.005	.441	039	217	.441	246	-0.006	0.088	-2.5	0.9	-2.2	0.9	A-	A-
250	615964	5	609	.332	.123	.243	.332	.294	.008	.287	168	131	.287	037	0.437	0.093	0.9	1.0	2.0	1.1	A-	
251	616322	5	5562	.505	.505	.127	.278	.087	.003	.373	.373	216	141	148	-0.424	0.029	-1.6	1.0	-2.0	1.0	A-	A-
252	615961	5	5562	.463	.463	.277	.126	.130	.005	.402	.402	113	198	213	-0.231	0.029	-3.4	1.0	-1.5	1.0	C-	A-
253	617341	5	609	.215	.126	.264	.384	.215	.010	.167	176	138	.135	.167	1.119	0.105	2.1	1.1	2.7	1.3	A+	
254	617343	5	608	.173	.173	.229	.240	.352	.007	.202	.202	047	160	.053	1.461	0.115	0.7	1.0	0.8	1.1	A-	A-
255	617336	5	614	.611	.121	.611	.101	.161	.007	.392	190	.392	067	232	-0.961	0.089	-0.5	1.0	-0.8	1.0	A-	A-
256	617337	5	619	.485	.141	.147	.485	.225	.003	.322	172	109	.322	133	-0.390	0.086	1.7	1.1	1.3	1.1	A+	
257	617731	5	633	.570	.182	.570	.155	.085	.008	.392	187	.392	228	081	-0.711	0.084	-1.6	1.0	-2.1	0.9	A-	
258	617331	5	611	.540	.540	.228	.090	.138	.005	.491	.491	220	292	170	-0.588	0.086	-4.5	0.9	-4.2	0.9	A+	A-
259	617333	5	611	.709	.098	.709	.046	.141	.007	.359	137	.359	230	191	-1.418	0.094	-0.7	1.0	-0.7	1.0	A-	A+
260	617335	5	638	.477	.135	.149	.477	.238	.002	.349	168	080	.349	205	-0.243	0.084	0.5	1.0	-0.1	1.0	A+	A+
261	617340	5	638	.335	.249	.323	.335	.091	.002	.161	087	007	.161	116	0.426	0.089	4.3	1.2	3.6	1.2	A+	A+
262	617332	5	638	.698	.096	.698	.143	.060	.005	.386	166	.386	243	160	-1.308	0.091	-1.3	1.0	-0.5	1.0	A+	A-
263	615963	5	619	.312	.194	.205	.312	.286	.003	.299	.038	153	.299	187	0.448	0.092	1.0	1.0	1.6	1.1	A-	
264	617339	5	614	.226	.244	.204	.311	.226	.015	.282	093	123	.017	.282	0.973	0.102	0.4	1.0	1.9	1.2	A-	A+
265	617342	5	619	.280	.280	.263	.359	.094	.005	.285	.285	131	066	107	0.622	0.095	1.2	1.1	1.5	1.1	A+	
266	616317	5	611	.548	.034	.097	.548	.319	.002	.250	072	211	.250	098	-0.618	0.086	2.7	1.1	2.5	1.1	A+	A+
267	617304	5	608	.380	.262	.176	.380	.176	.007	.357	111	240	.357	056	0.164	0.091	0.7	1.0	1.7	1.1	A-	A-
268	615936	5	633	.713	.035	.191	.713	.062	.000	.447	245	267	.447	219	-1.381	0.092	-2.7	0.9	-2.8	0.9	B+	
269	617307	5	638	.430	.155	.249	.161	.430	.005	.392	148	113	233	.392	-0.033	0.085	-0.9	1.0	-1.1	1.0	A-	A-
270	615939	5	615	.563	.117	.563	.236	.078	.007	.532	226	.532	250	256	-0.740	0.088	-5.0	0.9	-4.5	0.8	A+	A+
271	617499	5	615	.524	.263	.524	.101	.111	.002	.339	080	.339	285	124	-0.452	0.087	0.0	1.0	0.8	1.0	A-	A+
272	615942	5	614	.896	.018	.059	.023	.896	.005	.364	181	172	146	.364	-2.899	0.141	-0.5	0.9	-1.3	0.8	A+	A+
273	615940	5	1220	.471	.109	.049	.471	.367	.004	.374	230	199	.374	137	-0.263	0.061	-1.0	1.0	-0.1	1.0	A+	A+
274	615937	5	5562	.561	.170	.106	.160	.561	.004	.464	213	204	214	.464	-0.686	0.029	-9.9	0.9	-8.4	0.9	A+	A-
275	615941	5	5562	.475	.241	.475	.122	.155	.007	.263	204	.263	105	.014	-0.293	0.029	8.5	1.1	8.6	1.1	A-	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
276	615947	5	615	.870	.024	.080	.024	.870	.002	.363	155	232	169	.363	-2.506	0.125	-0.7	0.9	-2.0	0.7	<u>/г</u> А-	A+
277	617500	5	615	.615	.083	.140	.615	.161	.002	.376	195	212	.376	127	-0.886	0.089	-0.1	1.0	-0.4	1.0	A+	A+
278	617724	5	614	.446	.209	.217	.446	.121	.008	.406	076	192	.406	205	-0.177	0.087	-1.2	1.0	-1.1	1.0	A+	A-
279	617726	5	619	.701	.183	.032	.082	.701	.002	.501	336	160	257	.501	-1.431	0.093	-3.5	0.9	-3.0	0.8	A+	
280	617319	5	633	.403	.453	.403	.038	.103	.003	.268	063	.268	191	197	0.051	0.085	1.1	1.0	1.6	1.1	A+	
281	617308	5	611	.881	.087	.026	.881	.007	.000	.291	194	209	.291	080	-2.582	0.128	-0.5	1.0	-1.2	0.8	A-	A-
282	617306	5	638	.633	.221	.063	.082	.633	.002	.412	241	167	198	.412	-0.967	0.087	-2.0	0.9	-1.1	1.0	A+	A-
283	617309	5	638	.580	.241	.071	.580	.103	.005	.414	209	211	.414	184	-0.724	0.085	-1.8	1.0	-1.9	0.9	A-	A-
284	615938	5	611	.493	.077	.493	.144	.283	.003	.264	173	.264	210	012	-0.371	0.086	2.5	1.1	2.7	1.1	A+	A-
285	617725	5	614	.138	.207	.192	.138	.448	.015	027	111	109	027	.269	1.683	0.123	2.2	1.2	5.3	1.9	A+	A+
286	617501	5	614	.340	.340	.204	.178	.270	.008	.281	.281	160	129	.023	0.335	0.091	2.1	1.1	2.1	1.1	A-	A-
287	617310	5	633	.531	.289	.531	.057	.115	.008	.281	083	.281	236	096	-0.533	0.084	1.6	1.0	1.1	1.0	A+	
288	617305	5	619	.246	.283	.250	.246	.218	.003	.311	116	122	.311	052	0.823	0.099	0.1	1.0	1.4	1.1	A-	
289	617328	5	611	.668	.668	.136	.088	.108	.000	.497	.497	215	265	273	-1.181	0.090	-4.1	0.9	-3.8	8.0	A-	A+
290	615958	5	633	.608	.608	.081	.122	.183	.006	.310	.310	127	304	021	-0.882	0.086	0.3	1.0	0.4	1.0	A+	
291	616969	5	638	.666	.078	.666	.136	.118	.002	.300	204	.300	145	110	-1.134	0.089	0.9	1.0	0.8	1.0	A-	A+
292	617507	5	611	.408	.349	.088	.151	.408	.005	.194	.028	221	106	.194	0.018	0.087	4.3	1.1	3.6	1.2	A+	A+
293	616320	5	5562	.831	.831	.081	.071	.016	.001	.381	.381	255	172	190	-2.216	0.038	-3.2	0.9	-4.9	0.8	A-	A-
294	616971	5	5562	.527	.081	.271	.527	.117	.005	.338	246	164	.338	057	-0.529	0.029	1.8	1.0	1.3	1.0	A-	A-
295	615956	5	5562	.399	.067	.491	.039	.399	.005	.298	193	104	169	.298	0.069	0.029	4.8	1.1	4.2	1.1	A+	A+
296	615959	5	5562	.630	.169	.122	.630	.072	.007	.421	184	191	.421	220	-1.028	0.030	-5.0	0.9	-5.0	0.9	A+	A-
297	615957	5	608	.145	.169	.329	.145	.352	.005	.264	211	.062	.264	066	1.676	0.123	0.1	1.0	-0.1	1.0	A-	A-
298	616973	5	608	.549	.258	.091	.095	.549	.007	.410	195	211	147	.410	-0.672	0.089	-0.3	1.0	-0.9	1.0	C+	A-
299	616974	5	615	.395	.208	.218	.395	.177	.002	.222	083	163	.222	.005	0.157	0.089	2.6	1.1	1.6	1.1	A+	A+
300	615960	5	615	.607	.607	.278	.070	.042	.003	.340	.340	123	233	206	-0.853	0.089	0.4	1.0	0.5	1.0	A+	A+
301	616975	5	615	.468	.468	.156	.148	.223	.005	.302	.302	158	115	114	-0.298	0.087	2.0	1.1	1.4	1.1	A-	A-
302	616321	5	614	.710	.098	.147	.710	.041	.005	.516	187	337	.516	174	-1.473	0.095	-3.3	0.9	-3.9	0.8	A+	A-
303	617324	5	614	.446	.287	.098	.156	.446	.013	.466	194	156	172	.466	-0.192	0.087	-2.8	0.9	-2.9	0.9	A+	A-
304	617325	5	619	.399	.399	.176	.131	.291	.003	.409	.409	257	098	151	0.011	0.088	-1.5	1.0	-1.8	0.9	A-	
305	617506	5	619	.407	.176	.407	.247	.166	.003	.133	224	.133	099	.176	-0.029	0.087	6.2	1.2	5.8	1.3	A+	
306	617329	5	633	.223	.477	.103	.223	.193	.005	.028	.152	195	.028	048	0.983	0.099	2.8	1.2	5.1	1.4	A-	
307	616976	5	633	.273	.273	.261	.256	.201	.010	.114	.114	109	061	.104	0.683	0.093	2.8	1.1	3.1	1.2	A-	
308	616977	5	611	.224	.360	.131	.224	.282	.003	.203	170	031	.203	.033	0.998	0.102	1.0	1.1	2.3	1.2	A-	A+
309	616972	5	611	.146	.624	.144	.146	.079	.008	.042	.155	083	.042	190	1.572	0.119	1.6	1.1	3.9	1.5	A+	B+
310	617334	5	614	.266	.238	.223	.264	.266	.010	.185	115	107	.098	.185	0.741	0.097	2.9	1.1	3.7	1.3	A+	A+

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade				, ,								, ,			in	in	out	out	/F	/B
311	616968	5	611	.306	.409	.069	.213	.306	.003	.289	190	165	.022	.289	0.518	0.092	1.0	1.0	0.6	1.0	Α-	Α-
312	616319	5	638	.488	.213	.193	.105	.488	.002	.307	190	039	188	.307	-0.293	0.084	1.5	1.0	2.0	1.1	A+	Α-
313	616970	5	638	.641	.102	.641	.194	.061	.002	.219	143	.219	024	211	-1.009	0.087	3.1	1.1	2.5	1.1	A+	A+
314	617326	5	638	.301	.334	.320	.301	.042	.003	.349	134	123	.349	174	0.604	0.091	-0.3	1.0	0.4	1.0	A+	B+
315	617323	5	1226	.362	.075	.362	.479	.080	.004	.330	117	.330	194	078	0.226	0.063	0.2	1.0	1.5	1.1	Α-	A-
316	617327	5	633	.209	.164	.218	.403	.209	.006	.056	120	081	.137	.056	1.072	0.101	2.4	1.1	3.5	1.3	A+	
317	617741	6	627	.729	.104	.729	.091	.059	.018	.563	281	.563	278	242	-1.338	0.097	-3.9	0.8	-4.4	0.7	A+	1
318	615554	6	626	.534	.243	.083	.141	.534	.000	.375	138	150	249	.375	-0.250	0.085	-1.2	1.0	-1.0	1.0	A-	
319	615532	6	626	.864	.037	.864	.061	.034	.005	.450	231	.450	187	262	-2.265	0.125	-1.4	0.9	-2.7	0.7	A+	1
320	615540	6	625	.635	.195	.123	.635	.045	.002	.471	217	295	.471	212	-0.729	0.088	-3.4	0.9	-3.5	0.9	A+	
321	617508	6	626	.582	.582	.235	.107	.075	.002	.344	.344	127	192	176	-0.292	0.086	-0.2	1.0	-0.3	1.0	A-	
322	615539	6	5636	.817	.817	.061	.086	.032	.004	.335	.335	146	231	060	-1.778	0.036	-1.4	1.0	-0.7	1.0	A-	A+
323	619628	6	627	.533	.034	.533	.260	.168	.006	.306	027	.306	123	159	-0.244	0.086	1.8	1.1	1.5	1.1	B-	
324	619307	6	1252	.427	.336	.102	.121	.427	.014	.339	025	176	230	.339	0.221	0.061	0.0	1.0	0.3	1.0	A+	A-
325	619124	6	5636	.546	.546	.098	.247	.103	.007	.437	.437	239	175	149	-0.290	0.029	-8.9	0.9	-8.6	0.9	A-	A-
326	619308	6	627	.526	.199	.182	.526	.093	.000	.448	221	192	.448	212	-0.219	0.085	-3.3	0.9	-3.1	0.9	A-	
327	617510	6	627	.266	.279	.247	.206	.266	.002	.267	022	118	148	.267	1.045	0.095	0.1	1.0	0.9	1.1	A-	
328	619305	6	627	.397	.294	.204	.397	.077	.029	.297	121	136	.297	108	0.314	0.088	0.6	1.0	0.8	1.0	A-	
329	619306	6	623	.178	.225	.178	.416	.173	.008	.254	082	.254	.034	108	1.655	0.109	-0.2	1.0	-0.3	1.0	A-	
330	619309	6	623	.273	.101	.273	.527	.092	.008	.115	144	.115	.105	076	1.051	0.095	2.2	1.1	3.3	1.2	A-	
331	617511	6	623	.368	.262	.177	.170	.368	.024	.413	.026	179	211	.413	0.539	0.088	-2.5	0.9	-2.2	0.9	A+	
332	619310	6	629	.547	.323	.547	.099	.027	.005	.361	155	.361	200	159	-0.239	0.086	-0.1	1.0	-0.4	1.0	A-	
333	619128	6	626	.709	.709	.042	.131	.113	.005	.354	.354	226	087	242	-1.119	0.093	-0.6	1.0	-0.9	1.0	A-	
334	615527	6	626	.447	.328	.097	.123	.447	.005	.380	103	179	222	.380	0.136	0.085	-1.3	1.0	-0.9	1.0	A-	
335	615541	6	626	.505	.105	.241	.505	.136	.013	.241	277	003	.241	010	-0.142	0.085	3.5	1.1	3.6	1.1	A+	
336	619129	6	627	.349	.239	.164	.244	.349	.003	.196	.018	069	170	.196	0.560	0.089	2.9	1.1	3.5	1.2	A+	
337	615528	6	627	.585	.155	.072	.585	.187	.002	.219	093	037	.219	154	-0.537	0.087	3.6	1.1	3.5	1.2	A+	
338	615542	6	627	.612	.120	.139	.612	.102	.027	.493	184	296	.493	143	-0.738	0.089	-2.9	0.9	-2.9	0.9	A+	
339	619125	6	626	.296	.296	.113	.185	.403	.003	.203	.203	114	081	008	1.067	0.092	1.2	1.1	2.5	1.2	A-	
340	615529	6	626	.374	.374	.113	.141	.345	.027	.251	.251	265	115	.108	0.621	0.088	2.2	1.1	2.3	1.1	A-	
341	619130	6	626	.214	.264	.307	.214	.185	.030	.059	027	077	.059	.191	1.538	0.103	2.3	1.1	4.2	1.4	B-	
342	619126	6	626	.615	.086	.131	.157	.615	.011	.443	207	148	209	.443	-0.688	0.088	-2.2	0.9	-2.3	0.9	B+	
343	615553	6	626	.695	.062	.695	.125	.109	.010	.424	179	.424	171	205	-1.096	0.093	-1.7	0.9	-1.7	0.9	C+	
344	617753	6	626	.613	.115	.113	.136	.613	.022	.476	169	237	183	.476	-0.717	0.089	-3.3	0.9	-2.7	0.9	A+	
345	619304	6	626	.324	.145	.351	.153	.324	.026	.366	166	.022	234	.366	0.671	0.091	-1.1	1.0	-0.7	1.0	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
346	619127	Grade 6	625	.674	.136	.674	.149	.042	.000	.372	284	.372	151	115	-0.914	0.090	in -1.2	in 1.0	-0.5	1.0	/F A+	/B
347	617509	6	625	.586	.586	.088	.078	.246	.002	.363	.363	135	130	247	-0.494	0.086	-0.7	1.0	-0.4	1.0	A+	\vdash
348	615536	6	625	.347	.054	.080	.347	.510	.002	.194	224	118	.194	.001	0.599	0.089	2.8	1.1	3.4	1.2	A-	\vdash
349	615530	6	1253	.715	.050	.715	.152	.069	.015	.354	188	.354	160	095	-1.189	0.067	-0.4	1.0	0.0	1.0	A+	A+
350	615531	6	1253	.333	.144	.133	.373	.333	.018	.203	104	125	.038	.203	0.739	0.064	4.1	1.1	4.4	1.2	A-	A+
351	617533	6	1253	.194	.360	.049	.394	.194	.003	.171	012	202	014	.171	1.472	0.074	1.5	1.1	3.9	1.3	A+	B+
352	615594	6	626	.490	.169	.149	.189	.490	.003	.260	161	135	025	.260	-0.060	0.085	2.3	1.1	1.9	1.1	A+	
353	615603	6	627	.384	.043	.330	.225	.384	.018	.333	206	066	148	.333	0.367	0.088	0.6	1.0	0.7	1.0	A-	
354	615601	6	626	.727	.727	.168	.038	.059	.008	.336	.336	168	258	058	-1.059	0.096	0.0	1.0	0.1	1.0	A-	
355	619365	6	626	.842	.842	.066	.042	.042	.010	.454	.454	265	272	084	-2.086	0.118	-1.6	0.9	-1.9	0.8	A+	
356	615599	6	5636	.605	.222	.092	.605	.077	.005	.305	121	165	.305	121	-0.557	0.029	2.3	1.0	1.9	1.0	A-	A+
357	615590	6	627	.324	.239	.163	.324	.268	.006	.096	.031	049	.096	013	0.755	0.091	4.9	1.2	4.5	1.3	A-	
358	615600	6	1252	.682	.682	.068	.129	.115	.006	.342	.342	173	153	128	-0.973	0.065	-0.2	1.0	0.4	1.0	A-	A-
359	615602	6	627	.372	.420	.094	.372	.101	.014	.388	117	154	.388	126	0.497	0.089	-1.9	0.9	-1.2	0.9	A-	
360	615589	6	5636	.184	.189	.349	.265	.184	.014	.177	.015	068	021	.177	1.590	0.036	3.2	1.1	5.9	1.2	A+	A+
361	615591	6	627	.512	.112	.270	.107	.512	.000	.367	241	209	048	.367	-0.154	0.085	-0.1	1.0	0.0	1.0	A+	
362	619139	6	627	.330	.112	.386	.330	.147	.026	.204	205	.035	.204	116	0.656	0.091	3.0	1.1	4.1	1.2	A+	
363	619364	6	623	.154	.154	.361	.096	.380	.008	.008	.008	.025	005	.050	1.844	0.115	1.9	1.2	3.3	1.4	A-	
364	615592	6	623	.509	.509	.170	.117	.193	.011	.324	.324	108	199	027	-0.104	0.086	-0.4	1.0	-0.5	1.0	A-	
365	619142	6	623	.271	.271	.197	.241	.276	.014	.189	.189	080	124	.122	1.056	0.095	1.5	1.1	2.8	1.2	A-	
366	619363	6	629	.479	.479	.229	.162	.124	.006	.293	.293	084	165	089	0.074	0.086	2.4	1.1	2.5	1.1	A+	
367	615593	6	629	.448	.272	.448	.172	.100	.008	.257	.052	.257	175	200	0.216	0.086	3.3	1.1	3.1	1.1	A+	
368	619143	6	629	.580	.146	.124	.142	.580	.008	.456	244	209	129	.456	-0.406	0.087	-3.2	0.9	-3.1	0.9	A+	
369	619617	6	626	.264	.029	.264	.086	.620	.002	.142	190	.142	.036	063	1.054	0.095	2.2	1.1	3.3	1.2	A+	
370	619623	6	626	.374	.155	.090	.374	.372	.010	.151	027	212	.151	.053	0.472	0.087	4.4	1.2	5.1	1.2	A-	
371	619618	6	627	.426	.426	.201	.263	.109	.002	.220	.220	096	040	171	0.200	0.086	4.2	1.1	3.6	1.2	A-	
372	619625	6	627	.767	.030	.062	.139	.767	.002	.423	220	258	213	.423	-1.501	0.100	-1.7	0.9	-1.4	0.9	A+	
373	615595	6	627	.260	.169	.380	.177	.260	.014	.281	031	045	168	.281	1.022	0.096	0.7	1.0	0.9	1.1	A-	
374	615596	6	626	.808	.006	.011	.808	.169	.005	.335	128	110	.335	211	-1.555	0.108	-0.1	1.0	-0.7	0.9	A-	
375	619619	6	626	.318	.131	.395	.318	.142	.014	.123	070	.016	.123	.004	0.920	0.091	4.0	1.2	4.7	1.3	A+	\vdash
376	619626	6	626	.711	.711	.091	.136	.046	.016	.394	.394	177	178	106	-0.976	0.095	-0.9	1.0	-1.1	0.9	B-	\vdash
377	620237	6	626	.492	.232	.126	.492	.137	.013	.325	.016	215	.325	193	-0.097	0.086	0.7	1.0	0.7	1.0	A-	
378	619136	6	626	.308	.321	.308	.105	.259	.006	.246	013	.246	212	021	0.793	0.092	1.6	1.1	2.7	1.2	A+	
379	619622	6	626	.577	.198	.577	.097	.113	.014	.378	178	.378	203	054	-0.510	0.087	-0.4	1.0	-0.3	1.0	A-	\vdash
380	615588	6	626	.305	.134	.222	.305	.321	.018	.051	026	.081	.051	018	0.807	0.092	5.3	1.2	6.0	1.4	A-	ш

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
204	640407	Grade	625	205		. ,	• •		000	270	450	470	. ,	270	0.027	0.000	in	in	out	out	/F	/B
381	619137	6	625	.285	.190	.090	.434	.285	.002	.270	150	173	028	.270	0.927	0.093	0.7	1.0	0.7	1.0	A+	\vdash
382	619150	6	625	.507	.155	.242	.091	.507	.005	.407	217	132	214	.407	-0.141	0.085	-1.8	1.0	-2.0	0.9	A-	
383	620236	6	625	.261	.443	.141	.261	.147	.008	.265	.051	283	.265	093	1.055	0.095	0.4	1.0	1.5	1.1	A-	\vdash
384	619141	6	626	.500	.500	.120	.300	.072	.008	.244	.244	018	080	203	0.073	0.085	3.2	1.1	3.1	1.1	A+	\vdash
385	619624	6	627	.812	.064	.064	.061	.812	.000	.384	210	212	197	.384	-1.742	0.107	-1.5	0.9	-2.1	0.8	A-	\vdash
386	615518	6	627	.788	.788	.032	.161	.016	.003	.375	.375	182	232	215	-1.642	0.103	-0.8	1.0	-1.6	0.9	C-	\vdash
387	615520	6	626	.845	.053	.054	.845	.045	.003	.333	164	148	.333	143	-1.861	0.118	0.0	1.0	-0.6	0.9	A+	\vdash
388	615514	6	626	.808	.030	.040	.118	.808	.003	.353	153	209	185	.353	-1.722	0.107	-0.6	1.0	-0.9	0.9	B-	\vdash
389	618591	6	625	.869	.042	.869	.038	.051	.000	.211	089	.211	155	107	-2.191	0.122	0.3	1.0	0.7	1.1	A+	\vdash
390	619296	6	626	.829	.043	.053	.829	.074	.002	.454	216	247	.454	235	-1.867	0.111	-1.9	0.9	-2.9	0.7	A+	\vdash
391	615526	6	626	.708	.083	.708	.069	.134	.006	.424	177	.424	173	208	-1.153	0.094	-1.5	0.9	-1.9	0.9	A+	<u> </u>
392	618594	6	627	.783	.094	.783	.048	.065	.010	.373	191	.373	120	136	-1.579	0.104	-0.9	1.0	-1.3	0.9	A-	\vdash
393	618593	6	1253	.646	.120	.646	.131	.093	.011	.487	237	.487	242	128	-0.820	0.064	-5.2	0.9	-4.8	0.8	A+	\vdash
394	615509	6	5636	.869	.869	.066	.036	.024	.005	.466	.466	269	223	184	-2.223	0.042	-5.1	0.9	-9.3	0.7	A+	A-
395	619303	6	627	.447	.368	.447	.091	.085	.010	.387	174	.387	101	132	0.150	0.086	-2.1	0.9	-2.0	0.9	A-	
396	618790	6	5636	.414	.287	.047	.414	.243	.009	.348	085	194	.348	146	0.319	0.029	-1.2	1.0	1.3	1.0	A+	B-
397	620217	6	627	.499	.161	.089	.233	.499	.018	.479	224	228	108	.479	-0.114	0.086	-4.1	0.9	-4.0	0.9	A-	\vdash
398	619121	6	5636	.460	.085	.242	.191	.460	.022	.369	191	040	201	.369	0.072	0.029	-1.9	1.0	-1.6	1.0	A+	Α-
399	618792	6	1253	.707	.116	.062	.707	.109	.006	.364	144	204	.364	162	-1.027	0.066	-1.1	1.0	-1.4	0.9	A+	A+
400	620358	6	627	.447	.177	.021	.356	.447	.000	.342	076	187	239	.342	0.146	0.086	-0.1	1.0	-0.3	1.0	B-	\vdash
401	619293	6	627	.416	.132	.121	.329	.416	.002	.373	196	212	098	.373	0.283	0.086	-1.0	1.0	-1.0	1.0	A-	\vdash
402	619120	6	623	.779	.043	.103	.779	.067	.008	.295	149	087	.295	108	-1.493	0.103	0.8	1.1	0.7	1.1	A+	\vdash
403	619616 619295	6 6	623 623	.469	.469 .509	.039	.112	.372	.008	.341	.341	156	144	111	0.089	0.086	-0.5 2.9	1.0	-0.3	1.0	Α-	\vdash
<u> </u>				.344		.344	.079	.056	.013		.108	.187	210	147	0.678	0.089		1.1	2.2	1.1	A+	
405	615523	6	623 629	.502	.059	.257 .183	.151	.502	.031	.442	157	095	218	.442 078	-0.114 -0.557	0.086	-3.9	0.9	-3.7	0.9	A+	
406	619122 619298	6 6	629	.614 .822	.614	.024	.051 .822	.148	.005	.325	.283 192	157 181	126 .325	101	-0.557	0.088	2.1 -0.3	1.1	1.3 -0.6	0.9	A+	
<u> </u>	615524	6	629	_	.043	.200		.661		.430	192	142	225		-0.830	0.112	-0.5		-0.8	0.9	A+	\vdash
408				.661			.048		.014					.430				0.9			A+	
409	615525 619301	6	626 626	.669 .752	.090	.171	.059	.669 .752	.011	.474 .545	117 254	261 254	276 263	.474 .545	-0.927 -1.383	0.091	-3.1 -3.7	0.9	-3.0 -4.4	0.9	A+ B+	$\vdash\vdash\vdash$
410		6		.752		.102		.197		.070												$\vdash\vdash\vdash$
411	619123 619299	6	626 626	.824	.181	.038	.318	.034	.010	.524	.082	.070 204	067 304	010 242	0.868 -1.878	0.092 0.112	4.4 -2.5	1.2 0.8	5.8 -4.0	1.4 0.6	A+ A-	\vdash
412	615513	6	627	.622	.622	.190	.094	.034	.010	.401	.524	204	304	242	-0.714	0.112	-2.5 -0.9		-4.0 -0.4	1.0		$\vdash\vdash\vdash$
																		1.0			A+	\vdash
414	617740	6	627 627	.608 .727	.209	.070	.112	.608	.002	.530	213	282	303	.530	-0.643	0.087	-5.1	0.8	-5.1 -0.9	0.8	A+ ^	\vdash
415	619300	р	627	./2/	.048	.166	.046	.727	.013	.424	207	192	231	.424	-1.303	0.096	-1.2	0.9	-0.9	0.9	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
416	615534	Grade 6	1253	.880	.880	.032	.042	.036	.010	.484	.484	200	259	219	-2.347	0.094	-2.2	in 0.9	-4.5	out 0.6	/F A+	/B A-
417	619134	6	627	.558	.558	.169	.180	.030	.014	.508	.508	201	253	219	-0.442	0.034	-4.1	0.9	-3.8	0.0	A-	A-
418	616333	6	626	.768	.029	.768	.109	.086	.008	.480	137	.480	253	235	-1.298	0.101	-2.4	0.9	-3.5	0.8	A+	
419	615522	6	626	.102	.021	.839	.029	.102	.010	106	116	.321	184	106	2.546	0.139	1.3	1.1	4.5	1.8	A+	
420	619302	6	626	.494	.189	.133	.173	.494	.013	.336	.034	248	149	.336	0.093	0.085	0.2	1.0	-0.1	1.0	A+	
421	618592	6	1251	.595	.106	.595	.126	.166	.007	.380	176	.380	189	129	-0.461	0.061	-1.2	1.0	-1.1	1.0	A+	A-
422	615516	6	626	.246	.030	.024	.246	.693	.006	.089	120	165	.089	.088	1.160	0.098	3.0	1.2	4.6	1.4	A-	
423	618789	6	626	.748	.748	.077	.037	.133	.006	.283	.283	159	203	028	-1.384	0.098	1.3	1.1	1.1	1.1	A-	
424	615511	6	1251	.440	.401	.440	.122	.032	.005	.297	199	.297	021	130	0.156	0.061	2.1	1.0	1.8	1.1	A-	A+
425	615612	6	626	.385	.486	.385	.085	.032	.013	.176	.049	.176	136	192	0.397	0.088	4.6	1.2	4.7	1.2	A+	
426	615519	6	625	.550	.333	.061	.056	.550	.000	.286	106	192	203	.286	-0.328	0.085	1.7	1.1	1.4	1.1	A-	
427	619313	6	625	.434	.434	.264	.211	.082	.010	.316	.316	109	183	084	0.186	0.086	0.9	1.0	0.6	1.0	A-	
428	615535	6	1253	.652	.077	.652	.093	.176	.002	.428	230	.428	261	135	-0.832	0.063	-3.2	0.9	-3.2	0.9	A+	
429	615510	6	1256	.678	.206	.047	.067	.678	.002	.295	111	182	178	.295	-0.935	0.064	1.2	1.0	1.3	1.1	A+	
430	618590	6	1251	.333	.270	.333	.213	.177	.006	.265	131	.265	086	047	0.672	0.063	1.6	1.0	2.1	1.1	A+	A-
431	615512	6	1253	.625	.073	.625	.098	.192	.012	.340	181	.340	143	104	-0.616	0.063	0.2	1.0	0.4	1.0	A-	A-
432	618791	6	1255	.583	.070	.583	.148	.186	.014	.394	220	.394	182	105	-0.483	0.062	-1.3	1.0	-1.4	1.0	A+	
433	616332	6	1248	.678	.678	.091	.118	.097	.016	.403	.403	170	161	173	-0.961	0.065	-1.7	1.0	-2.1	0.9	A+	A-
434	615517	6	1251	.689	.054	.162	.090	.689	.005	.571	243	363	224	.571	-1.008	0.065	-7.5	0.8	-7.6	0.7	A-	A-
435	615560	6	627	.353	.064	.353	.507	.070	.006	.240	167	.240	016	235	0.540	0.089	2.3	1.1	2.6	1.1	A+	
436	619132	6	626	.746	.046	.070	.746	.131	.006	.408	181	230	.408	142	-1.150	0.098	-1.4	0.9	-1.8	0.9	B-	
437	615557	6	626	.754	.072	.754	.104	.061	.010	.515	247	.515	255	217	-1.393	0.099	-3.0	0.9	-3.8	0.7	A-	
438	615574	6	626	.792	.077	.792	.054	.070	.006	.451	135	.451	244	230	-1.675	0.105	-1.8	0.9	-1.8	0.9	A-	
439	617512	6	625	.203	.243	.400	.154	.203	.000	.248	134	028	080	.248	1.418	0.103	0.1	1.0	1.0	1.1	A-	
440	615566	6	627	.376	.416	.376	.112	.088	.008	.301	099	.301	104	094	0.489	0.088	0.6	1.0	1.0	1.0	A+	
441	615578	6	5636	.241	.203	.405	.241	.146	.005	.087	052	.073	.087	093	1.226	0.033	9.0	1.2	9.9	1.4	A-	A+
442	615583	6	627	.585	.585	.109	.136	.158	.013	.273	.273	123	001	139	-0.506	0.087	2.7	1.1	2.0	1.1	A-	
443	618600	6	5636	.584	.584	.175	.121	.111	.009	.397	.397	142	193	158	-0.473	0.029	-4.1	1.0	-3.9	1.0	A+	A+
444	615571	6	627	.294	.510	.147	.294	.035	.014	.266	006	141	.266	133	0.903	0.093	0.7	1.0	2.7	1.2	A-	
445	615549	6	5636	.426	.130	.112	.314	.426	.018	.391	171	194	088	.391	0.240	0.029	-4.1	1.0	-3.1	1.0	A+	A+
446	615584	6	627	.397	.195	.265	.397	.139	.005	.119	160	043	.119	.074	0.367	0.087	5.2	1.2	4.6	1.2	A+	\sqcup
447	615568	6	627	.388	.392	.093	.124	.388	.003	.352	101	220	167	.352	0.417	0.087	0.0	1.0	0.0	1.0	A+	igwdown
448	619361	6	627	.410	.410	.231	.262	.088	.010	.299	.299	113	087	192	0.297	0.087	0.9	1.0	1.6	1.1	A-	igwdown
449	619360	6	627	.424	.424	.222	.295	.046	.013	.445	.445	161	238	182	0.221	0.086	-2.7	0.9	-2.5	0.9	A-	$\vdash \vdash \vdash$
450	615581	6	627	.322	.152	.383	.322	.124	.019	.164	062	048	.164	070	0.711	0.091	3.4	1.1	3.6	1.2	A+	ш

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
451	615582	Grade 6	623	.268	.151	.323	.268	.250	.008	.145	.001	.058	.145	123	1.078	0.095	2.4	in 1.1	out 2.5	out 1.2	/F A-	/B
452	615585	6	623	.435	.432	.435	.043	.077	.013	.229	.023	.229	222	121	0.231	0.086	3.3	1.1	3.1	1.1	A-	
453	615569	6	623	.677	.202	.050	.677	.059	.013	.436	241	194	.436	065	-0.912	0.092	-1.8	0.9	-1.8	0.9	B+	$\overline{}$
454	615544	6	623	.191	.397	.303	.090	.191	.019	.243	.082	023	223	.243	1.556	0.106	-0.3	1.0	0.6	1.1	A+	
455	615586	6	629	.351	.046	.351	.526	.068	.008	.323	142	.323	116	160	0.687	0.089	-0.3	1.0	0.3	1.0	A-	$\neg \neg$
456	619362	6	629	.262	.288	.390	.053	.262	.008	.224	180	.103	195	.224	1.168	0.096	1.8	1.1	2.5	1.2	A-	
457	615545	6	629	.277	.262	.313	.143	.277	.005	.367	147	114	076	.367	1.091	0.095	-1.2	1.0	0.3	1.0	A-	
458	615543	6	629	.490	.127	.154	.490	.219	.010	.330	157	158	.330	075	0.013	0.086	0.8	1.0	0.6	1.0	A-	
459	615570	6	629	.673	.156	.073	.673	.089	.010	.459	185	273	.459	175	-0.871	0.091	-2.7	0.9	-2.9	0.8	A-	
460	615546	6	626	.300	.377	.213	.300	.107	.003	.266	047	218	.266	.018	0.853	0.092	0.6	1.0	1.6	1.1	A+	
461	615552	6	626	.227	.166	.227	.490	.115	.002	.101	040	.101	.028	099	1.273	0.100	2.1	1.1	4.6	1.4	A-	
462	618795	6	626	.283	.283	.391	.090	.232	.005	.206	.206	012	155	060	0.944	0.093	1.9	1.1	2.3	1.2	A-	
463	615550	6	626	.425	.235	.304	.425	.027	.010	.252	038	137	.252	107	0.231	0.086	2.6	1.1	2.8	1.1	B+	
464	617742	6	626	.340	.230	.401	.340	.018	.011	.274	191	005	.274	130	0.635	0.089	1.2	1.0	1.6	1.1	A-	
465	618805	6	626	.414	.230	.190	.150	.414	.016	.340	018	093	250	.340	0.274	0.086	0.2	1.0	0.2	1.0	A+	
466	615565	6	627	.236	.112	.633	.236	.018	.002	.187	244	.045	.187	172	1.184	0.098	0.8	1.0	3.3	1.3	A+	
467	617743	6	627	.499	.354	.030	.115	.499	.002	.380	216	221	139	.380	-0.138	0.085	-0.6	1.0	-1.0	1.0	A-	
468	615597	6	627	.510	.199	.510	.156	.129	.005	.224	103	.224	122	058	-0.199	0.085	4.0	1.1	4.2	1.2	A+	
469	615558	6	627	.494	.262	.494	.120	.112	.013	.346	073	.346	138	225	-0.138	0.086	0.8	1.0	0.7	1.0	A-	
470	618595	6	627	.627	.099	.152	.105	.627	.018	.475	259	143	239	.475	-0.784	0.089	-2.4	0.9	-2.8	0.9	A+	
471	615547	6	627	.418	.132	.418	.201	.220	.029	.328	140	.328	189	008	0.189	0.087	1.1	1.0	1.6	1.1	A-	
472	615573	6	626	.514	.401	.027	.514	.054	.003	.405	224	145	.405	215	0.009	0.085	-2.2	0.9	-2.4	0.9	A+	
473	619135	6	626	.275	.302	.176	.243	.275	.005	.110	.003	020	027	.110	1.181	0.094	2.7	1.1	4.5	1.3	A+	
474	615559	6	626	.733	.091	.035	.733	.133	.008	.516	300	216	.516	195	-1.083	0.097	-3.4	0.8	-4.3	0.7	A-	
475	618596	6	626	.626	.190	.104	.626	.061	.019	.496	159	270	.496	204	-0.547	0.089	-4.0	0.9	-4.1	0.8	A-	
476	615548	6	626	.324	.273	.259	.324	.117	.027	.330	150	023	.330	090	0.893	0.091	-0.9	1.0	-0.3	1.0	A+	
477	615575	6	626	.645	.058	.645	.070	.222	.005	.439	173	.439	212	209	-0.818	0.089	-2.2	0.9	-2.2	0.9	A-	
478	619358	6	626	.439	.171	.439	.153	.227	.010	.334	126	.334	206	024	0.144	0.086	0.5	1.0	0.6	1.0	A-	
479	615563	6	626	.553	.553	.077	.305	.056	.010	.379	.379	178	141	177	-0.381	0.086	-0.7	1.0	-0.6	1.0	A-	
480	618597	6	626	.503	.503	.353	.080	.045	.019	.459	.459	221	247	080	-0.177	0.086	-3.4	0.9	-3.1	0.9	C-	
481	615579	6	626	.203	.355	.241	.203	.179	.022	.072	.105	049	.072	048	1.410	0.105	2.2	1.1	5.2	1.5	A+	
482	618599	6	625	.506	.157	.139	.197	.506	.002	.425	095	138	320	.425	-0.127	0.085	-2.6	0.9	-2.6	0.9	A-	
483	618598	6	625	.490	.219	.490	.061	.230	.000	.408	246	.408	226	115	-0.053	0.085	-2.2	0.9	-1.7	0.9	A-	
484	615564	6	625	.378	.168	.200	.378	.250	.005	.313	080	199	.313	082	0.455	0.087	0.3	1.0	0.8	1.0	A+	
485	617513	6	625	.259	.408	.224	.101	.259	.008	.265	.095	205	222	.265	1.064	0.096	0.5	1.0	1.2	1.1	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
486	619359	Grade 6	625	.344	.382	.182	.344	.078	.013	.196	.093	267	.196	085	0.607	0.089	3.0	in 1.1	out 2.8	0ut 1.1	/F A+	/B
487	615562	6	626	.527	.141	.527	.069	.254	.010	.393	279	.393	245	021	-0.238	0.085	-1.3	1.0	-1.2	1.0	A-	
488	618609	6	625	.701	.085	.115	.701	.099	.000	.367	252	212	.367	101	-1.055	0.092	-0.5	1.0	-1.3	0.9	A-	
489	615576	6	627	.443	.271	.102	.174	.443	.010	.396	294	.025	136	.396	0.106	0.086	-1.2	1.0	-1.2	1.0	B-	
490	615551	6	629	.523	.523	.126	.245	.095	.011	.397	.397	160	099	248	-0.142	0.086	-1.2	1.0	-1.3	1.0	A-	
491	615577	6	626	.190	.190	.377	.147	.278	.008	.124	.124	.131	148	056	1.501	0.106	1.6	1.1	2.9	1.3	Α-	
492	619149	6	627	.317	.262	.317	.225	.182	.014	.160	044	.160	044	.024	0.775	0.092	3.1	1.1	4.2	1.3	A+	
493	618794	6	625	.674	.674	.067	.141	.117	.002	.287	.287	235	061	160	-0.918	0.090	0.5	1.0	1.7	1.1	A-	
494	615567	6	626	.649	.078	.113	.649	.152	.008	.389	222	194	.389	080	-0.627	0.089	-1.2	1.0	-1.4	0.9	A+	
495	615235	7	430	.707	.161	.067	.707	.065	.000	.399	212	225	.399	193	-1.035	0.112	-1.1	0.9	-1.4	0.9	A-	A-
496	615275	7	876	.539	.185	.175	.096	.539	.006	.415	012	280	258	.415	-0.223	0.072	-3.5	0.9	-3.1	0.9	A+	A-
497	615238	7	428	.895	.054	.895	.023	.028	.000	.339	261	.339	189	100	-2.432	0.163	-0.4	0.9	-1.5	0.8	A+	
498	615252	7	445	.636	.036	.148	.180	.636	.000	.533	126	314	317	.533	-0.684	0.104	-4.2	0.8	-4.4	0.8	C-	
499	615234	7	428	.386	.269	.140	.203	.386	.002	.448	204	238	116	.448	0.498	0.105	-2.6	0.9	-2.3	0.9	A+	
500	615253	7	428	.610	.063	.124	.610	.203	.000	.474	182	233	.474	273	-0.530	0.105	-3.2	0.9	-3.2	0.9	A+	
501	615230	7	6496	.598	.206	.085	.598	.108	.004	.357	194	178	.357	096	-0.504	0.027	-2.2	1.0	-2.3	1.0	A-	A+
502	615258	7	428	.477	.477	.133	.182	.201	.007	.500	.500	238	286	100	0.076	0.103	-3.9	0.9	-3.2	0.9	A-	
503	615232	7	428	.577	.129	.152	.136	.577	.007	.474	209	203	210	.474	-0.386	0.104	-3.4	0.9	-3.3	0.9	A+	
504	615268	7	428	.533	.241	.094	.124	.533	.009	.461	196	200	206	.461	-0.189	0.103	-2.8	0.9	-2.8	0.9	A-	
505	618857	7	6496	.286	.285	.201	.286	.219	.009	.254	100	141	.254	.028	0.966	0.029	2.1	1.0	5.5	1.1	A-	A+
506	618799	7	428	.299	.467	.154	.299	.068	.012	.186	.069	222	.186	073	0.922	0.112	1.5	1.1	1.9	1.1	A-	
507	616023	7	1286	.450	.143	.229	.167	.450	.011	.345	206	015	211	.345	0.134	0.060	-0.2	1.0	-0.5	1.0	A+	A+
508	615254	7	431	.292	.091	.415	.292	.195	.007	.286	100	068	.286	065	0.972	0.111	-0.4	1.0	0.2	1.0	A+	A-
509	615605	7	431	.478	.478	.153	.123	.239	.007	.291	.291	240	.001	039	0.079	0.102	0.2	1.0	0.9	1.0	A-	A-
510	616350	7	431	.381	.116	.381	.327	.169	.007	.280	279	.280	.079	111	0.529	0.105	-0.2	1.0	-0.1	1.0	A-	A+
511	615997	7	431	.446	.149	.446	.320	.077	.009	.196	132	.196	.047	101	0.221	0.103	2.5	1.1	2.8	1.1	A+	A+
512	615244	7	431	.397	.160	.116	.316	.397	.012	.274	082	109	041	.274	0.444	0.104	1.2	1.0	1.3	1.1	A-	A-
513	615269	7	431	.522	.211	.522	.070	.183	.014	.425	223	.425	192	056	-0.135	0.103	-2.8	0.9	-2.6	0.9	A-	A+
514	615273	7	859	.552	.232	.552	.134	.069	.014	.367	093	.367	218	110	-0.302	0.073	-1.2	1.0	-1.4	1.0	A-	A-
515	616009	7	450	.711	.193	.042	.053	.711	.000	.379	338	064	114	.379	-1.063	0.110	-1.7	0.9	-1.4	0.9	A+	
516	616351	7	450	.247	.098	.247	.387	.260	.009	.149	116	.149	.051	062	1.168	0.114	0.5	1.0	2.2	1.2	A+	
517	615606	7	450	.307	.344	.164	.176	.307	.009	.259	.036	183	098	.259	0.829	0.107	0.1	1.0	0.3	1.0	A+	\sqcup
518	615237	7	450	.298	.220	.311	.298	.164	.007	.196	077	182	.196	.153	0.889	0.108	0.4	1.0	0.3	1.0	A+	\sqcup
519	618793	7	450	.553	.264	.124	.051	.553	.007	.412	119	257	170	.412	-0.316	0.100	-2.2	0.9	-2.3	0.9	B-	\sqcup
520	615245	7	450	.804	.804	.062	.053	.071	.009	.410	.410	250	131	166	-1.672	0.127	-0.6	1.0	-1.3	0.9	A-	ш

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M /F	W
521	615274	Grade 7	878	.751	.051	.088	.751	.101	.009	.423	223	189	.423	174	-1.343	0.083	-1.8	in 0.9	-2.5	out 0.9	/F A+	/B A-
522	615609	7	434	.412	.412	.242	.251	.095	.000	.353	.353	151	186	097	0.435	0.104	-0.6	1.0	-0.3	1.0	A-	
523	615607	7	434	.498	.076	.281	.145	.498	.000	.387	213	200	133	.387	0.050	0.103	-1.5	1.0	-1.5	0.9	A-	
524	615239	7	434	.770	.060	.023	.148	.770	.000	.452	254	081	333	.452	-1.346	0.120	-1.7	0.9	-2.0	0.8	A-	
525	615264	7	434	.606	.606	.159	.108	.124	.002	.414	.414	242	247	097	-0.469	0.105	-1.8	0.9	-1.9	0.9	A-	
526	616017	7	434	.705	.088	.705	.088	.115	.005	.418	213	.418	263	151	-0.981	0.112	-1.3	0.9	-1.7	0.9	A+	
527	616004	7	434	.889	.058	.039	.009	.889	.005	.366	158	293	157	.366	-2.390	0.164	-1.0	0.9	-1.8	0.7	B+	
528	617514	7	879	.537	.224	.135	.537	.101	.002	.304	025	275	.304	145	-0.190	0.072	1.0	1.0	1.2	1.0	A+	A-
529	616349	7	430	.649	.649	.107	.121	.119	.005	.465	.465	293	191	139	-0.779	0.107	-3.3	0.9	-3.2	0.8	B+	A+
530	618797	7	430	.454	.274	.067	.454	.200	.005	.254	075	204	.254	037	0.122	0.102	1.2	1.0	1.1	1.0	A-	A-
531	617517	7	430	.591	.074	.193	.591	.130	.012	.470	149	246	.470	144	-0.513	0.104	-3.6	0.9	-3.2	0.9	B-	B-
532	617515	7	861	.283	.378	.196	.135	.283	.008	.322	030	161	086	.322	0.963	0.079	-0.9	1.0	-1.0	1.0	A-	B-
533	616018	7	430	.212	.158	.212	.579	.042	.009	.166	011	.166	.018	144	1.373	0.123	0.7	1.0	3.0	1.3	B-	A+
534	615267	7	430	.319	.319	.479	.084	.107	.012	.243	.243	.088	210	186	0.749	0.109	1.0	1.0	1.5	1.1	A-	A+
535	616006	7	430	.393	.063	.144	.386	.393	.014	.369	214	116	096	.369	0.379	0.104	-1.3	1.0	-1.4	0.9	A+	A+
536	616345	7	430	.440	.072	.221	.440	.265	.002	.375	100	123	.375	216	0.247	0.103	-0.8	1.0	-0.5	1.0	A-	
537	616010	7	430	.605	.151	.226	.605	.016	.002	.137	145	.024	.137	087	-0.509	0.105	4.1	1.2	4.9	1.3	A+	
538	615282	7	430	.540	.198	.172	.086	.540	.005	.477	159	279	192	.477	-0.213	0.103	-3.7	0.9	-3.4	0.9	A-	
539	620004	7	858	.442	.240	.442	.099	.215	.005	.347	154	.347	253	055	0.162	0.073	-0.5	1.0	-0.3	1.0	A-	A+
540	617749	7	430	.558	.558	.070	.237	.123	.012	.444	.444	151	167	263	-0.318	0.104	-2.5	0.9	-2.5	0.9	A-	
541	616019	7	430	.526	.342	.077	.526	.049	.007	.432	279	122	.432	140	-0.158	0.103	-2.4	0.9	-2.1	0.9	A-	
542	615246	7	430	.277	.091	.128	.495	.277	.009	.198	038	225	.042	.198	1.048	0.114	1.9	1.1	2.1	1.2	A+	
543	615256	7	434	.636	.636	.159	.134	.067	.005	.513	.513	264	266	156	-0.740	0.106	-3.8	0.9	-3.7	0.8	A-	
544	615608	7	434	.311	.237	.092	.311	.357	.002	.312	071	138	.312	127	0.808	0.110	0.1	1.0	0.7	1.1	A-	
545	616026	7	862	.580	.067	.580	.210	.139	.004	.374	139	.374	138	231	-0.462	0.073	-1.2	1.0	-1.8	1.0	A-	A-
546	617516	7	434	.539	.099	.168	.539	.191	.002	.468	202	208	.468	207	-0.278	0.103	-3.3	0.9	-2.9	0.9	B-	
547	615270	7	434	.311	.249	.196	.233	.311	.012	.148	036	108	.068	.148	0.804	0.110	3.3	1.2	3.4	1.2	A+	
548	616005	7	434	.493	.191	.120	.187	.493	.009	.458	166	194	169	.458	-0.072	0.103	-2.9	0.9	-2.6	0.9	A+	
549	615247	7	434	.740	.118	.069	.062	.740	.012	.583	256	276	283	.583	-1.314	0.117	-4.0	0.8	-4.7	0.7	A+	
550	615240	7	427	.712	.712	.138	.080	.070	.000	.366	.366	278	103	166	-1.020	0.112	-1.1	0.9	-1.3	0.9	A+	A-
551	615265	7	427	.300	.049	.300	.515	.134	.002	009	155	009	.191	171	0.936	0.111	4.4	1.2	5.4	1.4	A-	B-
552	616021	7	855	.371	.112	.233	.371	.278	.006	.150	004	096	.150	044	0.499	0.075	4.4	1.1	4.5	1.2	A+	B+
553	615276	7	427	.398	.127	.398	.152	.321	.002	.391	079	.391	194	190	0.449	0.105	-1.3	1.0	-0.9	1.0	A-	B-
554	617750	7	427	.440	.440	.267	.141	.150	.002	.303	.303	226	075	050	0.254	0.103	0.7	1.0	0.5	1.0	A-	A+
555	615259	7	427	.410	.410	.098	.429	.052	.012	.591	.591	290	306	147	0.382	0.105	-6.0	0.8	-5.7	0.8	A-	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	ID.	Grade	,,	ı vai	1 (4)	1 (5)	1 (0)	1 (5)	1 (-)	i (Di3	11(A)	11(0)	11(0)	11(0)	IVICUS	IVISE	in	in	out	out	/F	/B
556	618800	7	427	.719	.719	.122	.075	.070	.014	.518	.518	351	196	181	-1.114	0.115	-3.0	0.9	-3.1	0.8	B+	A-
557	615241	7	442	.396	.396	.088	.222	.292	.002	.425	.425	230	272	037	0.470	0.104	-1.7	0.9	-1.3	0.9	A-	
558	615266	7	442	.450	.095	.305	.145	.450	.005	.452	163	171	233	.452	0.210	0.103	-2.3	0.9	-2.2	0.9	A+	
559	616020	7	873	.560	.181	.136	.111	.560	.012	.462	150	211	217	.462	-0.320	0.073	-4.3	0.9	-4.4	0.9	A+	A-
560	615277	7	442	.572	.572	.274	.091	.059	.005	.398	.398	077	289	265	-0.365	0.104	-0.6	1.0	-1.0	1.0	A+	
561	615281	7	442	.321	.321	.324	.249	.102	.005	.220	.220	036	096	091	0.839	0.109	2.2	1.1	2.9	1.2	A+	
562	615260	7	442	.649	.054	.199	.091	.649	.007	.546	261	274	251	.546	-0.749	0.107	-4.1	8.0	-4.0	0.8	A+	
563	616347	7	442	.661	.079	.152	.102	.661	.007	.573	245	215	357	.573	-0.807	0.108	-4.7	8.0	-4.5	0.7	A+	
564	615248	7	430	.467	.088	.221	.223	.467	.000	.289	.004	337	013	.289	0.104	0.102	1.1	1.0	1.2	1.1	B-	A-
565	617518	7	430	.437	.037	.470	.056	.437	.000	.224	122	088	192	.224	0.241	0.103	2.5	1.1	2.3	1.1	A-	A-
566	615272	7	875	.709	.709	.094	.149	.047	.002	.508	.508	244	294	256	-1.057	0.079	-4.1	0.9	-4.7	0.8	A-	A-
567	616355	7	430	.437	.112	.165	.279	.437	.007	.314	083	183	123	.314	0.230	0.103	0.4	1.0	0.5	1.0	A+	B-
568	615278	7	430	.616	.133	.098	.151	.616	.002	.416	175	160	268	.416	-0.585	0.105	-1.6	0.9	-1.7	0.9	A-	B-
569	616352	7	430	.137	.137	.316	.126	.419	.002	.170	.170	050	177	.046	1.969	0.144	0.3	1.0	1.1	1.2	A-	A-
570	615257	7	430	.265	.458	.265	.216	.061	.000	.085	.189	.085	181	242	1.092	0.114	2.5	1.1	3.4	1.3	A-	A+
571	615242	7	430	.519	.170	.519	.088	.221	.002	.416	186	.416	280	139	-0.133	0.102	-1.8	0.9	-2.0	0.9	A+	A+
572	615250	7	428	.346	.103	.458	.091	.346	.002	.438	212	177	190	.438	0.644	0.108	-2.6	0.9	-2.1	0.9	A+	
573	620005	7	428	.201	.217	.463	.201	.115	.005	002	198	.285	002	131	1.471	0.126	2.9	1.2	3.5	1.4	A-	
574	615271	7	856	.471	.471	.320	.050	.153	.006	.359	.359	076	209	230	0.038	0.073	-1.1	1.0	-0.7	1.0	B-	B-
575	617751	7	428	.675	.675	.129	.131	.061	.005	.373	.373	216	083	227	-0.899	0.109	-1.3	0.9	0.0	1.0	A-	
576	616025	7	428	.451	.355	.068	.451	.122	.005	.281	119	095	.281	118	0.149	0.103	1.5	1.1	1.5	1.1	A+	
577	616353	7	428	.470	.189	.206	.129	.470	.007	.413	176	097	218	.413	0.061	0.103	-1.9	0.9	-2.1	0.9	A-	
578	616001	7	428	.549	.115	.208	.549	.115	.014	.423	153	214	.423	133	-0.317	0.104	-2.0	0.9	-2.2	0.9	A+	
579	615262	7	428	.530	.079	.171	.530	.208	.012	.347	211	276	.347	.046	-0.225	0.103	-0.1	1.0	-0.1	1.0	A-	
580	616008	7	428	.542	.072	.061	.542	.325	.000	.257	272	137	.257	053	-0.270	0.102	0.7	1.0	0.9	1.0	A-	
581	615236	7	428	.591	.297	.591	.082	.028	.002	.255	125	.255	163	081	-0.515	0.104	1.5	1.1	1.2	1.1	B+	
582	620002	7	428	.280	.269	.259	.280	.189	.002	.237	.056	156	.237	135	0.955	0.113	0.6	1.0	0.9	1.1	B-	
583	617748	7	428	.131	.098	.416	.131	.348	.007	057	150	.185	057	025	1.984	0.148	1.4	1.2	3.6	1.6	A-	
584	616002	7	428	.115	.115	.374	.273	.229	.009	.024	.024	.059	034	008	2.196	0.160	0.5	1.1	2.6	1.5	B+	
585	615251	7	445	.099	.710	.067	.099	.121	.002	151	.345	158	151	217	2.360	0.164	1.2	1.2	4.0	1.8	B+	
586	620003	7	445	.362	.265	.362	.198	.175	.000	.231	169	.231	028	066	0.573	0.104	1.4	1.1	2.0	1.1	A+	
587	616011	7	445	.400	.148	.142	.400	.308	.002	.217	077	281	.217	.048	0.390	0.102	2.1	1.1	2.2	1.1	A+	
588	615255	7	445	.614	.112	.121	.614	.142	.011	.612	342	288	.612	277	-0.615	0.104	-6.4	0.8	-6.3	0.7	A+	
589	617747	7	431	.452	.452	.158	.218	.165	.007	.413	.413	175	174	103	0.169	0.102	-3.1	0.9	-2.7	0.9	B-	A+
590	616354	7	431	.622	.186	.622	.139	.046	.007	.422	197	.422	181	153	-0.598	0.105	-2.4	0.9	-2.3	0.9	B+	A+

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	N	rvai	P(A)	P(D)	P(C)	P(D)	F(-)	PUDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
591	616013	7	431	.381	.070	.309	.225	.381	.016	.265	236	033	021	.265	0.484	0.104	0.8	1.0	0.8	1.0	A+	A+
592	618798	7	431	.336	.172	.239	.234	.336	.019	.342	048	080	149	.342	0.693	0.107	-1.0	1.0	-0.7	1.0	A-	A+
593	615996	7	428	.255	.570	.147	.255	.028	.000	.293	325	.105	.293	023	1.033	0.116	0.0	1.0	0.2	1.0	A-	
594	617752	7	428	.215	.453	.215	.122	.210	.000	.228	.025	.228	275	040	1.274	0.122	0.4	1.0	1.0	1.1	B-	
595	615261	7	428	.486	.089	.486	.327	.096	.002	.404	242	.404	111	236	-0.095	0.102	-1.9	0.9	-1.9	0.9	A-	
596	615263	7	428	.353	.117	.166	.355	.353	.009	.412	140	196	120	.412	0.505	0.107	-2.0	0.9	-1.5	0.9	A+	
597	616346	7	428	.430	.164	.178	.430	.220	.009	.454	190	298	.454	046	0.143	0.103	-3.0	0.9	-3.2	0.9	A-	
598	615249	7	430	.377	.167	.340	.377	.105	.012	.260	166	037	.260	071	0.525	0.106	1.8	1.1	1.8	1.1	A-	
599	615999	7	430	.644	.644	.147	.107	.086	.016	.414	.414	191	169	140	-0.793	0.107	-2.1	0.9	-1.8	0.9	B+	A+
600	616348	7	442	.618	.231	.618	.036	.106	.009	.230	014	.230	150	186	-0.596	0.106	3.1	1.1	3.1	1.2	A+	
601	616014	7	427	.548	.187	.127	.548	.119	.019	.372	097	229	.372	143	-0.269	0.104	-0.5	1.0	-0.6	1.0	A+	B+
602	616007	7	434	.198	.198	.230	.426	.134	.012	008	008	040	.145	049	1.477	0.127	2.7	1.2	5.4	1.7	B-	
603	616616	7	430	.484	.340	.063	.109	.484	.005	.265	.055	281	270	.265	0.023	0.102	1.8	1.1	1.5	1.1	B+	A-
604	618806	7	428	.729	.117	.079	.729	.072	.002	.448	218	235	.448	194	-1.177	0.114	-2.3	0.9	-2.4	8.0	A+	
605	617531	7	428	.266	.016	.266	.086	.629	.002	.067	177	.067	224	.137	1.020	0.114	2.7	1.2	3.5	1.3	A-	
606	616626	7	445	.474	.474	.389	.047	.088	.002	.454	.454	214	210	273	0.052	0.100	-3.2	0.9	-3.1	0.9	B-	
607	618607	7	428	.554	.150	.047	.554	.250	.000	.229	166	191	.229	033	-0.268	0.103	1.9	1.1	1.8	1.1	A-	
608	616984	7	6496	.662	.065	.022	.248	.662	.003	.368	204	082	222	.368	-0.811	0.028	-3.0	1.0	-3.2	1.0	A-	B-
609	616991	7	856	.329	.195	.134	.335	.329	.006	.254	062	196	027	.254	0.740	0.077	1.1	1.0	1.3	1.1	A-	A+
610	620012	7	428	.551	.133	.182	.551	.126	.007	.384	253	116	.384	124	-0.266	0.104	-1.3	1.0	-1.4	0.9	A-	
611	618604	7	6496	.583	.583	.299	.051	.060	.007	.212	.212	019	162	160	-0.442	0.027	9.9	1.1	9.7	1.1	A-	A+
612	616978	7	428	.414	.115	.414	.112	.351	.009	.049	178	.049	147	.206	0.359	0.104	5.9	1.2	5.2	1.3	A-	
613	618608	7	431	.896	.028	.042	.896	.028	.007	.535	237	288	.535	151	-2.434	0.167	-1.3	0.8	-3.1	0.5	A-	B-
614	616992	7	876	.384	.086	.384	.239	.289	.003	.150	045	.150	013	072	0.492	0.073	4.4	1.1	5.0	1.2	A+	B-
615	616981	7	431	.627	.088	.116	.160	.627	.009	.553	235	226	227	.553	-0.615	0.106	-5.1	0.8	-4.6	0.8	B+	A-
616	616979	7	431	.473	.473	.278	.107	.125	.016	.314	.314	135	165	.011	0.078	0.103	-0.2	1.0	0.7	1.0	A-	A+
617	617001	7	450	.820	.060	.820	.027	.084	.009	.313	001	.313	142	220	-1.803	0.132	0.2	1.0	-0.1	1.0	A-	
618	618804	7	881	.329	.329	.182	.207	.271	.011	.191	.191	.036	113	048	0.725	0.075	2.5	1.1	3.1	1.1	A-	B-
619	616982	7	450	.596	.280	.044	.071	.596	.009	.308	172	136	062	.308	-0.497	0.102	-0.4	1.0	-0.3	1.0	A-	
620	616980	7	450	.138	.478	.216	.156	.138	.013	012	.295	124	153	012	1.964	0.143	1.2	1.1	2.4	1.4	A+	
621	617002	7	434	.440	.440	.122	.353	.085	.000	.326	.326	130	166	143	0.305	0.103	0.3	1.0	0.7	1.0	A+	
622	616993	7	862	.565	.565	.142	.122	.169	.002	.079	.079	036	110	.043	-0.365	0.073	7.5	1.2	7.0	1.2	A-	A+
623	616983	7	434	.818	.108	.046	.023	.818	.005	.515	336	246	245	.515	-1.705	0.132	-2.0	0.9	-2.9	0.7	A-	
624	618892	7	434	.173	.288	.173	.311	.224	.005	.092	193	.092	.013	.126	1.812	0.134	1.3	1.1	2.5	1.3	A-	
625	617003	7	430	.512	.512	.230	.049	.205	.005	.414	.414	149	234	164	-0.140	0.102	-2.5	0.9	-2.3	0.9	B-	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
626	616985	7	430	.542	.093	.174	.181	.542	.009	.370	142	169	091	.370	-0.284	0.103	-1.0	1.0	-1.3	1.0	A+	B-
627	616623	7	430	.381	.130	.233	.381	.242	.014	.212	149	039	.212	.010	0.434	0.105	2.3	1.1	2.3	1.1	A+	B-
628	616631	7	430	.256	.481	.102	.158	.256	.002	.426	117	113	217	.426	1.179	0.117	-1.8	0.9	-1.9	0.9	C-	
629	617532	7	430	.607	.198	.044	.149	.607	.002	.360	296	209	003	.360	-0.520	0.105	-0.7	1.0	-0.3	1.0	A-	
630	616624	7	430	.507	.142	.507	.177	.158	.016	.424	260	.424	126	127	-0.093	0.103	-2.0	0.9	-1.8	0.9	A-	
631	616995	7	434	.369	.217	.369	.205	.207	.002	.214	181	.214	026	011	0.516	0.106	2.6	1.1	3.2	1.2	A-	
632	616617	7	434	.378	.357	.378	.228	.025	.012	.349	137	.349	090	195	0.462	0.106	-0.1	1.0	0.1	1.0	A-	
633	616996	7	427	.637	.192	.082	.637	.089	.000	.434	227	199	.434	228	-0.640	0.106	-1.9	0.9	-2.5	0.9	C-	A+
634	616618	7	427	.347	.187	.347	.281	.169	.016	.188	077	.188	122	.043	0.675	0.108	2.4	1.1	3.3	1.2	A+	A-
635	618610	7	442	.817	.817	.086	.048	.041	.009	.320	.320	176	165	125	-1.778	0.132	0.0	1.0	-0.6	0.9	A-	
636	618861	7	442	.274	.274	.192	.267	.258	.009	.120	.120	156	.085	020	1.094	0.114	3.3	1.2	4.2	1.4	B-	
637	616997	7	430	.286	.288	.212	.286	.214	.000	.306	020	167	.306	148	0.977	0.112	-0.3	1.0	0.2	1.0	B-	A-
638	616987	7	430	.593	.049	.174	.593	.172	.012	.408	161	236	.408	203	-0.505	0.105	-1.6	0.9	-1.5	0.9	A+	A+
639	616998	7	428	.294	.294	.334	.227	.140	.005	.282	.282	047	136	138	0.905	0.112	0.4	1.0	1.0	1.1	B-	
640	616988	7	428	.271	.072	.505	.271	.133	.019	.118	129	.148	.118	165	1.022	0.115	2.8	1.2	3.2	1.3	A-	
641	616627	7	428	.605	.154	.147	.091	.605	.002	.315	067	253	104	.315	-0.580	0.104	0.2	1.0	-0.2	1.0	A-	
642	616989	7	428	.252	.150	.402	.187	.252	.009	.217	070	025	100	.217	1.091	0.116	0.9	1.1	1.1	1.1	A-	
643	616625	7	445	.578	.079	.148	.578	.196	.000	.287	245	239	.287	.023	-0.409	0.101	1.1	1.0	1.0	1.0	A+	
644	616990	7	445	.339	.333	.339	.178	.142	.009	.132	.070	.132	194	063	0.662	0.105	2.9	1.1	3.6	1.2	A+	
645	616994	7	431	.325	.207	.325	.327	.137	.005	.087	077	.087	.067	031	0.770	0.108	3.3	1.2	3.9	1.2	B+	A+
646	618862	7	431	.404	.232	.060	.299	.404	.005	.048	125	152	.210	.048	0.394	0.103	5.7	1.2	5.1	1.2	A+	A+
647	616615	7	431	.582	.111	.582	.220	.081	.005	.365	022	.365	260	128	-0.409	0.103	-1.8	0.9	-1.2	1.0	A-	A+
648	616999	7	431	.297	.297	.320	.269	.097	.016	.166	.166	014	015	061	0.898	0.110	1.6	1.1	2.7	1.2	A+	A-
649	618606	7	428	.332	.530	.332	.089	.049	.000	.335	196	.335	104	141	0.622	0.108	-0.8	1.0	-0.3	1.0	B-	
650	618860	7	428	.610	.115	.096	.610	.178	.002	.317	162	244	.317	051	-0.654	0.104	-0.2	1.0	0.0	1.0	A+	
651	616620	7	428	.231	.171	.442	.231	.152	.005	.036	113	.111	.036	042	1.168	0.119	2.3	1.2	3.6	1.3	A+	
652	616619	7	430	.265	.265	.219	.223	.284	.009	.190	.190	.023	055	058	1.047	0.115	1.4	1.1	2.0	1.2	B-	A-
653	616622	7	430	.386	.242	.188	.177	.386	.007	.367	154	097	143	.367	0.488	0.105	-0.3	1.0	-1.0	1.0	A-	
654	618803	7	434	.459	.099	.459	.240	.198	.005	.156	082	.156	111	.028	0.090	0.103	5.0	1.2	4.3	1.2	A-	
655	616621	7	427	.089	.183	.319	.408	.089	.002	.046	193	.005	.134	.046	2.532	0.174	0.6	1.1	2.6	1.6	A-	A+
656	617000	7	442	.468	.224	.468	.208	.097	.002	.309	038	.309	237	099	0.128	0.102	1.6	1.1	2.1	1.1	A-	
657	617184	7	428	.194	.493	.194	.061	.243	.009	.269	053	.269	213	026	1.513	0.128	-0.2	1.0	1.5	1.2	A+	
658	615974	7	445	.596	.252	.079	.072	.596	.002	.298	121	191	153	.298	-0.497	0.102	0.7	1.0	0.7	1.0	A+	
659	615973	7	428	.794	.044	.794	.096	.063	.002	.424	166	.424	211	266	-1.609	0.126	-1.4	0.9	-1.5	0.9	A-	
660	616339	7	434	.866	.025	.866	.046	.060	.002	.207	171	.207	199	.013	-2.091	0.148	0.3	1.0	0.7	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Crada	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
661	615970	Grade 7	431	.550	.051	.088	.306	.550	.005	.356	227	096	151	.356	-0.262	0.102	-1.2	in 1.0	-1.1	out 1.0	/F B+	/B A+
662	617195	7	450	.831	.058	.069	.831	.036	.007	.485	219	243	.485	232	-1.881	0.134	-1.4	0.9	-2.5	0.7	A-	
663	619627	7	428	.657	.657	.243	.058	.042	.000	.358	.358	175	213	222	-0.873	0.107	-1.2	1.0	-1.3	0.9	A+	
664	617189	7	6496	.647	.087	.161	.647	.101	.005	.420	175	245	.420	159	-0.743	0.028	-7.6	0.9	-7.9	0.9	A+	A-
665	616022	7	428	.572	.572	.030	.285	.112	.000	.381	.381	123	159	303	-0.354	0.104	-1.2	1.0	-1.3	0.9	Α-	
666	617183	7	6496	.718	.718	.080	.066	.131	.005	.399	.399	260	242	087	-1.114	0.029	-5.2	0.9	-4.1	0.9	B+	A-
667	615980	7	6496	.825	.025	.077	.063	.825	.010	.411	159	195	224	.411	-1.829	0.035	-4.0	0.9	-6.4	0.8	A+	A-
668	615994	7	431	.568	.167	.097	.165	.568	.002	.501	245	186	236	.501	-0.333	0.103	-4.8	0.9	-4.3	0.8	A+	A+
669	615979	7	430	.633	.633	.067	.119	.177	.005	.331	.331	247	191	023	-0.697	0.106	-0.4	1.0	2.5	1.1	A-	A-
670	617200	7	430	.602	.063	.158	.602	.167	.009	.192	189	119	.192	.104	-0.563	0.104	3.0	1.1	3.2	1.2	A+	A+
671	617187	7	430	.402	.235	.233	.119	.402	.012	.458	128	123	222	.458	0.348	0.104	-3.6	0.9	-3.2	0.9	A+	A+
672	615610	7	430	.393	.226	.174	.198	.393	.009	.272	.038	165	106	.272	0.394	0.104	1.1	1.0	0.8	1.0	A+	A-
673	615982	7	430	.537	.114	.537	.084	.256	.009	.270	055	.270	176	057	-0.263	0.103	1.8	1.1	1.3	1.1	A+	A+
674	619311	7	430	.244	.244	.405	.174	.165	.012	.146	.146	026	.015	033	1.163	0.118	1.6	1.1	2.4	1.2	A+	A+
675	619148	7	430	.502	.074	.216	.198	.502	.009	.348	130	090	149	.348	-0.105	0.102	-0.6	1.0	-0.7	1.0	A+	A+
676	617204	7	430	.437	.158	.181	.437	.209	.014	.272	113	179	.272	.040	0.174	0.103	1.4	1.0	0.9	1.0	A+	A-
677	618008	7	430	.533	.172	.533	.163	.128	.005	.418	180	.418	184	171	-0.181	0.103	-2.4	0.9	-2.2	0.9	A+	
678	617212	7	430	.574	.240	.574	.112	.072	.002	.459	285	.459	156	162	-0.368	0.104	-2.9	0.9	-3.0	0.9	A+	
679	617218	7	430	.379	.367	.065	.379	.181	.007	.352	116	166	.352	145	0.522	0.106	-0.4	1.0	0.0	1.0	A-	
680	616340	7	430	.426	.084	.426	.121	.363	.007	.317	111	.317	158	116	0.300	0.104	0.4	1.0	1.1	1.1	A+	
681	616337	7	430	.493	.147	.181	.172	.493	.007	.388	217	104	149	.388	-0.009	0.103	-1.0	1.0	-1.5	0.9	B+	
682	619147	7	430	.488	.191	.488	.112	.200	.009	.363	132	.363	178	130	0.006	0.103	-0.4	1.0	-0.3	1.0	A-	
683	617188	7	430	.814	.065	.814	.054	.056	.012	.456	222	.456	223	209	-1.732	0.132	-1.6	0.9	-2.7	0.7	A+	
684	615975	7	430	.261	.230	.261	.344	.156	.009	.280	075	.280	.039	238	1.142	0.116	0.4	1.0	1.0	1.1	A-	
685	618009	7	434	.652	.652	.214	.042	.085	.007	.472	.472	320	187	173	-0.833	0.108	-3.4	0.9	-2.9	0.8	A-	
686	617213	7	434	.548	.076	.189	.184	.548	.002	.383	158	138	209	.383	-0.321	0.103	-0.9	1.0	-0.4	1.0	A+	
687	617190	7	434	.691	.120	.088	.099	.691	.002	.468	242	200	226	.468	-1.018	0.110	-2.6	0.9	-2.4	0.8	B+	
688	616341	7	434	.482	.037	.071	.482	.403	.007	.299	141	233	.299	074	-0.019	0.103	1.3	1.0	1.9	1.1	A-	
689	616338	7	434	.790	.042	.120	.790	.039	.009	.461	212	265	.461	126	-1.623	0.125	-1.8	0.9	-2.2	0.8	B+	
690	617222	7	434	.777	.044	.777	.122	.048	.009	.468	129	.468	238	258	-1.531	0.122	-2.0	0.9	-2.1	0.8	B-	
691	617219	7	434	.399	.150	.113	.330	.399	.009	.545	223	238	164	.545	0.368	0.105	-5.4	0.8	-4.5	0.8	B-	
692	616334	7	434	.523	.088	.205	.523	.173	.012	.460	197	201	.460	153	-0.218	0.103	-2.9	0.9	-2.7	0.9	A-	\sqcup
693	618010	7	427	.665	.665	.171	.089	.075	.000	.342	.342	162	207	158	-0.778	0.108	-0.3	1.0	-0.1	1.0	A-	A+
694	617215	7	427	.508	.508	.297	.075	.117	.002	.369	.369	270	166	033	-0.053	0.103	-0.7	1.0	-1.0	1.0	B+	A-
695	615987	7	427	.511	.176	.169	.143	.511	.002	.439	116	193	276	.439	-0.064	0.103	-2.7	0.9	-2.7	0.9	A+	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade				` '			. ,					, ,			in	in	out	out	/F	/B
696	617191	7	427	.838	.030	.838	.082	.045	.005	.431	165	.431	285	223	-1.861	0.138	-1.4	0.9	-2.7	0.7	A-	A-
697	615991	7	427	.424	.333	.119	.424	.122	.002	.200	023	027	.200	222	0.329	0.104	3.0	1.1	2.7	1.1	B-	A-
698	615984	7	427	.824	.033	.061	.077	.824	.005	.522	271	313	240	.522	-1.745	0.133	-2.2	8.0	-3.7	0.6	A+	A-
699	617223	7	427	.302	.112	.234	.302	.342	.009	.062	198	172	.062	.265	0.917	0.111	3.6	1.2	4.6	1.3	A-	A+
700	616335	7	427	.550	.070	.171	.192	.550	.016	.557	228	270	246	.557	-0.277	0.104	-5.5	8.0	-4.6	0.8	A+	A+
701	618856	7	442	.581	.222	.075	.120	.581	.002	.439	162	167	284	.439	-0.401	0.104	-1.7	0.9	-1.7	0.9	A-	
702	615988	7	442	.244	.134	.403	.215	.244	.005	.140	079	.141	207	.140	1.272	0.117	2.7	1.2	2.8	1.3	A+	
703	615972	7	442	.550	.333	.077	.550	.034	.007	.337	096	249	.337	192	-0.260	0.103	1.0	1.0	0.8	1.0	A-	
704	617211	7	442	.423	.235	.204	.134	.423	.005	.448	111	225	196	.448	0.335	0.103	-2.3	0.9	-1.9	0.9	A+	
705	617205	7	442	.796	.072	.796	.050	.075	.007	.380	191	.380	165	176	-1.610	0.126	-0.5	1.0	-1.0	0.9	A-	
706	615992	7	442	.622	.077	.622	.167	.129	.005	.451	302	.451	250	082	-0.606	0.106	-2.0	0.9	-1.8	0.9	A+	
707	615995	7	442	.697	.697	.102	.118	.079	.005	.468	.468	186	186	302	-0.992	0.111	-2.3	0.9	-1.8	0.9	A+	
708	615976	7	442	.342	.222	.100	.342	.328	.009	.132	136	187	.132	.150	0.728	0.107	4.2	1.2	5.4	1.4	B+	
709	615989	7	430	.488	.133	.488	.167	.209	.002	.399	199	.399	176	168	0.003	0.102	-1.7	1.0	-1.3	1.0	A-	A-
710	617186	7	858	.671	.100	.671	.110	.114	.005	.457	162	.457	254	239	-0.912	0.077	-3.3	0.9	-3.8	0.9	B+	A-
711	616344	7	430	.142	.712	.142	.037	.109	.000	.079	.094	.079	174	120	1.932	0.142	0.7	1.1	3.2	1.5	B-	A+
712	617207	7	430	.779	.119	.779	.049	.054	.000	.463	210	.463	258	304	-1.457	0.122	-1.9	0.9	-2.2	0.8	A-	A+
713	617201	7	430	.716	.716	.147	.077	.061	.000	.502	.502	285	271	224	-1.085	0.113	-2.9	0.9	-2.8	0.8	A+	A-
714	618796	7	430	.584	.081	.216	.119	.584	.000	.454	091	223	332	.454	-0.424	0.104	-2.6	0.9	-2.6	0.9	A-	A+
715	615977	7	430	.507	.086	.147	.507	.258	.002	.377	238	222	.377	097	-0.080	0.102	-0.9	1.0	-0.9	1.0	A+	A-
716	616342	7	428	.708	.708	.124	.089	.075	.005	.385	.385	125	230	201	-1.071	0.112	-1.3	0.9	-1.6	0.9	A-	
717	617203	7	428	.456	.159	.187	.189	.456	.009	.288	153	118	044	.288	0.120	0.103	1.2	1.0	1.0	1.0	A-	
718	615968	7	428	.645	.194	.105	.047	.645	.009	.476	202	283	182	.476	-0.762	0.107	-3.0	0.9	-3.0	0.8	B+	
719	617208	7	428	.624	.058	.624	.168	.143	.007	.384	208	.384	166	143	-0.650	0.106	-1.1	1.0	-1.2	0.9	A-	
720	617202	7	428	.797	.035	.065	.797	.094	.009	.412	234	261	.412	109	-1.630	0.127	-1.4	0.9	-1.3	0.9	A+	
721	615604	7	428	.526	.117	.217	.126	.526	.014	.415	196	171	125	.415	-0.210	0.103	-2.0	0.9	-1.4	0.9	A+	
722	615978	7	428	.472	.175	.287	.051	.472	.014	.259	061	095	142	.259	0.036	0.103	2.1	1.1	2.4	1.1	B-	
723	616343	7	428	.575	.575	.098	.065	.262	.000	.332	.332	282	091	131	-0.429	0.103	-0.6	1.0	-0.7	1.0	A-	
724	615993	7	428	.808	.068	.054	.808	.068	.002	.419	160	306	.419	181	-1.707	0.129	-1.2	0.9	-1.7	0.8	A+	
725	617744	7	428	.678	.678	.173	.070	.077	.002	.371	.371	181	250	116	-0.932	0.109	-1.1	1.0	-0.7	1.0	B+	
726	617192	7	428	.439	.439	.124	.348	.084	.005	.441	.441	211	168	206	0.185	0.103	-3.5	0.9	-3.3	0.9	A+	
727	617209	7	428	.456	.336	.456	.124	.077	.007	.471	283	.471	129	168	0.097	0.103	-4.2	0.9	-3.3	0.9	A+	
728	619145	7	428	.108	.108	.329	.495	.061	.007	.070	.070	090	.175	216	2.223	0.161	0.5	1.1	2.1	1.4	B-	
729	617197	7	428	.451	.182	.294	.451	.063	.009	.358	111	174	.358	157	0.105	0.103	-0.8	1.0	-0.5	1.0	B-	
730	615990	7	445	.205	.416	.103	.205	.272	.005	.052	001	.075	.052	088	1.432	0.122	1.9	1.1	3.0	1.3	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade											, ,				in	in	out	out	/F	/B
731	617745	7	445	.737	.130	.737	.079	.052	.002	.463	229	.463	277	215	-1.216	0.113	-2.0	0.9	-2.7	0.8	B+	
732	617193	7	445	.874	.034	.072	.874	.020	.000	.448	245	294	.448	201	-2.203	0.148	-1.3	0.9	-2.6	0.7	Α-	
733	617220	7	445	.533	.128	.533	.205	.133	.002	.462	166	.462	208	259	-0.210	0.101	-3.2	0.9	-3.2	0.9	A+	
734	617210	7	445	.539	.294	.539	.099	.067	.000	.328	120	.328	231	159	-0.226	0.100	-0.2	1.0	-0.2	1.0	A+	
735	619146	7	445	.690	.205	.049	.690	.056	.000	.277	.001	251	.277	320	-0.954	0.108	0.5	1.0	1.1	1.1	A+	
736	616336	7	445	.721	.047	.721	.155	.072	.005	.401	140	.401	204	288	-1.142	0.112	-1.2	0.9	-1.3	0.9	B+	
737	617216	7	431	.348	.186	.348	.246	.216	.005	.220	052	.220	100	027	0.656	0.106	1.2	1.1	1.4	1.1	Α-	A+
738	619366	7	431	.900	.900	.046	.030	.012	.012	.325	.325	178	140	023	-2.531	0.173	-0.3	1.0	-0.6	0.9	A+	A-
739	617221	7	431	.527	.072	.527	.149	.246	.007	.375	125	.375	161	144	-0.161	0.102	-1.7	1.0	-1.7	0.9	A+	A-
740	615985	7	431	.668	.668	.125	.072	.128	.007	.417	.417	232	258	061	-0.826	0.108	-2.1	0.9	-1.8	0.9	A+	B-
741	617746	7	431	.406	.074	.355	.153	.406	.012	.401	105	185	117	.401	0.372	0.103	-2.3	0.9	-2.2	0.9	A+	A+
742	617224	7	431	.552	.039	.299	.552	.100	.009	.255	116	109	.255	056	-0.282	0.102	1.6	1.1	1.6	1.1	A-	A+
743	618854	7	431	.578	.072	.165	.169	.578	.016	.428	195	205	107	.428	-0.416	0.104	-2.5	0.9	-2.5	0.9	A-	A-
744	617217	7	428	.360	.234	.248	.157	.360	.002	.147	046	127	.043	.147	0.484	0.106	3.1	1.1	2.8	1.2	A+	
745	617194	7	428	.509	.108	.278	.509	.103	.002	.298	236	023	.298	177	-0.199	0.102	0.4	1.0	0.5	1.0	A+	
746	617199	7	428	.773	.054	.145	.773	.023	.005	.497	243	346	.497	113	-1.525	0.121	-2.5	0.9	-3.1	0.8	A+	
747	617225	7	428	.598	.154	.145	.598	.094	.009	.426	150	188	.426	228	-0.620	0.104	-2.3	0.9	-2.1	0.9	B+	
748	615986	7	428	.262	.140	.145	.442	.262	.012	.156	137	238	.175	.156	0.979	0.115	1.6	1.1	2.5	1.2	A-	
749	617226	7	428	.682	.110	.108	.682	.091	.009	.487	130	349	.487	196	-1.030	0.110	-3.1	0.9	-2.9	0.8	A-	
750	617198	7	434	.479	.191	.131	.479	.191	.007	.383	250	200	.383	008	-0.010	0.103	-0.6	1.0	-0.6	1.0	A+	
751	615969	7	430	.356	.091	.358	.188	.356	.007	.370	183	057	152	.370	0.576	0.106	-1.2	1.0	-1.4	0.9	C-	A-
752	615971	7	430	.505	.270	.133	.091	.505	.002	.296	114	194	060	.296	-0.050	0.103	1.1	1.0	0.9	1.0	Ċ+	
753	618855	7	430	.670	.147	.670	.100	.084	.000	.349	215	.349	178	126	-0.840	0.108	-0.2	1.0	-0.5	1.0	B-	A-
754	618853	7	427	.419	.300	.197	.080	.419	.005	.296	117	104	178	.296	0.343	0.104	0.8	1.0	0.4	1.0	A+	A-
755	617196	7	442	.491	.050	.201	.491	.256	.002	.419	219	212	.419	146	0.023	0.102	-1.7	0.9	-1.2	1.0	A+	
756	618603	7	442	.613	.192	.613	.104	.084	.007	.564	298	.564	310	155	-0.567	0.105	-5.0	0.8	-4.5	8.0	A-	
757	618802	7	430	.833	.833	.063	.049	.056	.000	.514	.514	370	219	240	-1.833	0.134	-2.1	0.8	-3.3	0.7	B+	A-
758	617526	7	428	.432	.432	.416	.084	.054	.014	.402	.402	123	219	201	0.219	0.104	-1.6	1.0	-1.4	0.9	A+	
759	616039	7	428	.764	.764	.049	.143	.042	.002	.344	.344	223	147	180	-1.413	0.120	-0.6	1.0	-0.8	0.9	A-	
760	616028	7	428	.238	.108	.586	.238	.065	.002	.129	106	010	.129	047	1.280	0.119	1.6	1.1	2.1	1.2	A-	
761	615289	7	6496	.377	.122	.377	.329	.166	.006	.133	019	.133	020	086	0.508	0.027	9.9	1.1	9.9	1.2	A-	A+
762	617521	7	428	.575	.194	.575	.072	.154	.005	.405	120	.405	214	230	-0.372	0.104	-1.1	1.0	-1.6	0.9	A-	
763	617519	7	6496	.524	.156	.261	.524	.053	.006	.289	157	076	.289	141	-0.169	0.026	4.8	1.0	4.4	1.1	A-	A+
764	615290	7	428	.409	.255	.241	.409	.084	.012	.196	034	116	.196	038	0.377	0.105	2.9	1.1	2.7	1.1	A+	
765	616316	7	6496	.384	.222	.327	.384	.055	.013	.213	.039	118	.213	169	0.460	0.027	9.3	1.1	9.2	1.1	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
766	615284	Grade 7	431	.186	.246	.186	.420	.139	.009	.145	098	.145	.018	.068	1.625	0.129	in 0.6	in 1.1	out 2.0	0ut 1.2	/F A-	/B A-
767	620006	7	431	.383	.137	.383	.049	.425	.007	.170	123	.170	141	.065	0.518	0.105	2.3	1.1	1.9	1.1	A-	A+
768	616033	7	431	.299	.343	.186	.299	.158	.014	.235	104	076	.235	.058	0.924	0.111	0.6	1.0	0.8	1.1	C+	A+
769	615285	7	450	.162	.511	.256	.162	.067	.004	054	.072	.025	054	050	1.767	0.133	1.7	1.2	3.4	1.5	A-	
770	617522	7	450	.393	.393	.313	.242	.042	.009	.334	.334	119	105	166	0.404	0.102	-0.5	1.0	0.1	1.0	Α-	
771	615291	7	450	.256	.182	.173	.376	.256	.013	.324	118	195	.031	.324	1.112	0.113	-1.3	0.9	-0.8	0.9	A+	
772	617520	7	434	.664	.228	.067	.664	.042	.000	.363	184	321	.363	071	-0.750	0.108	-0.9	1.0	-0.9	0.9	A+	
773	615286	7	434	.339	.339	.279	.120	.260	.002	.192	.192	050	199	008	0.802	0.108	1.9	1.1	3.1	1.2	A-	
774	615292	7	434	.392	.392	.099	.145	.359	.005	.365	.365	246	172	079	0.513	0.105	-0.9	1.0	0.2	1.0	A-	
775	615287	7	430	.623	.077	.623	.156	.133	.012	.322	104	.322	158	087	-0.667	0.106	0.5	1.0	-0.4	1.0	A+	A+
776	615302	7	430	.437	.172	.437	.102	.279	.009	.292	121	.292	143	027	0.190	0.103	0.8	1.0	0.7	1.0	A-	A-
777	615294	7	430	.633	.633	.140	.119	.100	.009	.412	.412	130	193	158	-0.707	0.106	-1.8	0.9	-2.0	0.9	A-	A-
778	616030	7	430	.342	.172	.202	.342	.281	.002	.182	196	116	.182	.108	0.714	0.108	2.6	1.1	2.5	1.2	B+	
779	615303	7	430	.426	.400	.426	.088	.077	.009	.261	042	.261	196	122	0.297	0.104	1.7	1.1	2.2	1.1	A+	
780	617527	7	430	.402	.074	.200	.402	.316	.007	.318	173	102	.318	106	0.410	0.105	0.5	1.0	1.0	1.1	A-	
781	616031	7	434	.507	.221	.507	.074	.194	.005	.219	076	.219	141	069	-0.137	0.103	3.3	1.1	3.5	1.2	A+	
782	615304	7	434	.463	.194	.166	.463	.168	.009	.322	087	119	.322	168	0.056	0.103	0.6	1.0	0.3	1.0	A-	
783	615307	7	434	.369	.182	.283	.369	.157	.009	.293	111	039	.293	127	0.513	0.106	1.2	1.1	1.3	1.1	A+	
784	615295	7	434	.373	.373	.118	.120	.380	.009	.354	.354	238	201	.012	0.490	0.106	0.0	1.0	-0.3	1.0	A-	
785	615288	7	427	.693	.119	.693	.094	.091	.002	.393	203	.393	163	213	-0.931	0.111	-1.2	1.0	-1.8	0.9	A-	A-
786	615305	7	427	.478	.356	.478	.063	.096	.007	.342	169	.342	226	084	0.076	0.103	-0.1	1.0	-0.1	1.0	A-	A+
787	620011	7	427	.157	.169	.361	.307	.157	.007	.194	070	029	036	.194	1.843	0.138	0.3	1.0	1.4	1.2	A-	A-
788	615296	7	427	.391	.391	.384	.110	.105	.009	.359	.359	117	198	123	0.474	0.105	-0.6	1.0	0.0	1.0	A-	A-
789	615293	7	442	.477	.477	.260	.149	.109	.005	.448	.448	133	236	222	0.080	0.103	-2.6	0.9	-2.2	0.9	A-	
790	615306	7	442	.432	.432	.109	.315	.140	.005	.373	.373	189	030	273	0.292	0.103	-0.1	1.0	-0.3	1.0	A-	
791	616614	7	442	.509	.170	.509	.163	.154	.005	.404	152	.404	203	147	-0.068	0.102	-1.0	1.0	-0.7	1.0	A+	
792	616036	7	442	.403	.127	.113	.403	.351	.007	.284	164	302	.284	.065	0.429	0.104	1.9	1.1	2.1	1.1	A-	
793	617523	7	430	.554	.554	.095	.058	.288	.005	.228	.228	183	193	029	-0.297	0.103	2.6	1.1	2.4	1.1	B+	A+
794	618859	7	430	.242	.242	.300	.249	.205	.005	.069	.069	076	031	.049	1.218	0.118	2.4	1.1	3.6	1.4	A+	A+
795	616037	7	430	.407	.230	.147	.216	.407	.000	.197	.129	118	265	.197	0.380	0.104	2.8	1.1	2.5	1.1	A+	A-
796	617524	7	428	.734	.147	.734	.047	.065	.007	.348	215	.348	183	084	-1.221	0.116	-0.8	1.0	-0.1	1.0	A+	
797	618601	7	428	.294	.372	.192	.294	.133	.009	.275	001	235	.275	030	0.902	0.112	0.4	1.0	1.1	1.1	A-	
798	618858	7	428	.547	.119	.145	.547	.182	.007	.306	106	208	.306	050	-0.290	0.103	0.8	1.0	0.7	1.0	A-	
799	618602	7	428	.423	.180	.154	.241	.423	.002	.310	051	210	112	.310	0.266	0.103	-0.1	1.0	-0.3	1.0	A+	
800	620010	7	428	.528	.112	.178	.528	.180	.002	.328	154	105	.328	168	-0.228	0.102	-0.1	1.0	-0.2	1.0	B+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	,,			` '	, ,		• • •		(, .,	• •	(0)	(=,			in	in	out	out	/F	/B
801	617530	7	428	.285	.329	.077	.285	.301	.007	.280	117	260	.280	.030	0.911	0.112	0.2	1.0	0.4	1.0	A+	
802	620007	7	428	.451	.224	.451	.136	.182	.007	.195	.011	.195	114	122	0.129	0.103	2.7	1.1	2.7	1.1	A+	
803	615297	7	445	.173	.301	.173	.173	.353	.000	.101	.036	.101	173	.023	1.673	0.130	0.6	1.1	3.4	1.4	A-	
804	617528	7	445	.467	.119	.467	.236	.175	.002	.251	080	.251	075	175	0.092	0.100	1.5	1.1	1.4	1.1	A+	
805	615283	7	445	.400	.285	.175	.400	.139	.000	.367	151	219	.367	082	0.394	0.102	-1.1	1.0	-0.9	1.0	A-	
806	616314	7	445	.562	.128	.562	.223	.085	.002	.340	070	.340	247	155	-0.334	0.101	-0.5	1.0	-0.6	1.0	B-	
807	620008	7	445	.344	.344	.178	.198	.279	.002	.254	.254	106	047	131	0.658	0.105	0.9	1.0	1.4	1.1	A-	
808	615299	7	431	.139	.336	.274	.241	.139	.009	.140	.011	012	041	.140	1.940	0.143	0.4	1.0	1.1	1.1	A-	A-
809	615279	7	431	.446	.195	.446	.142	.214	.005	.348	109	.348	162	105	0.204	0.102	-1.0	1.0	-0.7	1.0	A+	A+
810	620009	7	431	.450	.339	.118	.450	.088	.005	.216	012	167	.216	061	0.183	0.102	2.6	1.1	2.3	1.1	A-	A+
811	617529	7	431	.548	.548	.227	.151	.067	.007	.426	.426	196	145	181	-0.258	0.102	-3.1	0.9	-3.0	0.9	A-	B-
812	615298	7	431	.241	.028	.160	.559	.241	.012	.058	107	169	.191	.058	1.214	0.117	2.3	1.1	3.6	1.3	A-	A+
813	615233	7	428	.332	.276	.332	.297	.094	.002	.161	.011	.161	158	.012	0.621	0.108	2.3	1.1	2.6	1.2	A-	
814	615301	7	428	.407	.126	.407	.327	.138	.002	.203	234	.203	.061	113	0.264	0.104	2.2	1.1	2.2	1.1	B-	
815	615280	7	428	.402	.150	.341	.103	.402	.005	.384	101	168	192	.384	0.279	0.104	-1.6	1.0	-1.3	1.0	A-	
816	617525	7	428	.327	.143	.231	.294	.327	.005	.344	.012	157	186	.344	0.638	0.108	-0.6	1.0	-0.5	1.0	A+	
817	615300	7	428	.577	.577	.203	.150	.061	.009	.457	.457	261	180	146	-0.522	0.103	-3.1	0.9	-3.2	0.9	A+	
818	616038	7	430	.363	.154	.195	.274	.363	.014	.311	053	055	152	.311	0.523	0.106	-0.1	1.0	0.3	1.0	A+	A+
819	618801	7	430	.116	.051	.347	.479	.116	.007	.062	253	.058	.057	.062	2.227	0.156	1.0	1.1	3.1	1.6	A+	
820	615308	7	427	.450	.148	.450	.262	.129	.012	.350	044	.350	215	129	0.197	0.104	-0.2	1.0	0.4	1.0	A-	A+
821	616313	7	434	.311	.249	.152	.311	.279	.009	.357	105	126	.357	089	0.805	0.110	-0.8	1.0	0.6	1.0	A-	
822	615784	8	264	.784	.008	.186	.023	.784	.000	.362	049	322	129	.362	-1.327	0.158	-0.7	0.9	-1.5	0.8	B-	
823	615776	8	263	.897	.023	.897	.034	.027	.019	.314	042	.314	059	092	-2.589	0.241	0.5	1.1	0.6	1.2	A+	
824	617289	8	260	.100	.100	.081	.650	.162	.008	.066	.066	.036	158	.145	2.722	0.220	0.2	1.0	1.6	1.4	A-	
825	617279	8	260	.858	.039	.058	.858	.039	.008	.452	191	196	.452	204	-2.003	0.191	-0.6	0.9	-1.6	0.7	A-	
826	620400	8	263	.764	.061	.076	.080	.764	.019	.585	165	313	230	.585	-1.277	0.164	-2.4	0.8	-3.0	0.6	A+	
827	615850	8	260	.415	.223	.135	.415	.215	.012	.280	.022	180	.280	089	0.540	0.139	1.9	1.1	1.9	1.2	A+	
828	620416	8	260	.308	.250	.308	.165	.265	.012	.123	016	.123	163	.156	1.109	0.147	4.1	1.3	3.9	1.5	A+	
829	620411	8	260	.235	.162	.208	.385	.235	.012	.442	108	166	046	.442	1.554	0.160	-2.1	8.0	-2.0	0.7	B-	
830	617280	8	5825	.823	.090	.823	.029	.052	.006	.422	259	.422	198	121	-1.660	0.037	-4.1	0.9	-4.6	0.8	A+	A-
831	620636	8	260	.369	.312	.108	.196	.369	.015	.241	.094	169	107	.241	0.773	0.141	2.8	1.2	2.1	1.2	A-	
832	617282	8	5825	.412	.412	.359	.133	.089	.008	.318	.318	.043	253	215	0.591	0.029	5.9	1.1	4.5	1.1	A+	A-
833	615845	8	260	.619	.073	.212	.619	.077	.019	.427	310	133	.427	026	-0.499	0.142	-1.0	0.9	-0.3	1.0	A-	
834	620412	8	259	.772	.772	.073	.073	.077	.004	.409	.409	291	138	138	-1.362	0.164	-0.6	1.0	-1.2	0.8	A+	
835	620638	8	259	.618	.127	.618	.073	.174	.008	.354	006	.354	310	172	-0.474	0.143	1.0	1.1	0.7	1.1	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
926	620428	Grade	250	.548		.162	.548	.085	.012	.325	039	059		283	-0.109	0.139	in 2.1	in	out	out	/F	/B
836	620428	8	259 259	.622	.193	.102	.622	.085	.012	.375	302	059	.325 .375	283	-0.109	0.139	0.6	1.1	1.5	1.1	Α-	
838	617300	8	259	.193	.286	.324	.182	.193	.015	.269	.003	055	053	.269	1.860	0.143	0.6	1.0	-0.1 0.2	1.0	A+ B+	
839	620429	8	259	.653	.031	.212	.100	.653	.013	.374	093	242	184	.374	-0.633	0.170	0.4	1.0	0.2	1.0	A-	\vdash
840	620639	8	259	.448	.112	.170	.448	.259	.004	.410	117	242	.410	133	0.380	0.143	-0.4	1.0	-0.7	1.0	B-	
841	617301	8	259	.378	.293	.378	.139	.189	.000	.188	.040	.188	217	087	0.731	0.138	3.7	1.2	3.8	1.3	B+	
842	620031	8	259	.660	.143	.660	.116	.077	.004	.288	037	.288	229	168	-0.663	0.144	1.2	1.1	1.9	1.2	A+	
843	620398	8	265	.423	.196	.423	.272	.109	.000	.274	174	.274	120	040	0.553	0.135	1.9	1.1	1.5	1.1	A+	
844	617302	8	265	.626	.034	.117	.626	.223	.000	.364	163	198	.364	199	-0.431	0.139	-0.3	1.0	-0.2	1.0	A-	
845	615903	8	265	.457	.181	.457	.279	.083	.000	.230	266	.230	.070	157	0.408	0.134	2.0	1.1	2.9	1.2	A-	
846	620033	8	265	.676	.676	.083	.125	.117	.000	.437	.437	122	292	233	-0.668	0.143	-1.2	0.9	-1.5	0.9	A+	
847	620399	8	262	.489	.489	.179	.225	.092	.015	.346	.346	233	095	.026	0.199	0.138	1.4	1.1	1.1	1.1	B+	
848	617303	8	262	.580	.118	.122	.580	.164	.015	.283	317	147	.283	.195	-0.254	0.140	2.2	1.1	3.1	1.3	A+	
849	615904	8	262	.672	.057	.092	.168	.672	.012	.485	177	164	230	.485	-0.741	0.146	-1.6	0.9	-1.6	0.8	A+	
850	620402	8	262	.611	.324	.611	.019	.038	.008	.236	049	.236	212	086	-0.235	0.139	2.2	1.1	1.2	1.1	B-	
851	620418	8	288	.271	.198	.424	.271	.104	.004	.378	154	050	.378	191	1.458	0.140	-1.1	0.9	-0.7	0.9	B-	
852	620384	8	263	.635	.635	.213	.076	.072	.004	.541	.541	389	216	082	-0.442	0.139	-3.5	0.8	-3.4	0.8	A-	
853	620423	8	263	.323	.270	.080	.323	.323	.004	.314	051	256	.314	069	1.083	0.142	0.8	1.1	1.6	1.2	B-	
854	620419	8	263	.578	.126	.099	.190	.578	.008	.554	186	257	283	.554	-0.173	0.136	-4.2	0.8	-3.5	0.8	A-	
855	615779	8	263	.434	.190	.171	.434	.186	.019	.296	110	051	.296	142	0.498	0.136	1.9	1.1	1.9	1.1	A+	
856	620420	8	263	.677	.099	.677	.183	.034	.008	.328	084	.328	154	161	-0.648	0.146	1.6	1.1	0.6	1.1	A-	
857	617283	8	263	.662	.662	.065	.088	.179	.008	.503	.503	223	294	157	-0.584	0.145	-1.6	0.9	-1.6	0.9	A+	
858	615896	8	263	.548	.107	.221	.548	.114	.011	.392	265	007	.392	192	0.013	0.139	0.4	1.0	0.4	1.0	A-	
859	620424	8	263	.574	.080	.574	.228	.099	.019	.438	084	.438	185	176	-0.157	0.140	0.1	1.0	-0.1	1.0	A-	
860	620421	8	264	.375	.375	.129	.231	.258	.008	.309	.309	160	195	.039	0.727	0.137	0.8	1.0	1.0	1.1	A-	
861	615897	8	264	.477	.239	.110	.163	.477	.011	.412	104	174	196	.412	0.226	0.134	-1.0	1.0	-0.5	1.0	A-	
862	620403	8	264	.424	.246	.216	.424	.106	.008	.331	.003	198	.331	169	0.486	0.135	1.2	1.1	0.8	1.1	A+	
863	620394	8	264	.466	.102	.311	.466	.110	.011	.448	054	265	.448	159	0.280	0.134	-1.4	0.9	-1.2	0.9	B-	
864	615782	8	264	.742	.042	.742	.083	.121	.011	.282	.012	.282	222	090	-1.129	0.152	1.0	1.1	1.0	1.1	A-	
865	620425	8	264	.436	.197	.436	.246	.110	.011	.437	222	.437	108	151	0.424	0.135	-1.2	0.9	-0.5	1.0	A-	
866	617286	8	264	.591	.068	.136	.193	.591	.011	.503	176	233	224	.503	-0.317	0.136	-2.7	0.9	-2.2	0.9	B+	ш
867	617285	8	269	.829	.829	.063	.019	.082	.007	.447	.447	216	200	172	-1.634	0.175	-1.2	0.9	-1.3	0.8	A+	
868	620395	8	269	.729	.130	.729	.063	.071	.007	.488	200	.488	300	138	-0.946	0.148	-1.9	0.9	-2.1	0.8	A+	
869	620404	8	269	.714	.714	.108	.134	.034	.011	.482	.482	205	236	168	-0.854	0.146	-2.1	0.9	-2.1	0.8	A-	
870	620397	8	259	.568	.189	.147	.089	.568	.008	.330	073	146	154	.330	-0.099	0.139	1.3	1.1	1.8	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z -	MS-	M	W
074	620405	Grade	250	247		204		• •	000	200	004	050	220	200	1.161	0.446	in	in	out	out	/F	/B
871	620405	8	259	.317	.127	.394	.154	.317	.008	.388	091	058	228	.388	1.164	0.146	-0.7	1.0	-0.8	0.9	A-	-
872	617287	8	259	.537	.170	.537	.104	.178	.012	.436	179	.436	129	171	0.047	0.138	-0.2	1.0	-0.4	1.0	A+	
873	617278	8	259	.614	.143	.147	.073	.614	.023	.458	104	281	125	.458	-0.386	0.143	-0.7	1.0	-1.2	0.9	A-	-
874	615793	8 8	260	.158 .842	.227	.446	.162	.158	.008	.220	049	.025	149	.220 179	2.174	0.181	0.1	1.0	-0.3	1.2 0.9	A-	-
875	620640 617281	8	260	.619	.081	.015	.842	.058	.004	.313	171 265	115	.313	179	-1.797	0.184	-1.1	1.0 0.9	-0.3	0.9	A+ A+	-
876	620406	8	260	.619	.139			.189	.008	.444	265 .498	.444 247	232	090	-0.396	0.140	-2.5	0.9	-1.4	0.9		
877 878	620406	8	260 273	.496	.282	.162	.142	.114	.012	.498	168	.431	295	143	0.200 0.711	0.136	-2.5 -1.7	0.9	-2.4	0.9	A+ A-	
879	620407	8	273	.513	.205		.150		.004	.431	129		211				-2.7	0.9	-2.0	0.9		
880	615794	8	273	.381	.213	.128	.381	.513	.004	.461	129	210 205	.274	.481	0.074 0.691	0.130	0.9	1.0	1.6		A- A-	
881	615795	8	262	.615	.615	.050	.107	.221	.007	.551	.551	240	329	216	-0.543	0.139	-3.3	0.8	-3.1	0.8	B-	
882	620642	8	262	.527	.176	.130	.157	.527	.012	.519	205	174	247	.519	-0.343	0.136	-2.5	0.8	-2.4	0.8	A+	
883	615796	8	262	.657	.061	.195	.657	.073	.012	.533	190	225	.533	312	-0.123	0.136	-2.5	0.9	-2.4	0.9	A+ A-	
884	615772	8	262	.313	.313	.160	.302	.206	.019	.333	.371	223	180	022	0.926	0.144	-0.3	1.0	1.3	1.1	B-	
885	615797	8	260	.539	.242	.042	.173	.539	.004	.436	268	113	149	.436	-0.110	0.145	-0.3	0.9	-1.7	0.9	A-	
886	615775	8	260	.727	.727	.050	.085	.135	.004	.326	.326	110	145	178	-1.080	0.150	0.3	1.0	-0.2	1.0	A+	
887	620643	8	260	.515	.208	.123	.515	.150	.004	.384	168	363	.384	.050	0.000	0.135	-0.2	1.0	-0.2	1.0	A-	
888	615898	8	260	.500	.096	.165	.235	.500	.004	.408	198	186	127	.408	0.000	0.135	-0.2	1.0	-0.2	1.0	B+	
889	620644	8	259	.676	.178	.039	.676	.100	.004	.540	332	227	.540	187	-0.705	0.133	-3.5	0.8	-3.4	0.7	A-	
890	615799	8	259	.425	.297	.425	.135	.139	.004	.337	175	.337	089	101	0.535	0.137	0.5	1.0	0.7	1.0	A-	
891	615846	8	289	.401	.197	.173	.225	.401	.004	.396	149	129	206	.396	0.596	0.130	-0.3	1.0	-0.3	1.0	A-	
892	615783	8	289	.716	.222	.042	.716	.017	.004	.346	232	192	.346	097	-0.958	0.140	0.2	1.0	0.2	1.0	A-	
893	615800	8	289	.796	.125	.796	.055	.024	.000	.395	185	.395	344	128	-1.448	0.155	-0.7	0.9	-0.7	0.9	A+	1
894	615786	8	260	.369	.131	.127	.369	.365	.008	.183	008	064	.183	059	0.752	0.139	2.9	1.2	3.0	1.3	A+	
895	620408	8	260	.608	.096	.204	.608	.081	.012	.405	153	139	.405	187	-0.417	0.139	-0.4	1.0	-0.2	1.0	Α-	
896	615847	8	260	.596	.096	.115	.596	.181	.012	.508	224	232	.508	164	-0.359	0.138	-2.2	0.9	-2.2	0.8	A-	
897	615801	8	260	.350	.350	.127	.481	.031	.012	.345	.345	277	025	082	0.845	0.141	0.2	1.0	0.9	1.1	A-	
898	620413	8	260	.385	.092	.385	.285	.223	.015	.334	098	.334	033	180	0.661	0.139	0.7	1.0	0.5	1.0	A+	
899	620414	8	260	.508	.039	.408	.042	.508	.004	.233	161	075	195	.233	0.129	0.134	2.6	1.1	2.8	1.2	B+	
900	615902	8	260	.865	.069	.031	.035	.865	.000	.339	260	184	099	.339	-1.973	0.194	-0.3	1.0	-0.9	0.8	A-	
901	617288	8	260	.654	.050	.654	.196	.100	.000	.429	193	.429	187	292	-0.562	0.141	-1.5	0.9	-1.8	0.9	A+	
902	615848	8	260	.196	.146	.365	.196	.289	.004	.118	294	031	.118	.162	1.806	0.165	0.9	1.1	2.9	1.5	A-	
903	620383	8	260	.577	.212	.100	.577	.112	.000	.395	158	214	.395	212	-0.199	0.136	-0.2	1.0	-0.1	1.0	B+	
904	620409	8	260	.339	.173	.204	.339	.285	.000	.299	158	213	.299	.010	0.945	0.140	0.5	1.0	1.0	1.1	A+	
905	615787	8	260	.508	.146	.150	.185	.508	.012	.438	132	282	161	.438	0.102	0.135	-0.9	1.0	-1.1	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	, ,				. (0)				(, .,	(5)	(0,	(5)	ivicus	11132	in	in	out	out	/F	/B
906	617290	8	261	.556	.556	.088	.184	.169	.004	.305	.305	111	116	145	-0.191	0.136	1.6	1.1	1.9	1.1	A+	
907	615849	8	261	.571	.571	.111	.138	.176	.004	.438	.438	157	173	228	-0.265	0.137	-0.5	1.0	-0.6	1.0	A-	
908	620410	8	261	.617	.142	.061	.617	.176	.004	.465	344	267	.465	055	-0.493	0.139	-1.4	0.9	-1.9	0.9	B+	
909	620415	8	261	.487	.084	.295	.487	.130	.004	.417	183	175	.417	169	0.140	0.135	-0.7	1.0	-0.5	1.0	B-	
910	620635	8	261	.245	.146	.245	.360	.241	.008	.162	182	.162	051	.095	1.396	0.154	2.0	1.2	2.7	1.4	A-	
911	620382	8	261	.621	.157	.153	.621	.061	.008	.339	119	187	.339	121	-0.525	0.140	0.6	1.0	1.1	1.1	A-	
912	620381	8	261	.264	.264	.295	.261	.172	.008	.235	.235	092	.075	183	1.278	0.151	1.4	1.1	1.2	1.1	A+	
913	615777	8	264	.288	.250	.296	.155	.288	.011	.065	124	.034	.121	.065	1.181	0.146	4.0	1.3	4.1	1.5	A-	—
914	615790	8	260	.439	.439	.219	.239	.104	.000	.351	.351	107	235	099	0.500	0.136	1.0	1.1	0.6	1.0	B-	
915	615789	8	259	.583	.147	.135	.583	.127	.008	.386	186	310	.386	.064	-0.177	0.139	0.4	1.0	1.1	1.1	A-	igwdot
916	617059	8	269	.093	.216	.123	.093	.561	.007	.117	074	097	.117	.141	2.810	0.222	0.2	1.0	1.5	1.4	A-	
917	615791	8	536	.334	.274	.216	.168	.334	.008	.331	049	049	219	.331	1.011	0.100	0.6	1.0	0.6	1.0	A+	——
918	617284	8	260	.619	.181	.065	.619	.131	.004	.457	243	293	.457	099	-0.503	0.138	-1.6	0.9	-1.4	0.9	A+	
919	620396	8	259	.425	.127	.151	.425	.293	.004	.185	121	275	.185	.115	0.492	0.138	3.7	1.2	3.4	1.3	A-	
920	617292	8	260	.335	.242	.335	.258	.158	.008	.330	091	.330	152	115	0.972	0.141	0.2	1.0	0.6	1.1	A+	
921	620637	8	265	.438	.094	.113	.351	.438	.004	.380	127	244	149	.380	0.494	0.135	0.1	1.0	0.3	1.0	A+	
922	620401	8	262	.710	.088	.710	.095	.095	.012	.392	148	.392	112	168	-0.963	0.151	0.0	1.0	0.0	1.0	A-	
923	620426	8	259	.421	.270	.421	.220	.077	.012	.288	060	.288	016	228	0.528	0.139	2.0	1.1	1.6	1.1	A+	ı
924	620427	8	288	.403	.257	.247	.403	.090	.004	.298	028	165	.298	137	0.785	0.128	0.8	1.0	0.6	1.0	A+	ı
925	620362	8	273	.502	.502	.051	.081	.359	.007	.429	.429	041	177	280	0.113	0.130	-1.6	0.9	-1.7	0.9	A+	
926	617484	8	260	.900	.015	.035	.046	.900	.004	.318	131	126	212	.318	-2.408	0.223	0.0	1.0	-0.3	0.9	A+	
927	618896	8	273	.714	.714	.051	.048	.183	.004	.323	.323	164	198	118	-0.918	0.143	-0.1	1.0	0.6	1.1	A+	
928	617294	8	263	.380	.179	.205	.232	.380	.004	.312	180	117	030	.312	0.789	0.138	1.1	1.1	0.6	1.0	A+	
929	617293	8	288	.701	.024	.108	.160	.701	.007	.341	074	174	171	.341	-0.640	0.137	-0.2	1.0	0.0	1.0	A+	
930	617485	8	5825	.783	.066	.114	.783	.032	.006	.513	220	309	.513	189	-1.354	0.034	-9.0	0.8	-9.9	0.7	A-	A-
931	617577	8	5825	.527	.527	.197	.163	.105	.008	.452	.452	215	198	120	0.034	0.029	-6.8	0.9	-6.3	0.9	A+	A-
932	617585	8	5825	.443	.092	.242	.443	.212	.011	.301	138	211	.301	.035	0.436	0.029	7.5	1.1	7.0	1.1	A+	A+
933	615834	8	259	.583	.220	.583	.116	.081	.000	.380	210	.380	139	205	-0.273	0.138	0.1	1.0	0.3	1.0	A-	
934	615835	8	265	.347	.555	.072	.347	.026	.000	.012	.089	152	.012	066	0.946	0.139	4.8	1.3	5.0	1.5	A+	
935	615836	8	262	.550	.061	.122	.550	.252	.015	.392	107	242	.392	085	-0.107	0.139	0.6	1.0	0.2	1.0	A+	
936	620041	8	262	.305	.305	.046	.534	.107	.008	.096	.096	082	014	.086	1.306	0.147	4.3	1.3	4.6	1.6	A-	
937	615838	8	262	.523	.523	.115	.279	.076	.008	.405	.405	203	094	186	0.200	0.136	-0.6	1.0	-0.9	0.9	A-	
938	617579	8	268	.369	.369	.306	.168	.157	.000	.353	.353	222	069	117	0.906	0.138	0.7	1.0	0.8	1.1	A+	
939	617595	8	268	.668	.078	.668	.179	.075	.000	.346	096	.346	340	026	-0.563	0.141	0.4	1.0	0.7	1.1	A-	
940	617488	8	268	.795	.795	.060	.075	.067	.004	.493	.493	176	320	276	-1.342	0.162	-1.6	0.9	-1.9	0.7	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade						• •			, ,	• •					in	in	out	out	/F	/B
941	615839	8	268	.761	.086	.082	.067	.761	.004	.584	223	354	335	.584	-1.121	0.154	-3.1	0.8	-2.7	0.7	A+	
942	618893	8	268	.698	.698	.127	.116	.052	.008	.392	.392	205	137	252	-0.752	0.145	-0.3	1.0	0.4	1.0	A+	
943	618549	8	268	.414	.414	.164	.280	.138	.004	.325	.325	075	203	104	0.672	0.135	1.2	1.1	0.7	1.1	A-	
944	618550	8	288	.688	.021	.038	.250	.688	.004	.478	187	166	322	.478	-0.557	0.135	-2.5	0.9	-2.5	0.8	A+	igwdot
945	617581	8	288	.375	.254	.129	.375	.240	.004	.147	137	009	.147	.035	0.918	0.129	2.8	1.1	3.3	1.2	B-	
946	618897	8	288	.389	.115	.212	.389	.281	.004	.204	188	120	.204	.073	0.851	0.129	1.6	1.1	1.8	1.1	A+	
947	615851	8	288	.458	.125	.344	.069	.458	.004	.503	230	254	118	.503	0.527	0.126	-4.0	0.8	-3.4	0.8	C-	
948	617597	8	288	.847	.847	.014	.090	.045	.004	.110	.110	056	.044	105	-1.584	0.171	0.9	1.1	2.9	1.5	A+	
949	617582	8	263	.319	.376	.186	.319	.110	.008	.226	095	204	.226	.127	1.089	0.143	2.1	1.1	2.1	1.2	A-	<u> </u>
950	615831	8	263	.369	.369	.308	.198	.107	.019	.386	.386	090	191	153	0.808	0.139	-0.7	1.0	-0.8	0.9	A+	
951	615852	8	263	.434	.213	.088	.243	.434	.023	.337	025	206	166	.337	0.484	0.136	1.0	1.1	0.4	1.0	A-	
952	618964	8	263	.319	.373	.319	.202	.084	.023	.171	.042	.171	115	092	1.072	0.144	3.1	1.2	2.4	1.2	A-	
953	615853	8	263	.453	.323	.148	.453	.068	.008	.340	193	107	.340	005	0.495	0.138	1.8	1.1	1.7	1.1	A-	
954	617295	8	263	.095	.095	.285	.266	.342	.011	.054	.054	.085	165	.143	2.907	0.222	0.7	1.1	2.5	1.9	C-	
955	615855	8	264	.216	.273	.205	.296	.216	.011	.329	051	152	036	.329	1.622	0.159	-0.5	1.0	0.5	1.1	A-	<u> </u>
956	615856	8	269	.219	.294	.216	.219	.264	.007	.195	099	063	.195	.072	1.678	0.156	0.8	1.1	1.7	1.2	A-	
957	618966	8	269	.617	.617	.089	.171	.108	.015	.453	.453	198	202	115	-0.365	0.136	-2.1	0.9	-1.7	0.9	A+	
958	618969	8	259	.282	.282	.135	.154	.417	.012	.228	.228	122	241	.139	1.358	0.150	2.2	1.2	2.8	1.4	A-	
959	615858	8	259	.432	.127	.139	.432	.282	.019	.154	076	074	.154	.064	0.542	0.139	5.2	1.3	5.0	1.4	A+	
960	615859	8	260	.292	.292	.162	.377	.169	.000	.309	.309	109	060	191	1.247	0.147	0.7	1.1	0.5	1.1	A+	
961	617592	8	260	.181	.242	.154	.419	.181	.004	018	021	134	.155	018	1.958	0.171	2.5	1.3	4.4	2.0	A+	
962	618970	8	260	.696	.058	.096	.696	.142	.008	.436	178	276	.436	174	-0.809	0.148	-0.5	1.0	-0.7	0.9	A+	
963	617594	8	273	.147	.377	.147	.202	.267	.007	062	.064	062	.008	.021	2.120	0.178	1.9	1.2	3.7	1.8	A-	
964	615860	8	273	.319	.491	.073	.319	.110	.007	.245	.069	328	.245	128	0.997	0.139	1.2	1.1	1.7	1.2	B-	
965	619020	8	273	.209	.454	.271	.209	.055	.011	.081	.062	028	.081	134	1.636	0.157	1.8	1.2	2.6	1.4	A-	
966	620037	8	262	.756	.107	.107	.027	.756	.004	.374	123	240	180	.374	-1.348	0.156	-0.4	1.0	0.6	1.1	A-	
967	620361	8	262	.454	.324	.454	.065	.153	.004	.151	.151	.151	251	179	0.228	0.136	4.4	1.2	3.9	1.3	A+	
968	619021	8	262	.798	.050	.798	.095	.053	.004	.487	230	.487	300	170	-1.632	0.166	-1.6	0.9	-2.2	0.7	A+	
969	620036	8	262	.359	.149	.244	.233	.359	.015	.361	260	045	059	.361	0.684	0.141	0.2	1.0	0.4	1.0	A-	
970	620038	8	260	.673	.031	.150	.142	.673	.004	.382	164	194	171	.382	-0.781	0.143	-0.1	1.0	0.0	1.0	A+	
971	617583	8	260	.569	.062	.281	.569	.077	.012	.378	156	121	.378	252	-0.275	0.137	-0.4	1.0	-0.3	1.0	B-	
972	617584	8	259	.297	.154	.479	.066	.297	.004	.403	117	171	142	.403	1.212	0.147	-0.7	1.0	-0.7	0.9	A-	
973	620039	8	259	.479	.479	.178	.182	.154	.008	.433	.433	344	011	140	0.270	0.136	-1.0	1.0	-0.7	1.0	A-	
974	615864	8	289	.325	.197	.325	.266	.208	.004	.173	.061	.173	184	059	0.982	0.135	3.0	1.2	3.3	1.3	A-	
975	617586	8	289	.488	.177	.488	.142	.194	.000	.209	070	.209	251	.026	0.189	0.128	3.9	1.2	3.3	1.2	B-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade					, ,	` .			. ,	. ,					in	in	out	out	/F	/B
976	620040	8	289	.294	.540	.100	.066	.294	.000	.369	153	199	129	.369	1.156	0.139	-0.5	1.0	1.1	1.1	A-	\vdash
977	615865	8	260	.439	.092	.373	.439	.092	.004	.388	163	122	.388	226	0.411	0.136	-0.6	1.0	-0.3	1.0	A-	\vdash
—	617587	8	260	.204	.104	.327	.204	.346	.019	.111	043	082	.111	.102	1.689	0.164	1.2	1.1	4.6	1.8	B-	
979	617574	8	260	.269	.339	.077	.269	.300	.015	.204	.121	236	.204	087	1.281	0.150	1.7	1.1	2.3	1.3	B-	
980	617575	8	260	.242	.292	.242	.169	.296	.000	.111	046	.111	.122	158	1.480	0.153	1.8	1.1	3.2	1.4	B-	
981	615866	8	260	.319	.142	.308	.319	.223	.008	.049	124	.034	.049	.035	1.040	0.142	4.0	1.3	4.2	1.4	A-	
982	620365	8	260	.377	.300	.192	.131	.377	.000	.362	064	281	105	.362	0.752	0.137	0.1	1.0	0.0	1.0	A+	
983	617486	8	261	.433	.433	.058	.276	.226	.008	.164	.164	230	.154	175	0.392	0.136	4.4	1.2	5.2	1.4	B-	
984	617578	8	261	.513	.119	.084	.280	.513	.004	.306	147	139	101	.306	0.012	0.135	1.3	1.1	0.9	1.1	A-	
985	620364	8	260	.350	.131	.300	.350	.204	.015	.145	080	011	.145	.015	0.836	0.141	3.7	1.2	3.4	1.3	A+	
986	618548	8	261	.548	.138	.195	.115	.548	.004	.323	090	106	208	.323	-0.154	0.136	1.9	1.1	1.6	1.1	A+	
987	615833	8	269	.245	.294	.294	.245	.156	.011	.252	.008	142	.252	019	1.485	0.150	0.6	1.0	0.9	1.1	A-	
988	615857	8	268	.310	.403	.183	.310	.101	.004	.144	.118	179	.144	164	1.211	0.143	2.8	1.2	4.6	1.5	A-	
989	615771	8	263	.734	.734	.190	.042	.030	.004	.460	.460	306	169	157	-0.979	0.150	-1.3	0.9	-1.6	0.8	A+	
990	618535	8	268	.840	.011	.840	.078	.067	.004	.449	071	.449	292	293	-1.692	0.177	-1.0	0.9	-1.8	0.7	A-	
991	617735	8	288	.743	.174	.042	.038	.743	.004	.258	170	078	046	.258	-0.864	0.142	0.6	1.0	0.4	1.0	A-	
992	620027	8	289	.630	.177	.121	.630	.073	.000	.501	275	240	.501	226	-0.493	0.132	-2.4	0.9	-2.3	0.8	A-	
993	617962	8	260	.662	.135	.065	.135	.662	.004	.404	267	149	120	.404	-0.720	0.142	-0.1	1.0	-0.5	1.0	A-	
994	620020	8	259	.228	.259	.328	.228	.182	.004	.173	038	058	.173	019	1.609	0.159	1.3	1.1	3.1	1.5	C-	
995	615702	8	5825	.394	.119	.245	.236	.394	.005	.370	184	133	098	.370	0.689	0.029	-0.3	1.0	0.5	1.0	A+	A+
996	617961	8	5825	.794	.027	.794	.081	.092	.007	.422	186	.422	228	175	-1.442	0.035	-3.2	0.9	-4.6	0.9	A+	A-
997	615886	8	260	.769	.069	.073	.769	.065	.023	.525	240	228	.525	118	-1.410	0.166	-1.4	0.9	-1.8	0.7	A+	
998	615871	8	260	.642	.104	.642	.131	.096	.027	.566	228	.566	245	159	-0.638	0.145	-3.5	0.8	-3.0	0.7	A+	
999	615704	8	5825	.565	.165	.565	.133	.126	.012	.468	161	.468	189	225	-0.156	0.029	-8.0	0.9	-7.7	0.9	A+	A+
1000	615750	8	260	.258	.585	.258	.065	.062	.031	.228	.015	.228	076	037	1.402	0.156	1.4	1.1	3.1	1.5	B-	
1001	615872	8	259	.073	.162	.097	.664	.073	.004	.198	234	210	.254	.198	3.309	0.269	-0.2	0.9	-1.2	0.6	B-	
1002	615888	8	259	.776	.066	.776	.131	.015	.012	.434	242	.434	185	118	-1.431	0.168	-0.1	1.0	-0.5	0.9	A+	
1003	615751	8	259	.672	.151	.672	.089	.070	.019	.568	295	.568	184	204	-0.785	0.149	-3.1	0.8	-2.9	0.7	A+	
1004	615889	8	259	.765	.205	.012	.765	.019	.000	.356	283	102	.356	189	-1.280	0.159	-0.2	1.0	-0.7	0.9	A-	
1005	615873	8	259	.668	.085	.154	.093	.668	.000	.569	332	281	257	.569	-0.690	0.144	-3.3	0.8	-3.2	0.7	A+	
1006	615752	8	259	.166	.154	.166	.166	.514	.000	.157	074	205	.157	.089	2.111	0.182	0.5	1.1	1.6	1.3	A+	
1007	615890	8	265	.917	.049	.011	.023	.917	.000	.317	175	122	247	.317	-2.654	0.241	-0.2	1.0	-1.2	0.7	A+	
1008	615874	8	265	.570	.109	.238	.570	.083	.000	.474	215	308	.474	134	-0.132	0.135	-2.1	0.9	-1.3	0.9	A-	
1009	615722	8	265	.366	.366	.094	.113	.426	.000	.070	.070	222	320	.267	0.831	0.137	3.9	1.2	4.9	1.5	A+	
1010	615891	8	262	.538	.134	.157	.538	.160	.012	.335	035	066	.335	212	-0.037	0.139	2.3	1.1	1.6	1.1	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Pof	ID	FT	Ν	DVal	D/A\	D/D\	D(C)	D/D)	D/ \	D+Dic	DT/A)	DT/D)	DT/C)	DT(D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1011	615725	8	262	.485	.485	.168	.202	.134	.012	.456	.456	082	269	105	0.232	0.138	-0.8	1.0	-0.8	0.9	A+	
1012	615731	8	262	.267	.431	.107	.183	.267	.012	.344	.098	192	227	.344	1.404	0.154	0.5	1.0	0.6	1.1	A-	
1013	615726	8	262	.435	.099	.263	.435	.195	.008	.358	288	060	.358	047	0.628	0.137	0.8	1.0	0.3	1.0	A-	
1014	615892	8	262	.534	.015	.095	.534	.344	.012	.461	065	266	.461	192	0.140	0.137	-2.3	0.9	-2.3	0.9	A+	
1015	615732	8	262	.756	.057	.756	.130	.042	.015	.416	216	.416	145	130	-1.079	0.158	-0.6	1.0	-1.4	0.8	A+	
1016	620026	8	268	.522	.075	.522	.179	.216	.008	.378	170	.378	232	122	0.145	0.134	0.4	1.0	1.4	1.1	A+	
1017	615893	8	268	.526	.063	.526	.138	.272	.000	.308	015	.308	173	203	0.143	0.134	1.5	1.1	1.4	1.1	A-	
1018	615729	8	268	.418	.418	.276	.123	.175	.008	.518	.518	217	324	112	0.648	0.135	-2.3	0.9	-2.2	0.9	A-	
1019	615733	8	268	.388	.261	.153	.194	.388	.004	.314	159	171	041	.314	0.801	0.137	1.7	1.1	1.5	1.1	B+	
1020	615894	8	288	.882	.063	.882	.038	.014	.004	.274	084	.274	136	156	-1.909	0.191	-0.1	1.0	0.0	1.0	B+	
1021	615734	8	561	.392	.210	.392	.201	.189	.007	.344	018	.344	212	128	0.734	0.092	-0.3	1.0	0.9	1.0	B-	
1022	617706	8	288	.295	.545	.295	.104	.049	.007	.010	.277	.010	255	180	1.320	0.137	4.0	1.3	4.1	1.4	A-	
1023	617707	8	263	.753	.095	.095	.753	.053	.004	.352	131	180	.352	169	-1.094	0.153	-0.4	1.0	0.4	1.1	A+	
1024	615753	8	263	.487	.376	.068	.487	.057	.011	.269	126	211	.269	.008	0.256	0.135	2.5	1.1	2.3	1.2	B+	
1025	615895	8	263	.643	.643	.179	.114	.061	.004	.459	.459	180	243	215	-0.481	0.139	-1.7	0.9	-1.8	0.9	A-	
1026	615735	8	263	.247	.247	.247	.240	.247	.019	.080	049	.080	026	.066	1.498	0.154	3.1	1.3	4.4	1.6	A+	
1027	615876	8	263	.673	.673	.049	.209	.061	.008	.502	.502	172	265	212	-0.670	0.147	-1.7	0.9	-2.1	8.0	B-	
1028	615705	8	263	.662	.034	.076	.213	.662	.015	.532	142	278	254	.532	-0.631	0.147	-1.9	0.9	-2.1	8.0	A+	
1029	615764	8	263	.555	.167	.167	.099	.555	.011	.597	188	257	272	.597	-0.045	0.139	-4.4	0.8	-3.3	0.8	B+	
1030	615710	8	263	.449	.449	.080	.262	.190	.019	.437	.437	184	196	045	0.501	0.139	-0.6	1.0	-0.1	1.0	B-	
1031	615756	8	263	.323	.099	.126	.434	.323	.019	.159	007	115	.058	.159	1.142	0.145	3.9	1.3	4.4	1.5	B+	
1032	617296	8	264	.318	.155	.254	.318	.269	.004	.083	155	161	.083	.238	1.040	0.143	3.6	1.2	3.7	1.4	A-	
1033	615765	8	264	.148	.148	.402	.292	.152	.008	.148	.148	.025	134	.077	2.145	0.182	0.8	1.1	2.9	1.6	A+	
1034	615877	8	264	.686	.030	.686	.076	.197	.011	.322	079	.322	252	102	-0.806	0.143	0.6	1.0	0.4	1.0	A-	
1035	615757	8	264	.152	.136	.242	.462	.152	.008	.096	160	185	.263	.096	2.112	0.180	1.5	1.2	1.8	1.3	A+	
1036	615706	8	264	.837	.837	.046	.076	.034	.008	.510	.510	189	286	231	-1.776	0.178	-1.8	0.8	-2.7	0.6	A-	
1037	615711	8	264	.489	.201	.212	.489	.091	.008	.389	131	182	.389	127	0.180	0.133	-0.3	1.0	0.2	1.0	A+	
1038	618681	8	264	.606	.133	.121	.133	.606	.008	.391	105	237	138	.391	-0.380	0.136	-0.7	1.0	-0.5	1.0	B+	
1039	618682	8	269	.290	.097	.290	.193	.413	.007	.157	141	.157	083	.091	1.233	0.143	2.3	1.2	2.9	1.3	A+	
1040	615713	8	529	.677	.677	.132	.144	.044	.004	.400	.400	152	227	161	-0.659	0.100	-1.2	1.0	-1.3	0.9	A-	A+
1041	617297	8	269	.691	.123	.078	.100	.692	.007	.441	228	151	156	.441	-0.736	0.142	-1.4	0.9	-1.5	0.9	B+	
1042	615758	8	269	.439	.030	.439	.428	.097	.007	003	031	003	.093	.006	0.490	0.132	7.1	1.3	6.2	1.5	A-	
1043	615878	8	269	.435	.286	.074	.197	.435	.007	.445	116	201	187	.445	0.507	0.132	-2.1	0.9	-1.4	0.9	A+	
1044	615767	8	269	.201	.201	.145	.082	.565	.007	.115	.115	138	136	.164	1.779	0.160	1.4	1.1	2.2	1.3	A-	
1045	615700	8	269	.231	.231	.205	.454	.100	.011	.197	.197	031	034	036	1.579	0.153	0.8	1.1	2.6	1.3	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z-	MS-	M /F	W /B
1046	615743	8	269	.294	.182	.294	.294	.223	.007	.249	073	141	.249	.049	1.213	0.142	0.9	1.1	out 1.8	1.2	/г А-	/ D
1047	620422	8	269	.591	.078	.145	.591	.175	.011	.391	163	231	.391	057	-0.229	0.134	-0.9	1.0	-0.7	1.0	A+	
1048	615707	8	269	.257	.045	.257	.539	.145	.015	.188	019	.188	.062	163	1.418	0.148	1.6	1.1	2.9	1.4	A-	
1049	617733	8	269	.219	.160	.041	.565	.219	.015	.275	025	152	046	.275	1.649	0.156	0.0	1.0	1.0	1.1	A+	
1050	615768	8	259	.738	.108	.027	.738	.120	.008	.346	189	081	.346	127	-1.026	0.155	1.0	1.1	0.7	1.1	A+	
1051	615701	8	259	.301	.054	.301	.498	.139	.008	.117	183	.117	.172	171	1.251	0.148	3.4	1.2	3.5	1.4	A+	
1052	615708	8	259	.807	.043	.077	.062	.807	.012	.476	189	222	199	.476	-1.526	0.173	-1.1	0.9	-1.8	0.7	A-	
1053	618683	8	259	.591	.591	.112	.251	.035	.012	.390	.390	273	085	128	-0.224	0.140	0.3	1.0	0.2	1.0	A+	
1054	617298	8	259	.653	.104	.653	.205	.027	.012	.322	213	.322	094	074	-0.553	0.144	1.6	1.1	0.7	1.1	A+	
1055	618536	8	259	.799	.031	.799	.100	.050	.019	.547	117	.547	300	248	-1.514	0.173	-1.8	0.8	-2.3	0.6	A+	1
1056	615908	8	259	.456	.085	.332	.456	.108	.019	.397	174	076	.397	190	0.427	0.138	0.4	1.0	1.0	1.1	A-	1
1057	615714	8	259	.452	.201	.151	.178	.452	.019	.414	168	123	121	.414	0.438	0.138	-0.3	1.0	-0.6	1.0	C-	
1058	615744	8	259	.695	.046	.147	.695	.093	.019	.389	145	109	.389	213	-0.825	0.150	0.4	1.0	0.7	1.1	B+	
1059	615716	8	259	.490	.108	.174	.205	.490	.023	.519	074	135	325	.519	0.241	0.138	-2.7	0.9	-2.5	0.8	A+	
1060	615879	8	259	.548	.143	.120	.548	.162	.027	.376	201	165	.376	014	-0.053	0.140	1.0	1.1	0.7	1.1	B-	
1061	618538	8	260	.889	.035	.065	.889	.012	.000	.418	297	241	.418	166	-2.180	0.207	-1.1	0.8	-2.0	0.6	A-	
1062	615745	8	260	.781	.131	.062	.781	.019	.008	.328	143	138	.328	273	-1.335	0.164	0.5	1.0	0.6	1.1	A+	
1063	615703	8	260	.512	.073	.135	.273	.512	.008	.513	127	390	164	.513	0.137	0.136	-2.2	0.9	-2.0	0.9	A+	
1064	615717	8	260	.419	.419	.115	.196	.258	.012	.421	.421	117	153	222	0.589	0.137	-1.4	0.9	-0.4	1.0	A-	
1065	615909	8	260	.627	.031	.031	.627	.308	.004	.291	200	123	.291	158	-0.425	0.140	2.2	1.1	2.0	1.2	A+	
1066	617964	8	260	.600	.119	.600	.127	.150	.004	.517	284	.517	168	261	-0.289	0.138	-1.9	0.9	-2.0	0.9	A-	
1067	615715	8	260	.385	.189	.181	.385	.242	.004	.333	189	214	.333	.015	0.755	0.138	1.1	1.1	0.8	1.1	B+	
1068	615709	8	260	.385	.131	.342	.385	.135	.008	.197	209	115	.197	.136	0.770	0.139	3.0	1.2	3.0	1.3	A-	
1069	615769	8	260	.804	.069	.058	.062	.804	.008	.380	223	157	171	.380	-1.508	0.171	-0.3	1.0	-0.5	0.9	A+	
1070	615880	8	260	.392	.392	.435	.104	.062	.008	.231	.231	.083	325	158	0.712	0.138	3.2	1.2	2.6	1.2	A-	
1071	615719	8	273	.216	.114	.582	.216	.088	.000	041	181	.234	041	145	1.603	0.155	3.0	1.3	4.7	1.7	A+	1
1072	617958	8	273	.575	.176	.095	.150	.575	.004	.369	216	193	061	.369	-0.216	0.131	-0.4	1.0	-0.4	1.0	B+	
1073	615966	8	273	.667	.180	.667	.110	.040	.004	.389	115	.389	294	127	-0.664	0.137	-0.8	1.0	-1.1	0.9	A+	1
1074	615746	8	273	.696	.242	.022	.696	.037	.004	.413	266	120	.413	194	-0.818	0.140	-1.0	0.9	-1.4	0.9	A+	1
1075	617055	8	273	.711	.084	.092	.711	.106	.007	.459	198	234	.459	179	-0.905	0.143	-1.3	0.9	-1.5	0.9	A+	
1076	618541	8	273	.648	.077	.103	.648	.169	.004	.512	198	260	.512	242	-0.571	0.136	-3.0	0.9	-3.0	0.8	C+	
1077	615910	8	273	.202	.392	.154	.249	.202	.004	.148	.261	247	175	.148	1.701	0.159	1.4	1.1	1.9	1.3	A-	
1078	615736	8	273	.169	.169	.260	.447	.117	.007	.204	.204	030	068	019	1.934	0.169	0.3	1.0	2.3	1.4	B-	
1079	615912	8	262	.298	.099	.095	.500	.298	.008	.399	090	183	155	.399	1.029	0.146	-0.1	1.0	-0.1	1.0	A+	
1080	615861	8	262	.221	.248	.221	.229	.294	.008	074	.172	074	080	.036	1.487	0.159	4.1	1.4	5.5	2.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1081	615747	8	262	.359	.359	.172	.294	.164	.012	.298	.298	224	061	.002	0.691	0.141	1.7	1.1	0.8	1.1	Α-	
1082	615721	8	262	.748	.050	.088	.748	.107	.008	.510	191	225	.510	292	-1.320	0.155	-1.8	0.9	-1.9	0.8	A-	
1083	617738	8	262	.531	.126	.126	.531	.202	.015	.452	194	273	.452	082	-0.168	0.137	-0.6	1.0	-0.5	1.0	B-	
1084	620022	8	262	.622	.157	.115	.092	.622	.015	.565	237	280	212	.565	-0.630	0.141	-3.1	0.8	-2.3	0.8	A+	
1085	617959	8	262	.496	.107	.218	.164	.496	.015	.418	106	261	084	.418	0.000	0.136	0.0	1.0	-0.2	1.0	A+	
1086	615738	8	262	.267	.225	.248	.244	.267	.015	.228	.092	243	.008	.228	1.216	0.151	1.5	1.1	1.5	1.2	A-	
1087	617056	8	262	.431	.229	.103	.221	.431	.015	.366	024	119	237	.366	0.317	0.137	0.9	1.0	0.9	1.1	B+	
1088	615739	8	260	.312	.292	.246	.312	.131	.019	.167	.013	098	.167	015	0.998	0.146	2.9	1.2	3.9	1.4	A-	
1089	615841	8	260	.535	.265	.089	.104	.535	.008	.368	126	217	133	.368	-0.101	0.136	0.5	1.0	1.0	1.1	A+	
1090	620014	8	260	.542	.077	.542	.162	.212	.008	.313	129	.313	212	044	-0.138	0.136	1.4	1.1	1.0	1.1	B+	
1091	618788	8	260	.704	.027	.169	.089	.704	.012	.357	158	136	198	.357	-0.975	0.148	0.1	1.0	-0.3	1.0	C+	
1092	617496	8	260	.462	.327	.462	.089	.115	.008	.237	.001	.237	158	146	0.252	0.136	3.1	1.2	3.4	1.3	A-	
1093	620024	8	260	.285	.189	.408	.285	.115	.004	008	.000	.012	008	.062	1.164	0.149	4.4	1.3	6.0	1.8	A+	
1094	615862	8	260	.554	.381	.554	.039	.023	.004	.337	196	.337	165	125	-0.184	0.136	0.7	1.0	1.1	1.1	A-	
1095	617963	8	260	.696	.108	.696	.069	.123	.004	.446	247	.446	182	182	-0.906	0.145	-1.4	0.9	-1.6	0.8	A+	
1096	615913	8	260	.508	.508	.162	.219	.108	.004	.463	.463	222	242	088	0.036	0.135	-1.1	1.0	-0.7	1.0	A-	
1097	617057	8	260	.558	.215	.558	.112	.104	.012	.426	156	.426	273	110	-0.219	0.137	-0.8	1.0	-0.9	0.9	A-	
1098	618849	8	259	.641	.066	.205	.641	.085	.004	.361	178	192	.361	109	-0.512	0.141	0.3	1.0	-0.4	1.0	A-	
1099	615759	8	259	.197	.548	.127	.124	.197	.004	.314	055	175	054	.314	1.821	0.167	-0.5	1.0	-0.1	1.0	A-	
1100	617497	8	259	.537	.066	.112	.537	.282	.004	.371	229	279	.371	043	0.000	0.136	0.4	1.0	0.6	1.0	A+	
1101	618532	8	259	.587	.112	.104	.587	.193	.004	.508	274	216	.508	193	-0.242	0.137	-2.9	0.9	-2.7	0.8	A+	
1102	615863	8	259	.745	.170	.050	.745	.027	.008	.293	061	221	.293	162	-1.130	0.155	0.2	1.0	0.8	1.1	B+	
1103	617058	8	259	.514	.189	.514	.135	.154	.008	.194	019	.194	117	055	0.104	0.136	4.3	1.2	4.3	1.3	A+	
1104	615740	8	259	.263	.216	.313	.263	.201	.008	.289	116	052	.289	063	1.388	0.152	0.6	1.0	2.4	1.3	A-	
1105	615842	8	259	.614	.139	.614	.143	.097	.008	.396	133	.396	140	229	-0.384	0.139	0.3	1.0	-0.2	1.0	A+	
1106	620017	8	259	.599	.599	.189	.097	.108	.008	.458	.458	154	307	141	-0.307	0.138	-1.8	0.9	-1.2	0.9	B+	
1107	618850	8	289	.716	.152	.028	.100	.716	.004	.422	231	141	249	.422	-0.958	0.140	-1.1	0.9	-1.0	0.9	C+	
1108	615741	8	289	.609	.609	.080	.190	.121	.000	.218	.218	234	.014	149	-0.390	0.130	2.4	1.1	3.4	1.3	A+	
1109	615843	8	289	.751	.751	.021	.190	.038	.000	.416	.416	153	285	241	-1.156	0.145	-1.4	0.9	-1.1	0.9	A+	
1110	620018	8	289	.568	.228	.132	.073	.568	.000	.408	272	087	226	.408	-0.188	0.129	-1.0	1.0	-0.9	0.9	B+	
1111	615760	8	289	.401	.173	.215	.208	.401	.004	.311	112	051	226	.311	0.593	0.130	1.1	1.1	1.0	1.1	A+	
1112	618533	8	289	.609	.166	.111	.609	.114	.000	.429	103	212	.429	329	-0.390	0.130	-0.8	1.0	-1.5	0.9	A+	
1113	615761	8	260	.323	.450	.323	.096	.123	.008	.099	.093	.099	210	.017	0.991	0.143	4.2	1.3	4.0	1.4	A-	
1114	615881	8	260	.762	.039	.115	.077	.762	.008	.530	154	322	213	.530	-1.264	0.157	-2.6	0.8	-2.5	0.7	A-	
1115	615844	8	260	.646	.054	.162	.646	.127	.012	.507	184	303	.507	131	-0.615	0.142	-2.2	0.9	-2.1	0.8	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1116	618534	8	260	.523	.200	.154	.112	.523	.012	.467	135	095	315	.467	-0.002	0.136	-1.7	0.9	-1.1	0.9	B+	
1117	618851	8	260	.458	.085	.285	.458	.162	.012	.453	205	130	.453	174	0.312	0.136	-1.8	0.9	-1.4	0.9	A-	
1118	620019	8	260	.581	.581	.092	.112	.204	.012	.436	.436	283	111	130	-0.283	0.138	-0.7	1.0	-0.8	0.9	A+	
1119	615762	8	260	.158	.158	.200	.319	.319	.004	.098	.098	.009	024	065	2.100	0.179	0.7	1.1	1.9	1.4	A+	
1120	615882	8	260	.277	.289	.277	.319	.108	.008	052	.064	052	.074	105	1.287	0.148	3.9	1.3	5.5	1.7	A-	
1121	615748	8	261	.330	.172	.241	.330	.249	.008	.368	202	118	.368	052	0.915	0.143	-0.3	1.0	1.4	1.1	A-	
1122	615763	8	261	.429	.061	.207	.299	.429	.004	.379	205	219	062	.379	0.416	0.136	-0.4	1.0	0.5	1.0	A-	
1123	615885	8	261	.740	.046	.138	.740	.073	.004	.468	223	220	.468	236	-1.164	0.153	-1.1	0.9	-1.4	0.8	A-	
1124	618852	8	261	.617	.081	.153	.138	.617	.012	.559	193	341	187	.559	-0.510	0.140	-3.6	0.8	-3.1	0.8	A+	
1125	615868	8	261	.402	.184	.402	.249	.157	.008	.365	182	.365	157	043	0.540	0.138	0.1	1.0	1.3	1.1	A-	
1126	617739	8	289	.661	.170	.104	.661	.062	.004	.540	428	206	.540	110	-0.658	0.134	-2.8	0.9	-2.8	0.8	A-	
1127	618786	8	262	.401	.088	.191	.401	.305	.015	.230	119	179	.230	.063	0.471	0.138	3.2	1.2	2.8	1.2	A+	
1128	620015	8	259	.517	.143	.517	.127	.209	.004	.092	018	.092	.032	067	0.106	0.138	4.8	1.3	4.3	1.4	B+	
1129	617737	8	260	.489	.300	.108	.489	.077	.027	.230	023	177	.230	.086	0.149	0.138	3.3	1.2	3.0	1.2	A+	
1130	618540	8	262	.332	.332	.168	.370	.118	.012	.339	.339	172	.015	153	1.156	0.144	-0.1	1.0	0.2	1.0	A-	
1131	620029	8	528	.434	.112	.434	.203	.242	.010	.168	063	.168	113	.043	0.513	0.096	5.9	1.2	7.2	1.4	A-	
1132	620025	8	263	.525	.110	.243	.114	.525	.008	.359	174	058	188	.359	0.113	0.138	1.3	1.1	1.1	1.1	A-	
1133	620021	8	263	.840	.065	.053	.840	.038	.004	.399	246	271	.399	012	-1.718	0.179	-0.8	0.9	-1.1	8.0	A+	
1134	615749	8	260	.781	.035	.150	.781	.035	.000	.360	123	302	.360	103	-1.271	0.161	-0.6	1.0	-0.6	0.9	A+	
1135	615723	8	273	.414	.117	.154	.304	.414	.011	.281	271	109	.032	.281	0.519	0.132	1.1	1.1	1.1	1.1	A+	
1136	615884	8	259	.610	.151	.131	.610	.085	.023	.373	054	206	.373	139	-0.365	0.142	0.7	1.0	0.9	1.1	A+	
1137	620030	8	263	.818	.049	.072	.818	.053	.008	.481	262	200	.481	167	-1.636	0.177	-1.0	0.9	-2.0	0.7	A+	ļ
1138	615927	8	269	.442	.186	.126	.238	.442	.007	.258	043	123	069	.258	0.472	0.132	1.9	1.1	1.8	1.1	A+	
1139	620023	8	264	.136	.136	.254	.349	.254	.008	.137	.137	037	.020	020	2.248	0.188	0.8	1.1	1.6	1.3	A+	
1140	617489	8	259	.772	.772	.120	.035	.066	.008	.420	.420	195	198	151	-1.252	0.162	-0.4	1.0	-1.0	0.9	B-	
1141	618543	8	269	.766	.045	.082	.766	.093	.015	.417	233	174	.417	100	-1.202	0.157	-0.7	0.9	-0.9	0.9	A+	
1142	618544	8	261	.322	.035	.464	.322	.176	.004	.284	229	185	.284	.060	0.959	0.143	1.5	1.1	1.5	1.2	A+	
1143	615810	8	268	.821	.041	.821	.060	.075	.004	.271	172	.271	186	077	-1.541	0.170	0.5	1.0	0.6	1.1	A-	
1144	618542	8	5825	.479	.086	.245	.185	.479	.006	.494	193	288	112	.494	0.274	0.029	-9.9	0.9	-9.9	0.9	C-	C-
1145	615914	8	260	.815	.815	.069	.046	.058	.012	.528	.528	233	243	157	-1.696	0.177	-2.0	0.8	-1.5	0.7	B+	
1146	620360	8	5825	.475	.288	.475	.129	.098	.010	.423	186	.423	186	107	0.288	0.029	-4.5	1.0	-3.0	1.0	A-	A-
1147	615916	8	259	.869	.869	.031	.066	.031	.004	.415	.415	220	160	226	-2.191	0.205	-0.5	0.9	-1.2	0.7	A+	
1148	615917	8	259	.618	.618	.108	.251	.023	.000	.410	.410	234	265	078	-0.448	0.140	0.1	1.0	-0.4	1.0	A-	
1149	615918	8	265	.374	.260	.117	.374	.249	.000	.313	087	215	.313	102	0.812	0.137	0.4	1.0	0.5	1.0	A+	
1150	620034	8	262	.679	.065	.679	.092	.153	.012	.353	230	.353	120	055	-0.784	0.147	0.9	1.1	1.4	1.2	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	ıc	FT	N/	DVal	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT(A)	DT/D)	DT/C)	DT/D)	Maaa	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1151	615921	8	262	.668	.084	.668	.179	.053	.015	.447	195	.447	188	122	-0.731	0.147	-0.9	0.9	0.2	1.0	A+	
1152	620035	8	262	.370	.095	.370	.370	.157	.008	.349	255	.349	039	078	0.956	0.140	0.6	1.0	0.5	1.0	A-	1
1153	615922	8	262	.782	.782	.015	.153	.042	.008	.184	.184	037	041	050	-1.225	0.162	2.0	1.2	3.0	1.5	A+	l
1154	615905	8	262	.718	.042	.149	.080	.718	.012	.517	180	225	235	.517	-0.823	0.150	-2.1	0.9	-2.4	0.7	A+	1
1155	615923	8	268	.567	.287	.056	.090	.567	.000	.444	245	167	248	.444	-0.054	0.134	-1.0	1.0	-0.8	0.9	A-	1
1156	617493	8	268	.452	.220	.142	.452	.187	.000	.391	108	250	.391	161	0.501	0.134	-0.1	1.0	0.8	1.1	A-	1
1157	615906	8	268	.780	.780	.090	.049	.078	.004	.254	.254	178	075	150	-1.243	0.159	0.9	1.1	0.5	1.1	A+	1
1158	615829	8	268	.403	.187	.403	.164	.243	.004	.323	098	.323	269	035	0.727	0.136	1.2	1.1	0.9	1.1	B-	
1159	618545	8	268	.545	.235	.545	.105	.112	.004	.329	162	.329	286	006	0.041	0.134	1.1	1.1	0.9	1.1	A-	1
1160	615805	8	268	.481	.090	.336	.090	.481	.004	.463	234	183	254	.463	0.346	0.134	-1.7	0.9	-1.0	0.9	A-	1
1161	615806	8	288	.583	.038	.583	.056	.316	.007	.222	173	.222	159	027	-0.052	0.128	2.3	1.1	2.0	1.1	A+	
1162	615816	8	288	.424	.424	.038	.451	.080	.007	.328	.328	225	109	130	0.684	0.127	-0.1	1.0	-0.1	1.0	A-	1
1163	617494	8	288	.420	.281	.420	.087	.208	.004	.277	079	.277	289	.010	0.704	0.127	1.2	1.1	0.6	1.0	B+	1
1164	615924	8	288	.313	.125	.177	.382	.313	.004	.261	139	170	.027	.261	1.231	0.135	0.7	1.0	1.6	1.1	A+	
1165	615907	8	288	.715	.069	.715	.174	.038	.004	.426	208	.426	209	190	-0.706	0.138	-1.6	0.9	-1.9	8.0	A-	1
1166	618546	8	288	.684	.038	.684	.146	.129	.004	.367	156	.367	116	227	-0.539	0.134	-0.8	1.0	-0.4	1.0	A-	
1167	615830	8	288	.611	.611	.212	.115	.059	.004	.291	.291	154	118	076	-0.177	0.129	0.8	1.0	1.0	1.1	A-	1
1168	615818	8	263	.852	.852	.019	.057	.068	.004	.293	.293	063	160	143	-1.817	0.184	0.2	1.0	0.3	1.1	A+	1
1169	615925	8	263	.589	.084	.126	.198	.589	.004	.472	184	245	194	.472	-0.216	0.136	-2.2	0.9	-2.3	8.0	A-	1
1170	617495	8	263	.247	.247	.095	.468	.186	.004	.140	.140	213	.255	263	1.517	0.153	2.7	1.2	2.6	1.4	A-	1
1171	618552	8	263	.422	.418	.422	.038	.114	.008	.340	212	.340	070	086	0.576	0.136	0.7	1.0	1.9	1.1	B-	1
1172	618553	8	263	.601	.601	.076	.221	.095	.008	.415	.415	187	077	278	-0.256	0.141	-0.1	1.0	0.0	1.0	B+	1
1173	615820	8	263	.582	.167	.099	.582	.145	.008	.455	236	106	.455	184	-0.158	0.140	-1.0	0.9	-1.3	0.9	B-	1
1174	615808	8	263	.152	.388	.156	.152	.297	.008	.000	014	096	.000	.179	2.304	0.183	2.0	1.2	4.1	2.1	A-	1
1175	617709	8	263	.312	.107	.179	.392	.312	.011	.156	100	.085	051	.156	1.235	0.147	3.7	1.3	3.2	1.4	A+	1
1176	617732	8	525	.250	.250	.259	.320	.164	.008	.281	.281	216	013	.020	1.390	0.108	0.9	1.1	1.6	1.1	A-	1
1177	620359	8	273	.476	.278	.476	.169	.073	.004	.405	211	.405	186	062	0.244	0.130	-1.0	1.0	-0.8	1.0	A-	1
1178	615821	8	262	.317	.382	.317	.195	.099	.008	.240	.146	.240	209	252	0.923	0.144	2.2	1.1	1.8	1.2	A+	1
1179	615823	8	260	.469	.231	.100	.469	.189	.012	.288	086	193	.288	056	0.205	0.136	1.8	1.1	1.4	1.1	A-	1
1180	615899	8	259	.541	.131	.116	.541	.209	.004	.213	240	037	.213	.020	-0.018	0.136	3.3	1.2	3.2	1.2	A-	
1181	615824	8	259	.386	.209	.151	.386	.247	.008	.371	187	118	.371	075	0.720	0.139	0.1	1.0	-0.3	1.0	A+	
1182	615900	8	289	.301	.145	.301	.246	.301	.007	.317	009	.317	118	195	1.110	0.138	0.2	1.0	1.3	1.1	A+	
1183	617498	8	289	.433	.235	.433	.183	.145	.004	.076	011	.076	.018	087	0.450	0.129	5.4	1.3	5.6	1.4	A+	
1184	615825	8	289	.190	.052	.329	.190	.429	.000	.060	183	.034	.060	.002	1.808	0.159	1.7	1.2	4.9	1.9	B-	
1185	615812	8	289	.381	.125	.381	.080	.415	.000	.368	006	.368	230	232	0.704	0.131	0.1	1.0	0.0	1.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1186	615901	8	260	.312	.185	.312	.423	.077	.004	.001	097	.001	.121	006	1.053	0.144	4.9	1.3	5.4	1.6	A-	75
1187	615813	8	260	.115	.096	.292	.115	.485	.012	.289	129	100	.289	.074	2.455	0.203	-0.4	0.9	-0.1	1.0	A-	
1188	615815	8	260	.300	.062	.289	.300	.346	.004	.440	121	273	.440	110	1.138	0.144	-1.5	0.9	-1.4	0.9	A-	
1189	618547	8	260	.323	.139	.208	.331	.323	.000	.467	184	327	048	.467	1.025	0.142	-1.6	0.9	-1.1	0.9	A-	
1190	617490	8	260	.685	.062	.158	.685	.089	.008	.410	251	227	.410	140	-0.775	0.146	-0.5	1.0	-0.5	1.0	A-	
1191	617491	8	261	.387	.387	.372	.153	.081	.008	.462	.462	211	198	097	0.617	0.138	-1.7	0.9	-1.6	0.9	A-	
1192	615817	8	524	.347	.168	.384	.099	.347	.002	.260	220	.044	172	.260	0.953	0.099	1.8	1.1	2.6	1.2	A+	
1193	615822	8	547	.309	.146	.227	.309	.313	.006	.285	157	230	.285	.077	1.188	0.100	0.4	1.0	1.2	1.1	A-	
1194	615819	8	264	.371	.371	.167	.133	.318	.011	.246	.246	074	290	.089	0.740	0.138	2.2	1.1	1.7	1.1	A-	
1195	615809	8	521	.123	.184	.438	.242	.123	.013	.103	084	.067	015	.103	2.401	0.142	1.1	1.1	2.8	1.5	A+	A+
1196	615919	8	262	.584	.584	.103	.034	.271	.008	.317	.317	227	123	042	-0.100	0.138	0.2	1.0	0.5	1.0	A-	
1197	615826	8	263	.468	.061	.179	.468	.289	.004	.334	143	219	.334	057	0.365	0.134	0.5	1.0	1.2	1.1	A+	
1198	615804	8	262	.473	.271	.199	.473	.050	.008	.452	157	228	.452	111	0.308	0.138	-1.3	0.9	-1.1	0.9	A-	
1199	617694	11	260	.177	.108	.150	.177	.546	.019	.115	078	179	.115	.232	1.924	0.174	1.1	1.1	3.9	1.8	A-	
1200	617693	11	260	.646	.115	.123	.100	.646	.015	.433	067	140	250	.433	-0.589	0.142	-1.0	0.9	-1.0	0.9	B-	
1201	617701	11	259	.259	.236	.290	.259	.205	.012	.041	.256	118	.041	072	1.383	0.153	3.1	1.2	4.5	1.6	A+	
1202	617702	11	259	.355	.390	.174	.355	.077	.004	.357	.005	368	.357	122	0.832	0.141	-0.2	1.0	0.2	1.0	A-	
1203	617704	11	265	.223	.155	.449	.223	.174	.000	.087	163	.072	.087	034	1.594	0.155	1.6	1.1	2.5	1.3	A-	
1204	617705	11	262	.275	.164	.374	.168	.275	.019	.209	113	.136	160	.209	1.300	0.150	2.1	1.2	1.8	1.2	A-	
1205	620380	11	262	.260	.218	.195	.321	.260	.008	.193	052	.046	075	.193	1.523	0.151	1.4	1.1	1.1	1.1	A+	
1206	617674	11	263	.137	.243	.369	.243	.137	.008	141	244	.330	.031	141	2.287	0.188	2.1	1.3	4.8	2.2	A+	
1207	617676	11	263	.437	.164	.160	.437	.232	.008	.118	.076	027	.118	089	0.513	0.136	5.5	1.3	4.9	1.4	A-	
1208	617677	11	264	.519	.250	.519	.117	.106	.008	.138	.016	.138	115	025	0.045	0.132	4.2	1.2	4.2	1.2	A-	
1209	617678	11	269	.290	.346	.201	.290	.156	.007	.332	141	129	.332	.027	1.228	0.143	-0.6	1.0	0.2	1.0	A-	
1210	617679	11	259	.533	.533	.043	.058	.359	.008	.110	.110	018	094	.022	0.063	0.136	5.7	1.3	5.1	1.4	A+	
1211	617680	11	260	.462	.169	.135	.462	.227	.008	.294	206	280	.294	.103	0.359	0.135	1.7	1.1	2.1	1.1	B-	
1212	617681	11	273	.330	.051	.330	.081	.535	.004	.293	263	.293	187	014	0.942	0.136	0.6	1.0	0.3	1.0	B-	
1213	617682	11	262	.183	.275	.199	.336	.183	.008	.242	248	.000	.089	.242	1.758	0.169	0.6	1.1	0.9	1.2	A-	
1214	617683	11	260	.515	.069	.135	.515	.277	.004	.259	043	024	.259	196	-0.016	0.133	2.0	1.1	1.5	1.1	A-	
1215	617695	11	260	.192	.192	.496	.219	.081	.012	.073	.073	.247	200	149	1.678	0.166	1.8	1.2	2.7	1.4	A+	
1216	617696	11	259	.313	.282	.282	.313	.120	.004	.353	072	137	.353	149	1.103	0.145	0.0	1.0	0.6	1.1	A-	
1217	617684	11	259	.533	.093	.533	.158	.209	.008	.416	211	.416	140	161	0.018	0.135	-0.7	1.0	-0.8	1.0	A+	
1218	617685	11	289	.727	.048	.727	.138	.083	.004	.556	245	.556	383	210	-1.003	0.141	-3.1	0.8	-3.0	0.7	A-	
1219	617697	11	289	.225	.332	.225	.208	.235	.000	.068	.084	.068	252	.081	1.541	0.149	2.3	1.2	3.0	1.4	A+	
1220	617689	11	289	.599	.170	.128	.599	.104	.000	.169	023	177	.169	048	-0.333	0.129	3.3	1.2	3.2	1.2	A+	<u>i</u>

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	ın	FT	A.	DV/ol	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT(A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1221	617686	11	260	.423	.423	.365	.073	.131	.008	.326	.326	034	113	275	0.496	0.136	0.0	1.0	0.6	1.0	A+	
1222	617698	11	260	.189	.189	.519	.173	.108	.012	.073	.073	.064	022	034	1.791	0.167	1.7	1.2	2.8	1.5	A-	
1223	617690	11	260	.408	.408	.258	.173	.150	.012	.306	.306	203	092	.053	0.552	0.136	1.3	1.1	0.7	1.1	A-	
1224	617699	11	260	.127	.227	.127	.481	.165	.000	.001	139	.001	.177	082	2.339	0.194	0.8	1.1	2.1	1.4	A-	
1225	617687	11	260	.173	.054	.173	.685	.089	.000	108	265	108	.265	079	1.941	0.171	1.9	1.2	3.6	1.6	A+	
1226	617691	11	260	.346	.127	.419	.346	.108	.000	.274	101	222	.274	.041	0.890	0.138	0.6	1.0	1.3	1.1	A+	
1227	617688	11	261	.452	.138	.452	.291	.111	.008	.146	023	.146	.003	144	0.291	0.134	4.3	1.2	3.8	1.2	A+	
1228	617692	11	261	.280	.126	.280	.479	.111	.004	.241	214	.241	.048	126	1.162	0.146	0.9	1.1	1.7	1.2	A-	
1229	617700	11	261	.559	.119	.153	.157	.559	.012	.537	249	202	224	.537	-0.215	0.135	-3.3	0.9	-3.5	8.0	A-	
1230	617613	11	260	.431	.239	.065	.254	.431	.012	.292	226	049	.050	.292	0.453	0.137	1.8	1.1	2.4	1.2	A+	
1231	617634	11	260	.242	.204	.242	.335	.192	.027	.145	.000	.145	.095	087	1.444	0.156	2.2	1.2	2.7	1.4	A+	
1232	617636	11	259	.313	.158	.313	.232	.293	.004	.195	114	.195	102	.038	1.075	0.145	2.5	1.2	3.2	1.3	A-	
1233	617614	11	259	.359	.359	.158	.185	.282	.015	.305	.305	081	129	027	0.826	0.141	0.1	1.0	0.5	1.0	A-	
1234	620645	11	259	.521	.201	.081	.521	.182	.015	.352	040	232	.352	109	0.012	0.137	1.2	1.1	1.1	1.1	A-	
1235	617615	11	259	.772	.043	.050	.772	.127	.008	.317	262	185	.317	080	-1.296	0.160	-0.1	1.0	-0.4	0.9	A-	
1236	617598	11	259	.270	.278	.209	.243	.270	.000	.215	109	.032	140	.215	1.304	0.151	1.3	1.1	1.4	1.2	A+	
1237	617637	11	259	.224	.166	.340	.266	.224	.004	.252	.092	198	091	.252	1.589	0.160	1.0	1.1	1.3	1.2	B+	
1238	617601	11	265	.491	.102	.491	.287	.121	.000	.200	109	.200	.005	212	0.240	0.132	2.3	1.1	2.0	1.1	A-	
1239	617617	11	265	.268	.268	.200	.287	.245	.000	.242	.242	129	075	051	1.322	0.146	0.3	1.0	1.3	1.1	A+	
1240	617638	11	265	.408	.140	.260	.408	.193	.000	.224	246	059	.224	.002	0.609	0.134	2.2	1.1	2.5	1.2	A+	
1241	617640	11	262	.206	.359	.206	.302	.122	.012	.061	.094	.061	056	.029	1.749	0.163	2.5	1.2	4.0	1.8	B-	
1242	617602	11	262	.389	.172	.122	.305	.389	.012	.485	145	227	117	.485	0.690	0.139	-2.5	0.9	-2.1	0.8	C-	
1243	617618	11	262	.454	.191	.225	.454	.118	.012	.254	.009	205	.254	.028	0.367	0.137	2.8	1.2	2.0	1.2	A+	
1244	617627	11	262	.695	.038	.221	.695	.034	.012	.252	081	076	.252	106	-0.674	0.146	1.4	1.1	2.6	1.3	A+	
1245	617603	11	262	.412	.149	.229	.195	.412	.015	.226	003	.004	140	.226	0.711	0.136	2.3	1.1	1.9	1.1	A-	
1246	617626	11	262	.248	.248	.103	.588	.050	.012	.133	.133	116	.095	075	1.590	0.153	2.1	1.2	2.8	1.4	A+	
1247	617604	11	268	.466	.105	.190	.239	.466	.000	.295	036	144	187	.295	0.417	0.133	1.5	1.1	1.6	1.1	A+	
1248	617628	11	268	.560	.157	.560	.164	.116	.004	.462	109	.462	311	217	-0.035	0.134	-1.4	0.9	-1.7	0.9	A-	
1249	617642	11	268	.231	.231	.332	.336	.097	.004	.115	.115	.013	.014	188	1.642	0.154	2.2	1.2	2.8	1.4	A+	
1250	617629	11	288	.306	.306	.281	.264	.142	.007	.044	.044	.055	006	032	1.255	0.135	3.1	1.2	4.0	1.3	A+	
1251	617605	11	288	.431	.250	.167	.431	.149	.004	.194	.003	.004	.194	210	0.652	0.126	2.4	1.1	2.4	1.1	A+	
1252	617643	11	288	.292	.417	.191	.097	.292	.004	.277	010	110	183	.277	1.330	0.136	0.2	1.0	0.3	1.0	A+	
1253	617646	11	263	.354	.297	.354	.110	.232	.008	.257	091	.257	130	051	0.894	0.138	1.4	1.1	2.0	1.2	A-	
1254	617606	11	263	.703	.019	.224	.703	.049	.004	.175	081	.009	.175	230	-0.784	0.144	2.4	1.2	1.7	1.2	B-	
1255	617633	11	263	.270	.236	.270	.350	.126	.019	.198	.081	.198	095	157	1.325	0.149	1.4	1.1	2.1	1.2	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Dof	ın	FT	A.	DV/el	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:a	DT(A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1256	617607	11	263	.525	.160	.217	.525	.088	.011	.276	211	022	.276	040	0.117	0.136	2.3	1.1	2.7	1.2	A-	
1257	617647	11	263	.331	.126	.331	.376	.156	.011	.313	123	.313	.050	225	1.087	0.142	0.6	1.0	1.1	1.1	A-	
1258	617635	11	263	.278	.202	.278	.186	.316	.019	.127	023	.127	153	.163	1.377	0.149	2.3	1.2	3.5	1.4	A+	<u>. </u>
1259	617608	11	264	.224	.163	.224	.538	.068	.008	.175	074	.175	051	.044	1.549	0.156	1.1	1.1	2.0	1.3	A-	
1260	617710	11	264	.375	.280	.375	.224	.114	.008	.164	.017	.164	071	082	0.718	0.136	3.0	1.2	3.1	1.2	A-	
1261	617639	11	264	.500	.110	.292	.500	.087	.011	.233	175	001	.233	093	0.123	0.132	2.7	1.1	2.3	1.1	A+	<u> </u>
1262	617641	11	269	.599	.130	.108	.599	.156	.007	.481	128	214	.481	234	-0.251	0.133	-2.9	0.9	-2.8	0.8	A+	
1263	620377	11	269	.126	.138	.476	.253	.126	.007	.071	052	.155	095	.071	2.377	0.191	0.9	1.1	2.6	1.6	B-	
1264	617609	11	269	.353	.149	.305	.353	.178	.015	.256	199	066	.256	.080	0.891	0.136	1.2	1.1	1.4	1.1	A+	1
1265	620379	11	259	.359	.359	.205	.286	.139	.012	.355	.355	204	163	.090	0.905	0.141	0.2	1.0	0.3	1.0	A-	1
1266	617644	11	259	.452	.452	.112	.270	.147	.019	.287	.287	110	.008	161	0.428	0.137	2.2	1.1	2.2	1.2	A+	
1267	617616	11	259	.375	.239	.236	.131	.375	.019	.407	131	133	089	.407	0.810	0.140	-0.7	1.0	-0.2	1.0	A-	1
1268	617645	11	260	.442	.096	.442	.235	.223	.004	.274	155	.274	167	019	0.456	0.135	2.2	1.1	1.9	1.1	A+	1
1269	617619	11	260	.669	.119	.669	.081	.127	.004	.257	.001	.257	093	253	-0.643	0.143	1.7	1.1	1.6	1.2	C-	1
1270	617648	11	273	.143	.077	.143	.473	.300	.007	.109	065	.109	105	.125	2.132	0.179	0.6	1.1	2.0	1.4	A-	1
1271	617620	11	273	.352	.352	.385	.106	.150	.007	.342	.342	094	104	174	0.822	0.135	-0.3	1.0	-0.5	1.0	A+	1
1272	617621	11	262	.397	.168	.206	.214	.397	.015	.469	191	047	247	.469	0.487	0.139	-1.4	0.9	-1.2	0.9	A+	1
1273	620376	11	262	.542	.153	.130	.157	.542	.019	.554	211	126	320	.554	-0.215	0.137	-3.4	0.8	-2.8	8.0	B+	1
1274	617622	11	260	.339	.169	.265	.223	.339	.004	.320	164	045	115	.320	0.824	0.140	0.1	1.0	0.9	1.1	A+	1
1275	620378	11	260	.350	.350	.219	.165	.254	.012	.344	.344	281	037	012	0.756	0.139	0.2	1.0	-0.4	1.0	A-	1
1276	617623	11	259	.888	.888	.043	.035	.031	.004	.376	.376	199	148	172	-2.216	0.210	-0.4	0.9	-1.1	0.7	A+	1
1277	617599	11	259	.409	.409	.189	.263	.131	.008	.324	.324	117	081	141	0.607	0.137	1.3	1.1	0.7	1.0	A+	1
1278	617600	11	289	.315	.249	.315	.197	.235	.004	.217	046	.217	204	.001	1.016	0.135	1.6	1.1	2.4	1.2	A+	1
1279	617624	11	289	.699	.699	.121	.031	.145	.004	.232	.232	250	169	.027	-0.848	0.137	1.3	1.1	2.5	1.2	B-	1
1280	617610	11	260	.542	.250	.077	.542	.115	.015	.329	037	212	.329	152	-0.101	0.136	1.1	1.1	0.9	1.1	A+	1
1281	617625	11	260	.192	.381	.235	.192	.173	.019	.095	.005	.031	.095	029	1.745	0.166	1.3	1.1	3.8	1.7	A-	1
1282	617630	11	260	.523	.131	.215	.523	.131	.000	.377	181	246	.377	078	0.066	0.133	-0.5	1.0	-0.4	1.0	A-	1
1283	617611	11	260	.239	.146	.292	.312	.239	.012	.046	165	.058	.048	.046	1.460	0.153	2.2	1.2	3.0	1.4	A-	1
1284	617612	11	261	.364	.364	.226	.176	.230	.004	.318	.318	104	144	080	0.721	0.138	0.5	1.0	0.6	1.0	A+	
1285	617631	11	261	.322	.272	.322	.253	.146	.008	.199	.055	.199	071	175	0.929	0.142	2.0	1.1	2.4	1.2	A+	
1286	617675	11	268	.313	.164	.082	.440	.313	.000	.120	078	212	.063	.120	1.174	0.141	3.4	1.2	3.4	1.3	A+	
1287	619999	11	268	.224	.343	.224	.187	.243	.004	.299	155	.299	162	.041	1.691	0.156	0.3	1.0	0.7	1.1	A+	
1288	617649	11	288	.149	.743	.063	.149	.042	.004	.125	.077	062	.125	198	2.260	0.171	0.5	1.1	2.1	1.4	A-	
1289	620001	11	288	.740	.066	.108	.740	.083	.004	.402	135	222	.402	182	-0.827	0.141	-1.1	0.9	-1.6	0.9	A+	
1290	617650	11	263	.354	.354	.145	.297	.198	.008	.405	.405	089	137	202	0.894	0.138	-1.1	0.9	-1.2	0.9	B-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1291	617651	11	263	.449	.080	.126	.338	.449	.008	.185	104	247	.122	.185	0.476	0.136	4.1	1.2	3.1	1.2	B+	,,,
1292	617652	11	264	.311	.367	.239	.072	.311	.011	.313	083	046	195	.313	1.041	0.142	0.3	1.0	0.2	1.0	A-	
1293	617653	11	269	.245	.175	.245	.257	.316	.007	.068	086	.068	.167	060	1.506	0.151	2.3	1.2	3.3	1.4	A-	
1294	617654	11	259	.135	.104	.170	.568	.135	.023	.082	047	167	.209	.082	2.340	0.191	1.1	1.1	2.9	1.7	A-	
1295	617655	11	260	.204	.523	.204	.069	.204	.000	.212	025	075	169	.212	1.765	0.163	0.1	1.0	2.8	1.5	B-	
1296	617670	11	260	.165	.189	.627	.165	.012	.008	.185	059	014	.185	207	2.039	0.176	0.5	1.1	2.3	1.4	B-	
1297	617671	11	273	.443	.125	.245	.183	.443	.004	.249	153	.028	163	.249	0.398	0.130	1.7	1.1	1.5	1.1	A+	
1298	617656	11	273	.260	.231	.260	.256	.245	.007	.112	047	.112	062	.048	1.309	0.146	2.0	1.1	2.8	1.3	A-	
1299	617663	11	262	.248	.248	.195	.126	.420	.012	.161	.161	242	282	.306	1.308	0.154	2.4	1.2	2.5	1.3	A-	
1300	617672	11	262	.699	.061	.699	.157	.073	.012	.412	104	.412	183	251	-1.015	0.148	-0.3	1.0	-0.7	0.9	A-	
1301	617673	11	260	.162	.162	.500	.131	.204	.004	093	093	.175	129	.030	1.918	0.177	2.1	1.2	5.0	2.1	A-	
1302	617664	11	260	.165	.108	.165	.223	.500	.004	119	117	119	078	.270	1.887	0.175	2.4	1.3	4.8	2.0	A-	
1303	617665	11	259	.390	.220	.108	.278	.390	.004	.212	093	174	.024	.212	0.724	0.138	2.7	1.2	2.8	1.2	A-	
1304	620000	11	259	.390	.058	.127	.417	.390	.008	.333	176	185	060	.333	0.721	0.138	0.5	1.0	0.7	1.1	C+	
1305	617657	11	259	.730	.054	.116	.093	.730	.008	.473	200	242	198	.473	-0.973	0.151	-1.8	0.9	-1.8	0.8	A-	
1306	617658	11	289	.412	.170	.412	.173	.246	.000	.422	086	.422	272	169	0.541	0.128	-1.4	0.9	-0.8	1.0	B-	
1307	617666	11	289	.495	.170	.159	.495	.177	.000	.255	233	157	.255	.046	0.153	0.127	2.1	1.1	2.4	1.1	A-	
1308	617659	11	260	.546	.131	.546	.204	.104	.015	.417	088	.417	321	020	-0.119	0.136	-0.8	1.0	-0.8	1.0	A-	
1309	617667	11	260	.696	.181	.696	.073	.035	.015	.453	269	.453	196	033	-0.878	0.147	-1.2	0.9	-0.9	0.9	A+	
1310	617668	11	260	.212	.008	.212	.273	.508	.000	.068	200	.068	071	.043	1.668	0.159	1.3	1.1	2.7	1.4	A-	
1311	617660	11	260	.396	.169	.215	.212	.396	.008	.426	168	125	211	.426	0.637	0.135	-1.4	0.9	-1.6	0.9	A+	
1312	617661	11	261	.211	.153	.192	.211	.441	.004	039	101	125	039	.247	1.581	0.160	2.7	1.3	4.4	1.7	B+	
1313	617669	11	261	.410	.341	.410	.126	.115	.008	.226	.067	.226	166	198	0.491	0.135	2.5	1.1	2.4	1.2	B-	
1314	616111	Bio	307	.730	.730	.088	.098	.072	.013	.422	.422	179	254	152	-0.558	0.137	-1.2	0.9	-2.0	0.8	A-	
1315	617013	Bio	311	.318	.203	.318	.405	.074	.000	.333	175	.333	072	189	1.482	0.128	-0.3	1.0	-0.4	1.0	A-	
1316	616112	Bio	307	.547	.547	.261	.101	.085	.007	.461	.461	245	140	203	0.269	0.122	-3.0	0.9	-3.0	0.9	C-	
1317	617004	Bio	4897	.391	.266	.083	.256	.391	.004	.350	077	123	196	.350	1.056	0.031	-3.0	1.0	-3.4	1.0	A+	A+
1318	616118	Bio	4897	.165	.467	.228	.135	.165	.005	.181	.198	165	218	.181	2.361	0.040	1.8	1.1	4.2	1.2	A+	A-
1319	617775	Bio	307	.202	.202	.427	.186	.179	.007	.079	.079	.121	147	019	2.040	0.150	1.5	1.1	1.9	1.3	A-	
1320	617776	Bio	300	.347	.490	.347	.080	.077	.007	.337	138	.337	124	083	1.351	0.129	0.1	1.0	0.0	1.0	A-	
1321	616126	Bio	312	.356	.154	.208	.279	.356	.003	.351	187	151	083	.351	1.179	0.124	-0.8	1.0	-1.0	1.0	A-	
1322	617016	Bio	312	.381	.160	.381	.231	.224	.003	.343	080	.343	134	190	1.058	0.122	-0.8	1.0	-0.7	1.0	A-	
1323	617014	Bio	312	.401	.266	.401	.247	.087	.000	.297	097	.297	122	178	0.974	0.121	0.0	1.0	0.0	1.0	A+	
1324	617570	Bio	312	.462	.045	.112	.462	.381	.000	.288	179	110	.288	148	0.703	0.119	0.1	1.0	0.2	1.0	A-	
1325	617777	Bio	312	.279	.279	.330	.337	.055	.000	.311	.311	134	041	250	1.571	0.131	-0.3	1.0	-0.3	1.0	A+	ш

Table B-4 (continued). Science Multiple-Choice Item Statistics

Def	-	FT		D) /al	D/A)	D/D)	D(C)	D/D)	D/ \	DAD:	DT/A)	DT/D)	DT/C)	DT(D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
1326	617792	Bio	312	.324	.186	.324	.385	.103	.003	.150	055	.150	.012	172	1.335	0.126	1.6	1.1	2.2	1.2	A-	
1327	616113	Bio	306	.464	.154	.464	.226	.150	.007	.470	136	.470	183	201	0.730	0.121	-4.2	0.9	-4.0	0.8	A+	
1328	617778	Bio	306	.382	.304	.105	.199	.382	.010	.339	110	106	087	.339	1.100	0.124	-0.7	1.0	-0.8	1.0	A+	
1329	617015	Bio	306	.268	.144	.268	.324	.255	.010	.068	097	.068	075	.198	1.679	0.135	2.3	1.2	3.1	1.3	B-	
1330	617783	Bio	306	.340	.327	.144	.180	.340	.010	.455	097	084	244	.455	1.304	0.127	-2.7	0.9	-2.8	0.8	A+	
1331	617793	Bio	306	.363	.340	.167	.363	.118	.013	.191	.098	109	.191	147	1.190	0.125	1.7	1.1	2.7	1.2	A+	
1332	617571	Bio	306	.768	.768	.023	.085	.108	.016	.408	.408	096	209	146	-0.791	0.144	-0.9	0.9	-1.2	0.9	A+	
1333	617779	Bio	301	.352	.253	.352	.136	.256	.003	.215	186	.215	160	.108	1.247	0.128	1.8	1.1	1.9	1.1	B+	
1334	616114	Bio	301	.535	.153	.086	.535	.223	.003	.412	145	164	.412	225	0.404	0.122	-1.7	0.9	-2.0	0.9	A+	
1335	617800	Bio	301	.738	.073	.073	.738	.113	.003	.285	068	216	.285	118	-0.593	0.138	0.2	1.0	0.1	1.0	C+	
1336	617794	Bio	301	.282	.239	.332	.282	.143	.003	.178	131	.034	.178	076	1.609	0.135	1.5	1.1	2.7	1.2	A-	
1337	617572	Bio	301	.402	.402	.183	.206	.196	.013	.379	.379	196	144	074	0.990	0.125	-1.0	1.0	-0.4	1.0	A-	
1338	616128	Bio	301	.269	.080	.455	.186	.269	.010	.090	093	.078	078	.090	1.676	0.137	2.6	1.2	3.2	1.3	A-	
1339	617780	Bio	297	.512	.108	.155	.219	.512	.007	.379	174	272	044	.379	0.435	0.122	-1.4	1.0	-1.3	0.9	A+	
1340	617795	Bio	297	.391	.071	.330	.202	.391	.007	.340	145	072	198	.340	0.980	0.125	-0.5	1.0	-0.5	1.0	A-	
1341	617017	Bio	297	.300	.300	.229	.189	.280	.003	.168	.168	094	111	.057	1.438	0.133	1.6	1.1	2.1	1.2	A+	
1342	617765	Bio	297	.330	.222	.104	.333	.330	.010	.412	094	195	145	.412	1.271	0.130	-1.6	0.9	-1.5	0.9	A-	
1343	616115	Bio	297	.562	.098	.179	.152	.562	.010	.433	128	258	145	.433	0.202	0.123	-2.5	0.9	-2.6	0.9	A+	
1344	616129	Bio	297	.411	.323	.189	.411	.067	.010	.358	143	170	.358	065	0.884	0.124	-0.9	1.0	-0.8	1.0	A+	
1345	617781	Bio	308	.244	.149	.383	.244	.218	.007	.447	159	174	.447	066	1.696	0.138	-1.9	0.9	-2.3	0.8	A-	
1346	616130	Bio	308	.490	.490	.276	.094	.133	.007	.209	.209	034	075	146	0.494	0.119	1.8	1.1	1.7	1.1	A+	
1347	616116	Bio	308	.474	.205	.130	.474	.188	.003	.369	185	184	.369	069	0.590	0.119	-1.8	0.9	-1.6	0.9	A-	
1348	617018	Bio	308	.299	.224	.162	.299	.312	.003	.216	014	155	.216	034	1.395	0.130	0.7	1.0	0.9	1.1	A +	
1349	617766	Bio	308	.429	.318	.429	.097	.153	.003	.326	158	.326	137	074	0.777	0.120	-0.7	1.0	-0.5	1.0	A+	
1350	617797	Bio	308	.273	.114	.406	.201	.273	.007	.333	046	108	142	.333	1.530	0.133	-0.7	1.0	-0.8	0.9	A+	
1351	617006	Bio	311	.508	.360	.026	.106	.508	.000	.187	068	161	114	.187	0.568	0.119	2.9	1.1	2.0	1.1	B+	
1352	620046	Bio	311	.424	.196	.424	.145	.235	.000	.327	121	.327	219	086	0.941	0.121	-0.3	1.0	-0.2	1.0	A+	
1353	617344	Bio	311	.605	.084	.167	.145	.605	.000	.362	165	195	167	.362	0.136	0.121	-1.2	1.0	-0.7	1.0	A +	
1354	616117	Bio	311	.463	.228	.225	.084	.463	.000	.363	149	231	080	.363	0.768	0.120	-0.9	1.0	-1.0	1.0	A+	
1355	617798	Bio	311	.161	.389	.318	.129	.161	.003	.285	.018	195	070	.285	2.421	0.161	-0.4	1.0	8.0	1.1	A-	
1356	617782	Bio	311	.232	.093	.405	.264	.232	.006	.221	175	.094	187	.221	1.922	0.141	0.8	1.1	0.5	1.1	A+	
1357	617812	Bio	311	.399	.399	.132	.097	.367	.006	.276	.276	160	283	.019	1.047	0.122	0.9	1.0	0.7	1.0	A-	
1358	617799	Bio	307	.160	.111	.160	.505	.222	.003	.326	077	.326	081	131	2.462	0.163	-0.3	1.0	-0.1	1.0	A-	
1359	620042	Bio	307	.332	.332	.287	.248	.130	.003	.340	.340	238	172	.076	1.384	0.129	0.2	1.0	0.2	1.0	A-	
1360	617345	Bio	307	.580	.114	.160	.580	.147	.000	.391	163	212	.391	179	0.230	0.123	-1.1	1.0	-1.4	0.9	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	15	FT	A.	DV/ol	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1361	617768	Bio	307	.450	.192	.450	.166	.192	.000	.486	137	.486	261	229	0.824	0.122	-3.0	0.9	-3.0	0.9	A-	
1362	617005	Bio	307	.518	.189	.518	.176	.108	.010	.373	220	.373	093	173	0.491	0.122	-0.6	1.0	-0.6	1.0	A+	
1363	620043	Bio	298	.534	.141	.171	.151	.534	.003	.385	139	147	190	.385	0.414	0.122	-1.9	0.9	-1.5	0.9	B+	
1364	617007	Bio	298	.473	.168	.473	.148	.208	.003	.299	155	.299	099	088	0.681	0.122	0.3	1.0	-0.1	1.0	A-	
1365	616119	Bio	298	.352	.352	.094	.208	.342	.003	.338	.338	185	173	036	1.234	0.127	-0.8	1.0	-0.5	1.0	A-	
1366	617769	Bio	298	.443	.443	.248	.104	.201	.003	.361	.361	137	188	106	0.815	0.122	-1.2	1.0	-1.1	1.0	A+	
1367	617346	Bio	298	.349	.379	.185	.349	.081	.007	.269	.029	239	.269	110	1.241	0.128	0.5	1.0	0.4	1.0	A-	
1368	617784	Bio	298	.487	.198	.138	.171	.487	.007	.465	212	102	247	.465	0.611	0.122	-3.8	0.9	-3.6	0.9	A+	
1369	617770	Bio	313	.805	.070	.029	.805	.090	.006	.426	228	179	.426	165	-0.989	0.149	-1.1	0.9	-1.9	0.8	A-	
1370	617347	Bio	313	.697	.150	.697	.080	.064	.010	.290	090	.290	194	065	-0.356	0.130	0.0	1.0	1.1	1.1	A+	
1371	617801	Bio	313	.348	.185	.329	.131	.348	.006	.291	140	053	076	.291	1.280	0.125	0.2	1.0	0.3	1.0	B+	
1372	617008	Bio	313	.240	.182	.284	.240	.281	.013	.282	.003	085	.282	100	1.851	0.138	-0.2	1.0	0.3	1.0	A+	
1373	617785	Bio	313	.220	.371	.166	.230	.220	.013	.224	.099	184	080	.224	1.969	0.142	0.4	1.0	8.0	1.1	A+	
1374	620044	Bio	313	.316	.307	.316	.265	.102	.010	.165	134	.165	.055	002	1.437	0.128	2.1	1.1	2.0	1.1	A-	
1375	616120	Bio	313	.157	.173	.508	.150	.157	.013	.091	065	.156	135	.091	2.425	0.161	0.9	1.1	2.0	1.3	A-	
1376	617802	Bio	317	.653	.085	.164	.653	.098	.000	.432	136	296	.432	197	-0.203	0.126	-1.5	0.9	-1.7	0.9	A-	
1377	617786	Bio	317	.060	.524	.060	.221	.186	.010	.120	.146	.120	162	026	3.731	0.261	-0.1	1.0	0.5	1.1	A-	
1378	617348	Bio	317	.448	.249	.180	.114	.448	.010	.362	016	233	176	.362	0.772	0.121	-0.7	1.0	2.3	1.1	A-	
1379	620045	Bio	317	.786	.786	.028	.142	.035	.010	.315	.315	079	198	096	-0.971	0.147	0.2	1.0	0.3	1.0	B+	
1380	616121	Bio	317	.820	.820	.025	.110	.038	.006	.471	.471	164	305	181	-1.238	0.158	-1.3	0.9	-1.7	0.8	A-	
1381	617009	Bio	317	.177	.151	.177	.416	.246	.010	.088	180	.088	.092	.021	2.269	0.155	1.2	1.1	2.5	1.4	A-	
1382	617771	Bio	317	.754	.044	.754	.073	.120	.010	.511	132	.511	273	303	-0.771	0.140	-2.2	0.9	-2.8	0.7	A+	
1383	616122	Bio	311	.312	.161	.161	.312	.360	.006	.162	054	.079	.162	098	1.424	0.128	1.6	1.1	2.4	1.2	A +	
1384	617787	Bio	311	.106	.453	.106	.119	.315	.006	.086	.222	.086	096	148	2.873	0.190	0.5	1.1	1.9	1.4	A+	
1385	617803	Bio	311	.457	.209	.190	.457	.138	.006	.473	179	234	.473	098	0.742	0.120	-4.1	0.9	-3.8	0.8	A-	
1386	617010	Bio	311	.306	.248	.306	.167	.273	.006	.157	.068	.157	243	.060	1.457	0.129	2.0	1.1	1.5	1.1	A-	
1387	617772	Bio	311	.640	.640	.100	.084	.170	.006	.382	.382	071	182	197	-0.090	0.124	-1.4	0.9	-1.1	0.9	A-	
1388	617011	Bio	300	.183	.297	.400	.113	.183	.007	.075	030	.059	026	.075	2.270	0.156	1.4	1.1	2.5	1.4	A-	
1389	617788	Bio	300	.137	.280	.273	.137	.300	.010	.028	205	.054	.028	.206	2.646	0.174	1.2	1.1	2.9	1.6	A-	
1390	617773	Bio	300	.280	.067	.417	.230	.280	.007	.254	066	150	.031	.254	1.662	0.136	0.8	1.1	0.7	1.1	A-	
1391	616123	Bio	300	.473	.473	.377	.063	.077	.010	.384	.384	120	216	128	0.714	0.123	-1.4	1.0	-0.5	1.0	C-	
1392	617804	Bio	300	.140	.140	.387	.310	.153	.010	048	048	.097	.065	038	2.618	0.173	1.8	1.2	3.2	1.6	B-	
1393	616124	Bio	298	.342	.369	.232	.342	.054	.003	.321	117	118	.321	167	1.292	0.129	-0.4	1.0	-0.1	1.0	B+	
1394	617790	Bio	298	.312	.312	.309	.245	.131	.003	.344	.344	255	071	008	1.444	0.132	-0.5	1.0	0.3	1.0	A-	
1395	617012	Bio	298	.309	.185	.064	.309	.436	.007	.302	157	110	.302	071	1.456	0.132	0.0	1.0	1.0	1.1	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Pof	ın	FT	N	DVal	D/A\	D/D\	D(C)	D/D)	D/ \	D+Dic	DT/A)	DT/D\	DT(C)	DT(D)	Moos	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1396	617568	Bio	298	.802	.030	.094	.802	.067	.007	.398	180	192	.398	218	-0.991	0.152	-1.0	0.9	-1.4	0.8	A+	
1397	617774	Bio	298	.309	.309	.547	.060	.077	.007	.194	.194	033	076	143	1.456	0.132	1.6	1.1	1.6	1.1	A+	
1398	617791	Bio	311	.219	.219	.177	.306	.299	.000	.146	.146	091	.017	073	2.045	0.143	1.2	1.1	1.7	1.2	B+	
1399	616125	Bio	311	.289	.206	.154	.351	.289	.000	.092	059	036	011	.092	1.633	0.131	2.3	1.1	3.0	1.3	A+	
1400	617569	Bio	311	.679	.064	.051	.679	.203	.003	.390	252	066	.390	251	-0.200	0.127	-1.2	0.9	-1.0	0.9	A-	
1401	617789	Bio	311	.605	.605	.209	.145	.035	.006	.421	.421	304	166	099	0.148	0.122	-2.0	0.9	-1.8	0.9	A-	
1402	617377	Bio	307	.775	.775	.062	.114	.042	.007	.357	.357	222	156	115	-0.918	0.145	-0.2	1.0	-0.5	0.9	A+	ĺ
1403	617839	Bio	301	.734	.040	.130	.734	.093	.003	.405	212	193	.405	202	-0.574	0.137	-1.3	0.9	-1.6	0.9	A-	ĺ
1404	617349	Bio	311	.688	.119	.035	.688	.151	.006	.389	223	113	.389	139	-0.329	0.129	-1.3	0.9	-1.2	0.9	A+	ł
1405	617836	Bio	307	.492	.085	.267	.150	.492	.007	.444	196	203	147	.444	0.524	0.122	-3.9	0.9	-3.3	0.8	A+	ł
1406	617464	Bio	307	.300	.300	.368	.186	.140	.007	.228	.228	.004	141	099	1.444	0.132	1.3	1.1	1.0	1.1	A+	ĺ
1407	617361	Bio	4897	.204	.095	.396	.204	.298	.008	.179	154	006	.179	.000	2.067	0.037	2.8	1.1	5.8	1.2	A-	A+
1408	617465	Bio	300	.277	.277	.053	.203	.460	.007	.135	.135	068	006	013	1.723	0.137	2.1	1.1	2.7	1.3	A-	
1409	617368	Bio	312	.253	.135	.295	.317	.253	.000	.146	225	.027	.002	.146	1.714	0.135	1.4	1.1	1.0	1.1	B+	
1410	617353	Bio	312	.561	.561	.180	.144	.112	.003	.304	.304	199	161	048	0.261	0.119	-0.3	1.0	-0.5	1.0	A+	
1411	617807	Bio	312	.494	.180	.189	.494	.138	.000	.327	159	180	.327	092	0.562	0.118	-0.6	1.0	-0.9	1.0	A+	
1412	617837	Bio	312	.760	.016	.760	.064	.160	.000	.242	096	.242	197	118	-0.707	0.136	-0.2	1.0	8.0	1.1	A+	
1413	620062	Bio	312	.359	.391	.160	.359	.090	.000	.276	093	110	.276	164	1.168	0.123	0.3	1.0	0.2	1.0	A-	
1414	617822	Bio	312	.481	.109	.481	.250	.160	.000	.337	092	.337	265	068	0.618	0.118	-0.8	1.0	-1.1	1.0	A-	
1415	617369	Bio	306	.333	.150	.147	.363	.333	.007	.229	005	088	080	.229	1.338	0.127	1.1	1.1	8.0	1.1	A-	
1416	620063	Bio	306	.343	.088	.343	.386	.177	.007	.387	157	.387	125	110	1.290	0.126	-1.6	0.9	-1.4	0.9	B-	
1417	617838	Bio	306	.637	.170	.062	.118	.637	.013	.413	107	168	213	.413	-0.069	0.126	-1.7	0.9	-1.8	0.9	A+	
1418	617808	Bio	306	.438	.438	.190	.137	.226	.010	.365	.365	197	134	026	0.844	0.121	-1.3	1.0	-1.0	1.0	A-	
1419	617823	Bio	306	.425	.206	.425	.203	.157	.010	.446	114	.446	250	075	0.904	0.122	-3.0	0.9	-3.0	0.9	A+	
1420	617354	Bio	306	.350	.134	.252	.255	.350	.010	.304	037	052	144	.304	1.256	0.126	-0.1	1.0	-0.1	1.0	A-	
1421	617355	Bio	301	.332	.143	.332	.269	.256	.000	.146	.072	.146	087	127	1.349	0.129	2.4	1.1	3.2	1.2	A-	
1422	620367	Bio	301	.568	.568	.156	.166	.110	.000	.418	.418	281	203	095	0.258	0.123	-2.5	0.9	-2.0	0.9	A-	
1423	617370	Bio	301	.495	.136	.156	.209	.495	.003	.494	170	161	287	.494	0.584	0.122	-3.6	0.9	-3.3	0.8	A+	
1424	617809	Bio	301	.372	.372	.203	.106	.312	.007	.188	.188	079	188	.040	1.146	0.126	2.7	1.1	2.1	1.1	A+	
1425	617825	Bio	301	.395	.106	.395	.269	.219	.010	.431	145	.431	184	148	1.029	0.125	-1.9	0.9	-1.7	0.9	A-	
1426	617810	Bio	297	.461	.259	.461	.165	.111	.003	.327	141	.327	097	145	0.668	0.123	-0.3	1.0	-0.6	1.0	A+	
1427	617840	Bio	297	.317	.175	.283	.317	.222	.003	.102	.037	138	.102	.049	1.350	0.131	2.7	1.2	2.6	1.2	C-	
1428	617815	Bio	297	.519	.519	.077	.155	.246	.003	.408	.408	241	155	147	0.414	0.122	-2.2	0.9	-2.3	0.9	A+	
1429	617371	Bio	297	.280	.253	.185	.280	.280	.003	.106	.075	236	.106	.071	1.546	0.136	2.2	1.1	2.5	1.2	A-	
1430	617826	Bio	297	.340	.242	.340	.306	.104	.007	.261	085	.261	123	035	1.223	0.129	0.5	1.0	1.1	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1431	620369	Bio	297	.471	.148	.313	.471	.061	.007	.386	172	194	.386	090	0.613	0.123	-1.5	1.0	-1.7	0.9	A-	
1432	620370	Bio	308	.494	.120	.341	.494	.042	.003	.228	031	143	.228	078	0.504	0.119	1.2	1.0	1.4	1.1	A-	
1433	617811	Bio	308	.536	.169	.114	.179	.536	.003	.376	215	104	139	.376	0.304	0.120	-1.7	0.9	-1.7	0.9	A-	
1434	617357	Bio	308	.354	.354	.146	.146	.347	.007	.393	.393	138	190	106	1.116	0.124	-1.7	0.9	-1.7	0.9	A-	1
1435	617841	Bio	308	.838	.049	.055	.838	.055	.003	.332	203	097	.332	158	-1.331	0.161	-0.4	1.0	-0.8	0.9	A+	1
1436	617827	Bio	308	.195	.367	.195	.208	.227	.003	.044	.004	.044	076	.078	2.005	0.149	1.5	1.1	1.8	1.2	A-	1
1437	617832	Bio	308	.253	.042	.253	.584	.117	.003	.167	136	.167	059	.014	1.642	0.136	0.9	1.1	1.3	1.1	B-	
1438	617358	Bio	311	.209	.125	.151	.515	.209	.000	.105	073	.069	087	.105	2.075	0.146	1.5	1.1	2.1	1.2	A+	1
1439	618573	Bio	311	.248	.145	.042	.566	.248	.000	.121	071	182	.019	.121	1.834	0.138	1.7	1.1	2.1	1.2	A+	1
1440	617372	Bio	311	.177	.219	.177	.129	.476	.000	.152	020	.152	082	045	2.301	0.155	0.5	1.0	2.5	1.4	A-	1
1441	620371	Bio	311	.756	.756	.061	.061	.122	.000	.396	.396	171	202	247	-0.631	0.137	-1.4	0.9	-1.2	0.9	B-	1
1442	617828	Bio	311	.334	.222	.138	.334	.299	.006	.265	058	157	.265	088	1.356	0.127	0.6	1.0	1.1	1.1	A+	1
1443	617373	Bio	311	.354	.122	.347	.354	.170	.006	.338	132	129	.338	135	1.261	0.125	-0.3	1.0	-0.4	1.0	A+	1
1444	617813	Bio	307	.391	.163	.117	.329	.391	.000	.415	242	067	195	.415	1.098	0.125	-1.1	1.0	-1.2	0.9	A+	1
1445	617359	Bio	307	.121	.186	.257	.437	.121	.000	.174	.120	082	137	.174	2.822	0.182	0.4	1.0	1.7	1.3	A-	1
1446	617374	Bio	307	.287	.287	.316	.195	.195	.007	.284	.284	041	170	072	1.623	0.134	0.8	1.1	0.6	1.1	A-	
1447	617829	Bio	307	.518	.173	.209	.518	.095	.007	.443	246	220	.443	088	0.502	0.122	-2.1	0.9	-1.7	0.9	B-	1
1448	617830	Bio	298	.611	.611	.218	.104	.057	.010	.301	.301	094	177	115	0.052	0.125	0.1	1.0	-0.1	1.0	A+	1
1449	617375	Bio	298	.178	.178	.027	.178	.611	.007	.268	.268	137	194	.028	2.237	0.158	-0.2	1.0	0.4	1.1	B-	1
1450	617360	Bio	298	.440	.188	.175	.440	.191	.007	.107	145	054	.107	.111	0.820	0.123	3.8	1.1	4.1	1.2	A+	1
1451	617814	Bio	298	.329	.178	.218	.329	.265	.010	.171	018	119	.171	018	1.332	0.129	1.7	1.1	1.7	1.1	A-	1
1452	617362	Bio	313	.326	.329	.326	.029	.310	.006	.187	101	.187	042	033	1.383	0.127	1.4	1.1	2.5	1.2	A-	
1453	617376	Bio	313	.451	.451	.192	.300	.054	.003	.204	.204	228	.089	147	0.807	0.120	2.2	1.1	2.3	1.1	A+	1
1454	617831	Bio	313	.575	.115	.575	.144	.160	.006	.375	239	.375	229	.012	0.245	0.121	-1.3	1.0	-1.1	0.9	A+	1
1455	620060	Bio	317	.423	.082	.300	.423	.186	.010	.278	159	144	.278	015	0.869	0.122	1.5	1.1	1.6	1.1	A-	1
1456	617816	Bio	317	.659	.155	.659	.095	.082	.010	.424	164	.424	291	122	-0.238	0.127	-1.3	0.9	-1.5	0.9	A-	1
1457	617463	Bio	317	.543	.044	.290	.543	.117	.006	.394	183	138	.394	222	0.354	0.121	-1.3	1.0	-1.1	0.9	A-	1
1458	617363	Bio	317	.476	.177	.476	.202	.136	.010	.412	142	.412	166	178	0.637	0.121	-1.6	0.9	-1.0	1.0	C+	1
1459	617817	Bio	311	.457	.457	.199	.183	.154	.006	.381	.381	139	089	172	0.742	0.120	-1.8	0.9	-1.8	0.9	A-	1
1460	617833	Bio	311	.232	.232	.566	.093	.103	.006	.223	.223	.131	184	225	1.871	0.140	0.4	1.0	0.7	1.1	A+	
1461	617364	Bio	311	.228	.338	.315	.228	.113	.006	.260	083	089	.260	.028	1.891	0.141	0.1	1.0	0.1	1.0	A+	
1462	617466	Bio	311	.235	.135	.232	.392	.235	.006	.213	084	037	018	.213	1.851	0.139	0.5	1.0	1.2	1.1	A-	
1463	617834	Bio	300	.200	.213	.287	.200	.293	.007	.261	.070	210	.261	004	2.152	0.151	-0.1	1.0	0.5	1.1	A-	
1464	617467	Bio	300	.370	.080	.057	.370	.483	.010	.218	.020	108	.218	078	1.196	0.127	1.8	1.1	2.1	1.1	A-	
1465	617350	Bio	300	.290	.380	.057	.260	.290	.013	.395	140	212	043	.395	1.597	0.135	-1.3	0.9	-1.1	0.9	B-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

D-f	-	FT		DV-I	D/A)	D/D)	D(C)	D/D)	D/ \	DAD:-	DT(A)	DT/D)	DT/C)	DT(D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
1466	617365	Bio	300	.413	.170	.310	.413	.097	.010	.238	149	.053	.238	132	0.990	0.125	1.7	1.1	2.6	1.2	A-	
1467	617819	Bio	300	.630	.043	.200	.630	.117	.010	.361	057	193	.361	120	-0.012	0.127	-0.3	1.0	-0.8	1.0	A+	
1468	620059	Bio	300	.370	.233	.370	.200	.180	.017	.361	177	.361	098	035	1.180	0.127	-0.8	1.0	-0.3	1.0	A+	
1469	617366	Bio	298	.252	.302	.235	.252	.211	.000	.194	260	055	.194	.142	1.796	0.141	0.8	1.1	1.3	1.1	A-	
1470	617835	Bio	298	.426	.151	.339	.426	.081	.003	.387	169	189	.387	121	0.904	0.124	-1.5	0.9	-1.6	0.9	A-	
1471	617805	Bio	298	.305	.305	.235	.225	.232	.003	.363	.363	134	150	093	1.479	0.132	-0.5	1.0	-0.9	0.9	A-	
1472	617820	Bio	298	.557	.228	.557	.151	.057	.007	.340	093	.340	200	179	0.301	0.123	-0.3	1.0	-0.6	1.0	A-	
1473	617351	Bio	298	.386	.175	.232	.201	.386	.007	.492	209	148	201	.492	1.075	0.126	-3.0	0.9	-3.1	8.0	B-	
1474	617367	Bio	311	.293	.293	.370	.203	.135	.000	.110	.110	.099	180	076	1.616	0.131	2.4	1.1	2.3	1.2	A-	
1475	617806	Bio	311	.659	.659	.055	.209	.077	.000	.440	.440	213	296	150	-0.095	0.125	-2.2	0.9	-2.4	0.9	A-	
1476	617352	Bio	311	.637	.035	.228	.100	.637	.000	.354	231	118	260	.354	0.013	0.124	-0.8	1.0	-0.8	1.0	A-	
1477	620061	Bio	311	.486	.486	.154	.248	.109	.003	.323	.323	080	254	057	0.695	0.120	0.0	1.0	0.1	1.0	B+	
1478	617821	Bio	311	.264	.264	.306	.164	.261	.006	.202	.202	029	047	125	1.767	0.135	0.9	1.1	1.7	1.2	A+	
1479	617401	Bio	4897	.507	.141	.266	.507	.082	.004	.414	129	259	.414	104	0.526	0.030	-8.6	0.9	-8.1	0.9	A+	A+
1480	617395	Bio	313	.329	.329	.278	.284	.099	.010	.204	.204	.004	170	.060	1.372	0.126	1.3	1.1	1.7	1.1	B-	
1481	617394	Bio	298	.554	.104	.178	.158	.554	.007	.335	102	161	149	.335	0.313	0.122	-0.8	1.0	-1.0	1.0	B+	
1482	617414	Bio	301	.452	.060	.452	.233	.253	.003	.121	192	.121	128	.123	0.779	0.123	4.4	1.2	3.7	1.2	A+	
1483	617880	Bio	307	.538	.538	.179	.143	.134	.007	.352	.352	130	247	077	0.412	0.122	-0.1	1.0	-0.3	1.0	A-	
1484	617418	Bio	307	.218	.218	.293	.127	.352	.010	.208	.208	065	079	018	1.920	0.146	0.5	1.0	0.6	1.1	A-	
1485	617890	Bio	307	.238	.176	.306	.277	.238	.003	.327	043	177	049	.327	1.808	0.141	-0.8	0.9	-0.5	1.0	A-	
1486	617885	Bio	4897	.282	.222	.311	.179	.282	.007	.268	058	029	156	.268	1.596	0.033	1.6	1.0	2.0	1.0	A+	A-
1487	617873	Bio	307	.570	.081	.222	.570	.121	.007	.399	064	284	.399	121	0.164	0.123	-1.6	0.9	-1.2	0.9	B+	
1488	617386	Bio	4897	.246	.370	.127	.249	.246	.009	.333	108	093	082	.333	1.802	0.035	-2.2	1.0	-1.0	1.0	A+	A-
1489	617403	Bio	300	.520	.080	.520	.273	.120	.007	.388	196	.388	142	126	0.535	0.123	-1.2	1.0	-0.9	1.0	A+	
1490	617397	Bio	300	.377	.217	.263	.137	.377	.007	.402	120	131	150	.402	1.202	0.127	-1.7	0.9	-1.8	0.9	B+	
1491	617419	Bio	300	.183	.150	.183	.300	.357	.010	048	132	048	.080	.134	2.316	0.157	2.8	1.3	2.8	1.4	A-	
1492	617384	Bio	300	.300	.197	.300	.283	.213	.007	.286	054	.286	123	044	1.594	0.134	0.4	1.0	1.8	1.2	A-	
1493	617402	Bio	300	.393	.060	.183	.393	.353	.010	.202	138	041	.202	019	1.121	0.126	2.2	1.1	1.8	1.1	A-	
1494	617874	Bio	300	.203	.283	.193	.313	.203	.007	.306	.046	152	103	.306	2.178	0.151	-0.1	1.0	-0.2	1.0	A+	
1495	617856	Bio	300	.293	.210	.293	.380	.110	.007	.225	.000	.225	005	203	1.630	0.135	0.9	1.1	1.2	1.1	A-	
1496	617420	Bio	312	.571	.074	.571	.192	.157	.006	.357	123	.357	327	051	0.206	0.120	-1.5	1.0	-1.5	0.9	A+	
1497	617387	Bio	312	.542	.112	.170	.542	.176	.000	.388	239	178	.388	134	0.352	0.118	-2.0	0.9	-2.2	0.9	A-	
1498	617892	Bio	312	.305	.147	.317	.231	.305	.000	.411	141	131	186	.411	1.436	0.128	-1.4	0.9	-1.8	0.9	A-	
1499	617859	Bio	312	.462	.462	.039	.263	.234	.003	.139	.139	066	130	004	0.694	0.119	2.9	1.1	3.0	1.1	B+	
1500	617413	Bio	312	.301	.218	.301	.324	.154	.003	.135	009	.135	090	030	1.451	0.129	1.8	1.1	1.8	1.1	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1501	617404	Bio	312	.590	.061	.115	.590	.234	.000	.223	139	229	.223	008	0.140	0.120	1.0	1.0	1.2	1.1	A-	
1502	617875	Bio	312	.183	.231	.183	.442	.144	.000	.119	051	.119	.003	074	2.164	0.152	0.8	1.1	1.7	1.2	A-	
1503	617388	Bio	306	.340	.193	.183	.340	.278	.007	.100	104	134	.100	.184	1.306	0.127	2.8	1.1	2.8	1.2	A-	
1504	617860	Bio	306	.614	.239	.092	.614	.049	.007	.347	140	208	.347	059	0.054	0.123	-0.6	1.0	-0.7	1.0	B+	
1505	617842	Bio	306	.431	.154	.320	.431	.082	.013	.094	.047	.010	.094	071	0.869	0.122	4.5	1.2	4.1	1.2	A-	
1506	617405	Bio	306	.216	.141	.242	.389	.216	.013	.281	021	054	074	.281	1.988	0.145	-0.3	1.0	0.0	1.0	A-	
1507	617845	Bio	306	.235	.180	.294	.281	.235	.010	.088	071	.024	.058	.088	1.869	0.140	1.9	1.2	1.9	1.2	A-	
1508	617421	Bio	306	.088	.196	.477	.226	.088	.013	.032	111	.217	051	.032	3.102	0.206	0.6	1.1	1.6	1.4	A-	
1509	617876	Bio	306	.350	.343	.118	.350	.177	.013	.132	.141	204	.132	032	1.253	0.126	2.8	1.1	2.6	1.2	A+	
1510	617861	Bio	301	.362	.150	.160	.329	.362	.000	.402	160	182	149	.402	1.201	0.127	-1.5	0.9	-1.3	0.9	A+	
1511	617422	Bio	301	.419	.419	.216	.239	.120	.007	.322	.322	181	099	070	0.926	0.124	0.5	1.0	0.1	1.0	A+	
1512	617843	Bio	301	.332	.455	.080	.130	.332	.003	.324	204	.054	154	.324	1.347	0.129	-0.2	1.0	0.4	1.0	A-	
1513	617389	Bio	301	.365	.249	.123	.253	.365	.010	.389	137	130	142	.389	1.173	0.127	-0.9	1.0	-0.9	1.0	A-	
1514	617406	Bio	301	.356	.163	.166	.306	.356	.010	.393	156	131	128	.393	1.221	0.128	-0.9	1.0	-1.2	0.9	A+	
1515	617390	Bio	297	.306	.091	.205	.394	.306	.003	.270	170	106	027	.270	1.403	0.132	0.3	1.0	0.9	1.1	A-	
1516	617844	Bio	297	.343	.185	.414	.343	.054	.003	.284	023	181	.284	074	1.216	0.128	0.4	1.0	0.5	1.0	B-	
1517	617878	Bio	297	.468	.094	.162	.468	.269	.007	.383	224	211	.383	051	0.635	0.123	-1.6	1.0	-1.4	0.9	A-	
1518	617851	Bio	297	.253	.239	.263	.239	.253	.007	.344	197	.035	143	.344	1.690	0.140	-0.6	1.0	-0.7	0.9	A+	
1519	617407	Bio	297	.482	.182	.236	.482	.091	.010	.262	.014	154	.262	154	0.564	0.123	1.2	1.0	1.3	1.1	B+	
1520	617423	Bio	297	.407	.229	.407	.148	.205	.010	.244	.026	.244	146	130	0.900	0.125	1.3	1.1	1.4	1.1	A-	
1521	617863	Bio	308	.221	.062	.630	.084	.221	.003	.104	136	.098	133	.104	1.856	0.143	1.2	1.1	1.4	1.2	A-	
1522	617408	Bio	308	.143	.127	.458	.266	.143	.007	.145	.040	.110	225	.145	2.426	0.169	0.2	1.0	1.0	1.2	A-	
1523	617391	Bio	308	.552	.110	.552	.273	.062	.003	.169	099	.169	041	058	0.232	0.120	2.4	1.1	2.7	1.1	A-	
1524	617864	Bio	308	.234	.289	.331	.234	.143	.003	.259	113	076	.259	005	1.776	0.140	-0.2	1.0	0.3	1.0	A-	
1525	617879	Bio	308	.175	.296	.149	.377	.175	.003	.233	013	108	048	.233	2.143	0.154	0.0	1.0	0.1	1.0	A-	
1526	617424	Bio	308	.370	.065	.205	.357	.370	.003	.312	090	104	137	.312	1.044	0.123	-0.3	1.0	-0.5	1.0	A-	
1527	617426	Bio	311	.489	.148	.042	.489	.322	.000	.247	123	184	.247	092	0.653	0.119	1.5	1.1	0.8	1.0	A-	
1528	617392	Bio	311	.457	.103	.457	.251	.187	.003	.349	148	.349	338	.052	0.789	0.120	-0.7	1.0	-0.8	1.0	A-	
1529	617846	Bio	311	.177	.518	.177	.154	.145	.006	.185	004	.185	190	.018	2.293	0.155	0.8	1.1	1.0	1.1	A-	
1530	617409	Bio	311	.322	.135	.373	.164	.322	.006	.289	286	.056	157	.289	1.421	0.128	0.5	1.0	0.2	1.0	A+	
1531	617862	Bio	311	.463	.135	.113	.283	.463	.006	.350	180	258	057	.350	0.754	0.120	-0.7	1.0	-0.4	1.0	A+	
1532	617865	Bio	307	.599	.599	.143	.143	.114	.000	.236	.236	149	095	094	0.139	0.123	1.4	1.1	2.4	1.2	A-	
1533	617393	Bio	307	.404	.147	.404	.235	.215	.000	.371	081	.371	208	159	1.036	0.124	-0.6	1.0	-0.6	1.0	A-	
1534	617881	Bio	307	.502	.502	.147	.287	.062	.003	.408	.408	118	266	159	0.582	0.122	-1.4	1.0	-1.3	0.9	A+	
1535	617379	Bio	307	.303	.225	.202	.270	.303	.000	.233	308	.029	.022	.233	1.540	0.132	1.6	1.1	1.0	1.1	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1536	617425	Bio	307	.642	.104	.137	.642	.114	.003	.421	202	274	.421	131	-0.073	0.126	-1.5	0.9	-1.9	0.9	A+	
1537	617847	Bio	307	.375	.169	.309	.143	.375	.003	.470	249	160	159	.470	1.170	0.126	-2.1	0.9	-2.2	0.9	A+	i I
1538	617410	Bio	307	.349	.251	.186	.349	.205	.010	.051	.084	128	.051	.001	1.289	0.128	4.5	1.3	4.3	1.3	A-	
1539	617852	Bio	307	.472	.104	.218	.472	.199	.007	.246	140	135	.246	028	0.710	0.122	2.3	1.1	2.2	1.1	A+	1
1540	617848	Bio	298	.279	.299	.222	.279	.198	.003	.216	.091	124	.216	166	1.611	0.135	0.9	1.1	1.0	1.1	A-	
1541	620372	Bio	298	.138	.171	.560	.138	.128	.003	.134	.200	184	.134	029	2.574	0.174	0.4	1.0	2.2	1.4	A-	1
1542	617866	Bio	298	.386	.121	.222	.269	.386	.003	.268	072	073	127	.268	1.075	0.125	0.7	1.0	0.7	1.0	A-	
1543	617380	Bio	298	.322	.124	.322	.326	.225	.003	.178	.056	.178	152	024	1.383	0.130	1.7	1.1	1.7	1.1	A-	1
1544	617882	Bio	298	.349	.383	.131	.131	.349	.007	.319	043	124	197	.319	1.246	0.128	-0.3	1.0	-0.5	1.0	A+	1
1545	617411	Bio	298	.329	.269	.245	.329	.154	.003	.202	.069	172	.202	086	1.349	0.129	1.4	1.1	1.3	1.1	B+	1
1546	617427	Bio	298	.540	.104	.225	.540	.128	.003	.387	203	108	.387	196	0.384	0.122	-1.9	0.9	-1.9	0.9	A+	1
1547	617883	Bio	298	.366	.168	.215	.248	.366	.003	.403	087	246	094	.403	1.169	0.126	-1.9	0.9	-1.7	0.9	A-	1
1548	617849	Bio	313	.393	.393	.137	.304	.157	.010	.347	.347	134	153	080	1.056	0.122	-0.7	1.0	-0.9	1.0	A+	1
1549	617877	Bio	313	.540	.214	.090	.150	.540	.006	.422	193	212	147	.422	0.396	0.120	-2.4	0.9	-2.6	0.9	A+	1
1550	620373	Bio	313	.157	.157	.077	.476	.281	.010	.114	.114	159	.311	271	2.427	0.161	0.8	1.1	2.0	1.3	A-	1
1551	617867	Bio	313	.543	.035	.265	.543	.150	.006	.331	122	275	.331	.035	0.390	0.120	-0.3	1.0	-0.4	1.0	A+	1
1552	617381	Bio	313	.377	.208	.377	.243	.163	.010	.275	068	.275	096	087	1.132	0.123	0.5	1.0	0.8	1.0	A-	1
1553	617412	Bio	313	.313	.313	.294	.217	.166	.010	.166	.166	.016	128	.003	1.447	0.128	1.9	1.1	2.0	1.2	A+	1
1554	617891	Bio	313	.348	.195	.348	.348	.102	.006	.216	045	.216	032	119	1.280	0.125	1.5	1.1	1.3	1.1	B-	1
1555	617468	Bio	313	.342	.105	.304	.342	.236	.013	.255	162	.056	.255	139	1.299	0.125	1.0	1.1	0.4	1.0	A-	1
1556	620374	Bio	317	.278	.164	.278	.114	.439	.006	025	011	025	220	.191	1.621	0.133	3.7	1.3	4.0	1.4	A+	1
1557	617884	Bio	317	.549	.549	.237	.082	.123	.010	.396	.396	180	238	097	0.300	0.121	-1.1	1.0	-1.1	0.9	A+	1
1558	617382	Bio	317	.347	.155	.347	.297	.189	.013	.257	161	.257	012	071	1.238	0.126	1.3	1.1	1.4	1.1	A-	1
1559	617850	Bio	317	.420	.262	.420	.145	.164	.010	.102	.024	.102	118	.013	0.914	0.122	4.5	1.2	4.1	1.3	A-	1
1560	617396	Bio	317	.256	.129	.202	.256	.401	.013	.188	035	149	.188	.027	1.740	0.137	1.3	1.1	1.7	1.2	A-	1
1561	617886	Bio	311	.203	.203	.334	.232	.225	.006	.110	.110	.071	134	.039	2.056	0.147	1.2	1.1	2.1	1.3	A+	
1562	620375	Bio	311	.267	.261	.351	.267	.116	.006	.062	.056	029	.062	003	1.664	0.134	2.4	1.2	3.0	1.3	A+	1
1563	617383	Bio	311	.351	.170	.254	.219	.351	.006	.254	078	061	067	.254	1.232	0.125	0.8	1.0	0.5	1.0	A+	1
1564	617869	Bio	311	.251	.228	.244	.270	.251	.006	.373	136	.000	151	.373	1.756	0.137	-1.0	0.9	-1.7	0.9	A+	
1565	617398	Bio	300	.477	.477	.073	.070	.370	.010	.437	.437	207	226	125	0.699	0.123	-2.3	0.9	-2.5	0.9	A+	1
1566	617870	Bio	300	.423	.120	.207	.423	.240	.010	.192	074	.078	.192	131	0.944	0.124	2.9	1.1	3.0	1.2	A+	
1567	617887	Bio	300	.157	.157	.103	.227	.497	.017	.273	.273	179	161	.139	2.462	0.166	-0.2	1.0	-0.1	1.0	A+	
1568	617415	Bio	300	.383	.207	.150	.243	.383	.017	.326	014	165	111	.326	1.115	0.126	0.0	1.0	0.2	1.0	B+	
1569	617888	Bio	298	.289	.134	.466	.104	.289	.007	.239	.008	095	205	.239	1.577	0.135	0.5	1.0	1.0	1.1	C-	ш
1570	620385	Bio	298	.349	.242	.104	.349	.299	.007	.399	136	198	.399	120	1.253	0.128	-1.1	1.0	-1.5	0.9	B+	1

Table B-4 (continued). Science Multiple-Choice Item Statistics

Def	-	FT		DV-I	D/A)	D/D)	D(C)	D/D)	D/ \	DAD:	DT/A)	DT/D)	DT/C)	DT(D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
1571	617385	Bio	298	.295	.295	.386	.161	.151	.007	.245	.245	019	109	128	1.527	0.134	0.7	1.0	1.2	1.1	A-	
1572	617853	Bio	298	.406	.178	.238	.406	.171	.007	.269	098	063	.269	135	0.981	0.124	1.0	1.0	1.1	1.1	A-	
1573	617416	Bio	298	.295	.295	.289	.118	.292	.007	.146	.146	.140	099	178	1.527	0.134	1.9	1.1	2.5	1.2	A+	
1574	617399	Bio	298	.285	.285	.349	.175	.185	.007	.206	.206	152	243	.229	1.581	0.135	1.3	1.1	1.2	1.1	A+	
1575	617871	Bio	298	.322	.211	.309	.322	.151	.007	.241	112	191	.241	.106	1.387	0.131	0.9	1.1	1.4	1.1	B-	
1576	617872	Bio	311	.560	.238	.132	.560	.071	.000	.273	262	062	.273	012	0.370	0.120	0.9	1.0	0.9	1.0	A-	
1577	617854	Bio	311	.248	.341	.174	.248	.238	.000	.188	002	171	.188	037	1.867	0.137	0.9	1.1	1.7	1.2	A-	
1578	617889	Bio	311	.254	.064	.122	.560	.254	.000	.250	233	065	061	.250	1.830	0.136	0.5	1.0	0.4	1.0	A+	
1579	617417	Bio	311	.550	.550	.212	.125	.113	.000	.362	.362	162	170	182	0.413	0.120	-0.9	1.0	-1.0	1.0	A+	
1580	617400	Bio	311	.325	.138	.148	.386	.325	.003	.288	031	166	125	.288	1.446	0.127	0.3	1.0	0.5	1.0	A+	
1581	617565	Bio	311	.698	.698	.215	.048	.039	.000	.519	.519	369	245	178	-0.290	0.129	-3.1	0.8	-3.4	0.8	Ċ	
1582	617430	Bio	311	.637	.039	.190	.129	.637	.006	.397	099	133	247	.397	-0.074	0.124	-1.6	0.9	-1.6	0.9	A-	
1583	617444	Bio	313	.773	.112	.773	.045	.064	.006	.461	277	.461	182	141	-0.778	0.141	-1.6	0.9	-2.2	0.8	B+	
1584	617458	Bio	297	.451	.162	.229	.152	.451	.007	.410	158	230	067	.410	0.710	0.123	-2.1	0.9	-2.0	0.9	A-	
1585	617449	Bio	311	.572	.174	.572	.097	.158	.000	.368	093	.368	170	265	0.312	0.121	-1.0	1.0	-0.7	1.0	A+	
1586	617462	Bio	298	.812	.024	.812	.034	.128	.003	.359	123	.359	203	194	-1.033	0.153	-0.7	0.9	-1.4	8.0	A+	
1587	617457	Bio	4897	.485	.485	.387	.063	.060	.006	.409	.409	219	145	165	0.625	0.030	-8.2	0.9	-7.6	0.9	A-	A+
1588	617454	Bio	311	.537	.537	.116	.180	.164	.003	.365	.365	197	217	083	0.465	0.120	-0.8	1.0	-1.0	1.0	A+	
1589	617451	Bio	300	.577	.577	.110	.273	.033	.007	.402	.402	140	179	218	0.274	0.125	-1.2	1.0	-0.9	1.0	A+	
1590	620393	Bio	307	.264	.368	.264	.319	.033	.016	.167	051	.167	026	067	1.635	0.137	1.0	1.1	1.4	1.1	A+	
1591	617925	Bio	307	.397	.134	.397	.231	.231	.007	.231	053	.231	141	043	0.954	0.124	1.8	1.1	1.2	1.1	A-	
1592	617550	Bio	307	.391	.222	.274	.111	.391	.003	.408	210	058	212	.408	0.996	0.124	-2.5	0.9	-1.6	0.9	A-	
1593	617453	Bio	307	.355	.355	.163	.166	.313	.003	.233	.233	089	.004	131	1.170	0.127	1.9	1.1	1.8	1.1	A-	
1594	617549	Bio	4897	.353	.066	.234	.344	.353	.004	.380	187	199	062	.380	1.239	0.032	-4.9	0.9	-4.3	0.9	A+	A-
1595	617450	Bio	307	.270	.095	.134	.270	.495	.007	.233	020	210	.233	003	1.613	0.136	1.2	1.1	1.3	1.1	A-	
1596	617893	Bio	4897	.288	.122	.288	.317	.268	.005	.308	190	.308	090	029	1.570	0.033	-0.6	1.0	0.4	1.0	A+	A-
1597	617434	Bio	307	.678	.678	.095	.189	.036	.003	.276	.276	282	.009	164	-0.349	0.129	0.7	1.0	2.2	1.2	A+	
1598	617566	Bio	307	.466	.130	.466	.244	.153	.007	.317	087	.317	165	097	0.642	0.122	0.6	1.0	0.6	1.0	A+	
1599	617898	Bio	4897	.489	.051	.050	.489	.402	.008	.292	166	173	.292	095	0.599	0.030	2.9	1.0	2.7	1.0	A-	A-
1600	620048	Bio	300	.160	.340	.160	.380	.103	.017	.089	087	.089	.174	084	2.500	0.165	1.3	1.1	1.5	1.2	B-	
1601	617435	Bio	300	.313	.467	.150	.313	.063	.007	.280	221	.038	.280	.012	1.522	0.132	0.4	1.0	0.6	1.1	A-	
1602	617567	Bio	300	.703	.023	.113	.153	.703	.007	.408	170	170	197	.408	-0.355	0.134	-1.4	0.9	-1.0	0.9	A-	
1603	617910	Bio	300	.590	.590	.083	.237	.083	.007	.242	.242	063	112	065	0.211	0.125	1.8	1.1	1.5	1.1	A+	
1604	617551	Bio	300	.610	.610	.147	.080	.157	.007	.462	.462	254	193	130	0.116	0.126	-2.4	0.9	-2.6	0.8	A+	
1605	617452	Bio	312	.212	.202	.067	.212	.519	.000	.285	038	245	.285	079	1.967	0.144	-0.2	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Def	-	FT		D) (al	D/A)	D/D)	D(C)	D/D)	D/ \	DAD:	DT/A)	DT/D)	DT/C)	DT(D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
1606	617927	Bio	312	.135	.042	.692	.128	.135	.003	.133	143	.100	180	.133	2.549	0.171	0.5	1.1	1.1	1.2	A-	
1607	617573	Bio	312	.289	.250	.208	.253	.289	.000	.159	184	040	.055	.159	1.520	0.130	1.5	1.1	1.3	1.1	A+	1
1608	617436	Bio	312	.734	.064	.103	.099	.734	.000	.463	158	233	318	.463	-0.562	0.132	-2.2	0.9	-2.7	0.8	A+	1
1609	617552	Bio	312	.821	.821	.071	.051	.058	.000	.333	.333	177	201	164	-1.097	0.151	-0.6	0.9	-1.6	0.8	A+	1
1610	620049	Bio	312	.308	.446	.308	.189	.058	.000	.168	015	.168	152	046	1.420	0.128	1.2	1.1	2.0	1.1	A-	1
1611	617437	Bio	306	.516	.212	.124	.141	.516	.007	.369	072	236	115	.369	0.498	0.120	-1.3	1.0	-1.4	0.9	A+	1
1612	618554	Bio	306	.565	.062	.311	.565	.056	.007	.338	243	100	.338	113	0.279	0.121	-0.6	1.0	-0.5	1.0	A+	1
1613	617455	Bio	306	.480	.180	.209	.121	.480	.010	.253	.003	029	211	.253	0.654	0.121	1.3	1.1	1.1	1.1	A+	
1614	620050	Bio	306	.350	.350	.141	.177	.324	.010	.272	.272	.002	143	061	1.256	0.126	0.2	1.0	0.8	1.1	A+	1
1615	617912	Bio	306	.428	.128	.428	.304	.124	.016	.422	172	.422	143	094	0.880	0.122	-2.6	0.9	-2.1	0.9	A-	1
1616	617553	Bio	306	.526	.180	.526	.114	.163	.016	.411	147	.411	195	087	0.439	0.121	-2.2	0.9	-2.2	0.9	A+	1
1617	617554	Bio	301	.492	.053	.163	.289	.492	.003	.339	151	203	126	.339	0.597	0.122	-0.3	1.0	0.2	1.0	A+	1
1618	620051	Bio	301	.249	.249	.169	.452	.123	.007	.326	.326	067	162	049	1.796	0.140	-0.2	1.0	0.0	1.0	A-	1
1619	617438	Bio	301	.419	.213	.419	.256	.103	.010	.252	108	.252	057	106	0.920	0.124	1.8	1.1	1.7	1.1	A+	1
1620	617895	Bio	301	.296	.226	.103	.365	.296	.010	.177	.047	116	088	.177	1.529	0.134	1.9	1.1	2.4	1.2	A-	1
1621	618555	Bio	301	.711	.070	.096	.110	.711	.013	.418	158	291	132	.418	-0.486	0.135	-1.5	0.9	-1.4	0.9	A+	
1622	617913	Bio	301	.708	.708	.120	.100	.063	.010	.412	.412	137	251	184	-0.453	0.134	-1.5	0.9	-0.9	0.9	A+	1
1623	617456	Bio	301	.199	.080	.216	.495	.199	.010	.269	056	.030	163	.269	2.111	0.152	0.1	1.0	0.8	1.1	B-	1
1624	618556	Bio	297	.428	.108	.428	.323	.138	.003	.204	046	.204	110	045	0.820	0.123	2.0	1.1	2.1	1.1	A+	
1625	620053	Bio	297	.306	.451	.111	.128	.306	.003	.251	073	092	091	.251	1.403	0.132	0.9	1.1	0.4	1.0	A-	1
1626	617914	Bio	297	.596	.596	.162	.091	.148	.003	.284	.284	119	237	021	0.065	0.124	0.3	1.0	0.6	1.0	A+	1
1627	617896	Bio	297	.300	.306	.300	.145	.246	.003	.235	110	.235	111	.004	1.438	0.133	0.7	1.0	1.1	1.1	A-	1
1628	617555	Bio	297	.822	.094	.034	.822	.047	.003	.371	239	143	.371	124	-1.177	0.157	-0.7	0.9	-1.6	8.0	A+	1
1629	617439	Bio	297	.286	.286	.212	.330	.162	.010	.306	.306	146	100	014	1.499	0.135	-0.3	1.0	0.4	1.0	A-	1
1630	617915	Bio	308	.425	.062	.425	.481	.029	.003	.387	079	.387	272	092	0.792	0.121	-2.0	0.9	-1.8	0.9	B-	1
1631	617899	Bio	308	.620	.114	.033	.227	.620	.007	.213	102	180	038	.213	-0.084	0.123	1.3	1.1	1.4	1.1	A+	1
1632	617459	Bio	308	.296	.198	.244	.257	.296	.007	.197	007	115	036	.197	1.408	0.130	1.0	1.1	0.8	1.1	A+	1
1633	618557	Bio	308	.062	.494	.308	.133	.062	.003	016	.084	.012	069	016	3.431	0.246	0.4	1.1	1.3	1.4	A+	1
1634	617556	Bio	308	.224	.224	.273	.338	.159	.007	.150	.150	057	.035	087	1.812	0.142	1.0	1.1	1.0	1.1	A-	1
1635	620054	Bio	308	.477	.153	.214	.477	.153	.003	.358	070	231	.358	106	0.561	0.119	-1.3	1.0	-1.4	1.0	A-	
1636	617440	Bio	308	.412	.412	.149	.169	.263	.007	.342	.342	154	159	072	0.844	0.121	-1.0	1.0	-0.7	1.0	A+	
1637	618558	Bio	311	.704	.174	.045	.704	.077	.000	.318	135	276	.318	138	-0.348	0.129	-0.8	1.0	-0.2	1.0	C-	
1638	617460	Bio	311	.752	.113	.084	.752	.051	.000	.351	209	194	.351	144	-0.612	0.136	-1.0	0.9	-1.1	0.9	A-	
1639	617443	Bio	311	.601	.167	.601	.154	.077	.000	.407	179	.407	219	199	0.150	0.121	-2.1	0.9	-1.9	0.9	A-	
1640	617916	Bio	311	.463	.064	.212	.261	.463	.000	.444	167	074	342	.444	0.768	0.120	-2.6	0.9	-2.6	0.9	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Pof	ID	FT	N	DVal	D/A\	D/D\	D(C)	D/D)	D/ \	D+Dic	DT/A)	DT/D)	DT/C)	DT/D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1641	617441	Bio	311	.408	.106	.408	.338	.148	.000	.367	175	.367	190	104	1.014	0.121	-1.1	1.0	-0.8	1.0	B-	
1642	620055	Bio	311	.289	.145	.261	.302	.289	.003	.198	.049	150	085	.198	1.593	0.131	1.5	1.1	1.0	1.1	A-	1
1643	620646	Bio	311	.283	.196	.283	.219	.293	.010	.197	.016	.197	137	063	1.622	0.132	1.2	1.1	1.8	1.1	A+	
1644	617901	Bio	307	.655	.166	.052	.655	.124	.003	.156	051	116	.156	087	-0.137	0.127	2.2	1.1	2.9	1.2	A+	1
1645	617442	Bio	307	.485	.485	.104	.121	.290	.000	.423	.423	167	237	183	0.660	0.121	-1.7	0.9	-1.3	0.9	A+	1
1646	618559	Bio	307	.306	.169	.306	.482	.042	.000	.321	091	.321	201	066	1.523	0.132	0.2	1.0	0.6	1.1	A-	1
1647	620056	Bio	307	.235	.235	.345	.290	.124	.007	.152	.152	059	.030	145	1.922	0.143	1.5	1.1	2.7	1.3	B-	1
1648	617558	Bio	307	.407	.104	.326	.407	.156	.007	.218	204	.066	.218	172	1.012	0.124	2.7	1.1	2.1	1.1	A+	1
1649	617917	Bio	307	.508	.104	.508	.199	.182	.007	.506	206	.506	341	106	0.546	0.122	-3.6	0.9	-3.3	0.8	A-	1
1650	618560	Bio	298	.258	.013	.027	.258	.698	.003	067	034	083	067	.146	1.724	0.138	3.5	1.3	4.1	1.4	A-	1
1651	617564	Bio	298	.322	.352	.258	.322	.064	.003	.241	054	082	.241	125	1.383	0.130	0.8	1.0	1.0	1.1	A+	1
1652	617902	Bio	298	.571	.205	.571	.104	.118	.003	.398	214	.398	190	101	0.249	0.123	-2.3	0.9	-1.6	0.9	A+	1
1653	617918	Bio	298	.473	.074	.289	.161	.473	.003	.318	046	149	160	.318	0.681	0.122	-0.5	1.0	-0.2	1.0	A+	1
1654	617559	Bio	298	.591	.144	.591	.161	.101	.003	.399	207	.399	143	168	0.159	0.123	-2.1	0.9	-2.0	0.9	A-	
1655	617919	Bio	313	.470	.067	.147	.470	.310	.006	.383	068	219	.383	166	0.715	0.120	-1.6	0.9	-1.4	0.9	B-	1
1656	617561	Bio	313	.412	.067	.169	.345	.412	.006	.432	151	100	219	.432	0.979	0.121	-2.6	0.9	-2.4	0.9	A-	1
1657	617548	Bio	313	.661	.661	.090	.141	.099	.010	.372	.372	075	202	151	-0.171	0.126	-0.9	1.0	-1.1	0.9	A+	1
1658	618561	Bio	313	.703	.048	.176	.064	.703	.010	.387	163	185	134	.387	-0.384	0.130	-0.9	1.0	-1.4	0.9	A-	1
1659	617903	Bio	313	.566	.115	.224	.566	.086	.010	.459	179	190	.459	184	0.283	0.120	-3.1	0.9	-3.0	0.9	A-	
1660	617900	Bio	317	.483	.057	.483	.284	.177	.000	.441	228	.441	093	329	0.618	0.120	-2.7	0.9	-2.6	0.9	B+	1
1661	617560	Bio	317	.492	.492	.237	.114	.158	.000	.430	.430	205	261	123	0.575	0.120	-2.1	0.9	-1.9	0.9	A-	1
1662	617894	Bio	317	.073	.678	.060	.186	.073	.003	024	.178	224	033	024	3.434	0.231	0.6	1.1	2.1	1.6	A-	1
1663	617445	Bio	317	.622	.076	.085	.622	.205	.013	.387	058	321	.387	142	-0.055	0.125	-0.8	1.0	-0.5	1.0	A+	1
1664	617920	Bio	317	.685	.057	.129	.123	.685	.006	.442	052	132	379	.442	-0.373	0.130	-1.7	0.9	-1.0	0.9	A+	1
1665	618563	Bio	317	.634	.054	.233	.073	.634	.006	.398	152	228	140	.398	-0.113	0.125	-0.7	1.0	-0.6	1.0	A-	1
1666	617429	Bio	317	.483	.189	.211	.107	.483	.010	.441	182	181	172	.441	0.591	0.121	-2.1	0.9	-2.1	0.9	A+	1
1667	617904	Bio	317	.416	.142	.183	.416	.249	.010	.422	157	226	.422	097	0.914	0.122	-2.2	0.9	-1.1	0.9	A-	
1668	617544	Bio	317	.618	.114	.110	.148	.618	.010	.506	206	216	251	.506	-0.048	0.124	-3.3	0.9	-2.7	8.0	A+	1
1669	617905	Bio	311	.534	.151	.219	.534	.090	.006	.344	095	148	.344	135	0.398	0.120	-0.8	1.0	-0.9	1.0	B+	
1670	617911	Bio	311	.550	.055	.113	.550	.277	.006	.345	134	132	.345	139	0.326	0.120	-0.8	1.0	-0.7	1.0	B-	
1671	618564	Bio	311	.740	.093	.103	.058	.740	.006	.324	074	087	243	.324	-0.608	0.136	-0.4	1.0	0.0	1.0	A-	
1672	617909	Bio	311	.219	.363	.238	.174	.219	.006	.227	.012	143	004	.227	1.951	0.143	0.3	1.0	0.8	1.1	A-	
1673	617545	Bio	311	.762	.097	.077	.058	.762	.006	.351	119	164	142	.351	-0.741	0.140	-0.4	1.0	-1.0	0.9	A-	
1674	617446	Bio	311	.611	.611	.151	.125	.106	.006	.446	.446	194	226	116	0.048	0.122	-3.0	0.9	-2.2	0.9	A+	
1675	617557	Bio	311	.560	.058	.232	.560	.145	.006	.253	161	106	.253	018	0.283	0.120	1.1	1.0	2.0	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1676	617921	Bio	311	.457	.097	.129	.457	.312	.006	.064	055	071	.064	.098	0.742	0.120	5.1	1.2	5.9	1.3	A-	
1677	617562	Bio	311	.656	.119	.109	.656	.109	.006	.418	129	207	.418	176	-0.168	0.125	-1.9	0.9	-2.0	0.9	A+	
1678	620389	Bio	311	.183	.183	.286	.302	.222	.006	.158	.158	134	010	.100	2.190	0.152	0.5	1.0	2.0	1.3	A-	
1679	620392	Bio	300	.737	.060	.090	.737	.107	.007	.245	059	138	.245	059	-0.564	0.138	0.5	1.0	1.9	1.2	A-	
1680	618565	Bio	300	.647	.647	.083	.190	.073	.007	.459	.459	186	228	162	-0.087	0.128	-2.5	0.9	-2.8	8.0	A-	
1681	617563	Bio	300	.643	.110	.157	.643	.083	.007	.400	190	058	.400	271	-0.071	0.128	-1.2	0.9	-1.4	0.9	A-	
1682	620386	Bio	300	.670	.147	.100	.670	.073	.010	.466	260	175	.466	108	-0.212	0.130	-2.2	0.9	-2.2	8.0	A+	
1683	617546	Bio	300	.600	.113	.600	.083	.193	.010	.365	113	.365	061	201	0.132	0.125	-0.5	1.0	-0.5	1.0	A+	
1684	617906	Bio	300	.567	.567	.147	.150	.127	.010	.444	.444	141	254	098	0.287	0.124	-2.4	0.9	-2.0	0.9	A+	
1685	617447	Bio	300	.783	.783	.053	.057	.093	.013	.477	.477	205	264	152	-0.883	0.149	-1.8	0.9	-1.6	8.0	A+	
1686	617922	Bio	300	.667	.123	.077	.667	.117	.017	.484	181	197	.484	217	-0.221	0.131	-2.6	0.9	-2.6	8.0	B-	
1687	617431	Bio	300	.170	.360	.217	.237	.170	.017	.050	.118	095	.024	.050	2.355	0.160	1.5	1.2	2.9	1.5	B-	
1688	617428	Bio	300	.397	.153	.263	.170	.397	.017	.424	051	169	179	.424	1.052	0.126	-2.1	0.9	-1.7	0.9	A+	
1689	617448	Bio	298	.128	.292	.466	.128	.111	.003	.081	214	.112	.081	.074	2.686	0.180	0.9	1.1	2.0	1.4	A-	
1690	617547	Bio	298	.366	.228	.091	.309	.366	.007	.455	109	168	234	.455	1.171	0.127	-2.3	0.9	-2.0	0.9	B-	
1691	618566	Bio	298	.430	.185	.201	.178	.430	.007	.425	131	165	199	.425	0.873	0.123	-2.0	0.9	-1.9	0.9	A-	
1692	617432	Bio	298	.352	.346	.121	.352	.175	.007	.307	115	207	.307	020	1.236	0.128	0.3	1.0	0.0	1.0	A-	
1693	617923	Bio	298	.362	.185	.218	.228	.362	.007	.237	150	.000	092	.237	1.187	0.127	1.3	1.1	1.5	1.1	A-	
1694	617926	Bio	298	.493	.151	.097	.493	.252	.007	.391	107	182	.391	198	0.586	0.122	-1.5	1.0	-1.2	1.0	A+	
1695	617907	Bio	298	.493	.299	.101	.493	.101	.007	.085	033	.002	.085	036	0.586	0.122	4.8	1.2	5.0	1.3	A+	
1696	620391	Bio	298	.205	.205	.305	.242	.242	.007	.323	.323	.084	220	135	2.066	0.150	-0.3	1.0	-0.2	1.0	A-	
1697	617924	Bio	311	.556	.238	.080	.556	.122	.003	.390	335	033	.390	108	0.381	0.120	-1.4	1.0	-1.2	0.9	A-	
1698	618568	Bio	311	.617	.228	.071	.080	.617	.003	.214	.004	178	197	.214	0.100	0.123	1.7	1.1	1.8	1.1	A+	
1699	620047	Bio	311	.479	.379	.100	.479	.042	.000	.383	180	238	.383	162	0.729	0.120	-1.2	1.0	-1.2	1.0	A-	
1700	620388	Bio	311	.740	.039	.740	.100	.122	.000	.420	236	.420	191	249	-0.516	0.135	-1.6	0.9	-1.7	0.9	A-	
1701	617908	Bio	311	.682	.682	.029	.055	.235	.000	.437	.437	165	290	260	-0.207	0.127	-2.0	0.9	-2.2	0.9	A-	
1702	620390	Bio	311	.338	.232	.322	.106	.338	.003	.348	251	.006	184	.348	1.382	0.126	-0.5	1.0	-0.5	1.0	A-	
1703	617433	Bio	311	.183	.463	.183	.254	.097	.003	.198	.068	.198	223	029	2.282	0.152	0.4	1.0	1.2	1.2	A-	
1704	616406	Chem	307	.482	.166	.182	.482	.163	.007	.389	078	181	.389	173	0.658	0.119	-2.5	0.9	-2.6	0.9	A-	
1705	616376	Chem	307	.505	.072	.098	.505	.316	.010	.324	065	086	.324	190	0.549	0.119	-1.1	1.0	-0.9	1.0	A+	
1706	616533	Chem	307	.485	.485	.388	.091	.033	.003	.345	.345	179	185	126	0.706	0.120	-1.4	1.0	-1.4	0.9	A-	
1707	616409	Chem	4315	.434	.137	.215	.434	.205	.009	.367	136	128	.367	161	0.870	0.032	-6.6	0.9	-6.3	0.9	A+	A-
1708	616503	Chem	309	.240	.291	.240	.278	.181	.010	.118	123	.118	002	.086	1.800	0.139	1.3	1.1	1.6	1.2	A-	
1709	616372	Chem	4315	.324	.273	.130	.262	.325	.010	.374	117	160	106	.374	1.378	0.034	-5.0	0.9	-4.3	0.9	A-	A-
1710	616532	Chem	309	.256	.107	.249	.382	.256	.007	.309	146	089	056	.309	1.710	0.136	-0.8	1.0	-0.8	0.9	A-	шĪ

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	ın	FT	N	DVal	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1711	618721	Chem	309	.288	.152	.447	.288	.107	.007	.089	.073	055	.089	050	1.532	0.131	2.0	1.1	1.9	1.2	A-	
1712	618751	Chem	309	.207	.207	.269	.295	.217	.013	.180	.180	.022	129	.002	1.996	0.146	0.6	1.1	0.8	1.1	A+	
1713	616514	Chem	307	.485	.235	.485	.176	.101	.003	.315	114	.315	114	187	0.706	0.120	-1.0	1.0	-0.8	1.0	B-	
1714	616566	Chem	307	.446	.179	.192	.446	.179	.003	.363	191	089	.363	163	0.879	0.120	-1.5	1.0	-1.6	0.9	A+	
1715	618752	Chem	307	.199	.199	.235	.371	.179	.016	.128	.128	139	.068	052	2.139	0.149	1.0	1.1	0.8	1.1	A+	
1716	618717	Chem	616	.333	.333	.395	.221	.047	.005	.313	.313	096	181	097	1.378	0.089	-1.1	1.0	-0.9	1.0	A-	
1717	620454	Chem	308	.308	.198	.325	.162	.308	.007	.257	072	120	037	.257	1.478	0.128	0.1	1.0	0.3	1.0	A-	
1718	616534	Chem	308	.283	.166	.370	.283	.166	.016	.296	010	108	.296	127	1.600	0.131	-0.5	1.0	0.3	1.0	A-	
1719	616567	Chem	308	.292	.156	.224	.312	.292	.016	.304	106	071	083	.304	1.552	0.130	-0.5	1.0	-0.1	1.0	A+	
1720	620455	Chem	309	.259	.359	.288	.259	.087	.007	.281	056	148	.281	075	1.709	0.135	-0.3	1.0	-0.1	1.0	A-	
1721	618684	Chem	309	.340	.178	.333	.142	.340	.007	.235	.037	145	139	.235	1.293	0.125	0.7	1.0	1.7	1.1	A-	
1722	616568	Chem	309	.372	.372	.136	.301	.168	.023	.404	.404	211	131	131	1.101	0.124	-1.8	0.9	-1.6	0.9	A-	
1723	616535	Chem	309	.437	.142	.437	.230	.168	.023	.232	055	.232	268	.059	0.797	0.120	0.8	1.0	1.3	1.1	A-	
1724	616371	Chem	309	.427	.185	.178	.191	.427	.019	.373	098	204	138	.373	0.853	0.121	-1.4	1.0	-1.3	0.9	A+	
1725	616430	Chem	309	.450	.133	.320	.450	.078	.019	.370	142	176	.370	148	0.752	0.120	-1.5	1.0	-1.3	1.0	A-	
1726	616565	Chem	309	.188	.188	.223	.375	.191	.023	.105	.105	.013	.000	084	2.129	0.151	0.9	1.1	1.6	1.2	A-	
1727	616536	Chem	308	.208	.240	.250	.299	.208	.003	.242	071	148	010	.242	1.969	0.145	-0.4	1.0	-0.6	0.9	A+	
1728	616373	Chem	616	.183	.183	.188	.481	.136	.011	.108	.108	149	.131	042	2.139	0.108	1.1	1.1	1.9	1.2	A+	
1729	620456	Chem	308	.250	.234	.250	.328	.175	.013	.002	.040	.002	.110	073	1.690	0.136	2.0	1.1	2.7	1.2	B+	
1730	616374	Chem	318	.280	.255	.280	.333	.132	.000	.252	.026	.252	247	022	1.670	0.130	0.3	1.0	0.3	1.0	B-	
1731	619959	Chem	318	.491	.085	.236	.186	.491	.003	.387	125	169	220	.387	0.679	0.117	-2.3	0.9	-1.9	0.9	A-	
1732	620457	Chem	318	.248	.286	.293	.248	.167	.006	.127	.032	057	.127	111	1.827	0.135	1.4	1.1	1.4	1.1	B+	
1733	616537	Chem	318	.346	.173	.151	.327	.346	.003	.350	090	154	157	.350	1.328	0.123	-1.0	1.0	-1.1	0.9	A-	
1734	619929	Chem	306	.471	.163	.471	.144	.222	.000	.398	127	.398	220	179	0.718	0.119	-2.4	0.9	-2.3	0.9	A-	
1735	619960	Chem	306	.281	.190	.121	.281	.405	.003	.164	130	132	.164	.040	1.597	0.132	0.4	1.0	1.2	1.1	A-	
1736	616375	Chem	306	.144	.144	.196	.405	.245	.010	.176	.176	038	.023	087	2.488	0.167	0.3	1.0	0.2	1.0	A+	
1737	616403	Chem	613	.406	.113	.194	.406	.277	.010	.153	051	119	.153	.004	0.973	0.086	3.2	1.1	3.2	1.1	A-	B+
1738	620458	Chem	306	.369	.177	.369	.294	.150	.010	.382	129	.382	141	133	1.151	0.123	-1.9	0.9	-1.7	0.9	A+	
1739	618757	Chem	307	.332	.332	.222	.371	.065	.010	.237	.237	003	199	.024	1.331	0.126	0.2	1.0	1.0	1.1	A-	
1740	618714	Chem	307	.283	.244	.251	.205	.283	.016	.126	.014	059	015	.126	1.570	0.132	1.5	1.1	1.6	1.1	A+	
1741	619930	Chem	307	.518	.192	.104	.518	.179	.007	.304	148	163	.304	032	0.502	0.119	-0.8	1.0	-0.3	1.0	B+	
1742	619961	Chem	307	.378	.160	.378	.313	.124	.026	.367	091	.367	193	026	1.087	0.123	-1.5	0.9	-1.3	0.9	A-	
1743	619931	Chem	305	.328	.144	.328	.357	.148	.023	.161	060	.161	.095	220	1.265	0.127	1.2	1.1	0.9	1.1	A+	
1744	618715	Chem	305	.249	.321	.184	.230	.249	.016	.275	065	085	056	.275	1.698	0.137	-0.3	1.0	0.2	1.0	A-	
1745	616377	Chem	305	.213	.285	.256	.213	.233	.013	.099	078	.054	.099	009	1.921	0.144	1.4	1.1	1.3	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1746	619962	Chem	305	.377	.259	.138	.377	.223	.003	.286	101	.012	.286	221	1.075	0.122	-0.7	1.0	-0.4	1.0	A-	
1747	616497	Chem	305	.292	.184	.292	.341	.157	.026	.073	.054	.073	.020	093	1.437	0.131	2.1	1.1	2.3	1.2	A-	
1748	618685	Chem	305	.216	.216	.207	.367	.180	.030	.128	.128	.059	.022	148	1.863	0.144	0.9	1.1	1.5	1.2	A-	i l
1749	616407	Chem	305	.239	.285	.239	.325	.112	.039	.223	058	.223	016	122	1.700	0.139	0.2	1.0	0.7	1.1	B-	1
1750	618746	Chem	308	.396	.396	.107	.234	.260	.003	.267	.267	148	158	041	1.093	0.121	-0.1	1.0	-0.2	1.0	A+	
1751	616380	Chem	308	.234	.218	.247	.234	.292	.010	.193	034	022	.193	085	1.924	0.140	0.6	1.1	8.0	1.1	A+	1
1752	618716	Chem	308	.458	.104	.458	.283	.146	.010	.424	144	.424	205	172	0.809	0.119	-3.0	0.9	-2.9	0.9	A+	1
1753	619932	Chem	308	.591	.292	.091	.591	.020	.007	.256	190	034	.256	104	0.237	0.121	0.0	1.0	1.4	1.1	B-	1
1754	618686	Chem	308	.318	.367	.188	.318	.114	.013	.102	.061	212	.102	.097	1.457	0.128	2.5	1.1	2.7	1.2	A-	1
1755	616498	Chem	308	.169	.143	.205	.468	.169	.016	.364	068	224	.006	.364	2.356	0.158	-0.8	0.9	-0.6	0.9	B-	
1756	619963	Chem	308	.240	.234	.276	.224	.240	.026	.247	078	086	013	.247	1.853	0.139	0.3	1.0	0.3	1.0	A-	1
1757	616408	Chem	308	.279	.279	.218	.211	.273	.020	.231	.231	057	032	108	1.640	0.132	0.4	1.0	0.5	1.0	A+	1
1758	618747	Chem	308	.682	.013	.075	.682	.231	.000	.410	095	179	.410	316	-0.199	0.127	-1.7	0.9	-1.9	0.9	A-	1
1759	619964	Chem	308	.266	.266	.273	.289	.162	.010	.244	.244	147	088	.037	1.725	0.134	0.4	1.0	0.5	1.0	A-	1
1760	616499	Chem	308	.396	.305	.179	.396	.117	.003	.224	.033	202	.224	130	1.083	0.122	1.3	1.1	1.2	1.1	A-	1
1761	619933	Chem	308	.331	.331	.156	.386	.123	.003	.295	.295	102	081	172	1.391	0.126	-0.2	1.0	0.4	1.0	A+	1
1762	618687	Chem	308	.357	.146	.247	.357	.244	.007	.196	116	104	.196	.013	1.263	0.124	1.5	1.1	1.5	1.1	A-	1
1763	616410	Chem	308	.296	.104	.344	.296	.250	.007	.069	112	034	.069	.076	1.570	0.130	2.5	1.2	2.6	1.2	A-	1
1764	618748	Chem	308	.198	.198	.442	.283	.058	.020	.238	.238	011	115	009	2.049	0.149	0.5	1.0	0.1	1.0	B+	
1765	616411	Chem	308	.117	.136	.117	.130	.597	.020	.149	080	.149	078	.091	2.721	0.183	0.5	1.1	0.9	1.2	B-	l
1766	618718	Chem	308	.334	.244	.257	.146	.334	.020	.419	073	204	102	.419	1.270	0.127	-2.0	0.9	-1.8	0.9	A+	1
1767	619965	Chem	308	.205	.205	.338	.302	.127	.029	.226	.226	009	075	058	1.970	0.147	0.3	1.0	0.4	1.0	A-	1
1768	620451	Chem	308	.273	.273	.247	.279	.179	.023	.276	.276	.009	107	113	1.574	0.134	0.3	1.0	0.1	1.0	A+	1
1769	619926	Chem	308	.299	.299	.318	.247	.117	.020	.163	.163	.044	136	030	1.437	0.130	1.5	1.1	1.5	1.1	A-	1
1770	616500	Chem	308	.364	.172	.211	.224	.364	.029	.345	040	036	247	.345	1.096	0.125	-0.8	1.0	-0.9	1.0	A-	1
1771	620452	Chem	307	.313	.300	.166	.313	.215	.007	.082	054	155	.082	.164	1.532	0.127	1.8	1.1	1.9	1.1	A-	1
1772	618719	Chem	307	.345	.088	.267	.293	.345	.007	.174	058	031	050	.174	1.379	0.123	0.8	1.0	0.8	1.0	A+	
1773	619966	Chem	307	.280	.235	.280	.264	.218	.003	.140	.004	.140	097	.003	1.704	0.130	0.8	1.1	0.6	1.0	A-	
1774	618749	Chem	307	.407	.104	.407	.355	.130	.003	.170	033	.170	020	120	1.101	0.120	1.3	1.0	1.4	1.1	B+	1
1775	616530	Chem	307	.189	.209	.238	.358	.189	.007	.151	057	125	.088	.151	2.238	0.149	0.2	1.0	0.2	1.0	A-	ш
1776	619927	Chem	307	.339	.218	.251	.182	.339	.010	.353	192	071	091	.353	1.396	0.124	-1.6	0.9	-1.8	0.9	A-	
1777	616501	Chem	307	.238	.179	.238	.397	.173	.013	.176	.029	.176	016	144	1.917	0.137	0.4	1.0	0.2	1.0	A-	
1778	618750	Chem	307	.674	.163	.055	.674	.104	.003	.355	175	112	.355	247	-0.227	0.126	-1.6	0.9	-1.3	0.9	A+	ш
1779	618720	Chem	307	.424	.424	.195	.156	.218	.007	.360	.360	183	150	115	0.890	0.120	-1.5	1.0	-1.6	0.9	A+	
1780	620066	Chem	307	.254	.153	.267	.316	.254	.010	.295	137	113	043	.295	1.724	0.136	-0.2	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

D-f	15	FT		D) /al	D/A)	D/D)	D(C)	D/D)	D/ \	DAD:	DT/A)	DT/D)	DT(C)	DT(D)	04	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
1781	616531	Chem	307	.202	.202	.228	.309	.241	.020	.093	.093	023	131	.101	2.029	0.148	1.3	1.1	1.8	1.2	A+	
1782	620453	Chem	307	.205	.127	.336	.323	.205	.010	.206	060	082	033	.206	2.022	0.147	0.3	1.0	1.1	1.1	A-	
1783	616502	Chem	307	.117	.117	.209	.108	.557	.010	.274	.274	062	.024	132	2.728	0.183	-0.1	1.0	-0.6	0.9	B+	
1784	618699	Chem	307	.414	.127	.195	.248	.414	.016	.348	104	079	142	.348	0.942	0.121	-1.4	1.0	-0.9	1.0	A+	
1785	618734	Chem	308	.503	.175	.503	.208	.110	.003	.382	151	.382	164	199	0.610	0.119	-2.0	0.9	-1.9	0.9	A-	
1786	616518	Chem	306	.572	.059	.572	.190	.173	.007	.310	116	.310	175	093	0.263	0.120	-0.8	1.0	-0.2	1.0	A+	
1787	616516	Chem	308	.471	.338	.123	.471	.062	.007	.373	105	213	.373	125	0.646	0.118	-2.5	0.9	-2.5	0.9	A+	
1788	618733	Chem	308	.471	.234	.208	.471	.084	.003	.407	174	180	.407	160	0.768	0.119	-2.6	0.9	-2.5	0.9	A+	
1789	620468	Chem	318	.418	.214	.245	.418	.113	.009	.393	203	125	.393	150	0.985	0.119	-2.0	0.9	-2.1	0.9	A+	
1790	618698	Chem	306	.781	.036	.065	.105	.781	.013	.280	033	140	157	.280	-0.839	0.146	-0.2	1.0	0.3	1.0	A+	
1791	619946	Chem	309	.430	.152	.204	.207	.430	.007	.383	161	094	166	.383	0.853	0.121	-1.7	0.9	-1.4	0.9	A+	
1792	618695	Chem	4315	.436	.436	.255	.186	.117	.006	.270	.270	089	092	142	0.866	0.032	0.6	1.0	0.7	1.0	A-	A+
1793	620435	Chem	309	.204	.214	.243	.324	.204	.016	.308	010	178	023	.308	2.017	0.146	-0.8	0.9	-0.9	0.9	A-	
1794	616519	Chem	4315	.235	.248	.447	.235	.057	.013	.185	067	017	.185	082	1.858	0.037	2.0	1.0	3.1	1.1	A-	A+
1795	616553	Chem	4315	.288	.549	.288	.084	.071	.009	.058	.121	.058	126	124	1.567	0.035	8.4	1.1	8.9	1.2	A+	B+
1796	616424	Chem	4315	.391	.189	.239	.391	.165	.016	.318	085	144	.318	097	1.048	0.033	-3.0	1.0	-2.8	1.0	A-	A+
1797	618701	Chem	4315	.304	.235	.341	.304	.100	.020	.219	036	101	.219	048	1.461	0.035	1.9	1.0	2.2	1.0	A-	A+
1798	620469	Chem	309	.353	.168	.353	.265	.197	.016	.284	.025	.284	115	170	1.191	0.125	-0.8	1.0	0.1	1.0	A+	
1799	620436	Chem	307	.365	.251	.365	.192	.189	.003	.291	118	.291	187	029	1.246	0.124	-0.3	1.0	-0.6	1.0	A+	
1800	620470	Chem	307	.388	.222	.388	.202	.182	.007	.372	161	.372	147	130	1.132	0.123	-1.9	0.9	-2.1	0.9	A-	
1801	619947	Chem	307	.319	.319	.228	.267	.179	.007	.213	.213	153	049	.000	1.465	0.128	1.3	1.1	0.9	1.1	A+	
1802	620471	Chem	308	.097	.049	.097	.776	.075	.003	.186	080	.186	.040	161	3.002	0.197	0.2	1.0	0.1	1.0	A-	
1803	618755	Chem	308	.474	.296	.474	.149	.071	.010	.249	029	.249	185	097	0.709	0.119	0.5	1.0	0.2	1.0	A+	
1804	619948	Chem	308	.315	.231	.386	.315	.055	.013	.140	034	086	.140	.025	1.427	0.127	1.5	1.1	1.6	1.1	A+	
1805	616513	Chem	308	.351	.153	.296	.351	.188	.013	.281	079	127	.281	081	1.255	0.124	-0.1	1.0	-0.2	1.0	A+	
1806	616423	Chem	308	.649	.071	.649	.195	.078	.007	.349	165	.349	164	146	-0.060	0.124	-1.2	1.0	-1.6	0.9	A-	
1807	620437	Chem	308	.305	.201	.273	.205	.305	.016	.337	146	042	147	.337	1.472	0.128	-0.9	1.0	-0.9	0.9	A+	
1808	620438	Chem	309	.346	.146	.430	.346	.074	.003	.363	057	252	.363	095	1.264	0.125	-1.3	0.9	-1.3	0.9	A+	
1809	620472	Chem	309	.440	.252	.139	.168	.440	.000	.517	248	192	221	.517	0.840	0.119	-4.7	0.9	-4.3	8.0	A+	
1810	616515	Chem	309	.388	.152	.337	.388	.117	.007	.255	100	166	.255	027	1.057	0.122	0.6	1.0	0.5	1.0	A-	
1811	616425	Chem	308	.227	.360	.276	.227	.123	.013	.239	001	052	.239	113	1.821	0.140	0.0	1.0	-0.1	1.0	A+	
1812	618696	Chem	308	.344	.140	.344	.299	.201	.016	.161	099	.161	108	.115	1.194	0.124	1.3	1.1	1.5	1.1	A-	
1813	616548	Chem	308	.386	.240	.386	.244	.114	.016	.237	116	.237	078	.031	1.000	0.122	0.4	1.0	0.4	1.0	A+	
1814	620439	Chem	308	.679	.049	.156	.679	.104	.013	.244	102	219	.244	.089	-0.308	0.127	0.1	1.0	0.6	1.0	A+	
1815	620473	Chem	308	.214	.156	.338	.283	.214	.010	.068	018	.050	012	.068	1.908	0.143	1.2	1.1	1.6	1.2	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Dof		FT	A.	DV/el	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT(A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1816	620440	Chem	318	.522	.094	.522	.308	.072	.003	.256	086	.256	162	104	0.541	0.117	0.3	1.0	-0.1	1.0	A-	
1817	616549	Chem	318	.280	.192	.315	.211	.280	.003	.359	062	169	135	.359	1.664	0.130	-0.9	1.0	-1.1	0.9	C+	1
1818	616426	Chem	318	.217	.217	.346	.245	.179	.013	.175	.175	014	204	.069	2.011	0.141	0.8	1.1	0.8	1.1	A+	
1819	620474	Chem	318	.264	.264	.333	.267	.123	.013	.340	.340	188	023	135	1.731	0.132	-0.6	1.0	-0.7	0.9	A-	1
1820	616517	Chem	318	.255	.217	.236	.283	.255	.009	.139	132	007	.004	.139	1.788	0.134	1.2	1.1	2.0	1.2	A-	1
1821	618697	Chem	318	.252	.252	.274	.308	.151	.016	.189	.189	138	081	.038	1.789	0.134	0.6	1.0	1.2	1.1	A+	1
1822	616550	Chem	306	.284	.150	.317	.239	.284	.010	.188	199	044	.072	.188	1.570	0.131	0.9	1.1	0.8	1.1	A+	1
1823	616551	Chem	307	.743	.114	.088	.743	.046	.010	.391	215	165	.391	115	-0.583	0.136	-1.2	0.9	-1.2	0.9	A+	1
1824	616386	Chem	307	.511	.140	.511	.212	.130	.007	.347	168	.347	094	134	0.531	0.119	-1.8	1.0	-1.7	0.9	A-	1
1825	618731	Chem	307	.241	.176	.241	.407	.156	.020	.208	099	.208	.056	091	1.808	0.139	0.5	1.0	0.7	1.1	A-	1
1826	619912	Chem	307	.225	.202	.277	.274	.225	.023	.194	084	022	.020	.194	1.900	0.142	0.6	1.1	0.7	1.1	A+	1
1827	616552	Chem	305	.315	.203	.197	.275	.315	.010	.323	039	043	241	.323	1.357	0.128	-1.2	0.9	-0.9	0.9	A+	1
1828	616539	Chem	305	.433	.433	.226	.256	.069	.016	.328	.328	194	141	.015	0.794	0.120	-1.5	1.0	-1.5	0.9	A+	1
1829	618732	Chem	305	.403	.249	.403	.177	.151	.020	.311	.006	.311	197	122	0.926	0.122	-0.5	1.0	-0.7	1.0	A-	
1830	619911	Chem	305	.246	.246	.269	.331	.138	.016	.351	.351	101	104	082	1.715	0.138	-0.8	0.9	-0.7	0.9	A-	1
1831	618700	Chem	305	.364	.134	.364	.371	.112	.020	.195	058	.195	103	025	1.097	0.124	1.1	1.1	1.1	1.1	A-	
1832	616387	Chem	305	.371	.154	.371	.295	.144	.036	.229	116	.229	040	046	1.034	0.124	0.8	1.0	0.4	1.0	A-	1
1833	619913	Chem	308	.526	.127	.107	.234	.526	.007	.298	159	097	137	.298	0.529	0.119	-0.8	1.0	-1.1	1.0	A-	1
1834	616554	Chem	308	.367	.283	.244	.367	.094	.013	.392	046	283	.392	089	1.216	0.124	-1.7	0.9	-1.6	0.9	A-	
1835	616388	Chem	308	.250	.149	.351	.250	.231	.020	.238	003	.065	.238	274	1.800	0.137	0.3	1.0	0.5	1.0	A-	1
1836	619914	Chem	308	.614	.091	.192	.614	.104	.000	.439	168	312	.439	141	0.125	0.122	-2.7	0.9	-2.7	0.9	A+	1
1837	618688	Chem	308	.231	.127	.234	.406	.231	.003	.370	216	068	101	.370	1.937	0.141	-0.9	0.9	-0.7	0.9	A+	
1838	616389	Chem	308	.412	.088	.412	.354	.140	.007	.381	196	.381	201	063	1.007	0.121	-1.4	1.0	-1.4	0.9	Ċ	1
1839	619942	Chem	308	.159	.286	.315	.234	.159	.007	.089	.121	091	073	.089	2.431	0.161	0.9	1.1	1.5	1.2	A-	1
1840	618735	Chem	308	.240	.201	.240	.338	.205	.016	.164	153	.164	011	.068	1.784	0.139	1.1	1.1	1.9	1.2	A-	1
1841	619943	Chem	308	.321	.321	.471	.140	.042	.026	.323	.323	066	199	045	1.316	0.128	-0.6	1.0	-0.3	1.0	B-	1
1842	616390	Chem	308	.546	.127	.546	.224	.084	.020	.386	118	.386	218	071	0.298	0.121	-1.9	0.9	-1.7	0.9	A+	
1843	616420	Chem	308	.308	.185	.312	.308	.162	.033	.175	125	.047	.175	043	1.362	0.130	1.5	1.1	1.6	1.1	A-	1
1844	619915	Chem	308	.406	.162	.169	.237	.406	.026	.444	175	105	180	.444	0.905	0.122	-3.1	0.9	-2.1	0.9	A+	1
1845	619944	Chem	307	.511	.182	.511	.160	.134	.013	.301	146	.301	102	090	0.628	0.118	-1.2	1.0	-1.3	1.0	A+	
1846	618736	Chem	307	.261	.261	.508	.173	.046	.013	.254	.254	046	110	116	1.787	0.133	-0.4	1.0	-0.1	1.0	A+	
1847	619916	Chem	307	.313	.212	.313	.209	.251	.016	.146	044	.146	062	.012	1.514	0.127	0.9	1.0	1.0	1.1	B-	
1848	616391	Chem	307	.254	.153	.176	.410	.254	.007	.272	043	164	021	.272	1.842	0.134	-0.5	1.0	-0.7	0.9	A-	
1849	616421	Chem	307	.134	.130	.313	.414	.134	.010	.135	052	.060	060	.135	2.665	0.171	0.0	1.0	0.8	1.1	A+	
1850	620434	Chem	307	.186	.127	.388	.283	.186	.016	.275	047	.036	222	.275	2.147	0.152	-0.1	1.0	-0.1	1.0	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	ın	FT	N	DV/el	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT(A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1851	619917	Chem	307	.257	.218	.241	.270	.257	.013	.251	057	073	130	.251	1.692	0.136	0.3	1.0	0.3	1.0	B+	
1852	619945	Chem	307	.502	.101	.195	.195	.502	.007	.433	158	204	201	.433	0.549	0.119	-3.3	0.9	-3.1	0.9	A+	
1853	616422	Chem	307	.489	.124	.218	.489	.163	.007	.354	112	218	.354	138	0.603	0.119	-1.7	1.0	-1.7	0.9	A-	
1854	616392	Chem	307	.163	.202	.326	.287	.163	.023	.260	093	068	054	.260	2.297	0.160	-0.1	1.0	0.0	1.0	A-	
1855	616511	Chem	305	.712	.712	.089	.102	.079	.020	.379	.379	237	176	101	-0.505	0.133	-1.4	0.9	-1.7	0.9	A+	
1856	619910	Chem	308	.331	.419	.331	.166	.078	.007	.320	070	.320	176	122	1.402	0.126	-0.4	1.0	-0.5	1.0	A+	
1857	618726	Chem	309	.343	.188	.311	.159	.343	.000	.233	126	073	075	.233	1.286	0.125	0.7	1.0	0.8	1.1	A+	
1858	616505	Chem	4315	.610	.075	.201	.610	.108	.007	.332	136	173	.332	139	0.101	0.032	-4.3	1.0	-4.3	0.9	A+	A-
1859	616543	Chem	4315	.506	.506	.171	.168	.149	.007	.417	.417	166	200	148	0.562	0.032	-9.9	0.9	-9.9	0.9	A+	A+
1860	620467	Chem	309	.210	.110	.275	.210	.398	.007	.115	206	087	.115	.164	1.985	0.145	1.1	1.1	1.2	1.1	A+	
1861	618728	Chem	4315	.217	.147	.290	.325	.217	.021	.307	112	094	042	.307	1.955	0.038	-1.9	1.0	-1.9	1.0	A+	A-
1862	616379	Chem	309	.282	.201	.282	.256	.246	.016	.187	098	.187	.032	059	1.552	0.132	0.2	1.0	0.4	1.0	A+	
1863	616381	Chem	307	.391	.153	.391	.231	.209	.016	.238	010	.238	147	086	1.097	0.123	1.1	1.0	0.7	1.0	A+	
1864	616404	Chem	308	.364	.364	.221	.101	.305	.010	.289	.289	147	144	022	1.207	0.123	-0.2	1.0	-0.1	1.0	A-	
1865	618725	Chem	308	.370	.104	.136	.383	.370	.007	.405	084	185	177	.405	1.180	0.123	-2.0	0.9	-2.1	0.9	A+	
1866	616378	Chem	308	.481	.120	.244	.481	.143	.013	.228	090	171	.228	.002	0.667	0.119	0.7	1.0	0.8	1.0	A+	
1867	618693	Chem	308	.338	.286	.127	.240	.338	.010	.312	128	054	107	.312	1.331	0.125	-0.4	1.0	0.2	1.0	A-	
1868	619934	Chem	308	.328	.156	.328	.406	.094	.016	.108	059	.108	.031	093	1.357	0.126	1.9	1.1	2.1	1.1	A-	
1869	616546	Chem	308	.539	.208	.117	.539	.123	.013	.379	179	150	.379	143	0.418	0.119	-2.4	0.9	-2.3	0.9	A-	
1870	616382	Chem	309	.269	.126	.269	.453	.146	.007	.198	013	.198	087	101	1.656	0.133	0.7	1.1	0.9	1.1	A+	
1871	619935	Chem	309	.385	.240	.256	.385	.107	.013	.373	104	227	.373	097	1.059	0.122	-1.3	1.0	-1.4	0.9	A-	
1872	616547	Chem	309	.311	.311	.388	.110	.181	.010	.341	.341	176	048	129	1.429	0.128	-0.7	1.0	-0.7	1.0	A+	
1873	618758	Chem	309	.243	.227	.084	.447	.243	.000	.227	018	201	068	.227	1.814	0.138	0.4	1.0	0.3	1.0	B+	
1874	618694	Chem	309	.450	.450	.087	.307	.152	.003	.236	.236	171	006	167	0.792	0.119	1.1	1.0	1.0	1.0	B+	
1875	616405	Chem	309	.418	.418	.207	.298	.062	.016	.208	.208	.017	153	108	0.906	0.121	1.7	1.1	1.6	1.1	A+	
1876	619967	Chem	309	.291	.188	.291	.333	.159	.029	.180	071	.180	085	014	1.487	0.131	1.0	1.1	1.4	1.1	A-	
1877	619905	Chem	308	.562	.562	.146	.227	.058	.007	.329	.329	089	083	256	0.253	0.119	-1.2	1.0	-1.1	1.0	A+	
1878	619936	Chem	308	.432	.143	.240	.179	.432	.007	.222	107	.022	117	.222	0.816	0.119	0.9	1.0	0.6	1.0	A-	
1879	618727	Chem	308	.247	.257	.247	.328	.156	.013	.294	.062	.294	109	163	1.709	0.136	-0.6	1.0	-0.4	1.0	A+	
1880	616412	Chem	308	.438	.257	.195	.438	.104	.007	.333	149	151	.333	011	0.787	0.119	-1.6	1.0	-1.3	1.0	A-	
1881	616383	Chem	308	.318	.318	.149	.344	.175	.013	.210	.210	037	055	042	1.331	0.127	0.5	1.0	0.7	1.0	A-	
1882	619968	Chem	308	.520	.104	.149	.520	.214	.013	.243	079	034	.243	128	0.418	0.119	0.5	1.0	0.2	1.0	A-	
1883	616384	Chem	318	.519	.085	.519	.302	.091	.003	.403	144	.403	249	160	0.555	0.117	-2.6	0.9	-2.5	0.9	A-	
1884	618729	Chem	318	.274	.274	.270	.248	.198	.009	.236	.236	177	085	.035	1.682	0.131	0.4	1.0	0.9	1.1	A+	
1885	619906	Chem	318	.179	.201	.267	.346	.179	.006	.182	077	.050	123	.182	2.275	0.151	0.6	1.1	0.6	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1886	619969	Chem	318	.223	.223	.352	.264	.151	.009	.194	.194	026	079	100	1.968	0.140	0.4	1.0	1.0	1.1	A+	70
1887	616413	Chem	318	.154	.154	.085	.503	.248	.009	.327	.327	168	187	.046	2.460	0.160	-0.5	1.0	-0.7	0.9	B-	
1888	619937	Chem	318	.377	.233	.280	.377	.101	.009	.384	141	153	.384	201	1.158	0.121	-1.7	0.9	-1.8	0.9	A+	
1889	616385	Chem	306	.232	.023	.105	.641	.232	.000	.258	010	121	147	.258	1.879	0.140	-0.6	1.0	-0.1	1.0	A+	
1890	618730	Chem	306	.428	.075	.389	.105	.428	.003	.265	093	207	007	.265	0.900	0.120	0.2	1.0	0.5	1.0	A+	
1891	620647	Chem	306	.278	.147	.474	.278	.095	.007	.286	110	135	.286	053	1.606	0.132	-0.3	1.0	-0.4	1.0	A-	
1892	616431	Chem	306	.392	.167	.327	.111	.392	.003	.218	193	041	027	.218	1.055	0.122	1.0	1.0	1.0	1.1	A-	
1893	619907	Chem	306	.265	.271	.317	.134	.265	.013	.172	005	076	068	.172	1.666	0.134	1.0	1.1	0.7	1.1	A-	
1894	619970	Chem	306	.343	.170	.248	.226	.343	.013	.328	062	165	092	.328	1.268	0.125	-0.9	1.0	-0.9	1.0	A-	
1895	616414	Chem	306	.242	.173	.438	.242	.137	.010	.177	112	.077	.177	142	1.805	0.138	0.6	1.0	1.3	1.1	A-	
1896	620459	Chem	306	.258	.167	.409	.258	.150	.016	.162	220	.077	.162	010	1.700	0.135	1.0	1.1	0.9	1.1	A-	
1897	619938	Chem	306	.409	.206	.409	.255	.118	.013	.308	206	.308	061	055	0.964	0.121	-0.4	1.0	-0.7	1.0	A+	
1898	619971	Chem	307	.713	.085	.078	.713	.121	.003	.320	218	172	.320	055	-0.402	0.131	-0.4	1.0	-0.6	1.0	A+	
1899	616538	Chem	307	.303	.147	.394	.303	.137	.020	.127	049	.016	.127	050	1.462	0.130	1.9	1.1	1.9	1.1	A-	
1900	618753	Chem	307	.251	.140	.469	.251	.130	.010	.137	177	.125	.137	089	1.762	0.137	1.4	1.1	1.3	1.1	A+	
1901	616415	Chem	307	.215	.117	.215	.241	.420	.007	.250	193	.250	078	.049	1.985	0.144	0.0	1.0	0.3	1.0	A-	
1902	616504	Chem	307	.222	.296	.251	.212	.222	.020	.204	035	.033	095	.204	1.925	0.143	0.5	1.0	0.5	1.1	A+	
1903	620460	Chem	307	.254	.417	.205	.254	.111	.013	.336	079	060	.336	130	1.740	0.136	-0.8	0.9	-0.8	0.9	A-	
1904	619908	Chem	307	.267	.267	.296	.267	.153	.016	.289	.289	030	104	064	1.663	0.134	-0.4	1.0	0.1	1.0	C-	
1905	619939	Chem	307	.189	.205	.254	.332	.189	.020	.269	163	024	.035	.269	2.142	0.151	-0.1	1.0	-0.4	1.0	A-	
1906	616512	Chem	305	.213	.400	.223	.213	.157	.007	.125	013	146	.125	.067	1.931	0.144	1.0	1.1	1.1	1.1	A-	
1907	620071	Chem	305	.161	.161	.236	.236	.354	.013	.198	.198	.046	223	.056	2.295	0.161	0.3	1.0	0.3	1.0	A+	
1908	619940	Chem	305	.161	.226	.305	.302	.161	.007	.156	.019	.002	107	.156	2.303	0.160	0.4	1.0	1.3	1.2	A+	
1909	620461	Chem	305	.528	.062	.528	.236	.161	.013	.365	082	.365	236	136	0.387	0.119	-2.6	0.9	-2.4	0.9	A+	
1910	616416	Chem	305	.338	.272	.338	.148	.223	.020	.349	140	.349	139	088	1.219	0.126	-1.1	1.0	-0.7	1.0	A-	
1911	620462	Chem	308	.367	.149	.218	.367	.257	.010	.182	065	120	.182	.008	1.224	0.123	1.4	1.1	2.0	1.1	A+	
1912	616506	Chem	308	.224	.133	.224	.484	.149	.010	.146	198	.146	.098	069	1.984	0.142	1.0	1.1	1.8	1.2	A-	
1913	618706	Chem	308	.549	.088	.263	.549	.094	.007	.414	130	228	.414	174	0.423	0.119	-3.3	0.9	-2.7	0.9	B-	
1914	619941	Chem	308	.240	.533	.097	.114	.240	.016	.096	.046	086	043	.096	1.876	0.139	1.6	1.1	2.2	1.2	A+	
1915	616540	Chem	308	.565	.565	.198	.110	.114	.013	.331	.331	168	105	134	0.333	0.120	-1.0	1.0	-1.2	0.9	A+	
1916	620430	Chem	308	.321	.153	.260	.321	.247	.020	.321	188	058	.321	093	1.419	0.127	-0.5	1.0	-0.6	1.0	B-	
1917	616418	Chem	308	.312	.169	.312	.321	.175	.023	.155	017	.155	139	.066	1.467	0.128	1.6	1.1	1.8	1.1	A-	
1918	616541	Chem	308	.234	.231	.234	.321	.214	.000	032	.023	032	141	.169	1.922	0.140	2.5	1.2	3.0	1.3	A-	
1919	616419	Chem	308	.458	.458	.114	.367	.058	.003	.273	.273	111	131	136	0.806	0.120	0.5	1.0	0.7	1.0	A+	
1920	620463	Chem	308	.565	.149	.081	.201	.565	.003	.393	228	209	127	.393	0.335	0.120	-2.2	0.9	-1.4	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1921	618707	Chem	308	.286	.312	.286	.201	.195	.007	.292	119	.292	181	.025	1.622	0.131	-0.1	1.0	0.1	1.0	A+	,,,
1922	616507	Chem	308	.575	.169	.575	.185	.062	.010	.301	075	.301	163	161	0.282	0.121	0.0	1.0	-0.3	1.0	A+	
1923	620431	Chem	308	.198	.166	.260	.360	.198	.016	.177	.063	029	159	.177	2.123	0.148	0.6	1.1	0.8	1.1	A-	
1924	620464	Chem	308	.334	.104	.461	.334	.065	.036	.103	.055	095	.103	013	1.223	0.127	2.2	1.1	2.2	1.1	A-	
1925	618722	Chem	308	.318	.133	.318	.162	.367	.020	.273	.036	.273	122	136	1.345	0.128	0.4	1.0	0.4	1.0	A+	
1926	616508	Chem	308	.312	.312	.101	.123	.451	.013	.317	.317	157	185	019	1.396	0.129	-0.4	1.0	-0.4	1.0	A-	
1927	618689	Chem	308	.289	.289	.195	.357	.140	.020	.067	.067	.221	050	168	1.501	0.132	2.7	1.2	2.5	1.2	A+	
1928	616542	Chem	308	.412	.412	.169	.279	.114	.026	.468	.468	094	233	157	0.878	0.122	-3.6	0.9	-3.4	0.9	A+	
1929	620432	Chem	308	.084	.227	.370	.286	.084	.033	.182	003	.039	067	.182	3.064	0.210	0.0	1.0	0.4	1.1	A-	
1930	620465	Chem	307	.147	.306	.290	.241	.147	.016	.269	.079	109	131	.269	2.541	0.164	-0.4	1.0	-0.6	0.9	A-	
1931	618723	Chem	307	.290	.280	.290	.261	.163	.007	.125	.078	.125	087	064	1.651	0.129	1.2	1.1	1.2	1.1	A-	
1932	620433	Chem	307	.231	.231	.251	.231	.277	.010	.124	111	046	.124	.091	1.964	0.139	0.6	1.0	1.2	1.1	A+	
1933	616509	Chem	307	.241	.287	.241	.283	.173	.016	.128	.114	.128	112	075	1.896	0.137	0.7	1.1	1.0	1.1	B-	
1934	616544	Chem	307	.303	.277	.303	.264	.150	.007	.232	006	.232	122	071	1.581	0.128	0.0	1.0	-0.1	1.0	A+	
1935	618691	Chem	307	.371	.225	.371	.261	.134	.010	.270	027	.270	115	138	1.245	0.122	-0.7	1.0	-0.8	1.0	A+	
1936	618754	Chem	307	.492	.179	.492	.160	.153	.016	.236	129	.236	137	046	0.565	0.120	1.0	1.0	0.5	1.0	A-	
1937	616545	Chem	307	.212	.212	.156	.290	.329	.013	.260	.260	199	082	.024	1.974	0.145	0.0	1.0	0.2	1.0	B-	
1938	618692	Chem	307	.345	.332	.345	.222	.091	.010	.234	073	.234	123	070	1.246	0.125	0.7	1.0	1.3	1.1	A-	
1939	618724	Chem	307	.375	.140	.332	.147	.375	.007	.324	223	013	183	.324	1.116	0.123	-0.5	1.0	-0.5	1.0	B-	
1940	620466	Chem	307	.772	.062	.104	.062	.772	.000	.364	275	139	182	.364	-0.738	0.140	-1.3	0.9	-1.6	0.9	A-	
1941	616510	Chem	307	.241	.205	.355	.192	.241	.007	.175	088	012	068	.175	1.804	0.139	1.0	1.1	0.9	1.1	A+	
1942	616362	Chem	305	.702	.141	.092	.702	.059	.007	.356	241	138	.356	153	-0.395	0.130	-1.2	0.9	-1.4	0.9	A-	
1943	616367	Chem	615	.670	.096	.114	.120	.670	.000	.332	118	225	154	.332	-0.167	0.089	-1.7	1.0	-0.7	1.0	A+	
1944	616559	Chem	308	.610	.610	.133	.114	.133	.010	.407	.407	164	145	217	0.141	0.122	-2.3	0.9	-2.1	0.9	C+	
1945	616494	Chem	307	.831	.055	.055	.831	.052	.007	.328	142	157	.328	195	-1.101	0.158	-0.6	0.9	-1.5	0.8	B+	
1946	616427	Chem	307	.694	.209	.039	.694	.055	.003	.207	086	079	.207	095	-0.169	0.127	0.3	1.0	1.0	1.1	A+	
1947	616365	Chem	308	.581	.143	.581	.117	.136	.023	.361	202	.361	138	084	0.122	0.122	-1.1	1.0	-1.3	0.9	B+	
1948	616561	Chem	308	.695	.046	.123	.133	.695	.003	.399	149	192	208	.399	-0.355	0.129	-1.5	0.9	-1.7	0.9	A+	
1949	616397	Chem	309	.295	.295	.168	.227	.307	.003	.359	.359	126	141	077	1.512	0.130	-1.3	0.9	-1.5	0.9	A+	
1950	616492	Chem	617	.449	.191	.449	.214	.130	.016	.300	179	.300	073	064	0.777	0.085	-0.7	1.0	-1.0	1.0	A+	A+
1951	618705	Chem	309	.262	.181	.262	.392	.155	.010	.259	.006	.259	130	075	1.671	0.135	0.0	1.0	-0.1	1.0	A+	ш
1952	616564	Chem	309	.246	.117	.220	.411	.246	.007	.229	.008	.099	238	.229	1.777	0.137	0.4	1.0	-0.3	1.0	A-	
1953	619953	Chem	309	.191	.191	.450	.168	.185	.007	.302	.302	085	090	049	2.115	0.150	-0.7	0.9	-0.8	0.9	A+	
1954	616368	Chem	309	.204	.165	.440	.181	.204	.010	.090	142	.134	059	.090	2.024	0.146	1.1	1.1	1.5	1.2	A+	
1955	618708	Chem	307	.267	.134	.182	.417	.267	.000	.406	234	165	074	.406	1.755	0.135	-1.6	0.9	-1.5	0.9	A+	<u> </u>

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
1956	619954	Chem	307	.202	.202	.241	.358	.182	.016	.101	.101	083	.039	065	2.121	0.149	1.3	1.1	1.9	1.2	Α-	
1957	618737	Chem	307	.336	.251	.195	.209	.336	.010	.296	055	112	138	.296	1.378	0.127	0.1	1.0	-0.1	1.0	B+	
1958	616369	Chem	307	.257	.257	.257	.326	.150	.010	.350	.350	167	119	033	1.790	0.137	-0.7	1.0	-0.2	1.0	A-	
1959	616398	Chem	307	.228	.440	.205	.228	.124	.003	150	.080	046	150	.155	1.982	0.142	3.1	1.3	4.3	1.5	A-	
1960	620441	Chem	307	.443	.443	.248	.199	.101	.010	.260	.260	046	113	171	0.874	0.121	0.4	1.0	0.3	1.0	A+	1
1961	616429	Chem	308	.276	.536	.149	.276	.036	.003	.099	149	.152	.099	096	1.655	0.132	1.7	1.1	1.9	1.2	A+	1
1962	618738	Chem	308	.351	.156	.435	.351	.058	.000	.305	208	068	.305	155	1.281	0.124	-0.7	1.0	-1.0	1.0	A-	1
1963	620442	Chem	308	.279	.279	.338	.237	.143	.003	.266	.266	270	.036	.015	1.639	0.132	0.3	1.0	0.2	1.0	A+	
1964	616520	Chem	308	.607	.127	.195	.607	.068	.003	.120	056	010	.120	095	0.147	0.121	2.2	1.1	2.4	1.1	A+	1
1965	616370	Chem	308	.354	.143	.354	.153	.341	.010	.194	191	.194	025	014	1.260	0.124	0.8	1.0	0.5	1.0	A+	1
1966	616399	Chem	308	.250	.558	.088	.094	.250	.010	.281	156	100	.030	.281	1.790	0.136	0.1	1.0	-0.5	1.0	A+	1
1967	619955	Chem	308	.390	.146	.390	.257	.195	.013	.263	128	.263	151	.016	1.078	0.122	0.3	1.0	0.3	1.0	A-	1
1968	618709	Chem	308	.208	.110	.331	.331	.208	.020	.140	152	.041	009	.140	2.029	0.145	0.9	1.1	1.0	1.1	A-	1
1969	616400	Chem	309	.372	.379	.172	.372	.078	.000	.220	.020	207	.220	142	1.148	0.123	0.8	1.0	0.6	1.0	A-	1
1970	618739	Chem	309	.262	.191	.165	.379	.262	.003	.206	.028	173	074	.206	1.695	0.134	0.8	1.1	0.7	1.1	B-	1
1971	619957	Chem	309	.252	.252	.256	.414	.074	.003	.259	.259	101	068	127	1.749	0.136	0.2	1.0	0.0	1.0	A-	1
1972	619918	Chem	309	.502	.185	.120	.502	.194	.000	.374	199	163	.374	143	0.571	0.119	-2.1	0.9	-2.2	0.9	A-	1
1973	620443	Chem	309	.476	.476	.175	.133	.217	.000	.283	.283	205	103	070	0.684	0.119	0.0	1.0	0.0	1.0	A-	1
1974	618710	Chem	309	.288	.288	.188	.327	.188	.010	.122	.122	060	.062	135	1.546	0.131	1.8	1.1	1.8	1.1	A+	1
1975	616521	Chem	309	.505	.175	.217	.505	.087	.016	.433	171	242	.433	140	0.518	0.120	-3.1	0.9	-3.0	0.9	A-	1
1976	616522	Chem	308	.292	.250	.292	.257	.188	.013	.220	.017	.220	166	.013	1.458	0.130	0.3	1.0	0.6	1.0	A+	1
1977	618711	Chem	308	.627	.188	.068	.107	.627	.010	.388	210	070	154	.388	-0.046	0.122	-2.1	0.9	-1.5	0.9	A+	1
1978	618740	Chem	308	.231	.231	.205	.354	.201	.010	.179	.179	049	.011	060	1.805	0.139	0.3	1.0	0.7	1.1	A+	1
1979	616401	Chem	308	.481	.231	.117	.481	.166	.007	.355	131	195	.355	061	0.604	0.118	-1.9	1.0	-1.8	0.9	B-	1
1980	616490	Chem	308	.487	.071	.159	.270	.487	.013	.272	139	186	.010	.272	0.560	0.118	-0.6	1.0	0.6	1.0	A+	1
1981	619958	Chem	308	.321	.321	.253	.244	.172	.010	.174	.174	042	062	.010	1.318	0.126	1.1	1.1	0.8	1.1	A+	1
1982	620444	Chem	308	.260	.260	.201	.302	.231	.007	.256	.256	118	080	.021	1.644	0.134	-0.1	1.0	0.2	1.0	A+	
1983	619919	Chem	308	.162	.153	.305	.370	.162	.010	.078	.076	.104	132	.078	2.268	0.158	0.7	1.1	1.6	1.2	A-	1
1984	618745	Chem	308	.377	.253	.377	.179	.179	.013	.254	059	.254	070	071	1.052	0.122	0.0	1.0	0.4	1.0	A+	1
1985	618569	Chem	308	.315	.315	.451	.114	.110	.010	.205	.205	.009	024	167	1.351	0.127	0.6	1.0	0.6	1.0	A-	ш
1986	616523	Chem	318	.708	.142	.708	.085	.066	.000	.132	126	.132	127	.077	-0.305	0.127	0.9	1.1	2.5	1.2	A+	
1987	620445	Chem	318	.330	.192	.283	.330	.192	.003	.320	093	170	.320	090	1.408	0.124	-0.5	1.0	-0.6	1.0	A+	ш
1988	618712	Chem	318	.296	.296	.299	.274	.126	.006	.193	.193	115	.001	105	1.572	0.128	1.0	1.1	1.0	1.1	A+	
1989	618570	Chem	318	.660	.072	.660	.110	.157	.000	.364	144	.364	175	221	-0.072	0.122	-1.6	0.9	-1.9	0.9	A+	
1990	616491	Chem	318	.399	.113	.399	.204	.280	.003	.289	081	.289	149	120	1.082	0.119	-0.1	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Dof	ın	FT	A.	DVal	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1991	618756	Chem	318	.293	.211	.264	.293	.226	.006	.084	153	171	.084	.250	1.593	0.128	2.3	1.1	2.1	1.2	A-	
1992	618741	Chem	318	.481	.151	.267	.481	.091	.009	.277	056	184	.277	112	0.700	0.117	0.1	1.0	0.3	1.0	B+	1
1993	619920	Chem	318	.318	.318	.340	.204	.129	.009	.337	.337	147	027	214	1.452	0.126	-0.6	1.0	-0.9	0.9	A+	1
1994	620446	Chem	306	.248	.180	.248	.203	.360	.010	.084	.014	.084	007	077	1.770	0.137	1.4	1.1	1.5	1.1	A-	1
1995	618713	Chem	306	.418	.121	.418	.314	.137	.010	.189	112	.189	027	062	0.930	0.121	1.6	1.1	1.8	1.1	A-	1
1996	616556	Chem	306	.549	.088	.232	.549	.124	.007	.418	134	221	.418	165	0.364	0.120	-2.9	0.9	-2.7	0.9	A-	1
1997	616524	Chem	306	.373	.131	.373	.209	.281	.007	.268	.036	.268	244	045	1.143	0.123	0.3	1.0	-0.1	1.0	A+	1
1998	618572	Chem	306	.111	.141	.111	.346	.395	.007	.090	072	.090	.156	113	2.804	0.186	0.5	1.1	1.1	1.2	A-	1
1999	618742	Chem	306	.467	.131	.467	.258	.134	.010	.218	225	.218	028	.006	0.712	0.119	1.6	1.1	1.1	1.1	A+	1
2000	619921	Chem	306	.513	.131	.216	.513	.124	.016	.237	182	047	.237	033	0.498	0.120	1.1	1.0	1.0	1.0	A+	1
2001	616495	Chem	306	.435	.180	.219	.435	.157	.010	.349	068	109	.349	216	0.855	0.120	-1.4	1.0	-0.8	1.0	A+	1
2002	620447	Chem	307	.430	.108	.209	.244	.430	.010	.359	226	094	086	.359	0.881	0.120	-1.9	0.9	-1.8	0.9	B+	1
2003	616496	Chem	307	.150	.150	.235	.209	.391	.016	.090	.090	002	029	.033	2.446	0.165	0.9	1.1	0.9	1.1	A+	1
2004	618743	Chem	307	.300	.309	.287	.300	.088	.016	.245	044	072	.245	056	1.489	0.130	0.3	1.0	0.3	1.0	A+	
2005	619922	Chem	307	.309	.251	.309	.212	.215	.013	.158	084	.158	043	.058	1.447	0.129	1.2	1.1	1.6	1.1	B-	1
2006	616557	Chem	307	.358	.235	.358	.270	.121	.016	.196	007	.196	072	042	1.199	0.124	1.3	1.1	1.5	1.1	A-	
2007	616525	Chem	307	.231	.192	.225	.231	.339	.013	.186	049	032	.186	007	1.874	0.140	0.6	1.0	1.0	1.1	A+	1
2008	616558	Chem	305	.564	.046	.564	.164	.226	.000	.196	124	.196	201	.007	0.265	0.119	-0.1	1.0	0.2	1.0	A+	1
2009	619923	Chem	305	.341	.138	.298	.210	.341	.013	.334	117	046	164	.334	1.226	0.125	-0.8	1.0	-0.9	1.0	A-	1
2010	620448	Chem	305	.226	.226	.197	.282	.275	.020	.247	.247	102	006	066	1.822	0.142	0.2	1.0	0.1	1.0	A+	1
2011	618744	Chem	305	.328	.259	.259	.328	.134	.020	.101	.102	.000	.101	222	1.267	0.127	2.4	1.1	2.0	1.1	A-	1
2012	616526	Chem	305	.492	.092	.233	.167	.492	.016	.376	163	201	133	.376	0.528	0.119	-2.4	0.9	-2.1	0.9	A-	
2013	616527	Chem	308	.296	.133	.419	.149	.296	.003	.346	023	207	102	.346	1.586	0.130	-0.7	1.0	-0.5	1.0	A-	1
2014	616363	Chem	308	.257	.211	.445	.257	.081	.007	.188	109	041	.188	.004	1.795	0.136	1.0	1.1	1.2	1.1	B-	1
2015	619924	Chem	308	.406	.172	.406	.257	.146	.020	.278	087	.278	112	080	1.025	0.122	0.2	1.0	0.1	1.0	A+	1
2016	620449	Chem	308	.260	.292	.266	.260	.156	.026	.065	.177	087	.065	141	1.734	0.136	2.1	1.1	2.3	1.2	B-	1
2017	620450	Chem	308	.419	.419	.133	.351	.097	.000	.212	.212	179	145	.086	0.986	0.121	1.6	1.1	1.5	1.1	B+	
2018	616364	Chem	308	.373	.325	.373	.218	.081	.003	.299	160	.299	113	101	1.185	0.123	-0.4	1.0	-0.1	1.0	A+	1
2019	616393	Chem	308	.315	.321	.237	.315	.127	.000	.247	117	.026	.247	213	1.477	0.128	0.4	1.0	0.3	1.0	A+	
2020	616560	Chem	308	.455	.149	.455	.270	.123	.003	.376	135	.376	210	121	0.821	0.120	-1.7	0.9	-1.5	0.9	B-	1
2021	619925	Chem	308	.377	.172	.159	.292	.377	.000	.170	076	114	026	.170	1.179	0.123	1.9	1.1	1.6	1.1	A-	
2022	616528	Chem	308	.140	.179	.136	.140	.539	.007	.217	.037	066	.217	106	2.595	0.169	0.1	1.0	0.4	1.1	C-	
2023	618702	Chem	308	.250	.250	.315	.244	.179	.013	.322	.322	114	055	093	1.732	0.137	-0.9	0.9	-0.9	0.9	A+	
2024	619950	Chem	308	.438	.110	.438	.149	.289	.013	.212	101	.212	138	.014	0.794	0.121	1.4	1.1	1.5	1.1	A-	
2025	616529	Chem	308	.279	.347	.146	.211	.279	.016	.330	111	121	053	.330	1.553	0.133	-0.7	1.0	-0.2	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Dof		FT	A.	DVal	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A)	DT/D)	DT(C)	DT(D)	Mass	NACE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
2026	616394	Chem	308	.539	.104	.175	.539	.169	.013	.397	116	221	.397	119	0.349	0.120	-1.9	0.9	-1.8	0.9	A-	
2027	618703	Chem	307	.603	.091	.140	.156	.603	.010	.433	223	092	239	.433	0.243	0.121	-3.1	0.9	-3.0	0.9	A-	1
2028	616402	Chem	307	.401	.130	.401	.277	.186	.007	.261	043	.261	113	084	1.127	0.120	-0.3	1.0	-0.5	1.0	A+	1
2029	616562	Chem	307	.254	.388	.212	.254	.143	.003	027	.200	098	027	064	1.844	0.134	1.9	1.1	2.9	1.2	A-	1
2030	619951	Chem	307	.381	.381	.088	.274	.251	.007	.360	.360	174	087	147	1.211	0.121	-2.0	0.9	-1.9	0.9	C-	1
2031	616395	Chem	307	.218	.218	.192	.404	.179	.007	.193	.193	041	072	010	2.048	0.141	0.0	1.0	0.3	1.0	A-	1
2032	616366	Chem	307	.264	.274	.134	.316	.264	.013	.227	024	091	078	.227	1.769	0.133	-0.3	1.0	0.2	1.0	A-	1
2033	616428	Chem	307	.531	.147	.531	.205	.114	.003	.311	116	.311	141	185	0.427	0.119	-1.2	1.0	-0.9	1.0	B+	1
2034	616396	Chem	307	.590	.062	.235	.590	.114	.000	.284	307	119	.284	048	0.178	0.120	-0.5	1.0	-0.1	1.0	A-	1
2035	619928	Chem	307	.511	.075	.143	.270	.511	.000	.292	129	177	113	.292	0.521	0.119	-0.2	1.0	-0.4	1.0	B+	1
2036	616563	Chem	307	.394	.153	.319	.394	.104	.029	.067	023	077	.067	.053	0.970	0.123	3.4	1.1	3.9	1.2	A-	
2037	618704	Chem	307	.365	.365	.218	.303	.108	.007	.356	.356	241	220	.117	1.160	0.124	-1.4	0.9	-0.5	1.0	A-	1
2038	619952	Chem	307	.329	.329	.254	.261	.140	.016	.184	.184	150	014	018	1.313	0.127	1.4	1.1	1.6	1.1	B-	1
2039	682635	K-2	112	.786	.786	.054	.089	.071	.000	.464	.464	192	325	212	-3.264	0.255	-0.2	1.0	-0.8	8.0	A+	1
2040	684579	K-2	112	.732	.732	.116	.071	.071	.009	.458	.458	375	085	197	-2.900	0.239	-0.1	1.0	1.7	1.4	A-	1
2041	684749	K-2	112	.696	.089	.116	.089	.696	.009	.486	197	303	204	.486	-2.679	0.231	-0.3	1.0	-0.6	0.9	A+	
2042	683994	K-2	112	.795	.795	.045	.098	.063	.000	.455	.455	449	185	150	-3.330	0.258	-0.3	1.0	-0.3	0.9	A+	1
2043	684434	K-2	112	.625	.625	.170	.089	.107	.009	.535	.535	292	271	193	-2.270	0.222	-0.8	0.9	-1.0	8.0	B+	1
2044	684809	K-2	112	.741	.116	.741	.063	.080	.000	.629	315	.629	198	466	-2.957	0.241	-2.0	0.8	-1.8	0.6	A-	
2045	682430	K-2	112	.830	.125	.830	.018	.018	.009	.528	366	.528	172	172	-3.614	0.275	-0.8	0.9	-1.2	0.6	A+	1
2046	684712	K-2	112	.911	.009	.009	.063	.911	.009	.325	131	070	174	.325	-4.478	0.356	0.0	1.0	0.6	1.2	A-	1
2047	684735	K-2	112	.616	.214	.152	.616	.009	.009	.514	324	209	.514	111	-2.220	0.221	-0.6	0.9	-0.8	0.9	A+	1
2048	684487	K-2	112	.920	.920	.009	.009	.054	.009	.388	.388	152	131	209	-4.612	0.374	-0.1	1.0	-0.8	0.5	A-	1
2049	683718	K-2	112	.830	.071	.036	.830	.054	.009	.513	287	194	.513	227	-3.614	0.275	-0.7	0.9	-1.2	0.6	A+	
2050	684716	K-2	112	.554	.080	.241	.116	.554	.009	.215	331	.040	008	.215	-1.885	0.217	3.3	1.3	2.2	1.4	A+	1
2051	683982	K-2	112	.357	.143	.357	.277	.205	.018	.199	157	.199	.053	055	-0.840	0.224	3.2	1.3	2.1	1.5	A+	1
2052	684794	K-2	112	.438	.268	.161	.125	.438	.009	.314	167	055	092	.314	-1.276	0.217	1.7	1.2	1.1	1.2	B-	1
2053	684871	K-2	112	.518	.241	.107	.518	.116	.018	.502	199	205	.502	213	-1.697	0.216	-0.4	1.0	0.1	1.0	A+	1
2054	684493	K-2	112	.714	.161	.071	.714	.045	.009	.470	144	354	.470	178	-2.788	0.235	-0.2	1.0	-0.3	0.9	A+	
2055	684860	K-2	112	.857	.857	.027	.009	.098	.009	.400	.400	110	.012	308	-3.857	0.294	0.0	1.0	-0.6	0.7	A+	
2056	684280	K-2	112	.786	.786	.098	.054	.054	.009	.441	.441	282	192	098	-3.264	0.255	-0.1	1.0	-0.7	0.8	A-	
2057	684463	K-2	112	.313	.152	.259	.313	.259	.018	.181	231	.000	.181	.093	-0.584	0.230	2.8	1.3	2.2	1.6	A-	
2058	684290	K-2	112	.911	.063	.911	.009	.009	.009	.521	365	.521	152	152	-4.478	0.356	-0.7	0.8	-1.4	0.4	A-	
2059	683995	K-2	115	.478	.139	.330	.052	.478	.000	.383	404	025	178	.383	-1.207	0.204	0.4	1.0	-0.1	1.0	A-	
2060	682636	K-2	115	.426	.078	.235	.261	.426	.000	.393	130	081	286	.393	-0.956	0.206	0.1	1.0	1.0	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Pof	ID	FT	N	PVal	P(A)	D/D\	P(C)	P(D)	P(-)	PtBis	PT(A)	DT/D)	PT(C)	PT(D)	Mons	MSE	Z-	MS-	Z-	MS-	М	W
Ref	IU	Grade	N	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PT(B)	PI(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
2061	684580	K-2	115	.826	.026	.078	.070	.826	.000	.427	051	408	174	.427	-3.134	0.262	-0.5	0.9	-0.6	0.8	A-	
2062	684870	K-2	115	.061	.130	.052	.061	.757	.000	.043	069	457	.043	.267	1.864	0.409	0.2	1.0	2.4	2.8	A+	
2063	684436	K-2	115	.644	.643	.078	.157	.122	.000	.291	.291	162	174	100	-2.011	0.212	1.1	1.1	0.4	1.1	B+	
2064	684750	K-2	115	.696	.078	.139	.696	.087	.000	.342	337	188	.342	007	-2.289	0.220	0.4	1.0	0.6	1.1	A+	
2065	684810	K-2	115	.704	.200	.096	.704	.000	.000	.529	446	214	.529	.000	-2.337	0.221	-1.4	0.9	-1.4	8.0	A+	
2066	682432	K-2	115	.730	.061	.148	.061	.730	.000	.493	144	259	385	.493	-2.488	0.227	-1.0	0.9	-1.2	0.8	A-	
2067	684713	K-2	115	.930	.026	.009	.930	.035	.000	.334	144	.009	.334	342	-4.276	0.380	-0.2	0.9	-0.5	0.7	A-	
2068	684736	K-2	115	.400	.400	.087	.270	.243	.000	.283	.283	.054	.027	386	-0.828	0.208	1.1	1.1	1.3	1.2	A+	
2069	684488	K-2	115	.939	.939	.017	.009	.035	.000	.251	.251	052	198	191	-4.429	0.403	-0.1	0.9	2.3	2.7	A+	
2070	683719	K-2	115	.696	.157	.696	.061	.087	.000	.170	.014	.170	153	166	-2.289	0.220	1.9	1.2	2.2	1.4	A+	
2071	684717	K-2	115	.765	.096	.765	.035	.104	.000	.448	251	.448	237	238	-2.702	0.237	-0.7	0.9	-0.1	1.0	A-	
2072	684728	K-2	115	.452	.052	.078	.452	.417	.000	.289	149	360	.289	028	-1.082	0.204	1.3	1.1	1.0	1.1	A+	
2073	684768	K-2	115	.652	.104	.652	.139	.104	.000	.635	308	.635	349	287	-2.056	0.213	-2.9	0.8	-2.4	0.7	A-	
2074	684872	K-2	115	.600	.270	.052	.070	.600	.009	.507	209	466	182	.507	-1.792	0.207	-1.4	0.9	-1.5	8.0	B-	
2075	684494	K-2	115	.548	.087	.104	.261	.548	.000	.518	280	189	276	.518	-1.539	0.204	-1.7	0.9	-1.6	8.0	A-	
2076	684861	K-2	115	.713	.078	.096	.713	.113	.000	.479	329	193	.479	227	-2.387	0.223	-0.8	0.9	-1.3	8.0	B-	
2077	684281	K-2	115	.600	.600	.113	.157	.130	.000	.515	.515	248	357	132	-1.792	0.207	-1.5	0.9	-1.2	0.9	A+	
2078	684464	K-2	115	.826	.087	.826	.061	.026	.000	.478	280	.478	314	171	-3.134	0.262	-0.7	0.9	-1.1	0.7	A-	
2079	683983	K-2	113	.885	.062	.018	.885	.035	.000	.470	424	075	.470	205	-4.136	0.318	-0.7	0.8	-0.1	0.9	A-	
2080	684729	K-2	113	.726	.726	.142	.062	.071	.000	.506	.506	335	357	090	-2.852	0.235	-0.5	0.9	-1.2	0.8	A+	
2081	682637	K-2	113	.522	.150	.522	.027	.301	.000	.420	181	.420	019	310	-1.733	0.213	0.6	1.1	0.0	1.0	A+	
2082	684581	K-2	113	.858	.027	.027	.858	.088	.000	.548	255	154	.548	441	-3.857	0.293	-1.2	0.8	-1.2	0.6	A+	
2083	684291	K-2	113	.726	.142	.035	.726	.097	.000	.405	278	224	.405	143	-2.852	0.235	0.4	1.0	0.6	1.1	A+	
2084	683725	K-2	113	.531	.159	.186	.124	.531	.000	.358	168	203	116	.358	-1.779	0.213	1.3	1.1	1.2	1.1	C+	
2085	684873	K-2	113	.646	.088	.062	.646	.195	.009	.453	333	252	.453	141	-2.386	0.221	0.1	1.0	0.2	1.0	A-	
2086	683720	K-2	113	.770	.088	.053	.770	.088	.000	.528	269	277	.528	294	-3.142	0.247	-0.9	0.9	-1.0	0.8	A-	
2087	682433	K-2	113	.425	.124	.071	.425	.381	.000	.338	253	422	.338	.050	-1.235	0.214	1.5	1.1	1.2	1.2	A-	
2088	684714	K-2	113	.549	.381	.549	.035	.035	.000	.216	173	.216	058	067	-1.870	0.214	3.0	1.3	3.9	1.6	A-	
2089	684737	K-2	113	.797	.035	.062	.106	.796	.000	.580	097	409	380	.580	-3.333	0.257	-1.4	0.8	-1.7	0.6	A-	
2090	684489	K-2	113	.363	.363	.133	.221	.274	.009	.414	.414	140	033	291	-0.907	0.219	0.0	1.0	0.4	1.1	A-	
2091	682628	K-2	113	.743	.106	.743	.097	.044	.009	.478	391	.478	204	098	-2.965	0.239	-0.4	1.0	-0.6	0.9	B-	
2092	684444	K-2	113	.513	.513	.301	.071	.097	.018	.279	.279	.022	344	216	-1.688	0.213	2.2	1.2	2.5	1.3	A+	
2093	683726	K-2	113	.460	.159	.265	.106	.460	.009	.557	351	261	086	.557	-1.417	0.213	-1.4	0.9	-1.6	0.8	A-	
2094	683727	K-2	113	.602	.602	.097	.106	.186	.009	.388	.388	229	204	133	-2.147	0.217	0.9	1.1	1.8	1.3	A+	
2095	684751	K-2	113	.620	.168	.619	.133	.062	.018	.553	291	.553	274	282	-2.241	0.218	-1.2	0.9	-0.8	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2096	682627	K-2	113	.345	.177	.327	.142	.345	.009	.340	163	001	262	.340	-0.810	0.221	0.4	1.0	2.2	1.4	A+	
2097	684862	K-2	113	.797	.796	.097	.053	.044	.009	.472	.472	406	188	098	-3.333	0.257	-0.4	0.9	-0.9	0.8	A-	
2098	684282	K-2	113	.699	.124	.699	.088	.080	.009	.570	270	.570	212	388	-2.690	0.229	-1.4	0.9	-1.3	0.8	A-	
2099	684465	K-2	109	.450	.183	.450	.092	.257	.018	.372	303	.372	264	.040	-1.528	0.215	0.9	1.1	1.0	1.1	A-	1
2100	683984	K-2	109	.395	.477	.083	.037	.394	.009	.300	.007	378	175	.300	-1.248	0.218	1.8	1.2	1.4	1.2	A+	1
2101	684874	K-2	109	.284	.450	.284	.147	.119	.000	.332	133	.332	041	212	-0.643	0.234	0.3	1.0	1.3	1.3	A+	1
2102	684445	K-2	109	.908	.037	.046	.009	.908	.000	.359	133	303	158	.359	-4.486	0.346	-0.2	0.9	-0.6	0.7	A+	1
2103	684582	K-2	109	.780	.055	.138	.780	.028	.000	.466	139	417	.466	109	-3.323	0.251	-0.6	0.9	-0.8	8.0	A+	1
2104	684730	K-2	109	.734	.083	.734	.028	.156	.000	.466	406	.466	049	237	-3.026	0.237	-0.7	0.9	0.6	1.1	A-	1
2105	684708	K-2	109	.239	.284	.266	.239	.211	.000	.143	.060	175	.143	026	-0.356	0.246	1.3	1.2	2.8	1.7	A+	1
2106	684385	K-2	109	.651	.651	.101	.165	.083	.000	.438	.438	232	172	272	-2.554	0.223	0.0	1.0	-0.2	1.0	A+	1
2107	683734	K-2	109	.734	.734	.046	.101	.119	.000	.470	.470	210	348	182	-3.026	0.237	-0.8	0.9	-0.2	1.0	A+	1
2108	682434	K-2	109	.569	.138	.110	.569	.183	.000	.537	343	047	.537	344	-2.124	0.215	-1.3	0.9	-1.0	0.9	A+	1
2109	684702	K-2	109	.450	.266	.147	.450	.128	.009	.192	078	069	.192	122	-1.528	0.215	3.1	1.3	2.9	1.4	B-	1
2110	684283	K-2	109	.505	.165	.101	.229	.505	.000	.633	272	251	333	.633	-1.803	0.214	-2.8	0.8	-2.6	0.7	A+	1
2111	684490	K-2	109	.872	.073	.009	.037	.872	.009	.559	394	178	289	.559	-4.069	0.303	-1.3	0.8	-1.8	0.4	A+	
2112	682634	K-2	109	.505	.119	.211	.505	.165	.000	.334	254	160	.334	052	-1.803	0.214	1.5	1.1	0.9	1.1	A+	1
2113	684738	K-2	109	.615	.101	.174	.615	.110	.000	.476	167	260	.476	265	-2.359	0.219	-0.5	1.0	0.0	1.0	A+	1
2114	682638	K-2	109	.725	.183	.037	.055	.725	.000	.521	389	278	131	.521	-2.971	0.235	-1.2	0.9	-1.0	0.8	A+	1
2115	683737	K-2	109	.486	.193	.174	.147	.486	.000	.433	222	013	349	.433	-1.711	0.214	0.0	1.0	0.0	1.0	A-	1
2116	684752	K-2	109	.661	.138	.092	.661	.101	.009	.454	287	210	.454	200	-2.604	0.224	-0.1	1.0	-0.8	0.9	A+	1
2117	682629	K-2	109	.339	.257	.138	.266	.339	.000	.459	227	157	144	.459	-0.956	0.224	-0.6	0.9	-0.5	0.9	A+	
2118	684863	K-2	109	.413	.183	.083	.413	.321	.000	.229	218	215	.229	.067	-1.342	0.216	2.3	1.2	2.3	1.3	A+	1
2119	684864	K-2	114	.360	.307	.167	.158	.360	.009	.241	101	230	.057	.241	-0.851	0.211	1.3	1.1	1.8	1.3	A-	1
2120	684446	K-2	114	.807	.088	.026	.807	.079	.000	.507	253	124	.507	403	-3.248	0.258	-0.7	0.9	-0.9	0.8	A+	1
2121	683985	K-2	114	.658	.658	.070	.035	.237	.000	.221	.221	209	011	116	-2.322	0.217	2.1	1.2	1.7	1.2	A+	1
2122	684703	K-2	114	.246	.360	.237	.149	.246	.009	.092	140	.086	015	.092	-0.222	0.232	1.4	1.2	2.6	1.6	A-	1
2123	684753	K-2	114	.316	.298	.123	.316	.263	.000	.298	249	290	.298	.160	-0.623	0.217	0.7	1.1	1.2	1.2	A+	1
2124	683714	K-2	114	.140	.140	.140	.035	.684	.000	.298	258	.298	058	007	0.548	0.282	-0.2	1.0	-0.3	0.9	A-	1
2125	684799	K-2	114	.798	.096	.798	.053	.044	.009	.572	306	.572	350	196	-3.183	0.254	-1.4	0.8	-1.8	0.6	B-	
2126	684467	K-2	114	.746	.746	.026	.070	.149	.009	.421	.421	097	226	250	-2.827	0.235	-0.2	1.0	-0.3	0.9	A+	
2127	684709	K-2	114	.588	.149	.175	.079	.588	.009	.652	377	275	228	.652	-1.961	0.209	-3.3	0.8	-3.1	0.7	A-	
2128	683735	K-2	114	.825	.053	.061	.053	.825	.009	.535	273	261	264	.535	-3.385	0.267	-1.1	0.8	-1.4	0.7	A-	
2129	684764	K-2	114	.465	.465	.114	.123	.289	.009	.292	.292	119	166	073	-1.367	0.205	1.4	1.1	0.9	1.1	A-	
2130	684691	K-2	114	.886	.886	.018	.035	.044	.018	.531	.531	204	268	395	-3.967	0.315	-1.2	0.8	-1.0	0.6	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2131	684710	K-2	114	.746	.061	.061	.746	.123	.009	.574	386	216	.574	257	-2.827	0.235	-1.5	0.8	-1.7	0.7	A+	
2132	684455	K-2	114	.904	.061	.904	.009	.018	.009	.502	368	.502	109	220	-4.178	0.337	-0.6	0.8	-1.6	0.5	A+	
2133	684811	K-2	114	.483	.079	.079	.482	.351	.009	.393	379	331	.393	.034	-1.451	0.205	0.2	1.0	-0.2	1.0	A+	
2134	684740	K-2	114	.649	.649	.105	.123	.114	.009	.425	.425	188	257	126	-2.275	0.215	0.0	1.0	-0.6	0.9	A-	
2135	684466	K-2	114	.632	.167	.105	.088	.632	.009	.512	363	153	155	.512	-2.183	0.213	-1.2	0.9	-0.8	0.9	A+	
2136	683738	K-2	114	.404	.035	.360	.404	.193	.009	.202	256	064	.202	001	-1.070	0.207	2.0	1.2	3.1	1.4	A+	
2137	684454	K-2	114	.061	.789	.061	.061	.079	.009	064	.341	180	064	220	1.527	0.399	0.5	1.1	1.9	2.3	A+	
2138	682632	K-2	114	.342	.202	.237	.342	.202	.018	.332	192	217	.332	.070	-0.761	0.213	0.2	1.0	1.0	1.1	A+	
2139	682633	K-2	118	.559	.229	.559	.136	.076	.000	.375	209	.375	151	175	-1.849	0.204	0.6	1.1	1.0	1.1	A-	
2140	684865	K-2	118	.271	.280	.331	.271	.119	.000	.204	.024	.005	.204	321	-0.376	0.224	1.1	1.1	2.4	1.5	A-	
2141	684723	K-2	118	.856	.051	.085	.008	.856	.000	.466	364	291	030	.466	-3.683	0.280	-0.5	0.9	-1.1	0.7	A+	
2142	683986	K-2	118	.390	.136	.390	.195	.280	.000	.258	093	.258	.086	285	-1.018	0.207	1.6	1.1	1.8	1.2	A+	Į.
2143	684704	K-2	118	.559	.559	.161	.136	.144	.000	.263	.263	196	134	037	-1.849	0.204	2.0	1.2	1.1	1.1	A+	Į.
2144	684471	K-2	118	.466	.119	.466	.119	.297	.000	.322	211	.322	284	002	-1.395	0.203	1.0	1.1	1.3	1.1	A+	
2145	683715	K-2	118	.636	.119	.110	.136	.636	.000	.669	223	336	424	.669	-2.235	0.210	-3.2	0.7	-3.0	0.7	B+	
2146	684800	K-2	118	.475	.398	.475	.068	.059	.000	.241	044	.241	285	115	-1.436	0.203	2.5	1.2	2.1	1.2	A-	
2147	684468	K-2	118	.602	.144	.186	.068	.602	.000	.470	116	328	245	.470	-2.060	0.207	-0.7	0.9	-0.2	1.0	A+	
2148	684284	K-2	118	.475	.059	.475	.339	.127	.000	.293	081	.293	152	165	-1.436	0.203	1.4	1.1	1.5	1.2	A-	
2149	683736	K-2	118	.949	.008	.017	.025	.949	.000	.517	181	273	393	.517	-4.944	0.432	-0.7	0.7	-1.7	0.2	A-	1
2150	684765	K-2	118	.576	.178	.576	.119	.127	.000	.458	109	.458	309	254	-1.933	0.205	-0.5	1.0	-0.2	1.0	A-	
2151	684692	K-2	118	.754	.754	.119	.102	.025	.000	.240	.240	174	030	241	-2.913	0.233	1.4	1.2	0.6	1.1	A+	
2152	684741	K-2	118	.576	.237	.127	.576	.059	.000	.325	152	153	.325	190	-1.933	0.205	1.1	1.1	1.7	1.2	A-	1
2153	684456	K-2	118	.771	.771	.144	.034	.051	.000	.507	.507	364	280	156	-3.024	0.238	-0.9	0.9	-1.2	0.8	A-	
2154	684812	K-2	118	.610	.195	.127	.059	.610	.008	.324	104	195	241	.324	-2.103	0.208	1.2	1.1	1.2	1.1	A-	
2155	684451	K-2	118	.788	.788	.025	.076	.110	.000	.396	.396	115	302	203	-3.140	0.244	0.0	1.0	-0.4	0.9	A-	1
2156	684321	K-2	118	.915	.915	.051	.025	.008	.000	.362	.362	183	254	225	-4.352	0.346	-0.2	0.9	-0.5	0.7	A-	
2157	683739	K-2	118	.848	.847	.051	.076	.017	.008	.557	.557	382	295	135	-3.606	0.274	-1.3	0.8	-1.5	0.6	A+	
2158	684754	K-2	118	.559	.093	.559	.153	.186	.008	.431	274	.431	187	119	-1.849	0.204	-0.2	1.0	-0.5	0.9	A+	ı
2159	684755	K-2	111	.180	.207	.180	.351	.261	.000	.176	199	.176	.079	056	0.008	0.263	0.2	1.0	3.3	2.3	A-	
2160	682630	K-2	111	.405	.378	.126	.090	.405	.000	.260	116	147	079	.260	-1.328	0.214	1.8	1.2	2.4	1.3	A+	į
2161	684866	K-2	111	.514	.514	.234	.144	.108	.000	.474	.474	191	219	254	-1.868	0.212	-0.4	1.0	-0.4	1.0	A+	
2162	684452	K-2	111	.333	.126	.333	.378	.162	.000	.255	096	.255	128	071	-0.952	0.221	1.0	1.1	2.7	1.5	A-	
2163	683987	K-2	111	.748	.072	.117	.748	.063	.000	.506	189	362	.506	224	-3.154	0.242	-0.5	0.9	-0.9	0.8	A+	
2164	684705	K-2	111	.802	.802	.072	.090	.036	.000	.594	.594	320	361	272	-3.532	0.261	-1.6	0.8	-1.8	0.6	A+	
2165	684472	K-2	111	.234	.189	.216	.360	.234	.000	.315	187	082	055	.315	-0.371	0.241	-0.2	1.0	1.9	1.5	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2166	683716	K-2	111	.775	.126	.775	.063	.036	.000	.454	243	.454	232	282	-3.336	0.251	-0.4	0.9	-0.5	0.9	Α-	
2167	684801	K-2	111	.324	.324	.099	.036	.541	.000	.197	.197	245	252	.057	-0.903	0.222	2.6	1.3	1.3	1.2	B+	
2168	684469	K-2	111	.378	.270	.198	.378	.144	.009	.182	064	184	.182	.000	-1.190	0.216	2.6	1.2	3.0	1.5	A-	
2169	684285	K-2	111	.604	.099	.189	.604	.108	.000	.415	289	206	.415	115	-2.326	0.217	0.5	1.0	0.2	1.0	A-	1
2170	684583	K-2	111	.811	.054	.811	.054	.081	.000	.552	241	.552	432	234	-3.601	0.265	-1.2	0.8	-1.3	0.7	A-	1
2171	684766	K-2	111	.288	.162	.306	.243	.288	.000	062	066	045	.171	062	-0.701	0.228	3.8	1.4	4.8	2.2	A-	1
2172	684693	K-2	111	.613	.090	.613	.180	.117	.000	.552	328	.552	240	257	-2.373	0.218	-1.3	0.9	-1.2	0.9	A+	1
2173	684743	K-2	111	.451	.450	.180	.126	.243	.000	.332	.332	073	130	219	-1.554	0.212	1.3	1.1	1.5	1.2	B+	1
2174	684457	K-2	111	.541	.261	.117	.541	.081	.000	.543	342	187	.543	220	-2.003	0.213	-1.4	0.9	-1.2	0.9	A-	1
2175	684813	K-2	111	.685	.054	.144	.685	.117	.000	.538	366	144	.538	362	-2.769	0.228	-1.1	0.9	-0.4	0.9	A+	1
2176	684322	K-2	111	.775	.099	.063	.775	.063	.000	.607	371	325	.607	263	-3.336	0.251	-1.7	0.8	-1.6	0.7	B+	1
2177	684724	K-2	111	.550	.550	.306	.081	.063	.000	.480	.480	130	427	255	-2.049	0.213	-0.4	1.0	-0.4	1.0	A-	1
2178	683728	K-2	111	.604	.171	.090	.135	.604	.000	.434	389	059	143	.434	-2.326	0.217	0.2	1.0	0.3	1.0	A-	1
2179	683729	K-2	111	.622	.054	.622	.261	.063	.000	.430	125	.430	340	128	-2.029	0.212	-0.4	1.0	-0.8	0.9	B-	
2180	684795	K-2	111	.883	.090	.009	.018	.883	.000	.385	365	.060	189	.385	-3.747	0.308	-0.4	0.9	-0.8	0.7	A+	1
2181	682631	K-2	111	.613	.180	.135	.613	.072	.000	.443	297	222	.443	099	-1.984	0.211	-0.7	1.0	-0.9	0.9	A+	1
2182	684875	K-2	111	.523	.225	.090	.523	.162	.000	.387	154	245	.387	160	-1.552	0.206	0.1	1.0	-0.2	1.0	B-	1
2183	684323	K-2	111	.541	.279	.541	.054	.126	.000	.527	393	.527	163	149	-1.637	0.207	-1.9	0.9	-1.6	8.0	A+	1
2184	684756	K-2	111	.252	.009	.018	.252	.721	.000	.272	054	.053	.272	267	-0.170	0.235	0.5	1.1	1.1	1.2	A-	1
2185	684706	K-2	111	.234	.468	.090	.207	.234	.000	.389	098	275	092	.389	-0.056	0.241	-0.4	1.0	-0.4	0.9	A-	1
2186	684473	K-2	111	.613	.126	.613	.072	.189	.000	.443	421	.443	066	151	-1.984	0.211	-0.7	0.9	-0.8	0.9	A+	1
2187	684814	K-2	111	.883	.045	.045	.027	.883	.000	.345	257	153	160	.345	-3.747	0.308	-0.3	0.9	-0.4	8.0	A-	
2188	684802	K-2	111	.189	.505	.090	.216	.189	.000	.244	.055	252	123	.244	0.255	0.259	0.4	1.1	1.5	1.4	A-	1
2189	684470	K-2	111	.550	.072	.550	.216	.162	.000	.324	165	.324	118	189	-1.680	0.207	0.8	1.1	0.6	1.1	B-	1
2190	684286	K-2	111	.487	.180	.153	.486	.180	.000	.389	146	323	.389	057	-1.382	0.206	0.0	1.0	-0.2	1.0	A-	1
2191	684584	K-2	111	.694	.694	.144	.090	.072	.000	.341	.341	213	102	207	-2.401	0.221	0.1	1.0	0.6	1.1	B+	1
2192	684767	K-2	111	.414	.216	.117	.414	.252	.000	.168	040	.042	.168	183	-1.038	0.209	2.5	1.2	2.2	1.3	A-	1
2193	684694	K-2	111	.523	.153	.207	.523	.117	.000	.551	114	388	.551	238	-1.552	0.206	-2.3	0.9	-2.0	0.8	A-	1
2194	684744	K-2	111	.631	.631	.153	.108	.108	.000	.560	.560	365	196	251	-2.074	0.212	-2.1	0.8	-1.8	0.8	A+	1
2195	684458	K-2	111	.793	.045	.081	.072	.793	.009	.357	112	254	207	.357	-2.999	0.249	-0.3	1.0	0.1	1.0	A-	
2196	683717	K-2	111	.514	.243	.036	.514	.207	.000	.311	199	120	.311	118	-1.510	0.206	1.0	1.1	3.1	1.4	A+	
2197	684453	K-2	111	.288	.180	.414	.117	.288	.000	.306	219	037	111	.306	-0.383	0.226	0.6	1.1	0.5	1.1	A-	
2198	684687	K-2	111	.306	.207	.270	.306	.216	.000	.222	108	081	.222	056	-0.484	0.223	1.1	1.1	1.6	1.3	A+	
2199	684757	K-2	111	.865	.036	.045	.054	.865	.000	.465	220	197	340	.465	-3.808	0.307	-0.3	0.9	0.4	1.1	A-	
2200	683730	K-2	111	.802	.802	.108	.027	.063	.000	.492	.492	251	265	309	-3.235	0.269	-0.2	1.0	-0.4	0.8	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Pof	ID	FT	N	PVal	P(A)	D/D\	P(C)	P(D)	P(-)	PtBis	PT(A)	DT/D)	PT(C)	PT(D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Ref	IU	Grade	N	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PT(B)	PI(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
2201	684796	K-2	111	.730	.730	.117	.054	.090	.009	.545	.545	344	356	097	-2.713	0.244	-0.7	0.9	-0.2	1.0	A-	
2202	683723	K-2	111	.432	.189	.117	.432	.261	.000	.259	100	282	.259	.003	-1.042	0.219	2.3	1.2	3.8	1.7	A+	
2203	684683	K-2	111	.550	.162	.550	.234	.054	.000	.566	313	.566	304	165	-1.663	0.220	-1.3	0.9	-1.2	0.8	A-	
2204	684326	K-2	111	.451	.252	.198	.450	.099	.000	.461	209	107	.461	322	-1.138	0.219	0.1	1.0	0.2	1.0	A-	
2205	684688	K-2	111	.739	.036	.739	.063	.153	.009	.465	211	.465	316	245	-2.773	0.247	0.1	1.0	0.6	1.1	A+	
2206	684272	K-2	111	.640	.640	.207	.108	.045	.000	.397	.397	158	275	197	-2.160	0.227	1.1	1.1	0.3	1.1	A+	
2207	684483	K-2	111	.775	.171	.775	.000	.036	.018	.408	220	.408	.000	375	-3.027	0.258	0.6	1.1	0.0	1.0	A-	
2208	684803	K-2	111	.793	.063	.063	.793	.081	.000	.604	145	428	.604	386	-3.164	0.265	-1.5	0.8	-0.9	0.7	A-	
2209	684267	K-2	111	.820	.045	.820	.045	.081	.009	.544	171	.544	293	400	-3.384	0.277	-0.6	0.9	-1.0	0.7	B-	
2210	684575	K-2	111	.423	.288	.126	.162	.423	.000	.438	056	360	195	.438	-0.994	0.220	0.1	1.0	0.5	1.1	A+	
2211	684287	K-2	111	.631	.108	.631	.171	.090	.000	.480	170	.480	267	273	-2.109	0.226	0.1	1.0	-0.4	0.9	A-	
2212	684585	K-2	111	.946	.946	.036	.009	.000	.009	.364	.364	288	190	.000	-4.982	0.443	0.0	1.0	-0.7	0.4	A-	
2213	684769	K-2	111	.414	.270	.162	.414	.144	.009	.326	086	092	.326	221	-0.946	0.220	1.5	1.1	2.1	1.4	A-	
2214	683988	K-2	111	.838	.838	.081	.036	.036	.009	.587	.587	353	220	366	-3.544	0.288	-1.2	0.8	-1.0	0.6	A+	
2215	684745	K-2	111	.658	.658	.135	.126	.063	.018	.573	.573	391	289	041	-2.265	0.230	-1.0	0.9	-1.2	8.0	A+	
2216	684459	K-2	111	.595	.099	.595	.171	.126	.009	.335	225	.335	186	050	-1.907	0.223	2.2	1.2	1.9	1.3	A+	
2217	684788	K-2	111	.766	.108	.766	.063	.054	.009	.632	385	.632	324	260	-2.961	0.255	-1.5	0.8	-1.6	0.6	A+	
2218	684447	K-2	111	.297	.054	.261	.378	.297	.009	.206	221	223	.133	.206	-0.282	0.234	2.7	1.3	2.3	1.6	A-	
2219	684734	K-2	105	.933	.933	.019	.029	.019	.000	.432	.432	293	300	130	-4.501	0.408	-0.4	0.9	-0.8	0.5	A+	
2220	684725	K-2	105	.714	.086	.048	.152	.714	.000	.497	123	329	334	.497	-2.501	0.239	-0.6	0.9	-0.6	0.9	A-	
2221	683731	K-2	105	.752	.057	.752	.048	.143	.000	.324	191	.324	339	066	-2.739	0.249	0.9	1.1	0.0	1.0	A-	
2222	684797	K-2	105	.581	.581	.067	.029	.324	.000	.256	.256	129	314	090	-1.771	0.220	2.1	1.2	1.7	1.2	A+	
2223	683724	K-2	105	.667	.086	.057	.190	.667	.000	.511	337	182	266	.511	-2.226	0.230	-0.8	0.9	-0.6	0.9	A+	
2224	684684	K-2	105	.400	.219	.400	.048	.333	.000	.273	008	.273	.058	304	-0.864	0.221	1.7	1.2	2.0	1.3	A+	
2225	684328	K-2	105	.943	.943	.000	.029	.029	.000	.489	.489	.000	354	327	-4.680	0.437	-0.5	0.8	-1.3	0.3	A-	
2226	684689	K-2	105	.667	.067	.143	.124	.667	.000	.356	120	327	071	.356	-2.226	0.230	0.8	1.1	0.2	1.0	A+	
2227	684273	K-2	105	.819	.819	.019	.086	.067	.010	.586	.586	244	353	379	-3.218	0.276	-1.3	0.8	-1.4	0.6	A+	
2228	684484	K-2	105	.838	.838	.067	.057	.038	.000	.456	.456	397	201	116	-3.376	0.287	-0.4	0.9	-0.4	8.0	A+	
2229	684804	K-2	105	.971	.971	.019	.010	.000	.000	.314	.314	293	126	.000	-5.446	0.598	0.1	0.9	-0.8	0.3	A-	
2230	684268	K-2	105	.581	.181	.095	.143	.581	.000	.229	054	038	232	.229	-1.771	0.220	2.4	1.2	1.5	1.2	A+	
2231	684576	K-2	105	.200	.248	.448	.200	.105	.000	.009	133	.231	.009	199	0.323	0.266	1.8	1.3	3.3	2.2	A-	
2232	684288	K-2	105	.771	.086	.095	.048	.771	.000	.482	194	227	381	.482	-2.866	0.255	-0.5	0.9	1.0	1.2	A+	
2233	684586	K-2	105	.629	.629	.286	.019	.067	.000	.361	.361	157	228	290	-2.019	0.225	0.9	1.1	0.3	1.0	A+	
2234	684784	K-2	105	.743	.095	.076	.743	.086	.000	.567	348	084	.567	441	-2.678	0.246	-1.3	0.8	-1.1	0.8	A-	
2235	683989	K-2	105	.667	.048	.086	.190	.667	.010	.544	277	369	243	.544	-2.226	0.230	-1.1	0.9	-1.2	0.8	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Def	-	FT		D) (al	D/A)	D/D)	D/C)	D/D)	D/ \	DAD:	DT/A)	DT/D)	DT/C)	DT/D)	NA	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
2236	684718	K-2	105	.619	.619	.067	.010	.305	.000	.334	.334	174	195	217	-1.969	0.224	1.1	1.1	0.5	1.1	A-	
2237	684460	K-2	105	.533	.286	.533	.067	.114	.000	.380	433	.380	.014	.007	-1.531	0.218	0.7	1.1	0.5	1.1	A-	
2238	684789	K-2	105	.733	.733	.038	.076	.152	.000	.543	.543	256	494	167	-2.618	0.244	-1.0	0.9	-1.2	0.8	A+	
2239	684790	K-2	115	.626	.165	.626	.070	.139	.000	.467	387	.467	294	021	-2.223	0.215	-0.3	1.0	-0.6	0.9	A-	
2240	684448	K-2	115	.600	.130	.600	.052	.217	.000	.465	322	.465	143	212	-2.086	0.212	-0.3	1.0	-0.5	0.9	B-	
2241	684726	K-2	115	.687	.104	.078	.687	.130	.000	.382	171	167	.382	238	-2.559	0.224	0.6	1.1	0.4	1.1	B-	
2242	684699	K-2	115	.687	.687	.026	.052	.235	.000	.273	.273	340	286	021	-2.559	0.224	1.7	1.2	1.1	1.2	A+	
2243	684798	K-2	115	.774	.104	.774	.087	.035	.000	.469	208	.469	372	153	-3.104	0.245	-0.4	0.9	-0.7	0.8	A+	
2244	684571	K-2	115	.652	.139	.148	.652	.061	.000	.635	259	432	.635	250	-2.364	0.218	-2.4	0.8	-1.8	0.7	A+	
2245	684685	K-2	115	.417	.130	.417	.296	.157	.000	.332	294	.332	003	174	-1.169	0.210	1.2	1.1	1.1	1.2	A-	
2246	684330	K-2	115	.800	.800	.078	.070	.052	.000	.439	.439	202	360	134	-3.292	0.255	-0.5	0.9	0.0	1.0	A+	
2247	684690	K-2	115	.487	.174	.139	.487	.191	.009	.470	276	026	.470	304	-1.517	0.208	-0.6	1.0	-0.6	0.9	A+	
2248	684274	K-2	115	.713	.713	.122	.113	.052	.000	.624	.624	412	319	210	-2.712	0.229	-2.0	0.8	-2.0	0.7	A-	
2249	684485	K-2	115	.287	.235	.217	.243	.287	.017	.266	074	031	217	.266	-0.469	0.225	1.3	1.1	2.1	1.5	A-	
2250	684805	K-2	115	.878	.070	.035	.878	.017	.000	.520	522	143	.520	086	-3.987	0.306	-0.9	0.8	-0.8	0.7	A-	
2251	684269	K-2	115	.835	.070	.835	.061	.035	.000	.438	463	.438	180	010	-3.571	0.273	-0.5	0.9	1.0	1.3	A+	
2252	684577	K-2	115	.557	.200	.043	.200	.557	.000	.436	378	156	083	.436	-1.864	0.210	0.1	1.0	0.5	1.1	A +	
2253	684289	K-2	115	.739	.139	.043	.739	.070	.009	.400	129	266	.400	301	-2.874	0.235	0.3	1.0	0.0	1.0	A+	
2254	684695	K-2	115	.748	.122	.748	.087	.043	.000	.546	251	.546	318	321	-2.929	0.237	-1.1	0.9	-1.3	0.8	A+	
2255	682435	K-2	115	.957	.957	.009	.035	.000	.000	.349	.349	.081	429	.000	-5.228	0.474	-0.4	0.8	0.2	0.9	A+	
2256	683990	K-2	115	.513	.191	.513	.139	.157	.000	.496	237	.496	351	092	-1.646	0.208	-1.0	0.9	-0.4	1.0	A+	
2257	684719	K-2	115	.861	.861	.043	.026	.070	.000	.448	.448	339	270	169	-3.809	0.291	-0.6	0.9	-0.3	0.9	A+	
2258	684461	K-2	115	.574	.148	.183	.574	.096	.000	.441	099	348	.441	165	-1.952	0.211	-0.1	1.0	0.1	1.0	A+	
2259	684462	K-2	111	.757	.757	.117	.063	.063	.000	.277	.277	079	247	137	-2.629	0.233	0.4	1.0	-0.3	0.9	A-	
2260	684791	K-2	111	.775	.775	.036	.162	.027	.000	.432	.432	258	283	173	-2.741	0.239	-0.6	0.9	-1.2	0.8	A+	
2261	684449	K-2	111	.586	.216	.072	.586	.126	.000	.319	116	176	.319	193	-1.739	0.206	0.5	1.0	0.2	1.0	A+	
2262	684746	K-2	111	.514	.180	.514	.063	.234	.009	.309	264	.309	181	012	-1.404	0.204	0.7	1.0	0.6	1.1	A+	
2263	684700	K-2	111	.766	.108	.766	.090	.036	.000	.429	327	.429	159	186	-2.684	0.236	-0.8	0.9	-0.4	0.9	A+	
2264	684277	K-2	111	.460	.297	.090	.153	.459	.000	.417	119	308	182	.417	-1.153	0.205	-0.9	0.9	-0.6	1.0	A-	
2265	684572	K-2	111	.460	.243	.459	.063	.234	.000	.337	183	.337	071	170	-1.153	0.205	-0.4	1.0	0.4	1.0	A-	
2266	684686	K-2	111	.667	.667	.099	.144	.090	.000	.303	.303	309	030	140	-2.135	0.214	0.4	1.0	0.5	1.1	A+	
2267	684333	K-2	111	.919	.063	.018	.000	.919	.000	.358	336	121	.000	.358	-4.021	0.356	-0.3	0.9	-0.5	0.7	A+	
2268	684867	K-2	111	.559	.234	.559	.054	.153	.000	.352	227	.352	225	078	-1.612	0.205	0.1	1.0	-0.4	1.0	A-	
2269	684275	K-2	111	.613	.045	.144	.189	.613	.009	.353	368	167	085	.353	-1.868	0.208	0.0	1.0	-0.4	1.0	A-	
2270	684486	K-2	111	.775	.081	.775	.054	.081	.009	.470	367	.470	225	191	-2.741	0.239	-1.0	0.9	-1.0	0.8	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Dof	15	FT	N	DV/el	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A\	DT/D)	DT(C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
2271	684806	K-2	111	.838	.838	.081	.009	.072	.000	.137	.137	103	.014	093	-3.185	0.268	0.6	1.1	1.1	1.3	A+	
2272	684270	K-2	111	.748	.063	.081	.108	.748	.000	.351	137	230	181	.351	-2.576	0.231	-0.4	1.0	0.9	1.2	A-	
2273	684578	K-2	111	.135	.162	.550	.153	.135	.000	.145	065	.047	137	.145	0.794	0.294	0.3	1.0	2.2	1.8	A-	
2274	684731	K-2	111	.793	.054	.081	.793	.072	.000	.201	035	103	.201	176	-2.858	0.246	0.6	1.1	0.5	1.1	A+	
2275	684696	K-2	111	.369	.441	.027	.369	.162	.000	.231	055	206	.231	137	-0.722	0.212	1.0	1.1	1.3	1.2	A-	
2276	682436	K-2	111	.793	.117	.027	.793	.063	.000	.551	320	223	.551	347	-2.858	0.246	-1.5	0.8	-1.5	0.7	A+	
2277	683991	K-2	111	.216	.099	.468	.216	.216	.000	.248	282	.189	.248	272	0.147	0.247	0.5	1.1	0.7	1.1	A-	
2278	684720	K-2	111	.766	.216	.766	.018	.000	.000	.138	090	.138	161	.000	-2.684	0.236	1.0	1.1	1.1	1.2	B+	
2279	684721	K-2	109	.725	.725	.119	.064	.092	.000	.448	.448	250	141	293	-2.780	0.245	0.4	1.0	0.3	1.1	B-	
2280	684491	K-2	109	.422	.128	.422	.147	.303	.000	.338	179	.338	137	127	-1.079	0.223	1.2	1.1	3.6	1.7	A+	
2281	684792	K-2	109	.716	.110	.716	.138	.037	.000	.449	314	.449	218	155	-2.720	0.243	0.5	1.1	0.1	1.0	A+	
2282	684450	K-2	109	.817	.064	.064	.817	.055	.000	.470	250	272	.470	235	-3.450	0.277	-0.4	0.9	-0.3	0.9	A-	
2283	684747	K-2	109	.505	.147	.505	.138	.211	.000	.216	137	.216	150	019	-1.520	0.221	3.6	1.4	2.5	1.4	A-	
2284	684681	K-2	109	.697	.092	.110	.697	.083	.018	.681	293	377	.681	286	-2.605	0.239	-2.4	0.7	-2.0	0.6	A+	
2285	684278	K-2	109	.578	.578	.128	.156	.119	.018	.293	.293	169	210	.065	-1.916	0.224	2.7	1.3	2.3	1.4	A-	
2286	684573	K-2	109	.404	.110	.321	.404	.156	.009	.201	171	024	.201	027	-0.979	0.224	3.3	1.4	3.1	1.6	A+	
2287	683732	K-2	109	.716	.716	.073	.055	.138	.018	.532	.532	313	196	238	-2.720	0.243	-0.5	0.9	-0.6	0.9	A-	
2288	684359	K-2	109	.220	.661	.073	.037	.220	.009	.434	080	382	098	.434	0.136	0.257	-0.5	0.9	-0.7	8.0	A+	
2289	684868	K-2	109	.706	.193	.706	.064	.028	.009	.532	303	.532	236	252	-2.662	0.241	-0.5	0.9	-0.2	0.9	A-	
2290	684276	K-2	109	.541	.073	.064	.541	.312	.009	.497	299	163	.497	228	-1.717	0.222	-0.2	1.0	-0.1	1.0	A-	
2291	684678	K-2	109	.881	.881	.018	.046	.046	.009	.565	.565	262	262	331	-4.070	0.323	-1.0	0.8	-1.4	0.4	A-	
2292	684807	K-2	109	.908	.028	.018	.908	.037	.009	.535	295	236	.535	270	-4.417	0.358	-1.0	0.8	-1.3	0.4	A+	
2293	684271	K-2	109	.762	.156	.761	.018	.055	.009	.363	111	.363	289	227	-3.029	0.255	0.9	1.1	0.5	1.1	A-	
2294	683721	K-2	109	.670	.138	.128	.046	.670	.018	.692	462	233	245	.692	-2.437	0.234	-2.7	0.7	-1.6	0.7	A+	
2295	684732	K-2	109	.706	.119	.128	.037	.706	.009	.509	211	228	336	.509	-2.662	0.241	-0.3	1.0	1.4	1.3	A+	
2296	684697	K-2	109	.266	.239	.064	.422	.266	.009	.348	359	163	.128	.348	-0.175	0.243	0.1	1.0	1.6	1.5	A+	
2297	682437	K-2	109	.835	.835	.046	.073	.037	.009	.622	.622	348	313	279	-3.609	0.287	-1.4	0.8	-1.7	0.5	A+	
2298	683992	K-2	109	.679	.147	.679	.083	.083	.009	.565	355	.565	162	253	-2.492	0.235	-0.9	0.9	-1.0	8.0	A-	
2299	683993	K-2	108	.704	.093	.019	.704	.185	.000	.254	204	104	.254	110	-2.436	0.229	1.3	1.1	0.8	1.1		
2300	684722	K-2	108	.370	.361	.000	.370	.269	.000	.257	114	.000	.257	156	-0.768	0.217	1.8	1.2	1.4	1.2		
2301	684492	K-2	108	.556	.111	.148	.185	.556	.000	.494	308	163	232	.494	-1.670	0.212	-1.1	0.9	-0.5	0.9		
2302	684793	K-2	108	.611	.611	.130	.111	.139	.009	.324	.324	118	254	135	-1.944	0.216	0.9	1.1	0.9	1.1		
2303	684715	K-2	108	.352	.231	.157	.259	.352	.000	.153	113	.011	068	.153	-0.673	0.219	2.3	1.2	2.4	1.4		
2304	684748	K-2	108	.389	.389	.120	.204	.287	.000	.412	.412	.092	221	313	-0.862	0.215	-0.5	1.0	-0.1	1.0		
2305	684682	K-2	108	.787	.028	.787	.102	.083	.000	.541	220	.541	483	142	-2.951	0.252	-1.2	0.8	-1.6	0.7		

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	D/B)	P(C)	P(D)	P(-)	PtBis	PT(A)	DT/B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
Kei	טו	Grade	//	PVai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PT(B)	PT(C)	PI(D)	ivieas	IVISE	in	in	out	out	/F	/B
2306	684279	K-2	108	.630	.111	.630	.204	.056	.000	.428	260	.428	205	183	-2.039	0.218	-0.2	1.0	-0.6	0.9		
2307	684574	K-2	108	.676	.676	.083	.120	.120	.000	.560	.560	447	253	173	-2.282	0.224	-1.7	0.8	-1.4	0.8		
2308	683733	K-2	108	.454	.093	.454	.194	.259	.000	.426	.042	.426	475	083	-1.179	0.211	-0.4	1.0	0.1	1.0		
2309	684368	K-2	108	.843	.046	.065	.037	.843	.009	.564	208	313	354	.564	-3.372	0.280	-1.3	0.8	-1.8	0.6		
2310	684869	K-2	108	.778	.046	.778	.074	.093	.009	.388	105	.388	288	160	-2.888	0.249	-0.2	1.0	0.2	1.0		
2311	684727	K-2	108	.324	.361	.241	.324	.065	.009	.372	069	254	.372	059	-0.527	0.223	-0.5	1.0	0.4	1.1		
2312	684711	K-2	108	.898	.019	.037	.898	.037	.009	.419	184	240	.419	205	-3.922	0.332	-0.4	0.9	-1.1	0.6		
2313	684808	K-2	108	.843	.074	.019	.843	.056	.009	.386	263	040	.386	212	-3.372	0.280	-0.2	1.0	-0.7	0.8		
2314	684707	K-2	108	.732	.157	.731	.074	.028	.009	.326	220	.326	131	075	-2.597	0.235	0.5	1.1	0.1	1.0		
2315	683722	K-2	108	.352	.204	.352	.241	.185	.019	.221	.100	.221	178	088	-0.673	0.219	1.8	1.2	1.7	1.2		
2316	684733	K-2	108	.778	.120	.065	.778	.019	.019	.404	180	392	.404	024	-2.888	0.249	-0.4	1.0	0.0	1.0		
2317	684698	K-2	108	.750	.037	.750	.074	.120	.019	.446	125	.446	107	346	-2.710	0.240	-0.7	0.9	-0.3	0.9		
2318	682438	K-2	108	.602	.139	.194	.602	.056	.009	.412	210	164	.412	202	-1.898	0.215	0.0	1.0	-0.5	0.9		
2319	684335	3	434	.866	.048	.025	.058	.866	.002	.473	322	156	276	.473	-3.260	0.151	-1.1	0.9	-2.4	0.6	B+	
2320	684409	3	434	.461	.067	.461	.157	.313	.002	.339	129	.339	187	142	-0.847	0.106	1.3	1.1	2.5	1.2	A-	
2321	682891	3	434	.975	.009	.975	.000	.014	.002	.153	142	.153	.000	065	-5.215	0.313	0.3	1.1	0.5	1.2	A-	
2322	684402	3	434	.265	.067	.424	.242	.265	.002	.140	212	.072	104	.140	0.188	0.118	3.2	1.2	4.5	1.5	A-	
2323	684334	3	434	.666	.122	.150	.060	.666	.002	.547	361	226	218	.547	-1.870	0.112	-3.1	0.9	-2.7	8.0	A-	
2324	682883	3	434	.807	.032	.134	.806	.025	.002	.411	310	198	.411	210	-2.747	0.131	-0.6	1.0	-0.2	1.0	A+	
2325	692123	3	434	.903	.023	.051	.903	.018	.005	.496	189	318	.496	252	-3.674	0.172	-1.5	0.8	-2.5	0.5	A+	
2326	689230	3	434	.751	.751	.120	.085	.039	.005	.501	.501	308	245	174	-2.366	0.121	-1.9	0.9	-1.8	8.0	B-	
2327	684354	3	434	.788	.788	.069	.104	.035	.005	.562	.562	281	387	142	-2.613	0.127	-2.6	0.8	-3.0	0.7	A-	
2328	684392	3	434	.836	.028	.046	.836	.085	.005	.473	222	359	.473	175	-2.986	0.140	-1.4	0.9	-1.9	0.7	A-	
2329	684376	3	434	.380	.171	.380	.336	.106	.007	.363	161	.363	110	161	-0.447	0.108	0.2	1.0	1.8	1.1	A-	
2330	692118	3	434	.825	.058	.035	.825	.078	.005	.511	255	303	.511	241	-2.890	0.136	-1.8	0.9	-2.1	0.7	A-	
2331	684415	3	434	.666	.666	.039	.090	.200	.005	.497	.497	275	277	218	-1.870	0.112	-1.9	0.9	-1.8	0.9	A+	
2332	682833	3	434	.795	.046	.795	.090	.062	.007	.447	186	.447	294	177	-2.662	0.129	-1.1	0.9	-0.5	0.9	B+	
2333	682903	3	434	.399	.127	.399	.270	.191	.014	.223	162	.223	.036	145	-0.540	0.108	3.3	1.1	5.1	1.4	A+	
2334	684422	3	434	.489	.488	.134	.288	.076	.014	.293	.293	046	122	232	-0.981	0.106	2.8	1.1	3.0	1.2	A+	
2335	682869	3	434	.636	.636	.111	.187	.053	.014	.309	.309	234	124	058	-1.711	0.110	2.3	1.1	2.0	1.1	A+	
2336	684399	3	434	.726	.141	.037	.726	.081	.016	.335	071	209	.335	259	-2.210	0.117	1.2	1.1	0.8	1.1	A-	
2337	684382	3	434	.221	.058	.514	.221	.194	.014	.208	099	044	.208	069	0.469	0.126	1.8	1.1	3.2	1.5	A-	
2338	684365	3	434	.516	.154	.516	.152	.164	.014	.283	108	.283	166	077	-1.114	0.106	3.3	1.1	2.6	1.2	A+	
2339	684367	3	436	.278	.278	.046	.573	.103	.000	.095	.095	168	.098	183	0.298	0.117	4.9	1.3	5.3	1.6	A+	
2340	684336	3	436	.814	.814	.087	.044	.053	.002	.423	.423	203	243	236	-2.665	0.133	-0.7	1.0	-0.7	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2341	684410	3	436	.729	.039	.729	.108	.124	.000	.334	214	.334	213	124	-2.086	0.118	1.5	1.1	0.7	1.1	A+	
2342	682892	3	436	.828	.046	.828	.057	.069	.000	.392	191	.392	292	158	-2.774	0.137	-0.5	1.0	-0.1	1.0	A+	
2343	684427	3	436	.461	.197	.156	.186	.461	.000	.388	142	186	179	.388	-0.675	0.107	0.6	1.0	1.2	1.1	A+	
2344	688906	3	436	.890	.025	.034	.050	.890	.000	.411	219	330	156	.411	-3.367	0.162	-0.9	0.9	-1.2	0.8	A+	1
2345	682884	3	436	.684	.683	.039	.083	.190	.005	.566	.566	239	263	345	-1.817	0.114	-3.0	0.9	-3.3	0.8	B-	1
2346	684341	3	436	.805	.149	.021	.023	.805	.002	.490	348	246	194	.490	-2.595	0.131	-1.5	0.9	-1.6	0.8	A+	1
2347	684342	3	436	.794	.099	.794	.048	.057	.002	.477	279	.477	251	216	-2.511	0.129	-1.4	0.9	-1.3	8.0	A-	1
2348	684355	3	436	.755	.071	.028	.144	.755	.002	.419	127	237	293	.419	-2.244	0.122	-0.1	1.0	-1.0	0.9	A-	1
2349	684393	3	436	.817	.050	.817	.053	.078	.002	.527	300	.527	255	281	-2.683	0.134	-2.2	0.8	-2.1	0.7	A-	1
2350	684377	3	436	.404	.404	.135	.252	.204	.005	.394	.394	068	327	043	-0.387	0.108	0.6	1.0	1.0	1.1	A-	1
2351	682890	3	436	.895	.028	.057	.894	.011	.009	.417	175	294	.417	162	-3.421	0.165	-0.8	0.9	-1.5	0.7	C+	1
2352	684416	3	436	.823	.057	.053	.060	.823	.007	.545	232	313	309	.545	-2.737	0.136	-2.3	0.8	-2.7	0.7	A-	1
2353	688901	3	436	.250	.266	.163	.250	.312	.009	.079	065	180	.079	.158	0.466	0.120	3.3	1.2	7.2	2.0	A+	1
2354	682904	3	436	.819	.062	.037	.073	.819	.009	.542	335	235	281	.542	-2.701	0.134	-2.2	0.8	-2.8	0.7	A+	1
2355	684423	3	436	.200	.200	.523	.165	.106	.007	.120	.120	.139	196	110	0.806	0.129	1.9	1.1	5.2	1.8	B+	1
2356	684374	3	436	.784	.784	.057	.128	.021	.009	.428	.428	310	182	204	-2.445	0.127	-0.5	1.0	-0.4	1.0	A-	<u>. </u>
2357	684386	3	436	.473	.204	.156	.472	.158	.009	.342	164	184	.342	068	-0.732	0.107	1.9	1.1	2.9	1.2	A-	
2358	684383	3	436	.654	.654	.092	.112	.133	.009	.468	.468	254	296	124	-1.652	0.111	-0.8	1.0	-1.0	0.9	A+	
2359	684400	3	430	.412	.412	.256	.030	.302	.000	.357	.357	280	104	077	-0.409	0.107	0.6	1.0	1.3	1.1	A-	
2360	684384	3	430	.249	.072	.249	.147	.530	.002	.151	131	.151	114	.015	0.470	0.120	3.1	1.2	2.9	1.3	A-	
2361	684337	3	430	.656	.063	.656	.063	.219	.000	.533	200	.533	247	351	-1.597	0.110	-3.1	0.9	-3.0	8.0	A+	
2362	684411	3	430	.840	.023	.840	.109	.028	.000	.336	117	.336	211	241	-2.763	0.140	-0.2	1.0	-0.1	1.0	A-	
2363	689229	3	430	.598	.077	.151	.174	.598	.000	.411	278	204	144	.411	-1.303	0.107	-0.4	1.0	-0.5	1.0	A+	
2364	684403	3	430	.572	.153	.121	.572	.151	.002	.466	176	257	.466	218	-1.178	0.106	-1.8	0.9	-1.6	0.9	A-	
2365	684348	3	430	.628	.067	.058	.628	.244	.002	.288	102	264	.288	108	-1.454	0.108	2.2	1.1	2.5	1.2	A+	
2366	682909	3	430	.430	.430	.163	.260	.142	.005	.304	.304	073	207	068	-0.499	0.106	2.2	1.1	2.0	1.1	A-	
2367	682870	3	430	.279	.114	.321	.279	.277	.009	.299	086	160	.299	043	0.288	0.116	0.9	1.1	0.9	1.1	A-	
2368	684343	3	430	.719	.119	.056	.102	.719	.005	.432	289	248	114	.432	-1.940	0.116	-1.1	0.9	-1.3	0.9	A-	
2369	684356	3	430	.914	.044	.014	.914	.016	.012	.382	276	153	.382	164	-3.550	0.180	-0.6	0.9	-1.6	0.7	A-	
2370	684394	3	430	.772	.026	.021	.772	.172	.009	.318	160	176	.318	191	-2.267	0.124	0.5	1.0	0.6	1.1	A-	
2371	684378	3	430	.458	.167	.181	.458	.179	.014	.406	226	167	.406	086	-0.634	0.105	-0.3	1.0	-0.4	1.0	A-	
2372	682885	3	430	.544	.321	.060	.544	.060	.014	.529	305	219	.529	201	-1.044	0.106	-3.5	0.9	-3.0	0.8	A+	
2373	684417	3	430	.470	.137	.251	.128	.470	.014	.522	364	210	080	.522	-0.689	0.105	-3.5	0.9	-3.1	0.8	A-	
2374	682880	3	430	.554	.279	.063	.553	.091	.014	.549	330	284	.549	134	-1.088	0.106	-4.1	0.9	-3.7	0.8	A-	
2375	682905	3	430	.540	.079	.063	.540	.300	.019	.317	301	150	.317	052	-1.021	0.105	2.1	1.1	1.6	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Dof	15	FT	A.	DV/el	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT(A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
2376	684424	3	430	.247	.240	.247	.400	.086	.028	.195	163	.195	.110	202	0.484	0.120	1.7	1.1	3.0	1.3	A+	
2377	692122	3	430	.874	.023	.051	.033	.874	.019	.419	199	256	203	.419	-3.084	0.154	-0.7	0.9	-2.0	0.7	B+	
2378	684369	3	430	.588	.209	.588	.081	.102	.019	.405	139	.405	215	224	-1.257	0.107	-0.3	1.0	-0.1	1.0	A+	
2379	682871	3	430	.235	.523	.142	.235	.100	.000	.301	191	.055	.301	171	0.424	0.125	1.0	1.1	1.7	1.2	A+	
2380	684401	3	430	.905	.028	.035	.033	.905	.000	.486	242	356	212	.486	-3.721	0.173	-1.5	0.8	-2.1	0.6	A+	
2381	684360	3	430	.774	.774	.040	.077	.107	.002	.403	.403	264	221	175	-2.543	0.126	0.0	1.0	0.6	1.1	B-	
2382	684338	3	430	.898	.026	.051	.898	.023	.002	.471	256	234	.471	312	-3.633	0.168	-1.1	0.9	-2.4	0.5	A+	
2383	684412	3	430	.781	.044	.781	.144	.030	.000	.428	210	.428	266	236	-2.591	0.127	-0.3	1.0	-1.3	8.0	A+	
2384	692119	3	430	.942	.040	.942	.009	.009	.000	.336	185	.336	236	207	-4.309	0.214	-0.4	0.9	-1.1	0.7	A+	
2385	684431	3	430	.600	.174	.600	.100	.121	.005	.437	116	.437	217	281	-1.532	0.110	-0.2	1.0	-0.4	1.0	A+	
2386	684349	3	430	.679	.679	.165	.098	.056	.002	.298	.298	148	189	093	-1.956	0.114	2.6	1.1	1.8	1.2	A-	
2387	682886	3	430	.828	.098	.030	.037	.828	.007	.585	403	259	252	.585	-2.943	0.138	-2.7	0.8	-3.1	0.6	A+	
2388	682876	3	430	.554	.553	.347	.063	.033	.005	.282	.282	083	231	187	-1.295	0.108	3.9	1.2	2.9	1.2	A+	
2389	684344	3	430	.300	.300	.195	.200	.300	.005	.291	201	.056	130	.291	0.018	0.116	1.7	1.1	2.7	1.3	A+	
2390	682898	3	430	.802	.067	.091	.030	.802	.009	.507	254	311	217	.507	-2.743	0.132	-1.6	0.9	-1.9	8.0	A-	
2391	684395	3	430	.733	.044	.733	.040	.177	.007	.292	243	.292	210	071	-2.271	0.120	2.1	1.1	1.4	1.2	A-	
2392	688907	3	430	.372	.235	.244	.372	.137	.012	.298	099	106	.298	106	-0.380	0.111	1.9	1.1	3.8	1.3	A-	
2393	682910	3	430	.770	.040	.030	.770	.147	.014	.439	208	278	.439	196	-2.511	0.125	-0.7	1.0	-0.5	0.9	A-	
2394	684418	3	430	.563	.184	.165	.563	.072	.016	.459	198	148	.459	296	-1.342	0.108	-0.5	1.0	-0.3	1.0	A-	
2395	682881	3	430	.733	.151	.053	.733	.047	.016	.523	342	222	.523	174	-2.271	0.120	-1.9	0.9	-2.3	8.0	A+	
2396	682906	3	430	.909	.019	.035	.023	.909	.014	.414	144	223	268	.414	-3.782	0.177	-0.8	0.9	-1.2	0.7	A-	
2397	684425	3	430	.821	.821	.079	.044	.042	.014	.522	.522	314	267	210	-2.886	0.136	-1.9	0.9	-2.2	0.7	A+	
2398	684404	3	430	.719	.719	.028	.165	.074	.014	.225	.225	175	115	044	-2.186	0.118	3.4	1.2	3.3	1.4	A+	
2399	684405	3	427	.916	.030	.916	.035	.019	.000	.316	187	.316	207	130	-3.718	0.187	0.1	1.0	-0.3	0.9	B+	
2400	682872	3	427	.445	.164	.075	.445	.311	.005	.271	180	281	.271	.021	-0.507	0.109	4.4	1.2	3.9	1.3	A+	
2401	688908	3	427	.794	.108	.794	.030	.068	.000	.469	272	.469	321	200	-2.479	0.133	-0.6	1.0	-0.5	0.9	A+	
2402	684361	3	427	.391	.391	.073	.450	.084	.002	.298	.298	252	079	118	-0.230	0.111	2.5	1.1	2.8	1.3	C-	
2403	684339	3	427	.853	.056	.852	.044	.044	.002	.539	297	.539	308	269	-2.973	0.150	-1.6	0.9	-2.4	0.6	A+	
2404	684388	3	427	.794	.794	.037	.023	.143	.002	.381	.381	231	205	226	-2.479	0.133	0.8	1.1	0.1	1.0	A+	
2405	682894	3	427	.810	.033	.810	.119	.037	.000	.517	275	.517	333	241	-2.606	0.137	-1.3	0.9	-1.9	0.8	A-	
2406	684432	3	427	.597	.066	.260	.597	.075	.002	.478	197	233	.478	323	-1.282	0.111	-0.9	1.0	-1.1	0.9	A+	
2407	684350	3	427	.831	.026	.080	.831	.061	.002	.495	185	358	.495	256	-2.782	0.142	-1.1	0.9	-0.7	0.9	A+	
2408	682887	3	427	.768	.023	.105	.094	.768	.009	.574	205	338	325	.574	-2.293	0.128	-2.4	0.8	-1.7	0.8	A-	
2409	682877	3	427	.735	.131	.084	.042	.735	.007	.426	149	289	210	.426	-2.074	0.123	0.3	1.0	1.8	1.2	A+	
2410	684345	3	427	.600	.054	.600	.237	.101	.009	.452	222	.452	226	187	-1.295	0.111	0.0	1.0	-0.8	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2411	682899	3	427	.775	.136	.037	.044	.775	.007	.442	285	178	184	.442	-2.342	0.129	0.0	1.0	-1.1	0.9	A-	
2412	684396	3	427	.667	.068	.096	.667	.162	.007	.414	200	330	.414	087	-1.665	0.115	0.9	1.1	0.5	1.0	A+	
2413	684379	3	427	.705	.105	.705	.070	.110	.009	.435	285	.435	270	068	-1.884	0.119	0.3	1.0	0.2	1.0	A-	
2414	682830	3	427	.841	.061	.047	.841	.040	.012	.529	374	232	.529	207	-2.865	0.145	-1.6	0.9	-2.0	0.7	A+	
2415	684419	3	427	.452	.452	.077	.185	.276	.009	.246	.246	130	125	052	-0.543	0.109	4.3	1.2	5.8	1.5	A+	
2416	682882	3	427	.728	.728	.087	.084	.084	.016	.500	.500	461	127	147	-2.029	0.122	-1.1	0.9	-0.2	1.0	A-	
2417	682907	3	427	.869	.066	.026	.869	.021	.019	.505	243	337	.505	253	-3.137	0.156	-1.2	0.9	-2.1	0.6	A+	
2418	684426	3	427	.888	.047	.026	.026	.888	.014	.519	313	289	223	.519	-3.346	0.166	-1.4	0.9	-2.2	0.6	C+	
2419	688909	3	439	.581	.264	.096	.059	.581	.000	.341	086	265	222	.341	-1.092	0.107	2.1	1.1	3.1	1.2	A+	
2420	684406	3	439	.811	.025	.103	.811	.062	.000	.359	146	308	.359	101	-2.470	0.133	0.8	1.1	1.0	1.1	B+	
2421	682873	3	439	.296	.109	.137	.458	.296	.000	.129	139	039	005	.129	0.365	0.114	4.3	1.2	7.5	2.0	A-	
2422	684428	3	439	.693	.112	.071	.692	.121	.005	.435	164	289	.435	196	-1.689	0.114	-0.1	1.0	-0.4	1.0	A-	
2423	684362	3	439	.403	.139	.169	.287	.403	.002	.306	108	241	041	.306	-0.208	0.107	2.9	1.1	2.1	1.2	A-	
2424	684340	3	439	.861	.036	.021	.077	.861	.005	.244	128	069	141	.244	-2.907	0.150	1.5	1.2	1.0	1.2	A+	
2425	684389	3	439	.959	.959	.007	.009	.016	.009	.475	.475	182	195	264	-4.419	0.252	-1.3	0.8	-2.9	0.2	A-	
2426	682895	3	439	.875	.023	.875	.048	.043	.011	.405	182	.405	234	118	-3.047	0.156	-0.4	1.0	-1.2	0.8	A+	
2427	684433	3	439	.513	.513	.084	.210	.180	.014	.492	.492	218	176	198	-0.751	0.106	-2.0	0.9	-1.7	0.9	A-	
2428	684351	3	439	.494	.494	.080	.123	.289	.014	.418	.418	152	155	175	-0.661	0.106	0.0	1.0	-0.2	1.0	A-	
2429	682888	3	439	.715	.068	.046	.153	.715	.018	.500	302	248	144	.500	-1.822	0.117	-1.5	0.9	-1.6	0.9	A+	
2430	682878	3	439	.854	.043	.039	.854	.043	.021	.586	258	265	.586	258	-2.841	0.147	-2.6	0.8	-3.3	0.5	A+	
2431	684346	3	439	.688	.025	.178	.688	.089	.021	.443	118	169	.443	251	-1.663	0.114	-0.3	1.0	-0.7	0.9	A-	
2432	682900	3	439	.797	.084	.041	.055	.797	.023	.609	224	284	321	.609	-2.366	0.130	-3.2	0.8	-3.4	0.6	A-	
2433	684413	3	439	.886	.043	.032	.014	.886	.025	.615	329	294	226	.615	-3.173	0.162	-2.8	0.7	-3.8	0.4	A+	
2434	684380	3	439	.503	.134	.189	.503	.153	.021	.453	239	176	.453	073	-0.706	0.106	-0.9	1.0	-0.4	1.0	A-	
2435	682831	3	439	.877	.021	.059	.021	.877	.023	.550	186	285	261	.550	-3.071	0.157	-2.1	0.8	-2.9	0.5	A-	
2436	684420	3	439	.396	.146	.210	.223	.396	.025	.291	152	058	021	.291	-0.173	0.108	2.6	1.1	2.9	1.2	A+	
2437	682867	3	439	.667	.667	.107	.064	.137	.025	.511	.511	139	335	173	-1.547	0.112	-1.8	0.9	-1.0	0.9	A-	
2438	682908	3	439	.959	.007	.959	.005	.009	.021	.397	163	.397	003	162	-4.419	0.252	-0.8	0.8	-1.5	0.5	A-	
2439	682875	3	427	.883	.061	.033	.883	.021	.002	.404	292	183	.404	150	-3.237	0.159	-0.8	0.9	-1.3	8.0	A+	
2440	684397	3	427	.700	.101	.143	.700	.056	.000	.481	240	296	.481	194	-1.891	0.115	-1.7	0.9	-1.8	0.9	A+	
2441	682896	3	427	.831	.073	.831	.059	.037	.000	.288	227	.288	168	050	-2.758	0.138	0.5	1.0	0.7	1.1	B+	
2442	682879	3	427	.801	.098	.801	.012	.089	.000	.439	296	.439	103	267	-2.525	0.130	-0.9	0.9	-1.5	0.8	A-	
2443	684429	3	427	.279	.237	.330	.155	.279	.000	.252	178	.008	115	.252	0.247	0.117	1.5	1.1	2.4	1.2	A-	
2444	684363	3	427	.244	.560	.082	.244	.112	.002	.282	048	181	.282	127	0.459	0.121	1.0	1.1	1.5	1.2	B-	
2445	684352	3	427	.258	.089	.417	.234	.258	.002	.210	161	.024	119	.210	0.372	0.119	2.0	1.1	3.0	1.3	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Def	-	FT		D) /al	D/A)	D/D)	D(C)	D/D)	D/ \	DAD:	DT(A)	DT/D)	DT/C)	DT/D)	NA	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
2446	684390	3	427	.766	.766	.117	.082	.033	.002	.336	.336	228	194	046	-2.285	0.123	0.4	1.0	1.6	1.2	A-	
2447	684407	3	427	.930	.047	.007	.930	.014	.002	.437	365	117	.437	150	-3.855	0.197	-1.0	0.8	-2.3	0.5	A+	
2448	684370	3	427	.290	.290	.361	.215	.131	.002	.102	.102	.089	143	068	0.179	0.115	3.8	1.2	6.5	1.7	A-	
2449	684357	3	427	.527	.056	.117	.527	.297	.002	.329	132	193	.329	141	-1.010	0.106	1.7	1.1	1.5	1.1	A-	
2450	682889	3	427	.738	.030	.185	.040	.738	.007	.481	210	298	232	.481	-2.109	0.119	-1.7	0.9	-2.0	0.8	B+	
2451	684372	3	427	.529	.059	.143	.529	.258	.012	.374	137	122	.374	217	-1.021	0.106	0.8	1.0	0.5	1.0	A+	
2452	684347	3	427	.323	.094	.323	.335	.237	.012	.249	270	.249	029	009	-0.002	0.112	2.0	1.1	2.5	1.2	A-	
2453	682901	3	427	.508	.028	.356	.508	.096	.012	.450	139	310	.450	112	-0.920	0.106	-1.3	1.0	-1.7	0.9	A-	
2454	684414	3	858	.776	.031	.069	.108	.776	.015	.511	228	280	252	.511	-2.377	0.088	-3.2	0.9	-3.7	0.7	A+	A-
2455	684381	3	858	.780	.780	.070	.080	.055	.015	.450	.450	178	220	252	-2.400	0.088	-1.8	0.9	-2.1	8.0	A+	A-
2456	682832	3	858	.921	.023	.921	.033	.009	.014	.358	196	.358	160	161	-3.724	0.132	-0.8	0.9	-2.5	0.6	A+	A+
2457	684421	3	858	.377	.104	.164	.340	.376	.015	.270	128	217	.027	.270	-0.316	0.077	3.6	1.1	3.6	1.2	A-	A+
2458	682868	3	858	.322	.322	.174	.263	.226	.015	.342	.342	146	237	.059	-0.030	0.079	0.4	1.0	1.6	1.1	A+	A+
2459	682902	3	431	.323	.318	.323	.169	.190	.000	.266	080	.266	056	169	-0.071	0.112	1.6	1.1	2.8	1.2	A+	
2460	682874	3	431	.450	.039	.255	.450	.251	.005	.450	167	251	.450	183	-0.711	0.105	-1.5	1.0	-1.1	0.9	A-	
2461	684398	3	431	.659	.065	.070	.204	.659	.002	.387	199	173	221	.387	-1.723	0.110	-0.2	1.0	-0.3	1.0	A+	
2462	684408	3	431	.381	.193	.056	.381	.371	.000	.348	157	102	.348	173	-0.372	0.108	0.5	1.0	2.3	1.1	A-	
2463	684366	3	431	.234	.234	.186	.478	.097	.005	.199	.199	138	.056	168	0.446	0.123	2.0	1.1	3.0	1.3	A-	
2464	684430	3	431	.508	.237	.167	.079	.508	.009	.355	242	050	150	.355	-0.987	0.105	1.0	1.0	1.0	1.1	A-	
2465	684364	3	431	.362	.362	.244	.121	.269	.005	.284	.284	234	115	.028	-0.278	0.109	1.9	1.1	1.9	1.1	A+	
2466	684358	3	431	.601	.601	.107	.202	.088	.002	.391	.391	136	187	241	-1.431	0.107	-0.1	1.0	-0.3	1.0	A-	
2467	684391	3	431	.935	.016	.028	.014	.935	.007	.379	135	296	122	.379	-3.963	0.202	-0.8	0.9	-2.2	0.5	B+	
2468	682897	3	431	.882	.005	.100	.882	.009	.005	.209	130	144	.209	063	-3.253	0.156	0.2	1.0	1.9	1.4	A-	
2469	684371	3	431	.443	.443	.146	.209	.197	.005	.315	.315	063	123	188	-0.678	0.105	1.7	1.1	2.4	1.1	A+	
2470	684353	3	431	.566	.049	.028	.566	.350	.007	.405	220	188	.405	230	-1.263	0.106	-0.4	1.0	-0.4	1.0	A+	
2471	692120	3	431	.738	.738	.072	.051	.130	.009	.472	.472	207	286	219	-2.159	0.118	-2.0	0.9	-2.1	8.0	A+	
2472	684373	3	431	.355	.204	.125	.304	.355	.012	.387	170	259	025	.387	-0.242	0.109	-0.5	1.0	0.6	1.0	A-	
2473	684375	3	431	.531	.531	.116	.179	.155	.019	.384	.384	256	156	086	-1.097	0.105	0.2	1.0	0.9	1.0	A+	
2474	680939	4	136	.581	.037	.581	.081	.301	.000	.282	058	.282	143	195	-0.929	0.194	2.2	1.2	1.9	1.3	A+	
2475	681647	4	136	.640	.132	.022	.206	.640	.000	.505	427	173	179	.505	-1.237	0.199	-0.9	0.9	-0.7	0.9	A-	
2476	685339	4	136	.831	.831	.000	.022	.147	.000	.306	.306	.000	204	239	-2.464	0.247	0.5	1.1	0.2	1.0	A+	
2477	684171	4	136	.529	.301	.044	.125	.529	.000	.293	201	040	138	.293	-0.670	0.192	2.2	1.2	1.7	1.2	B+	
2478	681653	4	136	.449	.360	.449	.081	.110	.000	.400	164	.400	159	245	-0.266	0.192	0.5	1.0	1.3	1.2	A-	
2479	682341	4	136	.522	.213	.154	.103	.522	.007	.248	126	059	112	.248	-0.633	0.192	2.8	1.2	2.2	1.3	A+	
2480	681620	4	136	.493	.110	.493	.118	.272	.007	.245	139	.245	192	.000	-0.486	0.191	2.9	1.2	2.9	1.4	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2481	683898	4	136	.860	.029	.860	.059	.044	.007	.383	224	.383	335	.004	-2.726	0.265	-0.2	1.0	-0.1	0.9	A+	
2482	682321	4	136	.596	.066	.596	.257	.074	.007	.356	245	.356	134	148	-1.005	0.195	1.2	1.1	2.3	1.3	A-	
2483	680967	4	136	.846	.029	.846	.044	.074	.007	.420	260	.420	195	194	-2.590	0.255	-0.5	0.9	-0.5	0.8	A+	
2484	684159	4	136	.919	.044	.022	.919	.007	.007	.404	328	142	.404	058	-3.416	0.330	-0.6	0.8	-0.7	0.6	A-	1
2485	682350	4	136	.404	.404	.206	.213	.169	.007	.453	.453	119	167	237	-0.041	0.195	-0.3	1.0	-0.7	0.9	A-	
2486	680974	4	136	.596	.162	.596	.118	.118	.007	.539	331	.539	169	221	-1.005	0.195	-1.4	0.9	-1.2	0.9	A-	
2487	681665	4	136	.544	.132	.110	.206	.544	.007	.551	243	235	250	.551	-0.743	0.192	-1.7	0.9	-1.5	8.0	A-	1
2488	682333	4	136	.507	.029	.507	.404	.051	.007	.547	269	.547	322	238	-0.560	0.191	-1.7	0.9	-1.8	0.8	A-	
2489	680985	4	136	.662	.662	.118	.147	.066	.007	.590	.590	164	470	172	-1.356	0.201	-2.0	0.8	-1.7	8.0	A-	
2490	683903	4	136	.368	.140	.279	.206	.368	.007	.468	156	322	026	.468	0.151	0.198	-0.7	0.9	-0.6	0.9	A-	1
2491	682325	4	136	.463	.110	.184	.235	.463	.007	.419	294	094	149	.419	-0.339	0.192	0.2	1.0	0.1	1.0	A-	1
2492	682339	4	136	.831	.051	.831	.059	.051	.007	.565	300	.565	277	286	-2.464	0.247	-1.5	0.8	-1.7	0.6	A+	1
2493	684173	4	136	.772	.772	.088	.066	.059	.015	.515	.515	213	331	212	-2.024	0.224	-1.2	0.9	-0.9	8.0	B-	1
2494	683246	4	138	.420	.152	.420	.333	.094	.000	.259	245	.259	.037	197	-0.120	0.189	2.0	1.2	1.4	1.2	A-	1
2495	680941	4	138	1.000	.000	1.00	.000	.000	.000	1.000	.000	1.000	.000	.000	-7.111	1.835	0.0	1.0	0.0	1.0	A-	
2496	681648	4	138	.935	.935	.036	.014	.014	.000	.253	.253	311	094	.058	-3.562	0.357	-0.1	1.0	0.0	0.9	A+	1
2497	685340	4	138	.609	.609	.029	.181	.181	.000	.413	.413	231	164	259	-1.038	0.191	0.0	1.0	-0.4	1.0	A-	1
2498	680950	4	138	.732	.181	.014	.732	.072	.000	.303	183	140	.303	182	-1.706	0.208	0.7	1.1	1.0	1.2	A+	1
2499	681630	4	138	.732	.036	.087	.732	.138	.007	.488	165	336	.488	228	-1.706	0.208	-1.0	0.9	-1.2	8.0	A+	1
2500	684168	4	138	.333	.304	.333	.152	.203	.007	.122	.095	.122	083	147	0.325	0.197	2.8	1.3	3.0	1.4	A-	1
2501	680959	4	138	.652	.652	.130	.123	.094	.000	.406	.406	187	255	160	-1.262	0.195	0.1	1.0	-0.4	1.0	B-	1
2502	681666	4	138	.319	.043	.043	.319	.594	.000	.319	228	219	.319	117	0.403	0.199	0.6	1.1	0.6	1.1	A-	
2503	682322	4	138	.623	.094	.623	.101	.174	.007	.464	185	.464	170	289	-1.112	0.192	-0.7	1.0	-1.0	0.9	A-	1
2504	680988	4	138	.493	.159	.493	.232	.101	.014	.307	144	.307	086	140	-0.472	0.187	1.4	1.1	1.9	1.2	B+	
2505	683261	4	138	.833	.058	.094	.833	.014	.000	.524	355	334	.524	124	-2.404	0.243	-1.1	0.8	-1.6	0.6	B+	1
2506	682351	4	138	.355	.196	.355	.290	.159	.000	.394	037	.394	155	283	0.210	0.194	-0.1	1.0	0.4	1.0	A+	
2507	684172	4	138	.949	.036	.007	.949	.007	.000	.349	330	120	.349	056	-3.846	0.400	-0.2	0.9	-1.1	0.5	A-	1
2508	683899	4	138	.710	.710	.101	.152	.036	.000	.463	.463	327	270	077	-1.579	0.204	-0.7	0.9	-1.1	0.8	B-	1
2509	682335	4	138	.341	.312	.341	.145	.196	.007	.261	096	.261	108	105	0.286	0.196	1.3	1.1	1.4	1.2	A-	
2510	680986	4	138	.413	.413	.051	.370	.159	.007	.303	.303	258	039	209	-0.084	0.189	1.3	1.1	1.0	1.1	A+	
2511	683904	4	138	.935	.014	.935	.022	.022	.007	.385	200	.385	196	321	-3.562	0.357	-0.5	0.9	-0.9	0.6	A+	
2512	682326	4	138	.384	.297	.145	.384	.167	.007	.345	168	201	.345	023	0.061	0.191	0.7	1.1	1.3	1.2	A+	
2513	682340	4	138	.529	.167	.188	.529	.101	.014	.548	101	420	.548	134	-0.647	0.187	-2.1	0.9	-2.2	0.8	A-	
2514	683883	4	138	.775	.036	.775	.080	.109	.000	.390	147	.390	229	236	-2.160	0.220	0.1	1.0	-0.7	0.8	A+	
2515	683247	4	138	.283	.094	.370	.283	.254	.000	.147	124	.105	.147	185	0.466	0.207	1.9	1.2	3.1	1.6	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2516	681613	4	138	.406	.101	.384	.109	.406	.000	.466	087	265	236	.466	-0.200	0.192	-0.8	0.9	-0.2	1.0	A+	
2517	682308	4	138	.659	.203	.659	.065	.072	.000	.584	406	.584	232	218	-1.473	0.197	-2.3	0.8	-1.8	0.8	B+	
2518	681658	4	138	.848	.848	.087	.043	.022	.000	.420	.420	245	245	218	-2.710	0.252	-0.6	0.9	-0.7	0.8	A-	
2519	680951	4	138	.732	.022	.732	.072	.167	.007	.432	134	.432	212	278	-1.884	0.209	-0.2	1.0	-0.7	0.9	B-	
2520	684169	4	138	.362	.362	.290	.152	.188	.007	.261	.261	012	364	.062	0.024	0.195	1.9	1.2	1.7	1.2	B-	
2521	683262	4	138	.268	.268	.130	.225	.362	.014	.198	.198	294	199	.254	0.553	0.210	1.7	1.2	1.9	1.3	A-	
2522	680960	4	138	.500	.138	.500	.246	.101	.014	.492	192	.492	164	270	-0.667	0.189	-1.0	0.9	-0.9	0.9	A+	
2523	685345	4	138	.638	.638	.101	.109	.138	.014	.441	.441	037	221	303	-1.357	0.195	-0.3	1.0	-0.3	1.0	A+	
2524	681635	4	138	.623	.623	.246	.072	.043	.014	.480	.480	256	171	245	-1.282	0.194	-0.9	0.9	-0.4	0.9	A+	
2525	680968	4	138	.580	.580	.210	.123	.072	.014	.485	.485	316	093	200	-1.061	0.191	-0.8	0.9	-1.0	0.9	A-	
2526	683238	4	138	.420	.399	.080	.087	.420	.014	.314	.059	263	300	.314	-0.273	0.191	1.6	1.1	1.1	1.1	A-	
2527	682353	4	138	.674	.123	.145	.674	.043	.014	.522	159	330	.522	237	-1.551	0.199	-1.5	0.9	-1.1	8.0	A-	
2528	681604	4	138	.775	.036	.087	.775	.087	.014	.530	213	365	.530	180	-2.160	0.220	-1.4	0.9	-1.5	0.7	A-	
2529	683900	4	138	.710	.138	.080	.710	.058	.014	.570	268	274	.570	274	-1.755	0.205	-2.0	8.0	-1.9	0.7	A+	
2530	681673	4	138	.587	.587	.109	.239	.051	.014	.310	.310	206	001	273	-1.097	0.191	1.5	1.1	1.3	1.2	A+	
2531	680987	4	138	.428	.217	.196	.428	.145	.014	.395	.054	463	.395	016	-0.309	0.190	0.6	1.0	1.0	1.1	A-	
2532	683250	4	138	.203	.203	.188	.377	.217	.014	.040	.040	150	.131	.016	0.985	0.230	1.9	1.3	3.1	1.9	A-	
2533	682327	4	138	.529	.181	.123	.529	.145	.022	.489	202	229	.489	138	-0.809	0.189	-0.9	0.9	-0.8	0.9	A+	
2534	682328	4	133	.511	.263	.150	.075	.511	.000	.381	170	309	020	.381	-0.664	0.189	0.3	1.0	-0.1	1.0	A+	
2535	683248	4	133	.353	.256	.233	.158	.353	.000	.381	235	050	161	.381	0.109	0.198	-0.1	1.0	0.1	1.0	A+	
2536	683239	4	133	.218	.714	.038	.218	.030	.000	.114	023	.059	.114	281	0.908	0.228	1.5	1.2	2.6	1.6	A+	
2537	683244	4	133	.820	.820	.045	.053	.083	.000	.311	.311	177	223	120	-2.369	0.239	0.1	1.0	-0.1	1.0	B+	
2538	682310	4	133	.880	.008	.083	.880	.030	.000	.214	064	153	.214	129	-2.899	0.279	0.0	1.0	1.4	1.5	A-	
2539	681659	4	133	.932	.932	.023	.030	.008	.008	.323	.323	161	237	192	-3.584	0.356	-0.1	1.0	-0.8	0.6	A-	
2540	681617	4	133	.549	.060	.083	.308	.549	.000	.442	046	106	390	.442	-0.843	0.190	-0.7	1.0	-0.8	0.9	A-	
2541	682316	4	133	.617	.098	.165	.120	.617	.000	.658	297	396	260	.658	-1.172	0.193	-3.9	0.7	-3.4	0.7	A+	
2542	684175	4	133	.541	.150	.135	.541	.173	.000	.560	262	182	.560	326	-0.807	0.189	-2.6	0.8	-2.4	0.8	A-	
2543	680961	4	133	.594	.068	.233	.105	.594	.000	.377	051	330	107	.377	-1.061	0.192	0.2	1.0	0.0	1.0	A+	
2544	685346	4	133	.451	.218	.451	.083	.248	.000	.337	226	.337	214	036	-0.377	0.190	1.0	1.1	0.5	1.1	A-	
2545	681637	4	133	.977	.977	.008	.008	.008	.000	.273	.273	149	085	235	-4.780	0.592	0.0	0.9	-0.8	0.4	A-	
2546	684163	4	133	.233	.233	.271	.188	.308	.000	.111	.111	.015	083	046	0.806	0.223	1.7	1.2	3.5	1.8	A-	
2547	683251	4	133	.609	.045	.609	.143	.203	.000	.402	186	.402	262	163	-1.135	0.193	-0.1	1.0	-0.6	0.9	A+	
2548	681669	4	133	.774	.060	.068	.774	.098	.000	.431	131	374	.431	185	-2.052	0.222	-0.7	0.9	-0.8	0.8	A+	
2549	680980	4	133	.421	.421	.226	.135	.218	.000	.243	.243	131	074	097	-0.231	0.192	2.1	1.2	1.7	1.2	A-	
2550	685324	4	133	.790	.789	.068	.068	.068	.008	.361	.361	183	161	220	-2.152	0.227	0.1	1.0	-0.7	0.9	B-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	ıc	FT	N	DV/ol	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
2551	681674	4	133	.707	.173	.075	.707	.045	.000	.391	218	237	.391	159	-1.645	0.205	-0.3	1.0	0.6	1.1	A-	
2552	681610	4	133	.759	.068	.759	.068	.105	.000	.560	381	.560	278	240	-1.956	0.217	-2.0	0.8	-1.8	0.7	A-	
2553	683256	4	133	.481	.481	.128	.256	.135	.000	.244	.244	126	146	047	-0.521	0.189	2.0	1.1	2.2	1.2	A-	
2554	683249	4	127	.291	.197	.291	.039	.472	.000	.118	203	.118	116	.100	0.302	0.207	1.5	1.1	2.5	1.4	A-	
2555	682329	4	127	.638	.047	.197	.638	.110	.008	.493	177	385	.493	093	-1.346	0.196	-1.7	0.9	-1.8	8.0	A+	
2556	683240	4	127	.260	.173	.039	.260	.512	.016	.226	083	072	.226	052	0.479	0.213	0.6	1.1	0.8	1.1	B-	
2557	684176	4	127	.669	.669	.039	.126	.157	.008	.254	.254	127	038	230	-1.503	0.200	0.7	1.1	0.9	1.1	A+	
2558	680942	4	127	.701	.071	.118	.102	.701	.008	.494	332	144	256	.494	-1.666	0.205	-1.5	0.9	-1.7	0.8	A+	
2559	681649	4	127	.669	.157	.669	.126	.039	.008	.402	288	.402	115	149	-1.503	0.200	-0.7	1.0	-0.8	0.9	A-	
2560	681660	4	127	.795	.795	.094	.016	.087	.008	.264	.264	076	038	222	-2.227	0.231	0.2	1.0	0.1	1.0	A+	
2561	681618	4	127	.614	.165	.110	.102	.614	.008	.441	209	053	340	.441	-1.232	0.194	-1.1	0.9	-1.3	0.9	A-	
2562	682317	4	127	.236	.677	.031	.236	.055	.000	.156	072	043	.156	110	0.620	0.220	0.8	1.1	1.9	1.3	A+	
2563	683252	4	127	.409	.205	.197	.181	.409	.008	.166	096	.031	099	.166	-0.288	0.192	2.0	1.1	1.9	1.2	A+	
2564	680962	4	127	.244	.244	.173	.323	.252	.008	.489	.489	380	.013	127	0.572	0.218	-1.5	0.8	-1.5	8.0	A-	
2565	685347	4	127	.252	.228	.291	.213	.252	.016	.312	.047	255	038	.312	0.525	0.215	-0.2	1.0	0.2	1.0	A+	
2566	681638	4	127	.803	.803	.008	.118	.063	.008	.369	.369	195	137	279	-2.280	0.234	-0.4	0.9	-0.6	0.9	A+	
2567	681623	4	127	.457	.087	.165	.457	.283	.008	.309	259	221	.309	.040	-0.506	0.190	0.5	1.0	0.3	1.0	A-	
2568	684166	4	127	.756	.205	.756	.016	.016	.008	.153	070	.153	072	089	-1.977	0.218	1.0	1.1	1.3	1.2	B+	
2569	681643	4	127	.409	.409	.157	.228	.197	.008	.291	.291	085	180	049	-0.288	0.192	0.6	1.0	0.9	1.1	A+	
2570	680981	4	127	.449	.449	.055	.323	.165	.008	.178	.178	222	.058	129	-0.470	0.190	2.2	1.1	1.7	1.1	A+	
2571	685325	4	127	.465	.110	.110	.307	.465	.008	.368	154	357	013	.368	-0.542	0.190	-0.3	1.0	-0.2	1.0	B-	
2572	682336	4	127	.213	.126	.213	.220	.433	.008	.076	237	.076	115	.227	0.771	0.228	1.4	1.2	1.4	1.3	A-	
2573	681611	4	127	.630	.283	.630	.039	.039	.008	.434	290	.434	214	105	-1.307	0.195	-1.1	0.9	-1.0	0.9	A-	
2574	680975	4	132	.636	.091	.053	.220	.636	.000	.328	261	220	081	.328	-1.447	0.194	0.3	1.0	0.2	1.0	A+	
2575	682343	4	132	.849	.068	.038	.848	.045	.000	.472	338	222	.472	200	-2.754	0.254	-0.9	0.9	-1.6	0.6	A+	
2576	682315	4	132	.811	.121	.015	.053	.811	.000	.303	292	142	027	.303	-2.458	0.234	0.0	1.0	-0.2	0.9	A-	
2577	683265	4	132	.356	.091	.356	.106	.439	.008	.299	067	.299	260	081	-0.117	0.195	0.5	1.0	1.1	1.1	A+	
2578	684178	4	132	.636	.121	.121	.636	.106	.015	.311	147	128	.311	173	-1.447	0.194	0.6	1.0	0.3	1.0	A+	
2579	680943	4	132	.788	.136	.045	.788	.030	.000	.387	304	161	.387	118	-2.300	0.225	-0.6	0.9	-0.6	0.9	A-	
2580	681650	4	132	.447	.348	.091	.114	.447	.000	.253	139	110	088	.253	-0.555	0.188	1.3	1.1	2.7	1.3	A-	
2581	681662	4	132	.864	.030	.864	.030	.076	.000	.340	094	.340	226	234	-2.888	0.264	-0.4	0.9	-0.3	0.9	A-	
2582	680953	4	132	.492	.492	.250	.144	.114	.000	.536	.536	286	243	185	-0.766	0.187	-2.5	0.9	-2.3	0.8	B+	
2583	682318	4	132	.349	.182	.288	.348	.182	.000	.125	025	066	.125	052	-0.079	0.196	2.4	1.2	2.1	1.3	A+	
2584	684179	4	132	.470	.333	.068	.470	.129	.000	.463	288	133	.463	184	-0.661	0.188	-1.3	0.9	-1.4	0.9	A-	
2585	680964	4	132	.462	.462	.227	.152	.159	.000	.321	.321	128	253	043	-0.626	0.188	0.7	1.0	0.4	1.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2586	685348	4	132	.099	.326	.098	.424	.152	.000	.131	026	.131	.117	236	1.689	0.303	0.5	1.1	0.9	1.3	Α-	
2587	682324	4	132	.796	.795	.083	.083	.038	.000	.373	.373	117	282	211	-2.351	0.228	-0.3	1.0	-0.6	0.9	A+	
2588	681624	4	132	.530	.530	.326	.114	.030	.000	.473	.473	216	270	287	-0.942	0.188	-1.5	0.9	-1.6	0.9	B+	
2589	683259	4	132	.242	.220	.205	.326	.242	.008	.037	041	178	.163	.037	0.505	0.216	1.7	1.2	3.6	1.7	A-	
2590	681644	4	132	.962	.023	.962	.000	.008	.008	.189	084	.189	.000	231	-4.359	0.463	0.0	1.0	0.0	0.9	A-	
2591	680982	4	132	.333	.144	.333	.333	.182	.008	.247	113	.247	.010	202	-0.002	0.198	1.0	1.1	1.0	1.1	A+	
2592	683901	4	132	.856	.038	.008	.091	.856	.008	.355	319	.055	225	.355	-2.820	0.259	-0.3	0.9	-0.7	0.8	A+	
2593	682337	4	132	.296	.098	.174	.424	.295	.008	.284	160	.049	197	.284	0.199	0.204	0.5	1.1	1.6	1.2	A-	
2594	681654	4	138	.188	.283	.065	.464	.188	.000	.172	.058	108	133	.172	0.771	0.229	0.7	1.1	1.3	1.3	A+	Į.
2595	680976	4	138	.362	.304	.152	.362	.181	.000	.450	129	154	.450	265	-0.239	0.189	-1.1	0.9	-1.1	0.9	A+	Į.
2596	682345	4	138	.188	.188	.109	.507	.196	.000	022	022	043	.052	011	0.771	0.229	1.6	1.2	2.8	1.7	A-	
2597	684170	4	138	.275	.203	.283	.239	.275	.000	.303	112	127	077	.303	0.219	0.203	0.3	1.0	0.1	1.0	B-	Į.
2598	680983	4	138	.601	.601	.116	.167	.116	.000	.434	.434	271	150	218	-1.360	0.186	-0.9	0.9	-1.2	0.9	A-	Į.
2599	684160	4	138	.420	.152	.304	.123	.420	.000	.303	148	187	031	.303	-0.518	0.185	0.8	1.1	0.6	1.1	A+	
2600	680945	4	138	.428	.101	.355	.428	.116	.000	.479	160	348	.479	070	-0.552	0.184	-1.6	0.9	-1.6	0.9	A-	Į.
2601	681670	4	138	.565	.159	.565	.159	.116	.000	.323	237	.323	134	076	-1.190	0.184	0.5	1.0	0.5	1.0	A-	
2602	685341	4	138	.659	.080	.159	.659	.101	.000	.494	283	372	.494	072	-1.645	0.192	-1.7	0.9	-1.8	0.8	A+	Į.
2603	680955	4	138	.587	.087	.101	.225	.587	.000	.217	196	147	018	.217	-1.292	0.185	1.7	1.1	1.7	1.2	A-	į
2604	681633	4	138	.326	.036	.326	.188	.449	.000	.330	136	.330	129	159	-0.055	0.194	0.1	1.0	0.3	1.0	A+	
2605	684164	4	138	.594	.029	.594	.239	.138	.000	.381	132	.381	263	153	-1.326	0.186	-0.3	1.0	-0.5	1.0	C-	į
2606	680965	4	138	.362	.246	.297	.094	.362	.000	.474	312	094	174	.474	-0.239	0.189	-1.5	0.9	-1.3	0.9	A+	Į.
2607	681667	4	138	.196	.486	.203	.196	.116	.000	.147	.022	160	.147	017	0.720	0.226	0.7	1.1	1.5	1.3	A+	
2608	682348	4	138	.384	.101	.449	.384	.058	.007	.379	172	254	.379	.005	-0.345	0.187	-0.3	1.0	0.0	1.0	B+	
2609	681625	4	138	.855	.022	.087	.036	.855	.000	.395	286	202	217	.395	-2.886	0.253	-0.7	0.9	-1.1	0.7	A+	
2610	684180	4	138	.130	.420	.130	.210	.239	.000	006	.230	006	.044	303	1.250	0.263	1.0	1.2	2.7	1.9	A-	1
2611	681651	4	138	.754	.087	.058	.754	.101	.000	.347	229	165	.347	153	-2.161	0.209	-0.2	1.0	-0.2	1.0	A+	1
2612	684496	4	138	.377	.152	.181	.283	.377	.007	.481	196	260	123	.481	-0.310	0.188	-1.6	0.9	-1.3	0.9	B-	1
2613	683902	4	138	.906	.022	.029	.906	.043	.000	.316	208	087	.316	233	-3.413	0.301	-0.2	1.0	-0.7	8.0	A+	1
2614	685342	4	141	.759	.106	.092	.043	.759	.000	.397	268	161	203	.397	-1.843	0.211	-0.3	1.0	-0.6	0.9	A+	1
2615	681655	4	141	.475	.475	.121	.199	.206	.000	.278	.278	300	026	076	-0.382	0.184	1.7	1.1	1.9	1.2	A+	
2616	680977	4	141	.695	.121	.113	.695	.071	.000	.390	291	087	.390	223	-1.472	0.197	-0.1	1.0	-0.1	1.0	A+	
2617	684181	4	141	.709	.099	.064	.709	.128	.000	.457	245	176	.457	273	-1.550	0.200	-0.7	0.9	-1.3	0.8	A-	
2618	680948	4	141	.794	.106	.035	.794	.064	.000	.338	226	293	.338	052	-2.075	0.222	-0.1	1.0	2.1	1.5	A+	
2619	684161	4	141	.497	.128	.496	.121	.248	.007	.335	110	.335	133	211	-0.484	0.184	1.0	1.1	0.3	1.0	A-	
2620	684165	4	141	.723	.099	.092	.723	.085	.000	.390	315	144	.390	139	-1.631	0.202	-0.1	1.0	-0.8	0.9	A-	1

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2621	680946	4	141	.497	.128	.496	.355	.021	.000	.348	013	.348	343	037	-0.484	0.184	0.8	1.1	0.6	1.1	A+	
2622	682311	4	141	.624	.128	.177	.071	.624	.000	.270	028	139	266	.270	-1.101	0.189	1.5	1.1	1.4	1.2	A+	
2623	685306	4	141	.731	.730	.064	.064	.142	.000	.423	.423	242	229	208	-1.672	0.204	-0.5	1.0	-1.0	0.8	A-	
2624	680956	4	141	.404	.199	.184	.213	.404	.000	.468	118	202	255	.468	-0.039	0.187	-1.0	0.9	-1.2	0.9	A+	
2625	681634	4	141	.766	.092	.064	.766	.078	.000	.421	277	196	.421	188	-1.888	0.213	-0.4	1.0	-1.2	0.8	A+	
2626	682346	4	141	.411	.092	.213	.284	.411	.000	.439	177	286	105	.439	-0.074	0.187	-0.6	1.0	-0.4	1.0	A-	
2627	681621	4	141	.312	.092	.227	.312	.369	.000	.306	238	013	.306	139	0.439	0.197	0.8	1.1	1.0	1.1	A+	
2628	685349	4	141	.567	.071	.121	.241	.567	.000	.313	.127	389	143	.313	-0.823	0.185	1.2	1.1	1.4	1.1	A-	
2629	682349	4	141	.489	.227	.057	.489	.227	.000	.324	297	001	.324	090	-0.450	0.184	0.8	1.1	1.0	1.1	A+	Į.
2630	680971	4	141	.631	.113	.248	.007	.631	.000	.289	254	114	110	.289	-1.137	0.189	1.2	1.1	1.2	1.1	A+	Į.
2631	683260	4	141	.355	.440	.099	.355	.106	.000	.411	118	202	.411	252	0.212	0.192	-0.3	1.0	-0.4	1.0	A+	
2632	682354	4	141	.546	.170	.121	.163	.546	.000	.338	.024	296	220	.338	-0.720	0.184	0.9	1.1	1.2	1.1	A+	Į.
2633	681605	4	141	.447	.170	.199	.184	.447	.000	.460	202	372	012	.460	-0.246	0.185	-0.9	0.9	-1.1	0.9	A+	Į.
2634	680978	4	140	.600	.600	.043	.171	.186	.000	.178	.178	128	.049	205	-1.185	0.187	2.6	1.2	2.3	1.3	A-	
2635	685307	4	140	.914	.043	.014	.914	.029	.000	.314	208	159	.314	162	-3.409	0.313	-0.2	0.9	-0.6	0.8	A-	
2636	681639	4	140	.643	.121	.121	.643	.114	.000	.507	191	251	.507	310	-1.399	0.191	-1.5	0.9	-1.5	8.0	A-	1
2637	681606	4	140	.936	.936	.036	.014	.014	.000	.342	.342	220	129	235	-3.741	0.354	-0.3	0.9	-0.8	0.6	A-	1
2638	683234	4	140	.364	.207	.150	.364	.279	.000	.318	184	089	.318	104	-0.052	0.190	0.5	1.0	1.5	1.2	B+	1
2639	681626	4	140	.929	.929	.029	.021	.021	.000	.394	.394	226	189	251	-3.621	0.338	-0.4	0.9	-1.3	0.5	A+	1
2640	684162	4	140	.329	.186	.329	.150	.329	.007	.168	094	.168	018	050	0.133	0.194	2.0	1.2	2.5	1.3	A+	1
2641	683253	4	140	.643	.250	.064	.043	.643	.000	.349	158	174	279	.349	-1.399	0.191	0.4	1.0	0.4	1.1	B-	
2642	681615	4	140	.921	.921	.043	.021	.014	.000	.382	.382	288	127	219	-3.511	0.325	-0.3	0.9	-1.2	0.5	A+	1
2643	682312	4	140	.879	.879	.064	.043	.007	.007	.372	.372	269	208	016	-2.987	0.271	-0.4	0.9	-0.6	8.0	A-	1
2644	685344	4	140	.393	.107	.457	.393	.036	.007	.243	164	031	.243	220	-0.194	0.188	2.0	1.1	1.1	1.1	A-	1
2645	680957	4	140	.400	.271	.200	.400	.107	.021	.332	118	076	.332	175	-0.229	0.187	0.5	1.0	1.0	1.1	A-	
2646	682319	4	140	.771	.771	.064	.036	.121	.007	.393	.393	210	249	169	-2.129	0.215	-0.5	0.9	-0.1	1.0	A-	
2647	683257	4	140	.386	.236	.386	.250	.121	.007	.413	311	.413	058	097	-0.159	0.188	-0.6	1.0	-0.3	1.0	A-	
2648	681622	4	140	.479	.314	.479	.029	.171	.007	.425	227	.425	183	171	-0.605	0.184	-0.5	1.0	-0.9	0.9	A+	
2649	685350	4	140	.379	.400	.107	.107	.379	.007	.369	105	082	291	.369	-0.123	0.189	0.1	1.0	0.0	1.0	A+	
2650	681656	4	140	.471	.064	.207	.243	.471	.014	.306	130	184	077	.306	-0.572	0.184	1.2	1.1	1.0	1.1	A+	
2651	682865	4	140	.729	.114	.107	.729	.043	.007	.421	271	239	.421	075	-1.865	0.204	-0.5	1.0	-0.7	0.9	A+	
2652	684182	4	140	.450	.229	.221	.450	.093	.007	.344	397	.035	.344	023	-0.470	0.184	0.6	1.0	0.9	1.1	A+	
2653	682355	4	140	.607	.164	.143	.607	.079	.007	.493	325	117	.493	248	-1.220	0.188	-1.5	0.9	-1.1	0.9	C+	
2654	681672	4	139	.554	.022	.554	.259	.165	.000	.148	073	.148	093	059	-0.865	0.184	3.1	1.2	2.6	1.2	A-	
2655	680979	4	139	.324	.324	.165	.230	.281	.000	.339	.339	245	015	136	0.239	0.194	-0.1	1.0	0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2656	685308	4	139	.532	.532	.151	.288	.029	.000	.454	.454	409	141	098	-0.764	0.184	-1.1	0.9	-1.0	0.9	Α-	
2657	682338	4	139	.655	.655	.201	.108	.036	.000	.406	.406	331	187	013	-1.359	0.193	-0.3	1.0	-0.6	0.9	B+	i I
2658	681607	4	139	.878	.022	.072	.022	.878	.007	.368	299	222	085	.368	-2.874	0.272	-0.3	0.9	-0.4	0.9	A-	1
2659	683237	4	139	.453	.453	.072	.129	.345	.000	.049	.049	.108	298	.101	-0.394	0.184	4.2	1.3	4.1	1.4	A+	1
2660	683242	4	139	.791	.029	.108	.072	.791	.000	.526	186	462	152	.526	-2.159	0.223	-1.4	8.0	-1.4	0.8	A-	
2661	680969	4	139	.619	.266	.619	.043	.065	.007	.200	165	.200	.008	090	-1.178	0.189	2.1	1.2	2.0	1.2	A+	1
2662	683254	4	139	.554	.554	.129	.036	.281	.000	.375	.375	351	268	042	-0.865	0.184	0.1	1.0	-0.1	1.0	A-	1
2663	681616	4	139	.453	.036	.496	.453	.014	.000	.424	233	368	.424	.138	-0.394	0.184	-0.8	1.0	-0.8	0.9	A+	1
2664	682313	4	139	.626	.626	.151	.165	.058	.000	.413	.413	258	192	155	-1.213	0.189	-0.3	1.0	-0.6	0.9	A+	1
2665	681663	4	139	.727	.727	.058	.201	.014	.000	.316	.316	267	159	124	-1.751	0.205	0.3	1.0	0.8	1.1	A-	1
2666	681619	4	139	.432	.338	.108	.432	.122	.000	.312	122	293	.312	017	-0.292	0.184	0.6	1.0	0.6	1.1	A+	1
2667	683882	4	275	.622	.622	.156	.091	.127	.004	.470	.470	197	395	128	-1.129	0.136	-1.2	0.9	-0.8	0.9	A+	1
2668	683258	4	275	.556	.204	.556	.145	.091	.004	.464	224	.464	235	208	-0.803	0.133	-1.2	1.0	-1.5	0.9	A-	1
2669	680966	4	275	.615	.113	.098	.175	.615	.000	.187	180	203	.069	.187	-1.092	0.136	3.9	1.2	4.5	1.4	B-	1
2670	683897	4	275	.753	.753	.033	.055	.153	.007	.458	.458	294	349	169	-1.862	0.152	-1.0	0.9	-1.0	0.9	A+	1
2671	681642	4	275	.589	.095	.589	.131	.178	.007	.460	279	.460	087	280	-0.964	0.134	-1.0	1.0	-1.1	0.9	A-	1
2672	680973	4	275	.651	.171	.651	.076	.102	.000	.343	049	.343	253	259	-1.280	0.138	1.0	1.1	0.9	1.1	A+	1
2673	684183	4	275	.426	.287	.204	.084	.425	.000	.259	018	180	171	.259	-0.168	0.134	2.7	1.1	2.4	1.2	A+	1
2674	683255	4	136	.427	.426	.103	.265	.199	.007	.353	.353	136	132	172	-0.070	0.194	1.2	1.1	1.8	1.2	A-	1
2675	682332	4	136	.544	.147	.544	.066	.243	.000	.444	320	.444	114	185	-0.661	0.192	0.0	1.0	0.7	1.1	A-	1
2676	681612	4	136	.265	.265	.088	.353	.294	.000	.178	.178	317	046	.073	0.837	0.217	1.6	1.2	2.4	1.5	A+	1
2677	685309	4	136	.368	.162	.162	.368	.309	.000	.411	151	229	.411	125	0.238	0.199	0.0	1.0	1.4	1.2	A+	1
2678	682356	4	136	.691	.059	.051	.691	.199	.000	.311	157	396	.311	048	-1.438	0.205	1.2	1.1	2.3	1.4	A-	1
2679	681608	4	136	.552	.257	.147	.044	.551	.000	.446	190	278	197	.446	-0.698	0.192	0.0	1.0	-0.6	0.9	A-	1
2680	682347	4	136	.765	.125	.051	.059	.765	.000	.479	370	165	189	.479	-1.891	0.222	-0.5	0.9	-1.0	0.8	A+	1
2681	681646	4	136	.566	.566	.243	.103	.088	.000	.470	.470	178	309	222	-0.772	0.193	-0.4	1.0	-0.9	0.9	A-	1
2682	681614	4	136	.765	.088	.081	.765	.066	.000	.423	137	312	.423	223	-1.891	0.222	-0.1	1.0	-0.4	0.9	A-	
2683	683266	4	136	.691	.088	.088	.132	.691	.000	.467	285	179	247	.467	-1.438	0.205	-0.5	1.0	-0.5	0.9	A+	1
2684	680947	4	136	.860	.066	.044	.029	.860	.000	.612	320	431	260	.612	-2.644	0.266	-1.9	0.7	-1.8	0.5	A+	1
2685	682314	4	136	.779	.059	.779	.029	.132	.000	.481	234	.481	287	283	-1.991	0.226	-0.6	0.9	-1.0	0.8	A-	ш
2686	681664	4	136	.427	.426	.015	.176	.382	.000	.426	.426	120	074	346	-0.070	0.194	-0.2	1.0	0.1	1.0	A-	
2687	683818	5	91	.396	.209	.396	.330	.066	.000	.052	.003	.052	012	085	-0.444	0.232	2.8	1.3	2.8	1.4	A-	ш
2688	683819	5	87	.529	.138	.218	.529	.115	.000	.311	089	136	.311	215	-1.084	0.231	-0.1	1.0	-0.1	1.0	B+	
2689	683820	5	83	.651	.181	.072	.651	.096	.000	.584	418	371	.584	072	-1.731	0.249	-2.4	0.8	-2.1	0.7	A-	
2690	683821	5	89	.303	.247	.202	.247	.303	.000	.209	.077	318	003	.209	-0.006	0.248	1.0	1.1	1.3	1.2	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2691	683822	5	88	.705	.125	.125	.705	.045	.000	.394	217	248	.394	124	-2.140	0.256	-0.3	1.0	0.1	1.0	A-	
2692	683823	5	95	.632	.632	.137	.095	.137	.000	.441	.441	168	347	156	-1.649	0.230	-0.9	0.9	-1.0	0.9	A+	
2693	683824	5	96	.531	.073	.208	.531	.188	.000	.096	240	.134	.096	102	-1.231	0.226	3.2	1.3	2.9	1.4	A-	
2694	683825	5	95	.295	.200	.189	.316	.295	.000	.194	160	158	.081	.194	0.138	0.241	0.7	1.1	1.2	1.2	A-	i l
2695	683826	5	83	.313	.313	.313	.265	.108	.000	076	076	.108	077	.062	-0.065	0.253	2.5	1.3	3.3	1.6	A-	
2696	683827	5	75	.520	.120	.093	.520	.267	.000	.287	229	297	.287	.039	-0.872	0.252	0.8	1.1	0.7	1.1		
2697	683828	5	92	.511	.174	.141	.511	.174	.000	.494	149	352	.494	179	-0.877	0.231	-1.2	0.9	-1.0	0.9	A-	1
2698	683829	5	94	.479	.479	.191	.170	.160	.000	.158	.158	040	166	002	-0.695	0.222	1.8	1.1	2.0	1.2	B-	1
2699	683830	5	96	.385	.250	.135	.385	.229	.000	.305	184	179	.305	018	-0.299	0.225	0.1	1.0	0.5	1.1	A+	1
2700	683831	5	91	.275	.451	.154	.121	.275	.000	.269	006	075	277	.269	0.264	0.253	0.2	1.0	0.8	1.2	A-	1
2701	683832	5	113	.460	.080	.097	.363	.460	.000	.158	210	192	.073	.158	-0.669	0.204	1.9	1.1	2.0	1.2	A+	<u> </u>
2702	683833	5	78	.526	.103	.526	.333	.038	.000	.209	217	.209	038	106	-1.183	0.248	1.7	1.2	1.3	1.2	B-	
2703	683834	5	85	.612	.612	.106	.094	.188	.000	.450	.450	368	280	062	-1.314	0.243	-0.8	0.9	-1.1	0.9	A+	1
2704	683835	5	60	.550	.083	.200	.167	.550	.000	.592	193	303	322	.592	-1.040	0.279	-2.4	0.8	-2.4	0.7	A+	<u> </u>
2705	683836	5	80	.400	.325	.213	.400	.063	.000	.442	105	298	.442	189	-0.530	0.244	-1.8	0.9	-0.8	0.9	A-	
2706	683837	5	95	.421	.147	.421	.284	.147	.000	.407	168	.407	159	196	-0.610	0.228	-0.8	0.9	0.4	1.0	A+	<u>. </u>
2707	683838	5	82	.732	.134	.732	.085	.049	.000	.209	093	.209	171	062	-2.017	0.269	1.0	1.1	0.9	1.2	A-	<u>. </u>
2708	683839	5	83	.265	.265	.265	.217	.253	.000	.080	.080	337	.033	.229	0.394	0.270	1.7	1.2	2.4	1.6	A-	
2709	683840	5	106	.274	.274	.198	.189	.340	.000	165	165	099	.071	.180	0.200	0.233	3.2	1.4	3.9	1.8	B-	
2710	683841	5	78	.359	.231	.269	.141	.359	.000	.281	.013	208	138	.281	-0.354	0.253	0.1	1.0	0.4	1.1	B+	
2711	683866	5	93	.495	.237	.172	.495	.097	.000	.398	168	210	.398	165	-0.846	0.225	-0.5	1.0	-0.5	1.0	A+	
2712	683867	5	101	.455	.228	.455	.149	.168	.000	.305	113	.305	131	155	-0.829	0.220	0.8	1.1	1.0	1.1	A+	
2713	683868	5	89	.573	.180	.191	.056	.573	.000	.277	002	183	279	.277	-1.263	0.233	0.7	1.1	0.8	1.1	A+	
2714	683869	5	96	.417	.125	.417	.219	.240	.000	.478	219	.478	084	301	-0.411	0.226	-1.5	0.9	-1.5	8.0	A-	
2715	683870	5	87	.414	.414	.230	.069	.287	.000	143	143	.122	236	.174	-0.556	0.236	4.5	1.4	4.1	1.5		
2716	683871	5	91	.363	.297	.231	.363	.110	.000	.188	046	240	.188	.101	-0.364	0.242	2.0	1.2	2.4	1.4	A+	
2717	683872	5	88	.182	.386	.193	.239	.182	.000	078	.308	023	260	078	0.988	0.289	1.4	1.2	2.8	1.9	A+	
2718	683873	5	89	.596	.135	.180	.596	.090	.000	.372	212	276	.372	015	-1.320	0.232	-0.6	1.0	-0.6	0.9	B+	
2719	683874	5	86	.430	.163	.430	.163	.244	.000	.254	228	.254	022	079	-0.587	0.240	1.2	1.1	1.7	1.2	A+	i
2720	683875	5	78	.423	.115	.410	.423	.051	.000	.109	170	.122	.109	270	-0.561	0.246	2.1	1.2	1.7	1.2	A+	
2721	683876	5	94	.330	.330	.309	.106	.255	.000	.197	.197	199	.024	019	-0.008	0.238	1.6	1.2	0.8	1.1	A+	
2722	683877	5	90	.300	.233	.278	.300	.189	.000	041	097	.176	041	049	0.231	0.247	2.5	1.3	3.3	1.7	A+	
2723	683879	5	96	.500	.219	.500	.146	.135	.000	.399	235	.399	122	173	-0.963	0.224	-0.3	1.0	-0.2	1.0	A-	
2724	683880	5	72	.264	.264	.236	.181	.319	.000	.157	.157	282	047	.147	0.145	0.289	1.1	1.2	1.2	1.3		
2725	683881	5	95	.284	.147	.284	.421	.147	.000	.041	165	.041	061	.197	0.248	0.242	1.9	1.2	2.2	1.4	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2726	683884	5	96	.521	.521	.188	.156	.135	.000	.526	.526	214	316	188	-1.090	0.221	-2.1	0.9	-2.0	0.8	A+	
2727	683885	5	83	.518	.518	.265	.120	.096	.000	.081	.081	.237	201	270	-0.848	0.237	2.7	1.2	2.4	1.3		
2728	683886	5	90	.344	.211	.344	.156	.289	.000	022	176	022	.124	.083	-0.135	0.236	2.9	1.3	2.4	1.4	A-	
2729	683887	5	100	.340	.340	.190	.330	.140	.000	.245	.245	048	125	110	-0.205	0.230	1.3	1.1	1.1	1.2	A+	
2730	683888	5	104	.365	.250	.192	.192	.365	.000	.086	100	023	.028	.086	-0.407	0.220	2.6	1.2	2.4	1.3	A-	
2731	683889	5	99	.313	.202	.283	.313	.202	.000	024	038	052	024	.124	-0.024	0.234	3.0	1.3	2.8	1.5	A+	
2732	683890	5	96	.583	.583	.104	.125	.188	.000	.330	.330	275	205	027	-1.283	0.224	0.0	1.0	0.3	1.0	A+	
2733	683891	5	84	.452	.167	.238	.452	.143	.000	.082	.101	135	.082	059	-0.661	0.240	2.7	1.3	3.1	1.4		
2734	683892	5	73	.425	.137	.425	.178	.260	.000	.451	084	.451	285	194	-0.670	0.256	-1.0	0.9	-0.8	0.9	A-	
2735	683893	5	79	.557	.266	.076	.557	.101	.000	.379	166	299	.379	118	-1.200	0.247	0.0	1.0	-0.3	1.0	B-	
2736	683894	5	94	.298	.298	.160	.415	.128	.000	.111	.111	133	.080	124	0.015	0.242	1.4	1.2	2.1	1.4	A+	
2737	683895	5	91	.681	.121	.132	.681	.066	.000	.296	.013	425	.296	.006	-1.721	0.242	0.4	1.0	0.3	1.0	A+	
2738	683896	5	83	.615	.614	.108	.120	.157	.000	.500	.500	313	256	173	-1.277	0.248	-1.2	0.9	-1.4	8.0	A-	
2739	683905	5	85	.612	.118	.612	.082	.188	.000	.502	173	.502	244	311	-1.383	0.241	-1.6	0.9	-1.6	8.0	A-	
2740	683906	5	110	.646	.645	.082	.118	.155	.000	.349	.349	167	252	110	-1.642	0.215	-0.2	1.0	-0.6	0.9	A+	
2741	683908	5	101	.406	.257	.198	.406	.139	.000	.400	163	120	.400	223	-0.805	0.220	-0.7	0.9	-0.2	1.0		
2742	683909	5	91	.407	.407	.341	.154	.099	.000	.400	.400	086	377	065	-0.592	0.232	-0.8	0.9	0.3	1.0	A+	i
2743	683910	5	66	.288	.348	.288	.242	.121	.000	.200	.164	.200	186	272	-0.030	0.289	0.7	1.1	0.7	1.1		
2744	683911	5	99	.303	.222	.333	.303	.141	.000	.228	052	283	.228	.144	-0.029	0.233	0.7	1.1	0.6	1.1	A+	
2745	683912	5	94	.192	.287	.277	.245	.191	.000	.139	.077	225	.026	.139	0.564	0.279	0.8	1.1	1.5	1.4	A-	i
2746	683913	5	92	.489	.141	.489	.207	.163	.000	.305	199	.305	003	223	-1.033	0.228	0.5	1.0	0.8	1.1	A+	
2747	683915	5	91	.352	.220	.176	.352	.253	.000	.092	.199	282	.092	044	-0.231	0.237	2.0	1.2	2.3	1.3	A-	<u> </u>
2748	683916	5	67	.373	.299	.373	.209	.119	.000	.319	121	.319	187	071	-0.358	0.275	0.5	1.1	0.2	1.0	A-	
2749	683918	5	78	.282	.231	.333	.282	.154	.000	137	.183	.137	137	221	0.216	0.272	2.9	1.4	3.3	1.8		
2750	683920	5	82	.524	.207	.159	.524	.110	.000	.096	171	.162	.096	121	-1.173	0.238	2.3	1.2	2.5	1.3	A-	
2751	683921	5	72	.444	.153	.278	.444	.125	.000	.365	218	246	.365	.021	-0.637	0.254	-0.4	1.0	-0.5	0.9	A-	
2752	683922	5	91	.341	.165	.275	.220	.341	.000	.505	088	349	123	.505	-0.176	0.245	-1.1	0.9	-0.9	0.9	B-	
2753	683923	5	83	.337	.217	.301	.145	.337	.000	.365	202	091	136	.365	-0.357	0.249	-0.4	1.0	-0.3	1.0	A-	
2754	683924	5	74	.487	.486	.162	.189	.162	.000	.329	.329	274	181	.020	-0.954	0.250	0.0	1.0	-0.1	1.0	A-	
2755	683925	5	82	.402	.402	.110	.037	.451	.000	.439	.439	269	228	177	-0.467	0.243	-1.0	0.9	-0.8	0.9	A-	
2756	683926	5	86	.581	.081	.581	.186	.151	.000	.371	339	.371	055	192	-1.369	0.244	0.6	1.1	0.4	1.1	A-	
2757	683927	5	96	.781	.031	.781	.083	.104	.000	.340	242	.340	141	194	-2.258	0.263	-0.2	1.0	-0.5	0.9	A-	
2758	683928	5	97	.742	.093	.052	.742	.113	.000	.260	183	086	.260	132	-2.196	0.246	0.4	1.0	0.0	1.0	A+	
2759	683929	5	87	.379	.172	.391	.379	.057	.000	.440	237	186	.440	142	-0.352	0.238	-1.3	0.9	-0.6	0.9	A-	
2760	683930	5	94	.564	.117	.106	.564	.213	.000	.437	103	254	.437	257	-1.283	0.228	-0.7	0.9	-1.0	0.9	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	D/A\	D/D\	D(C)	P(D)	P(-)	PtBis	PT(A)	DT/D\	PT(C)	PT(D)	Mons	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	N	PVdI	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PT(B)	PT(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
2761	683931	5	90	.522	.200	.522	.122	.156	.000	.157	095	.157	.054	160	-0.995	0.230	2.1	1.2	2.7	1.3	A-	
2762	684184	5	94	.394	.394	.160	.213	.234	.000	.411	.411	257	249	011	-0.494	0.228	-0.8	0.9	-0.6	0.9	A+	
2763	684185	5	72	.375	.167	.250	.375	.208	.000	.136	.083	350	.136	.136	-0.297	0.260	1.1	1.1	1.7	1.2		
2764	684186	5	92	.424	.207	.174	.424	.196	.000	.390	115	151	.390	224	-0.453	0.230	-0.4	1.0	-0.2	1.0	B-	
2765	684188	5	72	.417	.292	.139	.417	.153	.000	.176	.060	285	.176	044	-0.448	0.257	1.1	1.1	1.3	1.2	A+	
2766	684189	5	89	.517	.169	.517	.112	.202	.000	.301	071	.301	283	085	-1.074	0.233	1.0	1.1	1.2	1.1	A+	
2767	684190	5	111	.180	.180	.333	.207	.279	.000	010	010	.288	391	.059	0.967	0.262	1.2	1.2	3.0	2.0	A-	
2768	684192	5	77	.351	.351	.338	.117	.195	.000	036	036	.147	189	.021	-0.256	0.261	3.1	1.4	3.0	1.5		
2769	684193	5	100	.340	.240	.270	.340	.150	.000	.056	.128	114	.056	085	-0.237	0.227	2.2	1.2	2.6	1.4	A+	
2770	684194	5	85	.282	.200	.271	.247	.282	.000	.436	145	.003	323	.436	0.077	0.262	-0.6	0.9	-0.5	0.9	A+	
2771	684195	5	93	.419	.161	.204	.215	.419	.000	.331	.062	124	332	.331	-0.480	0.229	0.1	1.0	0.9	1.1	A-	
2772	684197	5	83	.217	.217	.145	.325	.313	.000	.280	.280	218	.086	170	0.598	0.280	-0.1	1.0	-0.1	1.0	A-	
2773	684198	5	84	.476	.214	.131	.476	.179	.000	.306	038	249	.306	138	-0.971	0.235	0.3	1.0	-0.1	1.0	A+	
2774	684199	5	79	.443	.241	.215	.443	.101	.000	.301	117	307	.301	.088	-0.833	0.247	0.6	1.1	1.0	1.1	A+	
2775	684200	5	94	.426	.234	.202	.426	.138	.000	.196	.056	230	.196	082	-0.477	0.225	1.2	1.1	1.9	1.2	A+	
2776	684202	5	82	.317	.268	.232	.317	.183	.000	.327	272	266	.327	.208	-0.111	0.257	0.2	1.0	0.0	1.0	B+	
2777	685310	5	90	.578	.578	.233	.156	.033	.000	.377	.377	348	075	065	-1.212	0.232	-0.1	1.0	-0.1	1.0	A-	
2778	685311	5	67	.806	.090	.075	.806	.030	.000	.664	422	385	.664	239	-2.256	0.330	-1.7	0.7	-2.1	0.5		
2779	685312	5	101	.574	.168	.089	.574	.168	.000	.334	133	134	.334	206	-1.289	0.218	0.1	1.0	-0.1	1.0	A+	
2780	685314	5	84	.571	.143	.571	.167	.119	.000	.506	253	.506	241	222	-1.201	0.241	-1.6	0.9	-1.1	0.9	A-	
2781	685315	5	95	.495	.179	.189	.137	.495	.000	.463	209	265	139	.463	-0.952	0.223	-1.4	0.9	-1.4	0.9	A-	
2782	685316	5	88	.227	.216	.330	.227	.227	.000	.309	142	147	005	.309	0.483	0.273	0.1	1.0	0.6	1.1	A-	
2783	685317	5	100	.250	.250	.250	.290	.210	.000	121	010	121	.008	.130	0.407	0.248	2.8	1.4	3.2	1.7	A-	
2784	685318	5	84	.595	.250	.595	.083	.071	.000	.388	380	.388	.052	157	-1.285	0.244	-0.1	1.0	-0.2	1.0	A-	
2785	685319	5	80	.263	.213	.438	.263	.088	.000	.338	123	039	.338	280	0.398	0.272	0.0	1.0	-0.3	0.9	A-	
2786	685320	5	90	.244	.289	.167	.300	.244	.000	.371	.157	378	196	.371	0.320	0.263	-0.2	1.0	-0.7	0.9	A+	
2787	685321	5	98	.306	.143	.306	.286	.265	.000	.180	068	.180	.079	214	0.135	0.234	1.1	1.1	0.8	1.1	A+	A+
2788	685322	5	109	.266	.339	.330	.266	.064	.000	.061	171	.141	.061	050	0.411	0.230	1.8	1.2	2.0	1.4	B-	
2789	685323	5	67	.567	.567	.164	.075	.194	.000	.355	.355	368	038	074	-1.364	0.267	-0.1	1.0	0.2	1.0	A-	
2790	685326	5	87	.356	.414	.356	.149	.080	.000	.093	.091	.093	139	146	-0.412	0.242	2.2	1.2	2.0	1.3		
2791	685327	5	87	.172	.080	.172	.069	.678	.000	.088	260	.088	327	.258	0.949	0.299	0.6	1.1	1.9	1.6	A+	
2792	685328	5	95	.347	.505	.347	.074	.074	.000	.058	.158	.058	341	068	-0.271	0.230	2.3	1.2	2.0	1.3	A+	
2793	685329	5	70	.486	.357	.057	.100	.486	.000	.250	.074	390	234	.250	-0.866	0.261	1.2	1.1	1.2	1.1	A+	
2794	685330	5	82	.573	.573	.220	.073	.134	.000	.422	.422	190	173	249	-1.458	0.244	-0.5	1.0	-0.5	0.9	A-	
2795	685331	5	91	.560	.187	.132	.560	.121	.000	.417	243	202	.417	135	-1.293	0.228	-1.0	0.9	-1.3	0.9	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
2796	685332	Grade 5	84	.310	.214	.262	.214	.310	.000	.494	176	221	144	.494	0.100	0.254	-1.4	in 0.9	-1.1	0.8	/F A+	/B
2790	685333	5	86	.593	.593	.174	.093	.140	.000	.454	.257	221	231	.049	-1.203	0.237	0.8	1.1	0.6	1.1	A-	
2798	685334	5	81	.457	.309	.457	.160	.074	.000	.132	.226	.132	424	056	-0.592	0.248	2.8	1.3	2.5	1.3	A-	
2799	685335	5	109	.615	.174	.615	.165	.046	.000	.150	004	.150	152	073	-1.509	0.212	2.0	1.2	1.4	1.2	A+	
2800	685336	5	86	.302	.256	.151	.302	.291	.000	055	.070	053	055	.030	0.050	0.250	2.3	1.3	2.5	1.4	A-	
2801	685337	5	97	.454	.371	.454	.124	.052	.000	271	.305	271	.047	124	-0.618	0.222	6.3	1.6	6.0	1.8	- ' '	
2802	685338	5	85	.153	.153	.118	.588	.141	.000	.070	.070	239	.299	273	0.762	0.316	0.5	1.1	1.3	1.4		
2803	685351	5	84	.560	.143	.560	.214	.083	.000	.416	151	.416	146	338	-1.189	0.240	-0.5	1.0	-0.9	0.9	B-	
2804	685353	5	80	.475	.200	.200	.125	.475	.000	.449	233	232	114	.449	-0.737	0.244	-0.9	0.9	-0.6	0.9	A-	
2805	685354	5	67	.179	.433	.090	.299	.179	.000	.125	067	208	.098	.125	0.889	0.332	0.5	1.1	0.6	1.2		
2806	685356	5	88	.557	.159	.091	.557	.193	.000	.362	220	307	.362	027	-1.030	0.232	-0.2	1.0	-0.2	1.0	A+	
2807	685357	5	90	.178	.556	.122	.144	.178	.000	.179	.209	238	268	.179	0.788	0.288	0.2	1.0	0.5	1.1	A+	
2808	685358	5	88	.568	.273	.045	.568	.114	.000	.493	248	050	.493	389	-1.227	0.232	-1.8	0.9	-1.8	0.8	B+	
2809	685359	5	84	.714	.048	.714	.107	.131	.000	.349	097	.349	311	121	-1.936	0.260	-0.1	1.0	0.0	1.0	A+	
2810	685360	5	85	.259	.212	.400	.129	.259	.000	.170	126	029	027	.170	0.066	0.270	0.9	1.1	2.2	1.5		
2811	685361	5	78	.769	.090	.064	.769	.077	.000	.247	230	209	.247	.048	-2.354	0.286	0.3	1.0	0.4	1.1	A+	
2812	685363	5	72	.653	.181	.653	.056	.111	.000	.293	109	.293	187	174	-1.610	0.267	0.5	1.1	0.1	1.0		
2813	685364	5	76	.329	.197	.289	.329	.184	.000	.062	162	163	.062	.282	-0.117	0.266	2.2	1.3	2.4	1.4	A+	
2814	685365	5	79	.519	.177	.190	.114	.519	.000	.430	193	233	157	.430	-0.947	0.246	-0.7	0.9	-0.5	0.9	A+	
2815	685366	5	87	.356	.287	.034	.356	.322	.000	.147	015	375	.147	.011	-0.190	0.237	0.7	1.1	1.7	1.2	A-	
2816	685367	5	96	.344	.219	.188	.344	.250	.000	.141	147	091	.141	.068	-0.103	0.233	1.9	1.2	2.0	1.3	A-	
2817	685368	5	72	.500	.250	.500	.181	.069	.000	.211	.066	.211	298	077	-0.826	0.252	0.9	1.1	0.8	1.1	A+	
2818	685369	5	74	.392	.365	.149	.392	.095	.000	.225	101	171	.225	.000	-0.483	0.257	1.0	1.1	1.0	1.1	A-	
2819	685370	5	105	.257	.257	.438	.162	.143	.000	.149	.149	.250	344	179	0.483	0.237	1.1	1.1	1.0	1.2	A-	
2820	685371	5	88	.489	.489	.011	.114	.386	.000	.461	.461	200	334	212	-0.860	0.231	-1.1	0.9	-1.3	0.9	A+	
2821	685372	5	91	.297	.154	.297	.121	.429	.000	045	266	045	260	.407	-0.001	0.246	2.6	1.3	2.8	1.5	A-	
2822	685373	5	98	.388	.327	.092	.194	.388	.000	.275	132	195	041	.275	-0.127	0.227	0.7	1.1	1.4	1.2	A-	
2823	685374	5	77	.169	.195	.390	.247	.169	.000	.239	.011	041	171	.239	0.967	0.323	0.2	1.0	0.6	1.2	A+	
2824	685375	5	95	.221	.221	.253	.305	.221	.000	.157	243	.240	148	.157	0.398	0.262	0.7	1.1	1.6	1.4		
2825	685376	5	94	.330	.330	.191	.245	.234	.000	.006	.006	177	.096	.061	0.007	0.236	2.8	1.3	2.6	1.5	A+	
2826	685378	5	102	.128	.127	.392	.255	.225	.000	.004	.004	.128	257	.115	1.308	0.309	0.7	1.1	2.2	1.9	A+	\longrightarrow
2827	685379	5	85	.506	.106	.188	.200	.506	.000	.386	146	150	224	.386	-0.879	0.238	-0.2	1.0	-0.2	1.0	A-	
2828	685380	5	97	.464	.103	.464	.320	.113	.000	.178	187	.178	129	.090	-0.890	0.218	1.6	1.1	1.4	1.1	A+	igwdown
2829	685381	5	85	.353	.353	.176	.259	.212	.000	.395	.395	078	114	267	-0.116	0.249	-0.2	1.0	-0.2	1.0	A-	igwdown
2830	685382	5	91	.429	.209	.077	.429	.286	.000	.272	164	157	.272	059	-0.646	0.232	0.9	1.1	1.1	1.1	A-	ш

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2831	685383	5	94	.351	.149	.202	.351	.298	.000	.241	305	.139	.241	136	-0.102	0.232	0.7	1.1	0.6	1.1	A-	
2832	685384	5	85	.094	.282	.282	.341	.094	.000	.040	058	141	.165	.040	1.721	0.383	0.3	1.1	1.5	1.8	A+	
2833	685385	5	93	.366	.247	.366	.301	.086	.000	170	.278	170	015	112	-0.153	0.231	4.1	1.4	4.4	1.7	A+	
2834	685386	5	92	.478	.196	.478	.174	.152	.000	.063	066	.063	052	.040	-0.785	0.226	2.9	1.2	3.2	1.4	A-	
2835	685387	5	81	.161	.309	.160	.346	.185	.000	179	.115	179	027	.065	0.784	0.321	1.8	1.4	3.2	2.4		
2836	685388	5	100	.600	.600	.220	.100	.080	.000	.519	.519	356	232	136	-1.464	0.218	-2.3	0.8	-2.2	0.8	A+	
2837	685389	5	95	.316	.316	.253	.274	.158	.000	182	182	175	.215	.178	0.019	0.240	4.1	1.5	4.6	2.0	A-	
2838	685390	5	82	.317	.244	.207	.232	.317	.000	.274	180	073	049	.274	0.107	0.257	0.6	1.1	0.1	1.0	A-	
2839	729935	6	904	.413	.181	.187	.219	.413	.000	.183	204	034	.005	.183	-0.061	0.073	5.4	1.1	5.5	1.2	A+	
2840	729936	6	927	.634	.176	.094	.096	.634	.000	.491	244	298	193	.491	-1.148	0.075	-3.5	0.9	-3.5	0.9	A+	A-
2841	729980	6	872	.595	.148	.149	.595	.108	.000	.305	129	203	.305	101	-0.875	0.076	2.4	1.1	2.2	1.1	A+	
2842	729981	6	939	.649	.109	.169	.073	.649	.000	.418	209	175	264	.418	-1.189	0.075	-1.9	0.9	-1.9	0.9	B+	B-
2843	729982	6	933	.861	.041	.861	.045	.054	.000	.445	263	.445	292	185	-2.723	0.102	-2.0	0.9	-2.7	0.7	B+	A-
2844	729983	6	841	.467	.181	.228	.467	.124	.000	.433	201	143	.433	240	-0.340	0.076	-3.0	0.9	-1.7	0.9	A+	
2845	729984	6	891	.562	.223	.123	.091	.562	.000	.363	154	089	300	.363	-0.834	0.074	0.0	1.0	-0.1	1.0	A+	A+
2846	729985	6	847	.829	.043	.063	.066	.829	.000	.365	167	146	275	.365	-2.329	0.099	-0.6	1.0	-0.5	1.0	A+	A+
2847	730041	6	863	.628	.110	.098	.163	.628	.000	.319	230	193	067	.319	-1.087	0.077	1.3	1.0	0.7	1.0	A+	B-
2848	730042	6	875	.355	.342	.137	.166	.355	.000	.234	057	107	130	.234	0.218	0.076	2.5	1.1	3.7	1.2	A-	B-
2849	730043	6	913	.777	.054	.083	.087	.777	.000	.493	241	224	317	.493	-1.962	0.086	-2.7	0.9	-4.1	0.7	A-	A-
2850	730044	6	875	.296	.173	.296	.064	.467	.000	.185	024	.185	120	092	0.526	0.080	2.9	1.1	5.4	1.4	A-	A-
2851	730045	6	920	.353	.171	.116	.353	.360	.000	.292	183	229	.292	.006	0.250	0.075	0.7	1.0	3.4	1.2	A+	A-
2852	730046	6	851	.515	.150	.219	.515	.116	.000	.335	140	118	.335	213	-0.522	0.075	1.0	1.0	1.2	1.0	A-	B-
2853	730175	6	943	.428	.245	.123	.204	.428	.000	.320	106	147	160	.320	-0.145	0.071	0.5	1.0	2.3	1.1	A+	A-
2854	730176	6	936	.579	.579	.185	.146	.090	.000	.405	.405	093	333	162	-0.850	0.073	-0.7	1.0	-0.8	1.0	A+	B+
2855	730177	6	910	.455	.226	.455	.179	.140	.000	.321	127	.321	217	066	-0.279	0.072	0.6	1.0	2.7	1.1	A+	A+
2856	730178	6	919	.585	.108	.176	.131	.585	.000	.366	206	128	201	.366	-0.912	0.074	0.5	1.0	0.7	1.0	A+	A+
2857	730265	6	950	.532	.147	.115	.206	.532	.000	.405	151	215	198	.405	-0.669	0.072	-0.7	1.0	-1.0	1.0	A+	
2858	730266	6	901	.248	.248	.080	.303	.370	.000	050	050	227	.009	.164	0.800	0.082	6.7	1.3	8.8	1.8	A+	A-
2859	730267	6	905	.356	.190	.179	.356	.275	.000	.193	118	260	.193	.121	0.138	0.075	3.7	1.1	6.7	1.4	A-	A-
2860	730268	6	889	.363	.363	.304	.183	.150	.000	.262	.262	151	155	.009	0.165	0.075	1.7	1.1	3.1	1.2	A-	A-
2861	730269	6	933	.421	.323	.070	.421	.186	.000	.231	091	239	.231	028	-0.101	0.072	3.3	1.1	5.1	1.2	A-	A-
2862	730270	6	926	.353	.254	.218	.175	.353	.000	.179	073	026	113	.179	0.261	0.074	4.0	1.1	6.6	1.4	A-	A-
2863	730271	6	915	.537	.537	.191	.110	.162	.000	.378	.378	110	243	188	-0.641	0.073	0.0	1.0	0.6	1.0	A-	A-
2864	730272	6	865	.177	.177	.182	.484	.157	.000	074	074	094	.172	059	1.282	0.093	3.5	1.2	9.0	2.1	A-	
2865	730273	6	892	.651	.159	.120	.651	.070	.000	.436	197	231	.436	239	-1.215	0.077	-1.8	0.9	-1.8	0.9	A+	Ш

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2866	730274	6	871	.340	.305	.122	.340	.233	.000	.305	101	144	.305	121	0.310	0.077	-0.2	1.0	2.1	1.1	A-	A+
2867	730275	6	903	.146	.176	.505	.173	.146	.000	047	091	.260	208	047	1.542	0.098	2.7	1.2	7.8	2.1	A-	A+
2868	730276	6	935	.359	.174	.334	.133	.359	.000	.212	082	.064	298	.212	0.175	0.073	3.4	1.1	5.3	1.3	A+	
2869	730277	6	932	.256	.150	.442	.151	.256	.000	.141	064	.094	238	.141	0.777	0.080	2.8	1.1	6.0	1.5	A+	A-
2870	730278	6	927	.606	.132	.606	.136	.126	.000	.369	110	.369	213	212	-0.914	0.074	0.3	1.0	-0.1	1.0	A+	A-
2871	730279	6	901	.493	.211	.194	.102	.493	.000	.401	123	151	299	.401	-0.413	0.073	-1.6	1.0	-0.8	1.0	A+	A-
2872	730280	6	885	.516	.227	.174	.516	.082	.000	.232	043	089	.232	234	-0.565	0.074	4.6	1.1	5.3	1.2	A-	A-
2873	730281	6	897	.294	.149	.294	.294	.262	.000	.107	218	.107	013	.079	0.562	0.078	3.8	1.1	7.1	1.5	A+	A+
2874	730282	6	950	.462	.462	.186	.242	.109	.000	.290	.290	135	138	105	-0.317	0.071	1.8	1.0	3.9	1.2	A+	A-
2875	730283	6	931	.405	.405	.205	.252	.137	.000	.275	.275	121	057	180	-0.045	0.073	1.8	1.1	4.0	1.2	A-	B+
2876	730284	6	925	.442	.133	.147	.278	.442	.000	.353	270	181	043	.353	-0.171	0.072	-0.7	1.0	1.2	1.1	A+	A-
2877	730285	6	903	.309	.225	.309	.158	.308	.000	.027	115	.027	221	.252	0.467	0.077	6.6	1.2	8.6	1.6	A-	
2878	730286	6	918	.611	.611	.142	.168	.080	.000	.485	.485	183	288	241	-0.980	0.074	-3.8	0.9	-3.7	0.9	A-	A+
2879	730287	6	919	.275	.201	.275	.201	.322	.000	.165	244	.165	026	.074	0.612	0.079	3.0	1.1	6.2	1.5	A-	A+
2880	730288	6	868	.229	.194	.160	.417	.229	.000	043	048	100	.149	043	0.983	0.085	5.1	1.2	8.3	1.8	A-	A-
2881	730318	6	877	.599	.162	.120	.599	.120	.000	.381	181	165	.381	204	-0.979	0.076	-0.2	1.0	-0.2	1.0	A+	A+
2882	735055	6	894	.518	.130	.163	.518	.189	.000	.297	180	199	.297	037	-0.522	0.073	2.6	1.1	3.1	1.1	A-	
2883	735056	6	912	.427	.200	.235	.427	.139	.000	.270	231	.010	.270	132	-0.124	0.073	2.6	1.1	3.8	1.2	A-	A-
2884	735057	6	892	.298	.289	.169	.298	.243	.000	.190	.030	073	.190	171	0.570	0.078	2.7	1.1	5.0	1.3	B-	A+
2885	735058	6	898	.631	.110	.631	.133	.126	.000	.304	213	.304	150	088	-1.133	0.076	2.3	1.1	2.3	1.1	A+	A-
2886	735059	6	877	.341	.274	.140	.341	.245	.000	.093	.110	195	.093	059	0.265	0.077	6.3	1.2	7.7	1.5	A-	A-
2887	735060	6	894	.530	.133	.239	.097	.530	.000	.210	095	.070	345	.210	-0.570	0.073	4.8	1.1	5.1	1.2	A+	
2888	735061	6	910	.341	.314	.341	.119	.226	.000	.176	.005	.176	307	.032	0.347	0.075	4.0	1.1	6.0	1.4	A-	A+
2889	735062	6	889	.475	.143	.170	.213	.475	.000	.345	225	133	108	.345	-0.323	0.073	-0.1	1.0	8.0	1.0	A+	
2890	737370	6	942	.607	.199	.125	.607	.069	.000	.340	100	203	.340	232	-1.000	0.073	1.4	1.0	0.9	1.0	A+	A-
2891	739886	6	937	.218	.321	.218	.336	.125	.000	102	.062	102	.073	064	1.020	0.084	6.0	1.3	9.9	2.0	A-	A+
2892	739887	6	912	.258	.252	.268	.223	.258	.000	.171	.008	077	106	.171	0.698	0.081	2.5	1.1	4.8	1.4	A+	A-
2893	739888	6	895	.447	.178	.447	.282	.094	.000	.295	183	.295	077	145	-0.197	0.073	2.2	1.1	2.8	1.1	A-	B-
2894	739889	6	920	.463	.222	.145	.463	.171	.000	.201	084	114	.201	067	-0.332	0.072	5.4	1.1	5.7	1.2	A+	A+
2895	739890	6	878	.410	.182	.271	.137	.410	.000	.436	192	175	181	.436	-0.097	0.075	-2.9	0.9	-0.7	1.0	A-	
2896	739891	6	934	.253	.203	.282	.262	.253	.000	.123	133	.108	110	.123	0.801	0.080	3.3	1.1	5.6	1.4	A+	
2897	739892	6	882	.335	.334	.227	.248	.190	.000	.170	.170	176	.063	084	0.362	0.077	3.9	1.1	5.4	1.3	A+	A-
2898	739893	6	877	.381	.230	.381	.178	.211	.000	.103	107	.103	071	.054	0.103	0.075	7.5	1.2	6.7	1.3	A-	
2899	739894	6	915	.320	.320	.212	.215	.252	.000	.143	.143	158	130	.118	0.419	0.076	4.2	1.1	7.0	1.4	A+	
2900	739895	6	887	.184	.184	.203	.186	.427	.000	136	136	056	106	.235	1.232	0.091	4.5	1.3	9.9	2.4	A-	B-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2901	739896	6	889	.465	.097	.465	.173	.265	.000	.251	246	.251	185	.040	-0.310	0.073	3.3	1.1	3.9	1.2	A-	A-
2902	739897	6	916	.181	.181	.222	.269	.329	.000	030	030	205	043	.246	1.333	0.090	3.2	1.2	8.3	1.9	B-	A-
2903	739898	6	828	.730	.089	.064	.729	.117	.000	.256	125	158	.256	123	-1.657	0.086	2.3	1.1	3.7	1.3	A+	A+
2904	739899	6	925	.221	.201	.255	.323	.221	.000	.081	075	030	.020	.081	1.007	0.084	2.7	1.1	7.5	1.7	A+	A-
2905	739908	6	921	.465	.206	.135	.465	.194	.000	.234	074	095	.234	138	-0.302	0.072	3.9	1.1	4.8	1.2	A-	A+
2906	739909	6	943	.151	.088	.493	.268	.151	.000	096	137	.195	056	096	1.536	0.095	3.8	1.2	8.5	2.2	A+	A+
2907	739910	6	941	.363	.191	.363	.307	.138	.000	.197	112	.197	057	070	0.182	0.073	4.1	1.1	6.0	1.3	A+	A-
2908	739911	6	960	.399	.199	.227	.399	.175	.000	.172	122	080	.172	005	-0.041	0.072	6.0	1.2	7.1	1.3	A+	A+
2909	739912	6	944	.336	.300	.174	.191	.336	.000	.209	.093	160	205	.209	0.341	0.074	2.9	1.1	3.7	1.2	A-	A+
2910	740627	6	916	.294	.206	.329	.294	.171	.000	045	.019	001	045	.036	0.601	0.078	8.4	1.3	9.9	1.8	A-	A-
2911	734701	7	761	.247	.188	.247	.359	.206	.000	.102	132	.102	.040	029	1.047	0.089	2.5	1.1	6.2	1.6	A-	
2912	734810	7	771	.537	.537	.091	.307	.065	.000	.234	.234	277	.013	175	-0.449	0.080	4.9	1.2	4.4	1.2	B-	
2913	734814	7	762	.407	.112	.407	.106	.375	.000	.099	136	.099	278	.165	0.244	0.080	7.5	1.2	8.1	1.4	A-	
2914	734815	7	749	.379	.379	.188	.250	.183	.000	.246	.246	133	105	057	0.374	0.081	1.8	1.1	4.9	1.3	A-	
2915	734816	7	768	.439	.086	.439	.260	.215	.000	.057	196	.057	.070	010	0.029	0.079	9.4	1.3	9.6	1.5	B+	
2916	734817	7	772	.668	.668	.052	.058	.222	.000	.276	.276	274	262	019	-1.096	0.085	2.8	1.1	3.6	1.2	B+	
2917	734818	7	812	.461	.089	.175	.276	.461	.000	.368	229	192	101	.368	-0.032	0.077	-0.7	1.0	2.1	1.1	A-	A+
2918	734819	7	764	.399	.168	.208	.225	.399	.000	.243	275	037	002	.243	0.218	0.080	3.6	1.1	3.4	1.2	A+	A-
2919	734821	7	769	.349	.349	.312	.140	.199	.000	.096	.096	.124	186	097	0.487	0.081	6.4	1.2	7.1	1.5	A+	A-
2920	734822	7	748	.687	.100	.098	.687	.115	.000	.415	125	269	.415	235	-1.213	0.087	-0.3	1.0	-1.2	0.9	A+	A-
2921	734823	7	787	.485	.172	.130	.485	.213	.000	.271	154	278	.271	.038	-0.266	0.078	2.7	1.1	3.9	1.2	A-	A+
2922	734824	7	789	.683	.067	.061	.683	.189	.000	.326	276	274	.326	043	-1.147	0.084	1.2	1.1	1.3	1.1	A+	A+
2923	734825	7	775	.363	.382	.363	.175	.080	.000	.248	055	.248	177	093	0.447	0.080	1.2	1.0	4.8	1.3	A+	A-
2924	734826	7	755	.551	.139	.180	.130	.551	.000	.427	195	227	172	.427	-0.407	0.080	-2.0	0.9	-1.1	1.0	A+	A-
2925	734827	7	725	.393	.226	.251	.393	.130	.000	.157	088	050	.157	054	0.262	0.083	5.9	1.2	5.7	1.3	A+	
2926	734833	7	767	.363	.180	.151	.362	.306	.000	.045	038	016	.045	003	0.443	0.081	7.4	1.2	9.2	1.6	A+	A-
2927	734834	7	727	.371	.224	.259	.146	.371	.000	.280	034	123	190	.280	0.425	0.083	1.6	1.1	2.2	1.1	A+	A-
2928	734838	7	801	.348	.348	.301	.260	.091	.000	.126	.126	107	.069	142	0.459	0.080	4.9	1.2	7.1	1.4	A+	A-
2929	734849	7	756	.451	.188	.221	.140	.451	.000	.383	186	079	245	.383	-0.047	0.080	-1.0	1.0	0.4	1.0	A+	A-
2930	734856	7	772	.294	.342	.206	.158	.294	.000	.197	.032	090	189	.197	0.791	0.085	1.8	1.1	5.1	1.4	A+	A-
2931	734857	7	768	.574	.044	.283	.099	.574	.000	.303	314	118	108	.303	-0.629	0.081	2.7	1.1	2.2	1.1	A+	
2932	734858	7	775	.377	.285	.377	.205	.133	.000	.340	118	.340	228	058	0.357	0.080	-0.7	1.0	1.9	1.1	A-	A-
2933	734862	7	762	.652	.196	.652	.062	.091	.000	.287	155	.287	195	099	-0.965	0.084	3.1	1.1	2.6	1.1	A+	A-
2934	734863	7	731	.635	.231	.059	.075	.635	.000	.378	121	241	282	.378	-0.885	0.084	0.0	1.0	-0.1	1.0	A+	
2935	734864	7	775	.761	.075	.074	.090	.761	.000	.507	257	282	261	.507	-1.621	0.092	-2.6	0.9	-3.8	0.8	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2936	734867	7	750	.740	.085	.740	.129	.045	.000	.428	234	.428	211	249	-1.541	0.092	-0.8	1.0	-1.2	0.9	A-	B-
2937	734868	7	754	.804	.023	.031	.804	.143	.000	.308	175	225	.308	164	-1.957	0.100	0.9	1.1	0.6	1.1	A+	
2938	734869	7	809	.834	.047	.080	.038	.834	.000	.537	328	289	269	.537	-2.109	0.103	-3.0	0.8	-4.2	0.6	A+	
2939	734877	7	775	.281	.523	.076	.281	.120	.000	.198	.122	317	.198	202	0.811	0.085	1.7	1.1	4.6	1.4	A-	A+
2940	734879	7	734	.282	.290	.282	.210	.218	.000	058	.082	058	105	.076	0.890	0.087	6.2	1.3	9.8	1.9	A+	A+
2941	734882	7	723	.539	.079	.242	.539	.140	.000	.405	270	146	.405	192	-0.436	0.082	-0.8	1.0	-0.4	1.0	A+	B-
2942	734883	7	792	.582	.230	.102	.582	.086	.000	.374	148	188	.374	234	-0.640	0.079	0.2	1.0	0.0	1.0	A-	
2943	734884	7	757	.678	.678	.082	.144	.096	.000	.509	.509	269	256	252	-1.174	0.086	-3.0	0.9	-3.7	8.0	A+	A-
2944	734914	7	761	.342	.158	.269	.231	.342	.000	.283	152	042	143	.283	0.526	0.082	0.9	1.0	2.5	1.2	A+	A-
2945	734917	7	744	.387	.387	.133	.167	.313	.000	.127	.127	162	151	.106	0.287	0.081	6.1	1.2	6.0	1.3	A-	
2946	735063	7	808	.451	.450	.223	.124	.203	.000	.218	.218	112	180	006	0.072	0.077	4.4	1.1	4.5	1.2	A+	A-
2947	735064	7	815	.741	.741	.067	.126	.065	.000	.371	.371	236	175	184	-1.468	0.089	0.9	1.0	-0.5	1.0	B+	
2948	735069	7	733	.458	.209	.188	.145	.458	.000	.314	158	055	201	.314	-0.036	0.081	0.8	1.0	2.1	1.1	A+	
2949	735070	7	784	.256	.352	.092	.300	.256	.000	.106	.038	138	054	.106	0.991	0.087	3.4	1.1	6.1	1.5	A+	A+
2950	735071	7	729	.292	.230	.237	.292	.240	.000	011	021	011	011	.044	0.834	0.087	5.9	1.2	9.9	1.9	A+	
2951	735072	7	800	.659	.659	.095	.105	.141	.000	.445	.445	227	237	206	-1.071	0.082	-1.8	0.9	-2.2	0.9	A+	A-
2952	735073	7	769	.507	.261	.103	.507	.129	.000	.279	086	162	.279	158	-0.240	0.079	2.6	1.1	4.1	1.2	A+	
2953	735324	7	755	.499	.150	.499	.228	.123	.000	.286	014	.286	195	171	-0.202	0.079	2.3	1.1	2.5	1.1	A+	
2954	735325	7	754	.348	.347	.113	.280	.260	.000	.055	.055	269	.054	.080	0.552	0.082	6.4	1.2	9.5	1.7	B-	
2955	735326	7	783	.444	.444	.119	.373	.064	.000	.209	.209	325	.079	152	0.063	0.078	4.5	1.1	4.7	1.2	A-	A-
2956	735327	7	721	.519	.200	.139	.143	.519	.000	.308	095	201	133	.308	-0.255	0.081	0.6	1.0	1.6	1.1	A-	A+
2957	735328	7	796	.573	.119	.104	.204	.573	.000	.269	095	119	163	.269	-0.578	0.079	3.7	1.1	3.3	1.1	A+	
2958	735329	7	781	.718	.718	.143	.060	.078	.000	.420	.420	199	198	269	-1.351	0.087	-0.9	1.0	-1.5	0.9	A+	B-
2959	735330	7	732	.701	.701	.123	.086	.090	.000	.344	.344	290	236	.014	-1.145	0.089	0.8	1.0	0.9	1.1	A+	A-
2960	736004	7	735	.412	.106	.297	.185	.412	.000	.285	139	088	148	.285	0.148	0.082	1.8	1.1	3.3	1.2	A+	
2961	736005	7	798	.629	.629	.079	.122	.170	.000	.355	.355	330	258	.004	-0.877	0.081	0.6	1.0	0.9	1.0	A-	A-
2962	736006	7	788	.580	.105	.175	.580	.140	.000	.341	187	176	.341	127	-0.608	0.079	0.6	1.0	1.6	1.1	A-	
2963	736007	7	797	.550	.550	.143	.142	.166	.000	.428	.428	224	275	104	-0.429	0.078	-2.3	0.9	-1.7	0.9	A+	
2964	736008	7	770	.409	.134	.142	.316	.409	.000	.192	095	202	.018	.192	0.206	0.079	4.8	1.1	4.7	1.2	A+	A-
2965	736009	7	740	.815	.082	.047	.815	.055	.000	.451	304	189	.451	226	-2.019	0.103	-1.8	0.9	-2.1	0.8	A+	A-
2966	736010	7	789	.472	.163	.471	.221	.144	.000	.292	193	.292	093	102	-0.142	0.078	1.8	1.1	3.2	1.1	A-	A-
2967	736011	7	772	.390	.234	.390	.205	.171	.000	.243	021	.243	170	108	0.299	0.080	3.1	1.1	4.3	1.2	A-	A-
2968	736012	7	809	.338	.110	.257	.337	.295	.000	.127	153	091	.127	.060	0.573	0.080	4.2	1.1	7.3	1.5	A-	A-
2969	736013	7	791	.309	.308	.440	.153	.099	.000	.119	.119	.095	189	115	0.673	0.082	3.7	1.1	6.9	1.5	A-	B-
2970	736014	7	783	.545	.160	.545	.123	.172	.000	.149	113	.149	151	.045	-0.418	0.079	6.8	1.2	7.7	1.3	A+	B-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	222					` .				• •				0.0=0	in	in	out	out	/F	/B
2971	736015	7	823	.462	.305	.102	.462	.131	.000	.170	.058	252	.170	105	-0.077	0.076	6.8	1.2	7.2	1.3	A-	A-
2972	736016	7	816	.556	.273	.082	.556	.088	.000	.390	103	253	.390	277	-0.502	0.077	-0.7	1.0	-0.2	1.0	A-	
2973	736017	7	785	.494	.494	.162	.201	.143	.000	.313	.313	122	145	153	-0.244	0.078	1.9	1.1	2.8	1.1	Α-	—
2974	736018	7	712	.541	.139	.149	.541	.171	.000	.332	171	189	.332	105	-0.472	0.082	1.2	1.0	1.1	1.1	A+	A+
2975	736019	7	769	.466	.228	.466	.235	.072	.000	.303	104	.303	113	232	-0.011	0.078	1.1	1.0	1.7	1.1	A+	A+
2976	736859	7	775	.508	.123	.508	.302	.067	.000	.155	052	.155	062	127	-0.313	0.079	7.2	1.2	7.3	1.3	Α-	B+
2977	736860	7	743	.353	.334	.353	.140	.174	.000	.125	.081	.125	198	077	0.506	0.083	5.3	1.2	6.7	1.4	A+	
2978	737374	7	807	.439	.191	.275	.439	.095	.000	.011	.021	.028	.011	089	0.025	0.077	9.9	1.3	9.9	1.5	Α-	A+
2979	739496	7	786	.377	.225	.168	.230	.377	.000	.058	.043	157	.030	.058	0.301	0.079	8.2	1.3	8.7	1.5	A+	A+
2980	739497	7	693	.636	.081	.134	.636	.149	.000	.178	063	105	.178	092	-0.892	0.087	4.9	1.2	4.7	1.2	A-	
2981	739498	7	738	.312	.121	.385	.312	.183	.000	.120	099	.032	.120	100	0.718	0.085	3.3	1.1	7.0	1.5	A+	A+
2982	739499	7	775	.545	.151	.128	.545	.177	.000	.276	138	267	.276	.002	-0.502	0.079	3.4	1.1	3.3	1.1	B+	
2983	739500	7	783	.447	.447	.175	.171	.207	.000	.344	.344	132	165	145	0.037	0.078	-0.3	1.0	1.1	1.0	Α-	<u> </u>
2984	739502	7	785	.357	.357	.215	.209	.219	.000	.198	.198	222	090	.079	0.442	0.081	3.9	1.1	5.8	1.4	A-	A+
2985	739503	7	771	.287	.263	.200	.250	.287	.000	.171	.035	021	195	.171	0.853	0.085	2.1	1.1	6.8	1.6	A+	
2986	739504	7	765	.161	.256	.237	.346	.161	.000	.017	.031	125	.070	.017	1.621	0.103	1.5	1.1	8.3	2.3	A+	A+
2987	739505	7	780	.314	.149	.283	.314	.254	.000	.163	185	059	.163	.038	0.735	0.083	2.8	1.1	6.5	1.5	A+	A-
2988	739506	7	815	.556	.556	.245	.079	.120	.000	.329	.329	164	253	077	-0.513	0.077	1.7	1.1	1.4	1.1	A-	B-
2989	739507	7	774	.287	.287	.335	.124	.255	.000	.130	.130	023	199	.041	0.867	0.085	2.7	1.1	8.2	1.7	B-	A+
2990	739508	7	728	.254	.141	.183	.254	.422	.000	.067	226	205	.067	.261	1.071	0.091	3.5	1.2	7.8	1.8	B-	
2991	739509	7	778	.681	.089	.681	.143	.087	.000	.377	220	.377	254	085	-1.143	0.084	0.0	1.0	-0.4	1.0	A+	
2992	739510	7	748	.459	.225	.087	.459	.230	.000	.279	028	230	.279	149	-0.009	0.080	2.6	1.1	3.5	1.2	A+	B-
2993	739511	7	748	.332	.332	.206	.206	.257	.000	.067	.067	100	057	.073	0.600	0.083	6.2	1.2	7.3	1.5	A-	
2994	739512	7	830	.323	.225	.323	.299	.153	.000	.029	046	.029	.093	102	0.613	0.079	7.2	1.2	7.9	1.5	A-	A-
2995	739513	7	725	.143	.192	.356	.309	.143	.000	.036	163	.090	.018	.036	1.791	0.110	1.5	1.1	6.0	2.0	A+	A+
2996	739514	7	754	.296	.407	.296	.129	.168	.000	.181	.063	.181	259	071	0.783	0.085	1.5	1.1	7.2	1.6	A+	A+
2997	739571	7	828	.216	.114	.192	.216	.478	.000	.080	133	067	.080	.072	1.275	0.088	1.9	1.1	6.6	1.7	A-	A+
2998	739583	7	777	.458	.458	.093	.355	.094	.000	.236	.236	160	153	.008	-0.026	0.078	4.3	1.1	3.9	1.2	A-	A-
2999	739787	7	713	.502	.107	.191	.502	.201	.000	.197	060	054	.197	148	-0.181	0.081	4.5	1.1	6.5	1.3	A+	A+
3000	739788	7	732	.279	.171	.279	.410	.141	.000	.168	136	.168	.068	166	0.873	0.088	1.6	1.1	6.7	1.6	A-	
3001	739789	7	784	.259	.259	.520	.162	.059	.000	.127	.127	.066	150	140	0.962	0.086	2.1	1.1	7.3	1.7	C-	B-
3002	739790	7	812	.176	.266	.426	.132	.176	.000	.124	155	.095	077	.124	1.558	0.097	1.3	1.1	5.1	1.7	A-	A-
3003	739791	7	761	.247	.247	.309	.218	.226	.000	059	059	.000	060	.120	1.067	0.089	5.8	1.3	8.8	1.9	A-	B-
3004	739792	7	793	.496	.178	.207	.496	.120	.000	.244	201	029	.244	102	-0.225	0.078	4.5	1.1	4.4	1.2	A+	
3005	739793	7	801	.365	.365	.210	.305	.121	.000	.250	.250	075	158	052	0.450	0.079	1.6	1.0	4.4	1.3	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
3006	739794	7	777	.556	.112	.104	.556	.228	.000	.362	262	254	.362	047	-0.498	0.079	0.6	1.0	0.6	1.0	A+	A-
3007	739900	7	721	.677	.148	.104	.677	.071	.000	.468	234	291	.468	183	-1.107	0.088	-2.3	0.9	-2.7	0.9	A+	
3008	739901	7	792	.365	.196	.197	.365	.242	.000	.160	220	002	.160	.025	0.402	0.080	4.8	1.1	4.7	1.3	B-	B-
3009	739902	7	781	.319	.319	.289	.138	.254	.000	.049	.049	028	150	.096	0.651	0.082	5.9	1.2	8.6	1.6	A-	
3010	739903	7	735	.404	.098	.329	.169	.404	.000	.218	183	.061	217	.218	0.262	0.082	4.0	1.1	4.6	1.3	A+	
3011	739904	7	778	.345	.144	.344	.180	.332	.000	.205	135	.205	145	.013	0.480	0.081	3.1	1.1	4.7	1.3	A-	
3012	739905	7	798	.390	.222	.203	.185	.390	.000	.213	113	093	050	.213	0.303	0.079	3.7	1.1	4.6	1.2	A-	
3013	739906	7	773	.228	.269	.273	.230	.228	.000	.088	.209	081	222	.088	1.197	0.091	2.8	1.1	6.2	1.6	A-	A-
3014	739907	7	730	.323	.111	.174	.392	.323	.000	.236	114	323	.097	.236	0.599	0.085	1.8	1.1	4.6	1.3	A+	
3015	739913	7	769	.245	.225	.165	.244	.365	.000	031	042	107	031	.146	1.095	0.089	5.2	1.2	9.0	1.9	A-	A-
3016	739914	7	784	.189	.189	.189	.292	.330	.000	037	037	086	.035	.068	1.437	0.096	3.1	1.2	9.4	2.3	A-	A+
3017	739973	7	765	.374	.322	.220	.374	.085	.000	.088	.088	152	.088	073	0.354	0.080	7.1	1.2	7.0	1.4	A-	
3018	740218	7	769	.278	.278	.166	.198	.358	.000	.158	.158	123	166	.085	0.855	0.086	3.0	1.1	4.7	1.4	B-	
3019	740219	7	766	.691	.691	.085	.106	.119	.000	.276	.276	115	204	102	-1.190	0.087	2.9	1.1	2.5	1.2	B-	
3020	740220	7	787	.424	.424	.337	.075	.164	.000	.236	.236	065	173	109	0.125	0.079	3.4	1.1	5.4	1.3	A-	A-
3021	740221	7	734	.375	.354	.136	.375	.135	.000	.216	.065	260	.216	136	0.359	0.083	3.8	1.1	3.6	1.2	A-	A-
3022	740222	7	789	.279	.215	.279	.274	.232	.000	.089	118	.089	.006	.014	0.908	0.085	3.8	1.2	9.0	1.8	A-	
3023	740223	7	727	.380	.217	.380	.252	.151	.000	.181	053	.181	076	092	0.407	0.082	3.5	1.1	6.4	1.4	A+	
3024	740224	7	819	.353	.353	.165	.293	.189	.000	.235	.235	124	084	072	0.443	0.079	2.5	1.1	4.6	1.3	A+	A+
3025	740276	7	744	.226	.069	.309	.397	.226	.000	020	238	.214	063	020	1.188	0.093	4.7	1.2	7.7	1.9	A-	
3026	740417	7	778	.255	.230	.254	.312	.203	.000	.058	004	.058	106	.062	1.054	0.087	3.9	1.2	6.4	1.6	A-	B+
3027	740418	7	773	.220	.247	.220	.330	.203	.000	068	.054	068	025	.042	1.226	0.092	4.8	1.2	9.9	2.2	A-	A+
3028	740419	7	752	.686	.686	.066	.189	.059	.000	.271	.271	248	065	164	-1.110	0.086	2.3	1.1	2.4	1.1	C-	A+
3029	740420	7	801	.225	.291	.351	.225	.134	.000	001	005	.080	001	105	1.225	0.089	3.5	1.2	9.1	2.0	A-	B-
3030	740421	7	758	.309	.153	.112	.309	.426	.000	.001	173	222	.001	.267	0.705	0.084	6.9	1.3	9.1	1.7	A+	A-
3031	740422	7	741	.468	.468	.260	.155	.116	.000	.225	.225	.033	181	192	-0.032	0.079	3.3	1.1	4.4	1.2	A-	
3032	740423	7	775	.640	.640	.177	.123	.061	.000	.392	.392	147	280	170	-0.941	0.082	-0.3	1.0	-0.7	1.0	A+	
3033	740425	7	772	.171	.171	.152	.280	.398	.000	.035	.035	106	089	.133	1.582	0.100	1.8	1.1	8.1	2.2	B-	A-
3034	740426	7	793	.371	.153	.303	.371	.174	.000	.173	105	164	.173	.079	0.430	0.079	4.3	1.1	5.1	1.3	B-	
3035	740839	7	766	.389	.155	.389	.103	.352	.000	.134	113	.134	235	.098	0.254	0.080	5.8	1.2	8.4	1.5	A-	A-
3036	740868	7	734	.574	.574	.204	.099	.123	.000	.351	.351	180	263	069	-0.586	0.082	0.8	1.0	1.5	1.1	A+	
3037	740869	7	752	.457	.457	.156	.195	.191	.000	.123	.123	003	136	015	-0.032	0.080	7.6	1.2	6.9	1.3	A-	
3038	740870	7	770	.604	.171	.604	.143	.082	.000	.418	270	.418	155	177	-0.765	0.081	-1.0	1.0	-0.7	1.0	A-	
3039	740871	7	796	.363	.182	.092	.363	.363	.000	.113	174	314	.113	.216	0.436	0.079	6.4	1.2	5.2	1.3	B+	A-
3040	740873	7	789	.363	.274	.362	.176	.188	.000	.185	083	.185	055	080	0.432	0.080	3.3	1.1	6.2	1.4	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	Ν	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	N	rvai	F(A)	P(D)	F(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
3041	740874	7	759	.490	.117	.182	.490	.211	.000	.200	132	204	.200	.052	-0.140	0.079	4.8	1.1	4.7	1.2	A+	A+
3042	740875	7	827	.470	.139	.470	.167	.224	.000	.403	225	.403	137	173	-0.133	0.076	-1.4	1.0	-0.9	1.0	A-	A+
3043	740876	7	761	.456	.456	.159	.258	.127	.000	.304	.304	133	056	235	-0.058	0.080	1.7	1.1	3.2	1.1	A+	A-
3044	740878	7	717	.513	.068	.298	.120	.513	.000	.348	174	134	212	.348	-0.263	0.081	-0.1	1.0	0.4	1.0	A+	A-
3045	741005	7	801	.449	.381	.091	.079	.449	.000	.240	.115	316	311	.240	0.077	0.077	4.0	1.1	4.6	1.2	A+	
3046	741006	7	807	.570	.169	.570	.156	.105	.000	.382	066	.382	286	197	-0.593	0.078	-0.1	1.0	-0.2	1.0	A+	A+
3047	741007	7	738	.782	.050	.099	.782	.069	.000	.427	219	252	.427	210	-1.707	0.098	-1.1	0.9	-1.4	0.9	A+	A-
3048	741008	7	771	.541	.541	.240	.135	.084	.000	.338	.338	088	199	225	-0.362	0.079	0.8	1.0	3.5	1.2	A+	A-
3049	741009	7	799	.552	.552	.145	.139	.164	.000	.255	.255	226	099	035	-0.427	0.078	3.5	1.1	4.5	1.2	A+	A+
3050	741010	7	787	.241	.080	.241	.413	.266	.000	.042	207	.042	.091	015	1.079	0.088	3.6	1.2	7.1	1.7	A-	A+
3051	741101	7	728	.526	.526	.115	.169	.190	.000	.310	.310	194	191	055	-0.311	0.081	1.7	1.1	2.0	1.1	B-	A+
3052	741102	7	787	.507	.117	.264	.112	.507	.000	.309	131	093	226	.309	-0.289	0.078	1.6	1.1	3.1	1.1	A+	A+
3053	741103	7	786	.426	.426	.281	.102	.191	.000	.192	.192	015	242	039	0.106	0.078	4.8	1.1	5.9	1.3	A+	A-
3054	741104	7	738	.202	.081	.423	.294	.202	.000	.085	121	.028	032	.085	1.339	0.097	2.2	1.1	6.6	1.8	A-	A-
3055	741105	7	741	.298	.185	.233	.283	.298	.000	.167	155	177	.130	.167	0.806	0.085	2.6	1.1	4.2	1.3	A-	A-
3056	741106	7	773	.602	.107	.151	.140	.602	.000	.525	294	238	232	.525	-0.711	0.081	-4.4	0.9	-4.6	8.0	A+	A-
3057	741107	7	774	.605	.072	.605	.186	.137	.000	.454	260	.454	220	201	-0.760	0.081	-1.9	0.9	-2.1	0.9	A-	
3058	741108	7	798	.218	.218	.203	.410	.169	.000	.066	.066	.004	023	046	1.222	0.090	2.5	1.1	6.7	1.7	A-	A-
3059	741141	7	770	.582	.182	.582	.138	.099	.000	.409	184	.409	179	231	-0.564	0.080	-1.1	1.0	-0.6	1.0	A-	C-
3060	741142	7	758	.492	.492	.156	.215	.137	.000	.359	.359	292	067	134	-0.170	0.079	-0.4	1.0	1.0	1.0	A-	B-
3061	741143	7	771	.507	.227	.125	.507	.141	.000	.332	116	255	.332	096	-0.261	0.079	1.4	1.0	2.4	1.1	A-	
3062	741144	7	725	.706	.088	.706	.123	.083	.000	.490	198	.490	299	250	-1.229	0.089	-2.7	0.9	-3.4	8.0	A-	A-
3063	741145	7	753	.535	.106	.135	.535	.223	.000	.455	271	194	.455	185	-0.422	0.081	-2.5	0.9	-1.1	1.0	A-	A-
3064	741146	7	778	.541	.212	.118	.541	.129	.000	.173	185	081	.173	.047	-0.442	0.079	6.2	1.2	6.4	1.3	A+	
3065	741147	7	793	.522	.144	.262	.522	.072	.000	.392	164	219	.392	164	-0.428	0.079	0.0	1.0	-0.2	1.0	A+	A-
3066	741148	7	777	.480	.181	.138	.201	.480	.000	.391	209	173	139	.391	-0.161	0.079	-1.3	1.0	-0.2	1.0	A-	A-
3067	741149	7	818	.289	.441	.289	.164	.106	.000	.120	.049	.120	147	080	0.793	0.083	3.7	1.1	7.3	1.6	A-	B-
3068	741150	7	749	.471	.471	.160	.210	.159	.000	.274	.274	118	113	130	-0.141	0.079	2.3	1.1	2.8	1.1	A+	A-
3069	741151	7	789	.333	.355	.215	.096	.333	.000	.248	.032	122	280	.248	0.581	0.082	2.0	1.1	3.9	1.3	A-	A+
3070	719408	8	534	.594	.594	.105	.140	.161	.000	.420	.420	267	300	056	-0.711	0.097	-0.8	1.0	-0.6	1.0	A+	A-
3071	719410	8	551	.490	.263	.156	.490	.091	.000	.333	081	145	.333	271	-0.122	0.093	0.8	1.0	1.8	1.1	A-	A-
3072	719411	8	580	.628	.628	.150	.119	.103	.000	.439	.439	173	254	224	-0.862	0.094	-1.7	0.9	-1.8	0.9	C+	
3073	719412	8	575	.430	.230	.170	.430	.170	.000	.251	045	159	.251	121	0.188	0.091	2.0	1.1	3.1	1.2	A-	A+
3074	719414	8	567	.247	.517	.157	.079	.247	.000	.109	.237	260	262	.109	1.136	0.103	2.2	1.1	6.2	1.7	A-	
3075	719415	8	562	.150	.149	.253	.395	.203	.000	.027	.027	089	024	.100	1.850	0.122	0.9	1.1	6.5	2.2	A-	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	Ν	PVal	P(A)	D/D\	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Kei	IU	Grade	N	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PI(B)	PI(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
3076	719416	8	581	.565	.148	.565	.213	.074	.000	.353	056	.353	237	221	-0.471	0.092	0.3	1.0	8.0	1.0	B-	B-
3077	719417	8	552	.489	.489	.185	.194	.132	.000	.324	.324	076	229	123	-0.147	0.093	0.8	1.0	1.9	1.1	A+	A-
3078	719419	8	519	.410	.310	.410	.135	.145	.000	.202	.004	.202	253	042	0.178	0.096	2.9	1.1	4.3	1.3	A+	
3079	719420	8	614	.481	.121	.480	.290	.109	.000	.371	254	.371	136	132	-0.133	0.088	-0.3	1.0	-0.1	1.0	A+	A+
3080	719423	8	568	.741	.741	.065	.088	.106	.000	.506	.506	246	333	217	-1.457	0.105	-2.4	0.9	-2.5	8.0	A+	
3081	719424	8	554	.455	.072	.162	.310	.455	.000	.320	242	194	054	.320	0.012	0.093	0.4	1.0	1.4	1.1	A+	A-
3082	719425	8	583	.530	.530	.300	.091	.079	.000	.323	.323	106	237	166	-0.304	0.090	0.9	1.0	1.5	1.1	A-	A+
3083	719426	8	544	.500	.500	.114	.261	.125	.000	.382	.382	252	108	192	-0.117	0.093	-1.2	1.0	0.1	1.0	A-	
3084	719430	8	556	.290	.183	.228	.299	.290	.000	.115	160	068	.084	.115	0.866	0.100	3.2	1.1	5.7	1.5	A-	A-
3085	719432	8	554	.294	.119	.330	.256	.294	.000	.209	065	124	036	.209	0.843	0.099	1.6	1.1	2.5	1.2	A-	A-
3086	719433	8	576	.290	.210	.290	.300	.200	.000	.077	086	.077	029	.033	0.852	0.098	4.0	1.2	5.6	1.5	A-	
3087	719434	8	568	.308	.099	.164	.430	.308	.000	.023	223	113	.198	.023	0.742	0.097	5.5	1.2	6.9	1.6	A+	
3088	719435	8	549	.432	.432	.095	.284	.189	.000	.095	.095	313	.012	.100	0.144	0.093	6.8	1.2	7.2	1.5	A-	A-
3089	719437	8	604	.298	.108	.409	.298	.185	.000	.180	218	014	.180	020	0.857	0.096	2.0	1.1	6.2	1.6	A+	
3090	719438	8	586	.526	.181	.130	.526	.164	.000	.343	197	177	.343	097	-0.261	0.090	0.4	1.0	0.7	1.0	A-	
3091	719439	8	555	.559	.121	.178	.142	.559	.000	.465	180	152	326	.465	-0.459	0.093	-3.1	0.9	-2.3	0.9	A+	
3092	719441	8	571	.420	.226	.233	.121	.420	.000	.269	020	080	279	.269	0.152	0.092	2.4	1.1	2.7	1.2	A+	A+
3093	719442	8	588	.441	.440	.289	.112	.158	.000	.109	.109	.069	204	057	0.069	0.090	6.6	1.2	8.5	1.5	A+	
3094	719443	8	551	.837	.837	.051	.053	.060	.000	.542	.542	284	346	256	-2.203	0.126	-2.5	0.8	-3.7	0.6	A+	
3095	719445	8	595	.632	.109	.138	.121	.632	.000	.395	171	121	293	.395	-0.811	0.093	-0.8	1.0	-0.9	1.0	B+	
3096	719446	8	560	.332	.332	.193	.189	.286	.000	027	027	066	025	.107	0.658	0.096	7.3	1.3	7.4	1.6	A+	A+
3097	719447	8	568	.416	.180	.415	.125	.280	.000	.221	111	.221	155	033	0.188	0.092	2.9	1.1	3.6	1.2	A+	A+
3098	719448	8	591	.574	.574	.120	.108	.198	.000	.193	.193	167	128	004	-0.509	0.091	4.4	1.2	4.2	1.2	A-	A+
3099	719450	8	568	.579	.095	.579	.185	.141	.000	.345	137	.345	225	123	-0.576	0.094	1.0	1.0	1.0	1.1	A-	
3100	719451	8	574	.476	.169	.159	.197	.476	.000	.427	140	163	254	.427	-0.141	0.092	-2.0	0.9	-0.6	1.0	A+	
3101	719453	8	548	.630	.082	.172	.630	.117	.000	.437	246	220	.437	189	-0.770	0.097	-1.4	0.9	-1.7	0.9	A+	A-
3102	719454	8	600	.562	.180	.210	.562	.048	.000	.323	006	260	.323	244	-0.516	0.090	1.3	1.0	1.8	1.1	B+	
3103	729938	8	612	.502	.147	.142	.502	.209	.000	.274	110	274	.274	006	-0.187	0.089	2.9	1.1	3.2	1.2	C+	B-
3104	729939	8	593	.125	.093	.410	.373	.125	.000	060	200	.143	.016	060	2.008	0.129	1.4	1.1	7.4	2.7	A-	
3105	729940	8	536	.157	.157	.392	.207	.244	.000	.044	.044	.205	232	051	1.654	0.124	1.4	1.1	4.9	1.8	B-	A+
3106	729941	8	556	.538	.201	.122	.138	.538	.000	.381	214	191	121	.381	-0.366	0.094	-0.4	1.0	0.7	1.0	A+	A+
3107	729942	8	558	.747	.747	.059	.081	.113	.000	.452	.452	237	251	229	-1.496	0.106	-1.4	0.9	-2.0	0.8	A+	
3108	729943	8	558	.493	.158	.493	.152	.197	.000	.312	071	.312	249	102	-0.171	0.092	1.2	1.0	1.8	1.1	A-	A-
3109	729944	8	522	.559	.132	.559	.119	.190	.000	.390	219	.390	241	106	-0.542	0.098	0.2	1.0	0.0	1.0	A+	A-
3110	729945	8	557	.575	.575	.178	.167	.081	.000	.458	.458	199	181	304	-0.556	0.094	-2.2	0.9	-2.5	0.9	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	10	Grade		rvai	F(A)	F(D)	r(c)	F(D)	F (-)	r tbis	r i(A)	F I(D)	F1(C)	r I(D)	IVICas	IVISE	in	in	out	out	/F	/B
3111	729946	8	560	.684	.075	.125	.116	.684	.000	.505	323	170	292	.505	-1.068	0.100	-2.6	0.9	-2.8	8.0	A+	A-
3112	729947	8	595	.459	.076	.309	.459	.156	.000	.223	277	071	.223	013	0.078	0.089	3.0	1.1	5.1	1.3	A-	A+
3113	729948	8	560	.688	.688	.043	.239	.030	.000	.371	.371	287	156	274	-1.176	0.101	0.4	1.0	0.2	1.0	A+	A-
3114	729949	8	545	.673	.119	.106	.101	.673	.000	.462	209	243	247	.462	-1.011	0.101	-1.6	0.9	-2.2	0.9	A+	B-
3115	729950	8	537	.736	.061	.736	.104	.099	.000	.381	196	.381	122	280	-1.438	0.108	0.2	1.0	-0.5	1.0	A+	
3116	729951	8	592	.449	.253	.206	.091	.449	.000	.317	044	188	218	.317	0.021	0.090	0.9	1.0	1.5	1.1	A+	
3117	729952	8	629	.262	.409	.262	.111	.218	.000	.054	020	.054	152	.082	0.990	0.097	4.2	1.2	5.8	1.6	A-	
3118	729953	8	530	.447	.092	.447	.408	.053	.000	.204	166	.204	001	238	0.025	0.095	3.6	1.1	4.8	1.3	B-	
3119	729954	8	538	.500	.500	.112	.240	.149	.000	.350	.350	269	063	179	-0.174	0.094	0.0	1.0	0.9	1.0	A+	A+
3120	729955	8	583	.341	.245	.184	.341	.230	.000	.183	178	115	.183	.082	0.613	0.094	2.4	1.1	5.0	1.4	A-	
3121	729956	8	601	.263	.241	.263	.304	.191	.000	.146	040	.146	047	066	0.997	0.098	1.8	1.1	4.8	1.5	A+	A+
3122	729957	8	574	.645	.645	.066	.181	.108	.000	.362	.362	308	182	087	-0.916	0.095	0.1	1.0	0.3	1.0	A+	
3123	729958	8	600	.488	.160	.298	.488	.053	.000	.247	262	003	.247	116	-0.111	0.089	3.2	1.1	3.4	1.2	A+	
3124	729959	8	530	.636	.051	.636	.202	.111	.000	.389	180	.389	282	110	-0.834	0.100	0.1	1.0	-0.3	1.0	A+	A-
3125	729960	8	566	.610	.177	.610	.102	.111	.000	.408	376	.408	051	127	-0.759	0.096	-0.4	1.0	0.0	1.0	A+	A-
3126	729961	8	580	.435	.259	.434	.116	.191	.000	.308	099	.308	260	067	0.088	0.091	1.4	1.0	0.8	1.0	A-	A-
3127	729962	8	597	.392	.216	.151	.241	.392	.000	.256	024	268	046	.256	0.309	0.091	2.4	1.1	3.4	1.2	A+	
3128	729963	8	570	.435	.435	.258	.246	.061	.000	.280	.280	126	149	082	0.099	0.091	0.7	1.0	2.9	1.2	A+	
3129	729964	8	529	.614	.208	.614	.102	.076	.000	.258	076	.258	226	099	-0.775	0.098	2.6	1.1	2.0	1.1	A+	
3130	729965	8	592	.527	.236	.527	.108	.128	.000	.272	075	.272	142	179	-0.209	0.089	1.6	1.1	3.3	1.2	A +	
3131	729966	8	609	.627	.080	.627	.220	.072	.000	.351	213	.351	181	142	-0.781	0.092	0.4	1.0	0.7	1.0	A-	
3132	729967	8	552	.371	.183	.322	.371	.123	.000	.238	103	025	.238	192	0.373	0.095	1.6	1.1	3.7	1.2	A+	
3133	729968	8	612	.802	.080	.052	.802	.065	.000	.467	252	315	.467	192	-1.875	0.111	-1.6	0.9	-1.8	0.8	A+	A-
3134	729969	8	530	.264	.268	.264	.374	.094	.000	057	021	057	.126	090	1.027	0.104	5.0	1.3	6.9	1.7	B+	
3135	729970	8	586	.130	.130	.160	.572	.138	.000	.093	.093	251	.215	132	1.898	0.128	0.4	1.0	4.4	1.9	B-	A+
3136	729971	8	547	.706	.112	.110	.073	.706	.000	.379	135	147	325	.379	-1.229	0.103	0.1	1.0	0.1	1.0	B+	
3137	729972	8	561	.405	.258	.196	.405	.141	.000	.056	.017	020	.056	078	0.214	0.094	7.9	1.3	7.5	1.5	A-	A+
3138	729973	8	581	.351	.143	.227	.279	.351	.000	.194	069	069	088	.194	0.532	0.093	2.4	1.1	4.6	1.3	A-	
3139	729974	8	578	.580	.112	.145	.580	.163	.000	.414	262	209	.414	130	-0.603	0.092	-1.7	0.9	-0.5	1.0	A+	
3140	729975	8	602	.628	.045	.221	.106	.628	.000	.405	175	213	230	.405	-0.763	0.093	-0.9	1.0	-0.2	1.0	A-	
3141	729976	8	578	.509	.509	.035	.071	.386	.000	.203	.203	217	333	.049	-0.196	0.091	4.5	1.2	4.7	1.2	A-	
3142	729977	8	588	.553	.267	.553	.058	.122	.000	.307	184	.307	306	.000	-0.379	0.091	1.6	1.1	2.1	1.1	A-	
3143	729978	8	533	.454	.311	.454	.129	.105	.000	.127	001	.127	103	092	0.033	0.094	4.8	1.2	7.6	1.4	A-	
3144	729979	8	572	.745	.745	.086	.093	.077	.000	.429	.429	307	179	184	-1.410	0.105	-1.1	0.9	-1.7	0.9	A-	
3145	734806	8	562	.621	.621	.157	.128	.094	.000	.385	.385	189	252	117	-0.770	0.095	-0.3	1.0	-0.6	1.0	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
3146	734807	8	560	.866	.039	.032	.063	.866	.000	.572	296	292	354	.572	-2.413	0.134	-2.8	0.8	-4.4	0.5	A+	A-
3147	734808	8	567	.601	.182	.601	.134	.083	.000	.345	196	.345	116	195	-0.737	0.095	1.5	1.1	1.1	1.1	A-	A-
3148	734809	8	600	.585	.585	.140	.175	.100	.000	.409	.409	141	259	180	-0.612	0.091	-1.1	1.0	-0.7	1.0	A-	A+
3149	734811	8	585	.576	.133	.171	.576	.120	.000	.246	188	089	.246	075	-0.507	0.092	3.2	1.1	3.0	1.1	A-	A-
3150	734812	8	564	.447	.080	.383	.090	.447	.000	.364	255	208	039	.364	0.044	0.092	-0.7	1.0	1.1	1.1	A+	
3151	734813	8	568	.477	.181	.477	.215	.127	.000	.245	086	.245	072	179	-0.073	0.091	2.9	1.1	3.1	1.1	A+	
3152	734820	8	571	.531	.531	.109	.096	.264	.000	.369	.369	318	154	091	-0.344	0.092	-0.1	1.0	-0.2	1.0	A+	A-
3153	734829	8	576	.344	.344	.151	.080	.425	.000	.037	.037	036	232	.118	0.586	0.094	5.9	1.2	7.4	1.5	A-	
3154	734830	8	592	.454	.171	.149	.454	.226	.000	.156	139	113	.156	.035	0.025	0.090	5.0	1.2	6.5	1.3	A+	A-
3155	734831	8	538	.496	.102	.175	.227	.496	.000	.358	156	284	057	.358	-0.128	0.094	-0.4	1.0	0.4	1.0	A-	
3156	734832	8	614	.318	.111	.257	.318	.314	.000	.013	066	047	.013	.075	0.705	0.092	5.6	1.2	8.2	1.6	A+	A-
3157	734835	8	615	.476	.218	.140	.476	.166	.000	.239	153	094	.239	064	-0.063	0.088	3.2	1.1	4.3	1.2	A+	A+
3158	734836	8	519	.418	.141	.129	.312	.418	.000	068	.069	044	.053	068	0.214	0.096	9.7	1.3	9.9	1.7	A+	
3159	734837	8	606	.297	.157	.460	.297	.086	.000	.080	200	.149	.080	135	0.822	0.095	4.5	1.2	6.2	1.6	A-	A-
3160	734839	8	566	.445	.445	.283	.219	.053	.000	.063	.063	.045	081	080	0.004	0.092	8.2	1.3	7.0	1.4	A-	A+
3161	734840	8	550	.449	.131	.305	.115	.449	.000	.248	154	.012	241	.248	0.110	0.093	2.6	1.1	3.2	1.2	A-	
3162	734841	8	525	.168	.284	.341	.208	.168	.000	.081	.019	124	.050	.081	1.660	0.122	1.0	1.1	4.6	1.7	B-	
3163	734842	8	564	.548	.259	.548	.101	.092	.000	.290	138	.290	140	145	-0.421	0.092	2.0	1.1	1.9	1.1	A+	B-
3164	734843	8	565	.414	.414	.179	.189	.218	.000	.198	.198	183	086	.015	0.204	0.093	4.1	1.1	3.9	1.3	A-	
3165	734844	8	614	.210	.060	.609	.210	.121	.000	027	208	.242	027	176	1.334	0.104	3.0	1.2	8.2	2.1	A+	
3166	734845	8	596	.815	.082	.047	.815	.055	.000	.463	256	249	.463	249	-1.941	0.115	-1.2	0.9	-2.6	8.0	B+	A-
3167	734846	8	566	.551	.203	.102	.143	.551	.000	.378	113	241	199	.378	-0.389	0.093	-0.3	1.0	-0.1	1.0	Ċ	
3168	734847	8	582	.777	.058	.095	.070	.777	.000	.505	255	334	206	.505	-1.664	0.109	-2.3	0.9	-2.9	8.0	A-	B-
3169	734848	8	575	.492	.099	.191	.217	.492	.000	.226	120	223	.026	.226	-0.121	0.091	3.7	1.1	4.0	1.2	A+	B-
3170	734850	8	579	.233	.247	.406	.233	.114	.000	.241	104	075	.241	064	1.184	0.104	0.3	1.0	1.7	1.2	A-	B-
3171	734851	8	547	.347	.161	.347	.298	.194	.000	.342	196	.342	114	098	0.546	0.097	-1.2	1.0	0.6	1.0	A-	
3172	734852	8	548	.611	.611	.117	.133	.139	.000	.396	.396	122	225	224	-0.745	0.096	-0.6	1.0	-0.7	1.0	A-	
3173	734853	8	574	.402	.402	.202	.242	.153	.000	.217	.217	143	097	022	0.291	0.092	2.5	1.1	4.4	1.3	A-	
3174	734854	8	551	.499	.261	.499	.172	.067	.000	.277	148	.277	195	.000	-0.191	0.093	2.3	1.1	3.5	1.2	A-	A+
3175	734855	8	600	.310	.173	.317	.310	.200	.000	.191	163	.047	.191	121	0.718	0.095	1.8	1.1	6.0	1.5	A-	A-
3176	734859	8	561	.544	.196	.230	.544	.030	.000	.292	303	027	.292	083	-0.383	0.093	2.4	1.1	2.1	1.1	A-	
3177	734860	8	578	.550	.140	.178	.131	.550	.000	.432	204	193	208	.432	-0.454	0.092	-2.0	0.9	-0.8	1.0	A+	
3178	734861	8	549	.636	.164	.636	.080	.120	.000	.326	183	.326	233	080	-0.797	0.096	0.6	1.0	0.4	1.0	A-	
3179	734865	8	572	.147	.094	.615	.147	.143	.000	003	227	.115	003	.033	1.807	0.122	1.4	1.1	5.9	2.1	A-	A-
3180	734866	8	609	.514	.092	.074	.514	.320	.000	.106	233	153	.106	.116	-0.288	0.088	6.8	1.2	6.8	1.3	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Pof	ID	FT	Ν	PVal	D/A\	D/D\	D(C)	D/D)	D/ \	PtBis	DT/A)	DT/D\	DT/C)	DT(D)	Moos	MSE	Z-	MS-	Z-	MS-	М	W
Ref	IU	Grade	N	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
3181	734870	8	593	.444	.219	.189	.444	.148	.000	.272	106	112	.272	134	0.077	0.090	2.4	1.1	3.1	1.2	A+	A-
3182	734871	8	508	.339	.339	.195	.266	.201	.000	.090	.090	048	062	.009	0.620	0.100	4.0	1.2	7.8	1.7	A-	A+
3183	734872	8	585	.178	.109	.415	.297	.178	.000	.246	161	048	044	.246	1.522	0.113	-0.6	1.0	2.6	1.3	A-	
3184	734873	8	544	.428	.151	.094	.428	.327	.000	.207	127	258	.207	.039	0.191	0.094	3.9	1.1	4.1	1.2	A-	A-
3185	734874	8	542	.323	.100	.271	.306	.323	.000	.181	190	065	.002	.181	0.684	0.099	3.1	1.1	4.5	1.4	A-	
3186	734875	8	566	.410	.113	.235	.410	.242	.000	.191	121	170	.191	.039	0.261	0.092	3.1	1.1	7.1	1.5	B-	A+
3187	734876	8	590	.364	.364	.110	.205	.320	.000	.013	.013	243	009	.157	0.508	0.091	7.4	1.3	7.6	1.5	A-	A+
3188	734880	8	592	.637	.147	.100	.637	.117	.000	.385	224	186	.385	157	-0.773	0.093	-0.6	1.0	-1.0	1.0	A-	A-
3189	734881	8	581	.451	.258	.451	.165	.126	.000	.277	049	.277	113	224	0.029	0.091	1.5	1.1	4.0	1.2	A-	
3190	734885	8	560	.227	.179	.227	.473	.121	.000	.095	111	.095	.090	130	1.185	0.106	1.9	1.1	5.0	1.6	A+	
3191	734886	8	548	.420	.420	.230	.223	.128	.000	.080	.080	.004	013	107	0.207	0.093	7.3	1.2	5.2	1.3	A+	A+
3192	734887	8	557	.483	.483	.226	.192	.099	.000	.260	.260	078	081	219	-0.034	0.092	2.1	1.1	2.8	1.1	A-	
3193	734888	8	573	.449	.148	.230	.449	.173	.000	.147	117	024	.147	056	0.055	0.091	5.7	1.2	5.4	1.3	A-	A-
3194	734889	8	600	.268	.268	.373	.178	.180	.000	.182	.182	.002	131	082	0.984	0.098	0.8	1.0	5.9	1.6	A+	A-
3195	734890	8	560	.563	.248	.121	.563	.068	.000	.332	090	244	.332	182	-0.422	0.093	0.6	1.0	0.5	1.0	A-	
3196	734891	8	611	.777	.041	.119	.777	.062	.000	.389	279	268	.389	081	-1.717	0.107	-0.2	1.0	-0.1	1.0	B+	A-
3197	734892	8	575	.219	.400	.117	.264	.219	.000	.160	.159	100	254	.160	1.331	0.107	1.1	1.1	5.7	1.8	C-	A-
3198	734893	8	596	.574	.094	.144	.188	.574	.000	.468	257	273	156	.468	-0.575	0.091	-2.7	0.9	-2.2	0.9	A-	A-
3199	734894	8	585	.248	.311	.292	.248	.149	.000	.038	.074	063	.038	061	1.096	0.102	3.4	1.2	7.3	1.8	A+	A+
3200	734913	8	514	.426	.183	.329	.426	.062	.000	.144	193	.098	.144	177	0.197	0.097	5.1	1.2	7.0	1.5	A+	B-
3201	734916	8	590	.471	.259	.175	.471	.095	.000	.263	108	146	.263	097	-0.031	0.090	2.3	1.1	3.1	1.1	A+	
3202	735032	8	549	.355	.355	.350	.235	.060	.000	.217	.217	152	.022	170	0.476	0.096	1.9	1.1	5.1	1.4	B-	
3203	736853	8	583	.431	.136	.302	.431	.132	.000	.183	123	.029	.183	183	0.153	0.090	4.0	1.1	5.4	1.3	A+	A-
3204	736854	8	580	.509	.509	.272	.100	.119	.000	.292	.292	107	198	120	-0.181	0.090	1.4	1.0	2.8	1.1	A-	A-
3205	736855	8	555	.393	.393	.234	.205	.168	.000	.292	.292	072	193	091	0.262	0.094	0.5	1.0	2.4	1.2	A-	
3206	736857	8	604	.715	.091	.715	.134	.060	.000	.489	197	.489	340	205	-1.268	0.098	-2.6	0.9	-3.3	8.0	A+	
3207	736863	8	575	.282	.282	.310	.224	.184	.000	.240	.240	.036	198	109	0.901	0.099	0.3	1.0	4.7	1.5	A+	A-
3208	736864	8	571	.601	.116	.601	.144	.140	.000	.341	205	.341	214	077	-0.649	0.094	0.8	1.0	0.7	1.0	A-	A-
3209	736866	8	561	.201	.178	.135	.485	.201	.000	.114	214	016	.083	.114	1.396	0.110	1.1	1.1	5.2	1.7	A-	A+
3210	736867	8	616	.373	.373	.226	.276	.125	.000	.221	.221	084	036	169	0.402	0.090	3.0	1.1	3.6	1.2	A-	A+
3211	736868	8	538	.587	.149	.162	.102	.587	.000	.501	141	236	361	.501	-0.607	0.096	-3.4	0.9	-3.1	0.9	A+	A-
3212	736869	8	544	.388	.208	.388	.164	.241	.000	.174	108	.174	191	.070	0.330	0.095	4.4	1.2	4.1	1.3	A+	
3213	737371	8	528	.464	.464	.165	.208	.163	.000	.345	.345	202	130	120	0.001	0.095	0.1	1.0	1.0	1.1	A+	B+
3214	739584	8	574	.728	.096	.115	.061	.728	.000	.452	256	154	320	.452	-1.335	0.103	-1.6	0.9	-1.2	0.9	A+	
3215	739585	8	614	.723	.119	.090	.723	.068	.000	.433	259	259	.433	143	-1.297	0.099	-1.2	0.9	-1.9	0.9	B+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	Ν	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	N	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PUDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
3216	739586	8	505	.618	.222	.069	.618	.091	.000	.358	153	279	.358	137	-0.769	0.100	0.4	1.0	0.2	1.0	A-	A+
3217	740014	8	566	.567	.567	.276	.064	.094	.000	.406	.406	148	200	295	-0.512	0.093	-0.8	1.0	-0.4	1.0	A-	A-
3218	740188	8	607	.438	.099	.250	.213	.438	.000	.315	246	057	143	.315	0.124	0.089	0.3	1.0	3.8	1.2	A+	B+
3219	740189	8	567	.693	.166	.693	.079	.062	.000	.374	135	.374	269	206	-1.114	0.099	-0.2	1.0	-0.7	1.0	B+	A-
3220	740190	8	590	.254	.254	.388	.193	.164	.000	.001	.001	.191	077	170	1.023	0.100	3.7	1.2	7.9	1.8	A-	
3221	740191	8	573	.351	.178	.084	.387	.351	.000	.313	122	170	115	.313	0.514	0.094	-0.6	1.0	2.8	1.2	A-	A-
3222	740192	8	551	.621	.162	.103	.114	.621	.000	.480	236	249	220	.480	-0.734	0.097	-2.7	0.9	-2.5	0.9	A+	A+
3223	740193	8	543	.551	.206	.145	.551	.098	.000	.315	076	232	.315	150	-0.440	0.095	1.5	1.1	1.5	1.1	A+	B-
3224	740194	8	578	.555	.555	.121	.256	.067	.000	.315	.315	315	.001	216	-0.417	0.092	1.4	1.1	2.3	1.1	A+	A-
3225	740195	8	544	.548	.548	.119	.107	.226	.000	.252	.252	105	216	060	-0.408	0.094	2.8	1.1	2.8	1.1	A-	A-
3226	740196	8	553	.349	.349	.190	.260	.201	.000	.162	.162	137	.033	096	0.616	0.095	2.8	1.1	4.7	1.3	A+	
3227	740203	8	551	.441	.441	.103	.303	.152	.000	.249	.249	270	.020	140	0.056	0.093	1.7	1.1	3.2	1.2	A-	
3228	740204	8	534	.603	.154	.603	.099	.144	.000	.363	197	.363	246	094	-0.676	0.097	0.4	1.0	0.3	1.0	A+	A-
3229	740205	8	553	.356	.369	.145	.130	.356	.000	.189	.182	245	273	.189	0.563	0.095	2.2	1.1	4.4	1.3	A+	A+
3230	740206	8	548	.464	.464	.285	.124	.128	.000	.309	.309	036	227	189	-0.006	0.094	1.2	1.0	2.0	1.1	A-	
3231	740207	8	584	.199	.199	.423	.137	.241	.000	.070	.070	.039	153	.013	1.370	0.109	2.0	1.1	5.4	1.7	A-	A+
3232	740208	8	554	.480	.168	.146	.206	.480	.000	.293	111	181	101	.293	-0.083	0.092	1.0	1.0	2.3	1.1	A+	
3233	740209	8	561	.601	.103	.194	.601	.102	.000	.283	317	023	.283	111	-0.657	0.094	2.1	1.1	2.2	1.1	B+	A-
3234	740210	8	536	.560	.125	.560	.196	.119	.000	.271	137	.271	146	097	-0.447	0.096	3.3	1.1	3.3	1.2	A-	
3235	740211	8	582	.723	.127	.089	.060	.723	.000	.451	251	251	197	.451	-1.376	0.103	-1.0	1.0	-1.4	0.9	A+	B-
3236	740212	8	584	.416	.137	.301	.416	.146	.000	.157	127	014	.157	079	0.248	0.091	4.6	1.2	6.1	1.4	A+	
3237	740213	8	531	.234	.234	.399	.186	.181	.000	167	167	.259	096	049	1.200	0.108	5.7	1.3	8.3	2.1	A+	A+
3238	740214	8	531	.194	.222	.390	.194	.194	.000	.050	008	027	.050	009	1.517	0.115	1.8	1.1	5.0	1.7	A+	A+
3239	740215	8	568	.433	.222	.176	.169	.433	.000	.236	.042	143	213	.236	0.112	0.092	2.7	1.1	4.8	1.3	A+	A-
3240	740216	8	567	.413	.159	.169	.259	.413	.000	.409	172	139	198	.409	0.216	0.092	-2.2	0.9	-1.4	0.9	A+	B-
3241	740217	8	563	.432	.128	.142	.432	.298	.000	.255	128	175	.255	050	0.133	0.092	2.3	1.1	2.4	1.1	C-	
3242	740267	8	556	.385	.173	.261	.385	.182	.000	.076	018	.006	.076	086	0.359	0.094	6.3	1.2	6.3	1.4	A+	
3243	740268	8	572	.243	.276	.243	.255	.226	.000	.052	.024	.052	082	.007	1.164	0.104	3.3	1.2	6.5	1.8	A-	A+
3244	740269	8	594	.439	.108	.140	.313	.439	.000	.297	202	027	163	.297	0.123	0.089	1.1	1.0	1.1	1.1	A-	
3245	740270	8	555	.395	.395	.369	.130	.106	.000	.085	.085	.063	083	143	0.318	0.094	6.8	1.3	6.9	1.5	A+	A-
3246	740271	8	495	.321	.321	.170	.315	.194	.000	.069	.069	071	.091	120	0.692	0.103	3.6	1.2	8.7	1.8	A-	
3247	740277	8	597	.256	.183	.260	.302	.256	.000	.287	189	107	011	.287	1.044	0.100	-0.6	1.0	2.6	1.3	A-	
3248	740278	8	615	.350	.167	.350	.306	.177	.000	.061	008	.061	045	014	0.552	0.090	5.6	1.2	7.3	1.5	A+	A-
3249	740279	8	579	.584	.584	.231	.100	.085	.000	.303	.303	017	266	223	-0.633	0.093	2.0	1.1	2.0	1.1	A+	B+
3250	740280	8	568	.447	.134	.048	.371	.447	.000	.126	026	316	.028	.126	0.112	0.091	6.1	1.2	4.6	1.2	A+	

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS-	M /F	W /B
3251	740281	8	583	.254	.170	.065	.254	.511	.000	.075	237	310	.075	.267	1.084	0.100	2.8	1.1	4.8	1.5	A-	A-
3252	740282	8	549	.412	.144	.197	.248	.412	.000	.313	080	177	129	.313	0.207	0.094	0.4	1.0	1.1	1.1	A-	A-
3253	740283	8	569	.301	.272	.301	.225	.202	.000	.098	011	.098	132	.038	0.826	0.097	3.4	1.1	5.8	1.5	A+	
3254	740284	8	585	.320	.091	.450	.320	.140	.000	.084	362	.165	.084	050	0.690	0.095	5.0	1.2	5.7	1.5	Α-	
3255	740285	8	596	.362	.315	.362	.210	.112	.000	.106	042	.106	005	092	0.527	0.091	4.9	1.2	6.7	1.5	A+	
3256	740286	8	551	.499	.499	.140	.276	.085	.000	.240	.240	115	022	252	-0.161	0.093	3.4	1.1	4.0	1.2	A+	
3257	740287	8	576	.392	.392	.214	.090	.304	.000	.276	.276	188	103	061	0.346	0.092	0.9	1.0	3.0	1.2	A-	
3258	740288	8	536	.285	.131	.285	.244	.340	.000	022	105	022	.019	.078	0.827	0.102	5.2	1.2	8.2	1.8	A-	A-
3259	740289	8	568	.109	.236	.109	.335	.320	.000	172	082	172	.062	.127	2.170	0.139	1.6	1.2	9.0	3.6	A-	
3260	740290	8	522	.582	.107	.167	.144	.582	.000	.441	204	176	253	.441	-0.549	0.097	-1.9	0.9	-1.8	0.9	A+	
3261	740291	8	556	.221	.371	.221	.228	.180	.000	.020	.077	.020	094	016	1.276	0.108	3.0	1.2	6.4	1.8	A-	A-
3262	740292	8	563	.403	.403	.290	.194	.114	.000	.162	.162	.007	177	040	0.278	0.093	5.1	1.2	4.6	1.3	A+	
3263	740293	8	592	.274	.274	.122	.446	.159	.000	002	002	125	.119	048	0.964	0.098	4.6	1.2	8.4	1.9	A-	B+
3264	740294	8	573	.461	.461	.173	.194	.173	.000	.222	.222	103	233	.055	-0.024	0.091	3.2	1.1	3.7	1.2	A-	
3265	740295	8	601	.228	.228	.334	.160	.278	.000	.039	.039	.055	140	.020	1.257	0.103	3.1	1.2	6.8	1.8	A-	A-
3266	740443	8	550	.409	.409	.273	.200	.118	.000	.272	.272	035	190	131	0.255	0.093	0.7	1.0	1.8	1.1	A+	A+
3267	740444	8	564	.335	.310	.282	.335	.073	.000	.008	.007	.070	.008	149	0.636	0.096	6.2	1.2	9.3	1.8	A-	B-
3268	740446	8	568	.412	.412	.164	.379	.046	.000	010	010	125	.160	126	0.211	0.092	9.0	1.3	9.9	1.6	A+	A-
3269	740447	8	545	.534	.090	.262	.114	.534	.000	.340	225	045	268	.340	-0.314	0.094	0.7	1.0	0.7	1.0	C+	A+
3270	740448	8	553	.394	.275	.394	.192	.139	.000	.167	.040	.167	151	115	0.295	0.095	4.5	1.2	5.9	1.4	A+	
3271	740449	8	535	.342	.325	.342	.133	.200	.000	.050	.210	.050	283	066	0.594	0.098	5.5	1.2	8.5	1.7	A-	A+
3272	740450	8	573	.414	.414	.164	.283	.140	.000	.259	.259	354	.030	027	0.256	0.092	2.1	1.1	3.5	1.2	A+	A-
3273	740451	8	604	.450	.450	.154	.215	.180	.000	.242	.242	188	023	112	0.043	0.089	2.9	1.1	4.3	1.2	A-	
3274	740452	8	533	.266	.266	.188	.178	.368	.000	.134	.134	091	129	.053	0.934	0.104	2.1	1.1	4.5	1.4	A-	
3275	740838	8	587	.354	.102	.354	.228	.315	.000	.212	166	.212	089	029	0.539	0.093	2.4	1.1	3.1	1.2	A-	A-
3276	741002	8	556	.468	.275	.468	.185	.072	.000	.263	.051	.263	230	250	-0.109	0.092	2.5	1.1	2.6	1.1	A+	
3277	741003	8	580	.214	.138	.543	.214	.105	.000	.113	235	.200	.113	211	1.301	0.107	1.6	1.1	4.7	1.6	A-	A-
3278	741004	8	564	.495	.124	.495	.161	.220	.000	.307	189	.307	152	085	-0.128	0.092	1.0	1.0	1.8	1.1	A+	
3279	741206	8	551	.376	.185	.245	.194	.376	.000	.352	144	046	240	.352	0.404	0.095	-0.2	1.0	0.2	1.0	A-	B-
3280	741207	8	574	.861	.861	.049	.052	.038	.000	.321	.321	251	131	145	-2.398	0.129	-0.1	1.0	0.1	1.0	B+	
3281	741208	8	627	.260	.185	.193	.362	.260	.000	.204	145	156	.059	.204	1.065	0.097	1.2	1.1	4.3	1.4	A-	A-
3282	741209	8	568	.616	.616	.188	.090	.106	.000	.298	.298	047	209	218	-0.731	0.094	1.3	1.1	1.3	1.1	A+	B-
3283	741210	8	540	.382	.381	.139	.196	.283	.000	.173	.173	138	125	.030	0.369	0.096	3.8	1.1	5.5	1.4	A-	
3284	741211	8	594	.574	.226	.114	.574	.086	.000	.360	133	263	.360	137	-0.522	0.090	-0.1	1.0	-0.4	1.0	C+	A-
3285	741212	8	551	.256	.330	.256	.327	.087	.000	.005	.134	.005	.001	233	1.067	0.104	4.5	1.2	7.6	1.9	A+	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Dof	ın	FT	Ν	DV/el	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:	DT/A)	DT/D)	DT/C)	DT(D)	Mass	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	IV	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
3286	741213	8	594	.369	.369	.091	.288	.253	.000	.200	.200	233	021	046	0.423	0.091	2.7	1.1	4.5	1.3	A+	A-
3287	741242	8	556	.446	.446	.241	.167	.146	.000	.268	.268	006	276	078	0.050	0.093	1.7	1.1	3.3	1.2	A+	
3288	741243	8	559	.528	.107	.528	.261	.104	.000	.400	256	.400	157	169	-0.369	0.093	-0.8	1.0	-0.6	1.0	A-	A-
3289	741244	8	561	.447	.169	.283	.447	.100	.000	.190	161	.012	.190	131	0.051	0.092	4.4	1.1	4.2	1.2	A+	
3290	741245	8	576	.627	.092	.627	.122	.160	.000	.283	197	.283	186	052	-0.780	0.095	2.5	1.1	2.2	1.1	A-	A-
3291	741246	8	556	.496	.126	.144	.234	.496	.000	.456	187	269	169	.456	-0.242	0.092	-3.3	0.9	-2.8	0.9	A+	A-
3292	741248	8	552	.794	.094	.056	.793	.056	.000	.494	195	327	.494	294	-1.806	0.116	-1.7	0.9	-2.3	0.8	B+	
3293	741307	8	589	.304	.261	.166	.304	.268	.000	.121	083	059	.121	.005	0.740	0.095	2.8	1.1	5.5	1.5	A-	B-
3294	741308	8	591	.283	.357	.191	.283	.169	.000	.009	.027	149	.009	.111	0.890	0.097	5.0	1.2	6.2	1.6	A-	A-
3295	741309	8	543	.144	.188	.429	.239	.144	.000	054	063	.112	028	054	1.837	0.127	2.0	1.2	6.0	2.2	A-	
3296	741310	8	580	.395	.141	.334	.395	.129	.000	.087	007	017	.087	096	0.322	0.092	6.0	1.2	7.2	1.4	A-	
3297	741311	8	558	.337	.337	.168	.256	.238	.000	.010	.010	085	018	.083	0.588	0.096	6.6	1.3	7.4	1.6	A+	A-
3298	741312	8	593	.261	.128	.204	.261	.406	.000	007	162	154	007	.242	1.003	0.099	4.9	1.2	6.6	1.7	A-	B-
3299	741313	8	560	.214	.191	.214	.259	.336	.000	041	.009	041	132	.150	1.288	0.109	3.6	1.2	6.8	1.9	A-	A+
3300	741314	8	577	.305	.305	.444	.165	.087	.000	.097	.097	.143	224	116	0.768	0.097	4.9	1.2	4.6	1.4	A+	B-
3301	741315	8	574	.310	.310	.230	.096	.364	.000	.239	.239	115	194	011	0.746	0.097	0.9	1.0	3.8	1.3	B-	
3302	741316	8	580	.209	.209	.153	.302	.336	.000	036	036	148	056	.198	1.343	0.107	3.6	1.2	5.6	1.7	A-	
3303	741317	8	556	.317	.218	.324	.142	.317	.000	.153	171	.140	189	.153	0.726	0.097	2.3	1.1	5.4	1.4	A-	
3304	741384	8	555	.418	.418	.173	.157	.252	.000	.325	.325	283	193	.039	0.164	0.093	0.2	1.0	2.0	1.1	A+	
3305	741385	8	547	.143	.165	.554	.143	.139	.000	002	129	.078	002	.027	1.791	0.127	1.2	1.1	7.3	2.5	A-	
3306	741386	8	631	.303	.246	.246	.303	.206	.000	.081	015	061	.081	011	0.789	0.092	3.9	1.2	7.1	1.6	A+	A-
3307	741409	8	601	.376	.376	.295	.226	.103	.000	.153	.153	011	127	053	0.357	0.091	4.3	1.1	6.1	1.4	A-	
3308	716939	BIO	4553	.402	.402	.348	.111	.139	.000	.248	.248	.038	194	227	0.772	0.033	7.3	1.1	9.9	1.2	A-	A+
3309	716940	BIO	4685	.408	.260	.250	.408	.082	.000	.297	089	178	.297	109	0.727	0.032	3.5	1.0	9.7	1.2	A-	A-
3310	716941	BIO	4693	.525	.525	.286	.116	.073	.000	.321	.321	159	200	093	0.145	0.032	4.0	1.1	3.4	1.1	A-	A-
3311	716942	BIO	4704	.486	.266	.486	.132	.116	.000	.245	043	.245	219	092	0.364	0.032	9.1	1.1	9.9	1.2	A-	A-
3312	716943	BIO	4609	.550	.137	.187	.550	.127	.000	.128	134	.021	.128	077	0.058	0.032	9.9	1.2	9.9	1.3	A+	A+
3313	719251	BIO	4699	.668	.668	.091	.131	.110	.000	.358	.358	264	176	107	-0.549	0.034	0.9	1.0	0.7	1.0	A+	A+
3314	719252	BIO	4615	.400	.140	.282	.400	.178	.000	.228	176	068	.228	052	0.773	0.033	7.8	1.1	9.9	1.2	A-	A-
3315	719254	BIO	4721	.333	.189	.204	.333	.274	.000	.105	037	194	.105	.097	1.136	0.033	9.9	1.2	9.9	1.5	A+	A+
3316	719255	BIO	4697	.538	.193	.142	.127	.538	.000	.182	034	126	102	.182	0.095	0.032	9.9	1.2	9.9	1.3	A+	A+
3317	719256	BIO	4719	.334	.103	.272	.334	.291	.000	.075	174	038	.075	.076	1.104	0.033	9.9	1.2	9.9	1.5	A-	A-
3318	719259	BIO	4521	.473	.202	.157	.473	.169	.000	.298	115	254	.298	028	0.401	0.033	5.2	1.1	7.6	1.1	A+	A+
3319	719657	BIO	4574	.403	.403	.239	.207	.152	.000	.343	.343	155	179	083	0.748	0.033	-0.9	1.0	3.5	1.1	A-	A+
3320	721681	BIO	4837	.632	.072	.632	.096	.201	.000	.290	269	.290	253	.010	-0.370	0.033	5.7	1.1	6.7	1.1	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
3321	721682	BIO	4758	.582	.228	.135	.055	.582	.000	.393	195	170	236	.393	-0.098	0.032	-2.0	1.0	-2.4	1.0	A+	A+
3322	721684	BIO	4674	.490	.163	.233	.490	.114	.000	.218	106	154	.218	014	0.347	0.032	9.9	1.1	9.9	1.3	A+	Α-
3323	721685	BIO	4646	.342	.213	.210	.235	.342	.000	.194	.015	174	064	.194	1.059	0.033	8.9	1.1	9.9	1.4	A+	A+
3324	722444	BIO	4666	.471	.471	.247	.171	.111	.000	.210	.210	106	135	027	0.428	0.032	9.9	1.1	9.9	1.3	A+	A-
3325	722445	BIO	4547	.233	.133	.232	.344	.290	.000	.103	063	.103	095	.050	1.675	0.037	6.7	1.1	9.9	1.6	A-	A-
3326	722446	BIO	4656	.365	.365	.314	.176	.145	.000	.324	.324	061	116	238	0.917	0.033	0.3	1.0	5.4	1.1	A+	A+
3327	722447	BIO	4787	.183	.146	.364	.307	.183	.000	.253	112	071	052	.253	2.019	0.040	-0.6	1.0	7.1	1.3	A-	A+
3328	722449	BIO	4544	.357	.173	.294	.176	.357	.000	.206	073	082	088	.206	0.973	0.034	8.2	1.1	9.9	1.3	A+	A+
3329	722450	BIO	4601	.221	.221	.281	.292	.206	.000	.118	.118	099	046	.040	1.747	0.038	5.8	1.1	9.9	1.7	A-	A-
3330	722451	BIO	4576	.274	.274	.240	.284	.202	.000	.060	.060	019	038	004	1.435	0.035	9.9	1.2	9.9	1.7	A-	A-
3331	724038	BIO	4715	.345	.091	.218	.346	.345	.000	.291	156	085	123	.291	1.038	0.033	1.7	1.0	7.7	1.2	A+	A+
3332	724040	BIO	4719	.385	.210	.385	.213	.193	.000	.258	055	.258	135	123	0.837	0.033	5.8	1.1	9.9	1.2	A-	A-
3333	724042	BIO	4688	.448	.448	.165	.233	.154	.000	.203	.203	179	.054	159	0.553	0.032	9.9	1.1	9.9	1.3	A-	A-
3334	724046	BIO	4524	.583	.069	.160	.188	.583	.000	.328	234	133	136	.328	-0.131	0.033	3.1	1.0	5.5	1.1	A-	A-
3335	724068	BIO	4593	.480	.480	.095	.078	.347	.000	.236	.236	126	163	079	0.405	0.032	9.9	1.1	9.9	1.2	A-	A-
3336	724069	BIO	4538	.696	.066	.117	.696	.120	.000	.371	181	230	.371	159	-0.668	0.035	0.2	1.0	-2.4	0.9	A+	A-
3337	724070	BIO	4686	.322	.198	.269	.211	.322	.000	.386	159	205	064	.386	1.164	0.034	-5.6	0.9	2.4	1.1	A-	A+
3338	724071	BIO	4572	.612	.105	.084	.612	.199	.000	.405	217	299	.405	120	-0.246	0.033	-2.6	1.0	-3.2	0.9	A+	A-
3339	724072	BIO	4647	.785	.056	.785	.077	.083	.000	.408	219	.408	245	190	-1.247	0.039	-2.7	0.9	-4.5	0.9	A-	A-
3340	724073	BIO	4602	.495	.239	.139	.128	.495	.000	.387	102	208	234	.387	0.315	0.032	-2.3	1.0	-0.2	1.0	A-	A-
3341	724074	BIO	4758	.155	.240	.266	.339	.155	.000	.147	204	.076	.001	.147	2.257	0.042	2.3	1.1	9.9	1.6	A-	A-
3342	730074	BIO	4552	.299	.299	.264	.241	.196	.000	.190	.190	047	182	.029	1.295	0.035	6.7	1.1	9.9	1.4	A-	A-
3343	730075	BIO	4729	.372	.196	.372	.284	.148	.000	.191	110	.191	031	098	0.900	0.033	9.1	1.1	9.9	1.3	A-	A+
3344	730076	BIO	4648	.478	.478	.129	.205	.189	.000	.381	.381	256	157	106	0.394	0.032	-2.6	1.0	2.0	1.0	A+	A+
3345	730077	BIO	4663	.397	.223	.198	.182	.397	.000	.290	049	193	116	.290	0.804	0.033	4.6	1.1	7.3	1.2	A+	A-
3346	730078	BIO	4588	.344	.117	.316	.223	.344	.000	.314	246	.025	197	.314	1.054	0.034	0.3	1.0	7.7	1.2	A-	A-
3347	730079	BIO	4662	.439	.166	.206	.439	.189	.000	.348	172	241	.348	030	0.568	0.032	-0.5	1.0	4.0	1.1	A+	A-
3348	730080	BIO	4657	.801	.052	.801	.069	.078	.000	.403	169	.403	301	176	-1.377	0.040	-2.7	0.9	-4.8	0.8	A-	A-
3349	730081	BIO	4596	.198	.198	.517	.179	.106	.000	.004	.004	.185	151	116	1.924	0.039	8.2	1.2	9.9	1.9	A-	A-
3350	730082	BIO	4570	.689	.147	.689	.099	.065	.000	.441	172	.441	305	213	-0.685	0.035	-4.9	0.9	-4.1	0.9	A+	A-
3351	730083	BIO	4650	.672	.180	.082	.672	.066	.000	.290	063	258	.290	167	-0.574	0.034	4.5	1.1	4.1	1.1	A-	A-
3352	730084	BIO	4594	.377	.254	.181	.377	.189	.000	.254	109	158	.254	038	0.915	0.033	5.2	1.1	9.9	1.3	A-	A-
3353	730085	BIO	4640	.429	.200	.156	.214	.429	.000	.375	160	160	155	.375	0.633	0.032	-2.6	1.0	1.3	1.0	A-	A-
3354	730086	BIO	4546	.482	.482	.163	.199	.156	.000	.373	.373	188	163	142	0.409	0.032	-2.4	1.0	0.1	1.0	A-	A-
3355	730087	BIO	4743	.465	.465	.116	.314	.106	.000	.172	.172	179	.020	123	0.463	0.032	9.9	1.2	9.9	1.3	A-	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
3356	730088	BIO	4709	.350	.194	.350	.218	.237	.000	.085	092	.085	.042	052	1.026	0.033	9.9	1.2	9.9	1.5	A+	A-
3357	730089	BIO	4626	.425	.050	.250	.425	.275	.000	.136	265	021	.136	002	0.640	0.032	9.9	1.2	9.9	1.4	A-	A-
3358	730090	BIO	4642	.462	.065	.462	.416	.057	.000	.201	214	.201	025	152	0.447	0.032	9.9	1.2	9.9	1.3	A-	A-
3359	730091	BIO	4631	.434	.434	.212	.168	.186	.000	.387	.387	134	243	118	0.610	0.032	-3.6	1.0	2.4	1.0	A-	A-
3360	730092	BIO	4671	.348	.337	.225	.348	.090	.000	.261	003	207	.261	129	1.040	0.033	3.1	1.0	9.9	1.3	A-	A-
3361	730093	BIO	4761	.332	.133	.337	.332	.198	.000	.076	139	.142	.076	140	1.120	0.033	9.9	1.2	9.9	1.5	A+	A+
3362	730094	BIO	4776	.537	.137	.537	.186	.140	.000	.370	167	.370	212	128	0.102	0.032	-1.4	1.0	0.3	1.0	A+	A-
3363	730095	BIO	4610	.313	.222	.262	.203	.313	.000	.354	186	146	056	.354	1.199	0.034	-3.9	0.9	4.0	1.1	A-	A-
3364	730096	BIO	4583	.350	.153	.350	.232	.265	.000	.133	058	.133	149	.046	1.003	0.034	9.9	1.2	9.9	1.4	A+	A+
3365	730097	BIO	4584	.449	.173	.449	.224	.154	.000	.189	027	.189	167	039	0.535	0.032	9.9	1.2	9.9	1.3	A+	A-
3366	730098	BIO	4609	.367	.367	.228	.271	.135	.000	.295	.295	114	133	104	0.936	0.033	0.4	1.0	9.6	1.2	A-	A-
3367	730099	BIO	4649	.627	.130	.138	.627	.105	.000	.401	252	226	.401	101	-0.337	0.033	-1.7	1.0	-3.4	0.9	A+	A-
3368	730100	BIO	4681	.395	.152	.228	.226	.395	.000	.260	111	049	161	.260	0.802	0.032	5.0	1.1	9.9	1.2	A+	A-
3369	730101	BIO	4569	.240	.213	.367	.180	.240	.000	.049	148	.185	129	.049	1.663	0.037	9.9	1.2	9.9	1.7	A-	A+
3370	735065	BIO	4546	.378	.225	.182	.378	.216	.000	.278	191	127	.278	015	0.884	0.033	3.4	1.0	9.9	1.3	A-	A-
3371	735066	BIO	4631	.504	.504	.183	.184	.128	.000	.386	.386	185	215	115	0.273	0.032	-2.5	1.0	0.9	1.0	A+	A-
3372	735067	BIO	4637	.424	.143	.235	.198	.424	.000	.370	220	163	092	.370	0.642	0.032	-2.4	1.0	1.9	1.0	A-	A-
3373	735068	BIO	4534	.297	.347	.173	.183	.297	.000	.233	.128	187	251	.233	1.294	0.035	3.8	1.1	9.9	1.3	A-	A-
3374	735074	BIO	4572	.332	.332	.188	.184	.297	.000	.201	.201	190	223	.145	1.118	0.034	7.2	1.1	9.9	1.3	A+	A-
3375	735075	BIO	4785	.159	.399	.167	.159	.275	.000	.152	.097	206	.152	059	2.217	0.042	1.0	1.0	9.9	1.9	A-	A-
3376	735076	BIO	4695	.272	.272	.216	.336	.176	.000	.123	.123	173	.096	077	1.436	0.035	8.2	1.1	9.9	1.6	A-	A-
3377	735078	BIO	4651	.256	.222	.155	.367	.256	.000	.147	078	183	.072	.147	1.544	0.036	6.7	1.1	9.9	1.5	A+	A+
3378	735079	BIO	4506	.340	.199	.340	.265	.196	.000	.209	083	.209	161	.013	1.092	0.034	6.3	1.1	9.9	1.4	A-	A-
3379	735080	BIO	4504	.498	.498	.121	.151	.230	.000	.387	.387	332	162	065	0.302	0.033	-2.9	1.0	-0.5	1.0	A-	A+
3380	735081	BIO	4659	.381	.163	.335	.381	.120	.000	.168	121	063	.168	023	0.873	0.033	9.9	1.2	9.9	1.4	A+	A-
3381	735084	BIO	4701	.392	.166	.186	.392	.256	.000	.222	099	234	.222	.046	0.808	0.032	8.8	1.1	9.9	1.3	A-	A-
3382	735085	BIO	4705	.308	.139	.177	.376	.308	.000	.226	140	143	003	.226	1.239	0.034	4.5	1.1	9.9	1.3	A+	A-
3383	735086	BIO	4479	.378	.378	.235	.268	.119	.000	.239	.239	156	050	084	0.885	0.033	6.6	1.1	9.9	1.3	A+	A+
3384	735087	BIO	4478	.533	.533	.163	.217	.087	.000	.422	.422	246	201	132	0.127	0.033	-5.0	0.9	-2.9	1.0	A+	A-
3385	735088	BIO	4622	.357	.357	.280	.203	.160	.000	.144	.144	085	090	.015	0.987	0.033	9.9	1.2	9.9	1.4	A-	A-
3386	737228	BIO	4539	.728	.728	.086	.086	.100	.000	.432	.432	251	219	200	-0.882	0.037	-3.2	0.9	-5.1	0.9	A-	A-
3387	737229	BIO	4637	.663	.122	.085	.663	.130	.000	.420	203	249	.420	186	-0.521	0.034	-3.3	1.0	-5.1	0.9	A+	A-
3388	737230	BIO	4576	.377	.089	.377	.257	.277	.000	.044	229	.044	.033	.066	0.895	0.033	9.9	1.3	9.9	1.5	A+	A+
3389	737231	BIO	4716	.407	.174	.051	.406	.368	.000	.211	122	235	.211	011	0.737	0.032	9.5	1.1	9.9	1.3	A+	A+
3390	737232	BIO	4639	.568	.150	.130	.568	.152	.000	.348	099	218	.348	178	-0.031	0.033	1.9	1.0	1.8	1.0	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
3391	737233	BIO	4652	.670	.670	.104	.185	.040	.000	.389	.389	254	166	207	-0.586	0.034	-1.2	1.0	-1.2	1.0	A+	A-
3392	737234	BIO	4702	.623	.110	.111	.623	.156	.000	.178	048	071	.178	135	-0.315	0.033	9.9	1.2	9.9	1.3	A+	A-
3393	737235	BIO	4602	.391	.164	.098	.346	.391	.000	.233	112	248	.003	.233	0.810	0.033	8.5	1.1	9.9	1.2	A+	A-
3394	737236	BIO	4693	.473	.089	.098	.473	.341	.000	.073	072	140	.073	.054	0.411	0.032	9.9	1.3	9.9	1.4	A+	A-
3395	737237	BIO	4628	.354	.038	.354	.486	.122	.000	206	140	206	.268	027	1.006	0.033	9.9	1.5	9.9	1.9	A-	A+
3396	737238	BIO	4567	.389	.152	.177	.389	.282	.000	.048	075	164	.048	.147	0.822	0.033	9.9	1.3	9.9	1.5	A-	A-
3397	737239	BIO	4691	.420	.107	.420	.305	.168	.000	.222	147	.222	031	134	0.662	0.032	9.7	1.1	9.9	1.2	A+	A-
3398	737240	BIO	4781	.259	.210	.229	.259	.302	.000	.053	043	072	.053	.054	1.512	0.035	9.9	1.2	9.9	1.8	A+	A-
3399	737241	BIO	4704	.390	.173	.158	.280	.390	.000	.328	099	160	142	.328	0.838	0.033	0.5	1.0	5.9	1.1	A+	A+
3400	737242	BIO	4672	.283	.168	.283	.160	.389	.000	.040	145	.040	106	.154	1.350	0.035	9.9	1.2	9.9	1.7	A+	A+
3401	737243	BIO	4620	.238	.159	.228	.375	.238	.000	.129	094	103	.048	.129	1.652	0.037	6.1	1.1	9.9	1.6	A+	A-
3402	737244	BIO	4557	.300	.158	.255	.300	.287	.000	.058	155	144	.058	.206	1.272	0.035	9.9	1.2	9.9	1.6	A-	A-
3403	737245	BIO	4572	.475	.284	.475	.123	.118	.000	.212	093	.212	179	015	0.425	0.032	9.9	1.1	9.9	1.2	A+	A-
3404	737246	BIO	4647	.321	.182	.321	.315	.181	.000	.103	003	.103	032	083	1.180	0.034	9.9	1.2	9.9	1.5	A-	A+
3405	737247	BIO	4727	.655	.108	.055	.655	.182	.000	.284	150	234	.284	091	-0.485	0.033	5.3	1.1	4.7	1.1	A+	A-
3406	737248	BIO	4617	.675	.113	.674	.112	.100	.000	.415	191	.415	273	159	-0.584	0.034	-3.4	1.0	-3.3	0.9	A+	A-
3407	737249	BIO	4679	.302	.286	.302	.270	.142	.000	.110	.072	.110	165	029	1.301	0.034	9.9	1.2	9.9	1.6	A-	A+
3408	737250	BIO	4758	.389	.230	.389	.208	.174	.000	.233	001	.233	203	082	0.821	0.032	6.9	1.1	9.9	1.3	A-	A-
3409	737251	BIO	4687	.332	.230	.210	.332	.227	.000	.171	084	093	.171	017	1.097	0.034	9.7	1.1	9.9	1.4	A-	A-
3410	737252	BIO	4575	.654	.144	.069	.654	.133	.000	.353	201	230	.353	115	-0.511	0.034	1.9	1.0	1.8	1.0	B-	A-
3411	737253	BIO	4646	.549	.133	.549	.077	.241	.000	.261	167	.261	313	.024	0.064	0.032	8.9	1.1	8.6	1.2	A-	A-
3412	737254	BIO	4662	.644	.110	.105	.141	.644	.000	.500	240	267	237	.500	-0.416	0.034	-9.6	0.9	-8.6	0.8	A+	A+
3413	737255	BIO	4607	.412	.216	.412	.211	.160	.000	.211	023	.211	179	058	0.704	0.033	9.9	1.1	9.9	1.3	A-	A-
3414	737257	BIO	4741	.466	.190	.151	.466	.193	.000	.187	038	177	.187	038	0.458	0.032	9.9	1.2	9.9	1.3	A-	A-
3415	737258	BIO	4618	.487	.074	.159	.281	.487	.000	.376	254	189	117	.376	0.362	0.032	-2.1	1.0	0.9	1.0	A-	A-
3416	737259	BIO	4684	.678	.089	.151	.678	.082	.000	.370	253	145	.370	178	-0.590	0.034	-0.2	1.0	0.4	1.0	A-	A-
3417	737260	BIO	4651	.509	.144	.115	.232	.509	.000	.341	210	211	069	.341	0.244	0.032	1.7	1.0	3.5	1.1	A+	A-
3418	737261	BIO	4626	.334	.226	.334	.274	.166	.000	.102	066	.102	.065	133	1.099	0.034	9.9	1.2	9.9	1.5	A-	A-
3419	737262	BIO	4566	.662	.138	.098	.102	.662	.000	.450	138	272	279	.450	-0.529	0.034	-5.6	0.9	-4.7	0.9	B+	B-
3420	737263	BIO	4737	.616	.079	.096	.209	.616	.000	.411	272	239	138	.411	-0.266	0.033	-2.7	1.0	-2.3	1.0	A+	A-
3421	737264	BIO	4663	.439	.198	.439	.100	.263	.000	.349	125	.349	237	119	0.575	0.032	-0.5	1.0	3.6	1.1	A-	A-
3422	737265	BIO	4662	.729	.095	.729	.077	.100	.000	.280	115	.280	132	185	-0.898	0.036	3.5	1.1	4.1	1.1	A+	A+
3423	737266	BIO	4616	.494	.494	.207	.198	.102	.000	.289	.289	276	.059	185	0.309	0.032	6.1	1.1	7.5	1.1	A-	A-
3424	737267	BIO	4616	.408	.322	.407	.142	.129	.000	.336	114	.336	246	079	0.716	0.033	-0.7	1.0	5.9	1.1	A+	A-
3425	737268	BIO	4641	.255	.221	.228	.254	.296	.000	.095	046	104	.095	.047	1.561	0.036	7.8	1.1	9.9	1.8	A+	A-

Table B-4 (continued). Science Multiple-Choice Item Statistics

Ref	ID	FT	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade			. (,	. (-,	- (-)	. (=)	. ()		()	(=)	(0)	(=)			in	in	out	out	/F	/B
3426	737269	BIO	4635	.527	.212	.527	.160	.101	.000	.250	141	.250	073	135	0.148	0.032	9.2	1.1	9.8	1.2	A-	A-
3427	737270	BIO	4595	.591	.203	.116	.090	.591	.000	.418	173	249	196	.418	-0.152	0.033	-4.3	1.0	-3.9	0.9	A+	A-
3428	737271	BIO	4641	.262	.262	.103	.416	.219	.000	.124	.124	228	.078	058	1.496	0.036	7.9	1.1	9.9	1.6	A-	A-
3429	737272	BIO	4717	.364	.295	.364	.125	.216	.000	.183	113	.183	095	013	0.960	0.033	9.9	1.1	9.9	1.3	A+	A-
3430	737273	BIO	4757	.496	.496	.171	.207	.126	.000	.365	.365	100	243	141	0.307	0.032	-1.0	1.0	1.8	1.0	A-	A-
3431	737274	BIO	4695	.275	.296	.269	.160	.275	.000	.218	.004	051	209	.218	1.427	0.035	3.3	1.1	9.9	1.5	A+	A-
3432	741615	BIO	4612	.371	.184	.371	.138	.307	.000	.190	028	.190	284	.037	0.935	0.033	9.9	1.1	9.9	1.3	A+	A+
3433	741616	BIO	4677	.333	.196	.333	.374	.097	.000	.137	086	.137	073	.017	1.099	0.034	9.9	1.2	9.9	1.5	A-	A-
3434	741624	BIO	4608	.576	.194	.576	.128	.102	.000	.339	155	.339	235	092	-0.066	0.033	2.2	1.0	1.7	1.0	A-	A-
3435	741631	BIO	4643	.634	.036	.133	.197	.634	.000	.394	202	152	252	.394	-0.375	0.033	-1.4	1.0	-0.6	1.0	A+	A+
3436	741633	BIO	4584	.451	.451	.247	.187	.116	.000	.284	.284	160	073	138	0.522	0.032	5.5	1.1	8.5	1.2	A+	A+
3437	741635	BIO	4676	.644	.173	.644	.111	.072	.000	.342	223	.342	195	070	-0.451	0.034	2.6	1.0	1.2	1.0	A+	A-
3438	741636	BIO	4671	.385	.385	.102	.307	.206	.000	.161	.161	161	021	050	0.836	0.033	9.9	1.2	9.9	1.4	A-	A-
3439	741637	BIO	4657	.451	.174	.201	.451	.174	.000	.275	104	181	.275	066	0.520	0.032	6.4	1.1	8.9	1.2	A+	A-
3440	741638	BIO	4565	.447	.208	.447	.214	.130	.000	.225	109	.225	149	019	0.547	0.032	9.8	1.1	9.9	1.2	A+	A-
3441	741639	BIO	4606	.303	.303	.220	.277	.200	.000	.165	.165	019	035	131	1.261	0.035	8.4	1.1	9.9	1.4	A-	A-
3442	741641	BIO	4759	.347	.220	.257	.347	.176	.000	.135	046	139	.135	.040	1.036	0.033	9.9	1.2	9.9	1.4	A-	A-
3443	741744	BIO	4640	.325	.275	.237	.325	.163	.000	.044	.103	120	.044	043	1.151	0.034	9.9	1.2	9.9	1.6	A-	A-

Items with reference line numbers 1-2038 were field tested during the stand-alone field test administered in fall 2010. Items with reference line numbers 2039-2838 were field tested during the field test administered in fall 2013. Items with reference line numbers 2839-3443 were field tested during the embedded field test administered during the 2015-2016 school year.

WRITING/ENGLISH COMPOSITION MULTIPLE-CHOICE ITEMS

Table B-5. Writing/English Composition Multiple-Choice Item Statistics

Table B-5. Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	10	Grade	Grade	,,	rvai	F(A)	F(D)	r(c)	F(D)	F (-)	FtDIS	r i(A)	F1(D)	r I(C)	FI(D)	IVICas	IVISE	in	in	out	out	/F	/B
1	622443	3	3	2753	.769	.059	.056	.769	.113	.005	.448	243	226	.448	194	-2.331	0.050	-2.6	0.9	-2.1	0.9	A+	A-
2	621004	3	3	2753	.893	.038	.038	.893	.027	.005	.410	221	161	.410	224	-3.454	0.068	-1.9	0.9	-3.4	0.7	A+	A-
3	623134	3	3	2753	.317	.208	.173	.296	.317	.006	.332	124	158	054	.332	0.101	0.045	2.9	1.1	5.1	1.2	A+	A-
4	639851	3	3	2753	.375	.429	.085	.375	.105	.006	.308	029	204	.308	183	-0.206	0.044	5.4	1.1	5.9	1.2	A+	A-
5	622448	3	3	2753	.678	.118	.100	.097	.678	.007	.495	231	217	242	.495	-1.780	0.045	-4.9	0.9	-4.9	8.0	A+	A-
6	631022	3	3	2753	.680	.157	.680	.066	.091	.006	.449	220	.449	241	171	-1.787	0.045	-2.0	1.0	-1.4	1.0	A+	A-
7	622457	3	3	2753	.537	.179	.537	.085	.191	.008	.424	237	.424	195	111	-1.034	0.042	-0.2	1.0	0.1	1.0	A-	A+
8	626549	3	3	2753	.433	.433	.137	.201	.220	.009	.392	.392	201	168	083	-0.527	0.043	1.9	1.0	4.0	1.1	A+	A+
9	635457	3	3	2753	.310	.519	.310	.125	.036	.009	.384	152	.384	133	179	0.142	0.045	-0.4	1.0	3.3	1.1	A-	A+
10	620993	3	3	2753	.782	.782	.079	.088	.041	.010	.445	.445	249	215	153	-2.441	0.051	-2.3	0.9	-3.1	0.9	A-	A-
11	622447	3	3	274	.829	.110	.829	.033	.029	.000	.409	246	.409	199	248	-2.813	0.176	-0.6	0.9	-0.6	0.9	A-	į
12	622445	3	3	274	.412	.256	.110	.219	.412	.004	.354	281	096	020	.354	-0.408	0.138	2.3	1.1	2.5	1.2	A+	
13	640135	3	3	274	.438	.438	.336	.150	.077	.000	.239	.239	109	086	137	-0.536	0.137	3.1	1.2	3.6	1.3	A+	
14	621011	3	3	274	.544	.544	.142	.164	.135	.015	.475	.475	190	159	268	-1.107	0.137	-0.8	1.0	-1.1	0.9	A+	
15	621018	3	3	274	.540	.274	.080	.540	.102	.004	.518	248	167	.518	296	-1.063	0.136	-1.7	0.9	-1.6	0.9	A-	
16	626766	3	3	275	.596	.596	.055	.062	.284	.004	.325	.325	233	150	121	-1.413	0.142	1.7	1.1	1.9	1.2	A+	A-
17	623059	3	3	275	.931	.931	.029	.018	.011	.011	.474	.474	256	167	127	-4.536	0.305	-0.1	1.0	-1.0	0.5	A+	A+
18	634165	3	3	275	.844	.051	.844	.062	.033	.011	.458	272	.458	203	092	-3.085	0.188	-0.9	0.9	-1.2	0.7	A-	B-
19	621013	3	3	275	.811	.124	.033	.811	.022	.011	.523	307	234	.523	139	-2.851	0.177	-1.3	0.9	-1.8	0.6	A+	A-
20	621019	3	3	275	.476	.178	.182	.476	.149	.015	.418	119	156	.418	175	-0.812	0.140	0.2	1.0	8.0	1.1	A-	A+
21	623098	3	5	274	.551	.186	.551	.197	.066	.000	.471	365	.471	097	217	-1.073	0.132	-1.6	0.9	-1.2	0.9	A+	A+
22	623014	3	3	274	.281	.131	.281	.266	.321	.000	.261	167	.261	133	004	0.281	0.144	1.5	1.1	2.7	1.3	A-	A-
23	626921	3	3	274	.686	.139	.066	.686	.110	.000	.519	341	250	.519	196	-1.754	0.140	-2.4	0.9	-2.5	8.0	A+	A-
24	635445	3	3	274	.485	.139	.485	.139	.237	.000	.410	242	.410	112	194	-0.760	0.131	-0.3	1.0	0.3	1.0	A+	A-
25	623127	3	3	274	.361	.157	.383	.099	.361	.000	.221	216	005	086	.221	-0.153	0.136	3.0	1.2	2.7	1.2	A-	A-
26	630803	3	3	274	.467	.256	.168	.467	.106	.004	.262	042	171	.262	153	-0.681	0.132	3.0	1.2	2.7	1.2	A+	A-
27	627410	3	3	274	.679	.679	.095	.102	.120	.004	.451	.451	307	201	180	-1.728	0.140	-0.9	0.9	-1.8	0.8	A-	A+
28	622459	3	3	274	.416	.128	.416	.256	.201	.000	.440	178	.440	149	232	-0.426	0.133	-0.8	1.0	-1.0	0.9	A+	A-
29	624759	3	3	274	.672	.672	.055	.062	.212	.000	.225	.225	290	149	009	-1.676	0.139	2.2	1.1	3.2	1.3	B-	A-
30	623024	3	3	274	.277	.310	.172	.237	.277	.004	.332	181	155	005	.332	0.300	0.145	0.5	1.0	1.2	1.1	B+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-/->	-/->	-/a\	-/->	-/\		(-)		/->				Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
31	621399	3	3	274	.814	.814	.058	.066	.062	.000	.400	.400	216	206	225	-2.549	0.164	-0.6	0.9	-1.3	8.0	A+	A+
32	623137	3	3	274	.547	.102	.142	.204	.547	.004	.437	233	234	150	.437	-1.061	0.132	-0.7	1.0	-0.9	0.9	A+	B+
33	622456	3	3	276	.598	.598	.091	.101	.203	.007	.367	.367	189	180	127	-1.331	0.132	0.1	1.0	-0.3	1.0	A-	
34	635897	3	3	276	.565	.127	.178	.123	.565	.007	.405	178	183	121	.405	-1.170	0.131	-0.7	1.0	-0.3	1.0	A+	
35	635446	3	3	276	.837	.087	.837	.040	.029	.007	.472	240	.472	224	182	-2.750	0.173	-1.4	0.9	-1.6	0.7	A-	
36	635895	3	3	276	.714	.141	.094	.714	.044	.007	.442	199	276	.442	088	-1.925	0.142	-1.5	0.9	-1.4	0.9	A+	
37	630804	3	3	276	.540	.167	.540	.145	.138	.011	.302	133	.302	140	041	-1.064	0.130	1.3	1.1	1.8	1.1	A-	
38	621017	3	3	276	.388	.239	.388	.192	.167	.015	.257	018	.257	128	072	-0.358	0.133	1.9	1.1	3.1	1.2	A+	
39	623120	3	3	276	.380	.214	.199	.188	.380	.018	.342	031	093	187	.342	-0.335	0.133	0.4	1.0	1.0	1.1	A-	
40	625484	3	3	276	.826	.116	.022	.826	.015	.022	.414	225	211	.414	098	-2.774	0.175	-0.8	0.9	-0.8	0.9	A-	
41	634152	3	3	276	.333	.333	.185	.254	.207	.022	.136	.136	030	090	.058	-0.111	0.137	3.5	1.2	3.5	1.3	A-	
42	627784	3	3	276	.630	.120	.630	.210	.015	.025	.399	306	.399	070	085	-1.549	0.136	-0.3	1.0	-0.3	1.0	A+	
43	624772	3	3	276	.196	.312	.268	.196	.203	.022	.259	058	078	.259	.014	0.724	0.160	0.4	1.0	1.3	1.2	A-	
44	633542	3	3	276	.725	.112	.058	.076	.725	.029	.507	244	078	295	.507	-2.088	0.148	-1.8	0.9	-2.2	0.8	A+	
45	620994	3	3	277	.733	.733	.083	.079	.101	.004	.399	.399	116	270	176	-2.136	0.148	-0.1	1.0	0.8	1.1	A-	
46	635444	3	3	277	.347	.209	.209	.231	.347	.004	.390	196	141	071	.390	-0.171	0.137	-0.6	1.0	-0.5	1.0	A-	
47	626568	3	3	277	.585	.188	.101	.123	.585	.004	.443	249	151	174	.443	-1.334	0.134	-0.8	1.0	-0.7	0.9	A-	
48	623092	3	3	277	.874	.047	.874	.040	.033	.007	.333	115	.333	130	173	-3.247	0.195	-0.2	1.0	1.0	1.2	A-	
49	634153	3	3	277	.296	.220	.350	.112	.296	.022	.182	006	043	035	.182	0.112	0.143	2.7	1.2	4.5	1.6	A-	
50	634149	3	3	277	.801	.040	.123	.801	.025	.011	.418	306	115	.418	199	-2.632	0.165	-0.1	1.0	-0.7	0.9	A+	
51	639885	3	3	277	.617	.163	.617	.090	.116	.014	.522	267	.522	146	235	-1.527	0.137	-2.2	0.9	-1.7	0.9	A+	
52	628033	3	3	277	.913	.025	.036	.913	.014	.011	.427	128	295	.427	061	-3.849	0.240	-0.6	0.9	-1.5	0.6	A+	
53	622991	3	3	277	.769	.769	.108	.061	.047	.014	.418	.418	209	147	185	-2.421	0.157	-0.1	1.0	-0.8	0.9	A-	
54	622999	3	3	277	.354	.242	.137	.354	.246	.022	.456	154	163	.456	121	-0.219	0.138	-1.2	0.9	-1.3	0.9	A-	
55	621009	3	3	277	.780	.018	.040	.780	.144	.018	.393	202	327	.393	086	-2.514	0.161	-0.2	1.0	0.7	1.1	A-	
56	633543	3	3	277	.697	.108	.137	.043	.697	.014	.557	240	302	200	.557	-1.968	0.144	-2.5	0.8	-2.6	0.7	A+	
57	620995	3	3	275	.542	.222	.146	.087	.542	.004	.399	108	220	207	.399	-0.959	0.136	1.4	1.1	0.9	1.1	B+	
58	628317	3	3	275	.844	.022	.022	.106	.844	.007	.413	191	180	238	.413	-2.777	0.185	-0.6	0.9	-0.4	0.9	A+	
59	635878	3	3	275	.633	.124	.633	.066	.171	.007	.422	141	.422	216	228	-1.414	0.141	0.1	1.0	0.1	1.0	A-	
60	633544	3	3	275	.822	.051	.822	.036	.084	.007	.498	275	.498	226	235	-2.644	0.179	-1.5	0.8	-1.1	0.8	A+	
61	639886	3	3	275	.466	.222	.135	.175	.466	.004	.398	276	140	049	.398	-0.551	0.136	1.2	1.1	0.9	1.1	A-	
62	634150	3	3	275	.847	.087	.015	.847	.047	.004	.463	295	148	.463	224	-2.894	0.191	-1.0	0.9	-1.4	0.7	A+	
63	622461	3	3	275	.836	.836	.095	.047	.018	.004	.322	.322	297	.027	150	-2.753	0.183	-0.1	1.0	1.3	1.3	A-	
64	623007	3	3	275	.556	.233	.116	.091	.556	.004	.379	170	197	125	.379	-1.015	0.136	1.6	1.1	0.6	1.1	A+	
65	639446	3	3	275	.073	.651	.073	.076	.196	.004	057	063	057	061	.198	2.958	0.316	0.5	1.1	1.2	1.6	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Def	15	FT	PCS		DV/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT/A)	DT/D)	DT/C)	DT/D)	D4	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
66	639870	3	3	275	.411	.226	.258	.102	.411	.004	.396	206	140	098	.396	-0.211	0.138	0.1	1.0	0.5	1.0	C-	
67	622995	3	3	275	.520	.520	.138	.138	.200	.004	.423	.423	107	261	167	-0.828	0.136	0.5	1.0	0.5	1.0	A+	
68	634154	3	3	275	.578	.164	.578	.135	.120	.004	.390	222	.390	226	049	-1.071	0.137	0.8	1.0	0.6	1.1	A+	
69	623100	3	3	275	.738	.069	.087	.738	.098	.007	.426	179	236	.426	136	-2.015	0.152	-0.7	0.9	-0.7	0.9	A+	A-
70	639429	3	4	275	.887	.887	.022	.022	.058	.011	.526	.526	163	258	240	-3.403	0.218	-0.8	0.9	-1.6	0.6	A-	A-
71	620987	3	3	275	.298	.393	.298	.218	.080	.011	.195	.122	.195	119	190	0.263	0.143	3.0	1.2	2.8	1.4	A+	A+
72	634159	3	3	275	.487	.487	.302	.127	.069	.015	.395	.395	203	.010	225	-0.725	0.134	0.6	1.0	0.3	1.0	B-	A+
73	621007	3	3	275	.407	.200	.164	.407	.218	.011	.411	167	119	.411	103	-0.318	0.135	-0.4	1.0	-0.4	1.0	A-	A-
74	623084	3	3	275	.386	.196	.309	.095	.386	.015	.303	217	.083	157	.303	-0.227	0.136	2.4	1.1	1.9	1.2	A-	A+
75	623025	3	3	275	.807	.058	.807	.058	.066	.011	.489	189	.489	199	217	-2.531	0.170	-1.0	0.9	-1.7	0.7	A+	A-
76	626548	3	3	275	.407	.189	.124	.266	.407	.015	.323	155	196	.031	.323	-0.346	0.135	2.0	1.1	2.2	1.2	A+	A+
77	623094	3	4	275	.880	.066	.880	.026	.018	.011	.557	349	.557	173	140	-3.356	0.215	-0.9	0.9	-2.1	0.5	A+	A-
78	639871	3	3	275	.331	.196	.138	.324	.331	.011	.308	207	103	.046	.308	0.061	0.140	1.2	1.1	2.5	1.3	B-	A+
79	639887	3	3	275	.284	.207	.258	.284	.236	.015	.233	.042	090	.233	076	0.343	0.145	1.5	1.1	3.4	1.5	A-	A-
80	630795	3	3	275	.869	.047	.040	.869	.029	.015	.547	259	270	.547	155	-3.261	0.209	-0.9	0.9	-1.7	0.6	A+	A-
81	633545	3	3	275	.822	.073	.822	.040	.055	.011	.603	262	.603	268	271	-2.745	0.179	-2.0	0.8	-2.6	0.6	A+	A-
82	635896	3	3	277	.531	.357	.033	.531	.079	.000	.309	197	221	.309	077	-0.991	0.133	2.6	1.1	1.9	1.2	A-	
83	620998	3	3	277	.686	.242	.043	.022	.686	.007	.473	345	221	146	.473	-1.843	0.144	-1.2	0.9	-0.5	0.9	A+	
84	624841	3	4	277	.650	.108	.650	.076	.166	.000	.462	214	.462	168	294	-1.581	0.139	-1.3	0.9	-0.6	0.9	A-	
85	635898	3	3	277	.747	.747	.036	.079	.134	.004	.426	.426	226	139	297	-2.177	0.152	-0.6	1.0	-0.3	1.0	A+	1
86	621010	3	3	277	.379	.379	.314	.246	.061	.000	.331	.331	071	223	132	-0.249	0.137	2.1	1.1	1.6	1.2	A-	
87	632331	3	3	277	.451	.144	.307	.098	.451	.000	.428	119	259	174	.428	-0.597	0.134	-0.4	1.0	0.4	1.0	A-	
88	624751	3	3	277	.404	.404	.177	.123	.296	.000	.341	.341	113	239	101	-0.379	0.135	1.7	1.1	2.3	1.2	B-	
89	630796	3	3	277	.830	.051	.076	.033	.830	.011	.394	290	158	227	.394	-2.868	0.179	-0.4	1.0	-0.9	8.0	A-	
90	620997	3	3	277	.177	.303	.177	.079	.440	.000	.108	068	.108	151	.063	1.068	0.173	2.0	1.2	3.2	1.7	A-	
91	627700	3	3	277	.502	.159	.148	.502	.181	.011	.492	280	164	.492	176	-0.876	0.134	-1.0	1.0	-1.2	0.9	A-	
92	623021	3	3	277	.386	.289	.123	.386	.199	.004	.439	093	242	.439	213	-0.288	0.136	-0.2	1.0	0.1	1.0	C+	
93	639850	3	3	277	.408	.123	.383	.408	.079	.007	.381	148	151	.381	223	-0.372	0.136	0.3	1.0	0.9	1.1	A+	
94	639881	3	3	277	.783	.069	.783	.076	.058	.014	.545	243	.545	298	301	-2.502	0.164	-2.2	0.8	-2.1	0.7	A+	
95	622444	3	3	276	.674	.116	.044	.167	.674	.000	.410	261	215	174	.410	-1.809	0.140	-0.1	1.0	-0.1	1.0	A-	A-
96	622449	3	3	276	.562	.188	.562	.163	.087	.000	.441	184	.441	175	292	-1.228	0.133	-0.2	1.0	-0.6	1.0	A+	A+
97	623010	3	3	276	.717	.717	.065	.130	.080	.007	.404	.404	093	264	228	-2.077	0.147	-0.1	1.0	-0.1	1.0	A+	A-
98	623031	3	3	276	.370	.344	.112	.170	.370	.004	.321	141	138	111	.321	-0.279	0.137	2.0	1.1	1.8	1.2	A-	A-
99	634028	3	3	276	.591	.116	.591	.141	.152	.000	.370	284	.370	054	201	-1.355	0.134	0.9	1.1	0.2	1.0	A+	A-
100	634163	3	3	276	.446	.083	.152	.315	.446	.004	.377	329	095	136	.377	-0.651	0.134	0.6	1.0	1.1	1.1	A+	A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS					- / - >	>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
101	639883	3	3	276	.772	.069	.105	.772	.054	.000	.507	264	316	.507	215	-2.396	0.155	-1.8	0.9	-2.2	0.7	A+	A-
102	634151	3	3	276	.804	.029	.145	.804	.022	.000	.369	197	257	.369	157	-2.626	0.163	-0.3	1.0	0.5	1.1	A-	A-
103	620991	3	3	276	.725	.725	.058	.123	.094	.000	.408	.408	189	152	302	-2.099	0.147	-0.2	1.0	-0.5	0.9	A+	A+
104	628101	3	3	276	.380	.152	.254	.380	.214	.000	.493	170	216	.493	206	-0.331	0.136	-1.9	0.9	0.5	1.0	A+	A-
105	621002	3	3	276	.420	.073	.275	.232	.420	.000	.525	276	345	080	.525	-0.533	0.134	-2.1	0.9	-2.2	8.0	B+	A-
106	622462	3	N/A	276	.254	.308	.254	.370	.069	.000	045	176	045	.149	.116	0.404	0.151	4.9	1.4	5.7	2.0	A+	A-
107	621005	3	3	276	.848	.036	.848	.098	.015	.004	.354	317	.354	149	168	-3.005	0.181	-0.4	1.0	0.5	1.1	A+	B+
108	620990	3	3	274	.912	.040	.912	.037	.011	.000	.404	394	.404	124	132	-3.538	0.226	-1.0	0.8	-1.3	0.6	A+	A+
109	622450	3	3	274	.799	.033	.037	.799	.128	.004	.424	205	109	.424	308	-2.487	0.166	-0.5	1.0	0.1	1.0	A-	A-
110	634032	3	3	274	.745	.080	.069	.099	.745	.007	.503	249	269	224	.503	-2.112	0.154	-1.2	0.9	-1.8	0.8	A-	A-
111	635443	3	3	274	.693	.135	.077	.693	.095	.000	.442	300	174	.442	188	-1.768	0.144	-0.6	1.0	-1.2	0.9	A-	A+
112	622463	3	3	274	.602	.602	.146	.117	.131	.004	.414	.414	186	184	200	-1.297	0.137	0.2	1.0	0.7	1.1	A+	A+
113	623091	3	3	274	.679	.033	.259	.679	.026	.004	.381	220	212	.381	225	-1.709	0.143	0.4	1.0	1.4	1.2	A+	A+
114	625477	3	3	274	.934	.026	.934	.026	.015	.000	.408	253	.408	261	166	-3.955	0.262	-0.7	0.9	-1.9	0.4	A+	A-
115	622458	3	3	274	.485	.117	.146	.248	.485	.004	.417	217	192	141	.417	-0.713	0.134	0.5	1.0	0.2	1.0	A-	A-
116	639884	3	3	274	.715	.124	.073	.715	.084	.004	.447	168	284	.447	249	-1.930	0.148	-0.7	1.0	-0.7	0.9	A-	A+
117	621015	3	3	274	.307	.307	.358	.157	.175	.004	.181	.181	.019	139	084	0.236	0.144	3.4	1.2	4.3	1.6	A-	A-
118	626555	3	3	274	.383	.161	.193	.259	.383	.004	.396	173	238	073	.396	-0.205	0.137	0.5	1.0	0.8	1.1	A+	A-
119	620988	3	3	274	.639	.150	.084	.120	.639	.007	.516	194	241	299	.516	-1.500	0.140	-1.7	0.9	-2.1	0.8	A+	A+
120	634164	3	3	274	.628	.080	.150	.628	.131	.011	.377	227	220	.377	052	-1.443	0.139	0.9	1.1	2.0	1.2	A-	B-
121	626547	3	3	274	.420	.197	.226	.153	.420	.004	.169	062	052	092	.169	-0.448	0.133	4.3	1.2	4.6	1.4	B+	A-
122	621012	3	3	276	.482	.123	.188	.482	.203	.004	.315	226	055	.315	104	-0.777	0.129	0.1	1.0	0.7	1.0	A+	
123	634030	3	3	277	.386	.206	.386	.163	.231	.014	.386	123	.386	145	119	-0.369	0.135	0.2	1.0	-0.1	1.0	A-	
124	634160	3	3	275	.520	.207	.076	.520	.193	.004	.451	167	205	.451	217	-0.810	0.136	-0.5	1.0	-0.2	1.0	A+	
125	623056	3	3	275	.884	.884	.033	.026	.044	.015	.559	.559	266	106	320	-3.447	0.222	-1.0	0.8	-2.0	0.5	A-	A-
126	621006	3	3	277	.668	.065	.668	.166	.098	.004	.533	265	.533	278	268	-1.730	0.141	-2.2	0.9	-1.9	0.8	A+	<u> </u>
127	624801	3	3	276	.873	.044	.044	.873	.040	.000	.439	275	297	.439	151	-3.221	0.192	-0.9	0.9	-1.8	0.6	A-	A+
128	623023	3	3	274	.438	.120	.175	.263	.438	.004	.239	275	025	039	.239	-0.466	0.135	4.3	1.2	2.8	1.3	A-	B+
129	622985	3	3	274	.449	.153	.120	.277	.449	.000	.495	186	409	102	.495	-0.585	0.132	-2.2	0.9	-1.4	0.9	A-	B-
130	624847	3	3	277	.480	.480	.152	.090	.264	.014	.256	.256	082	111	067	-0.847	0.133	3.6	1.2	3.8	1.3	A+	
131	624849	3	3	276	.355	.254	.217	.170	.355	.004	.291	186	071	024	.291	-0.168	0.135	0.7	1.0	1.6	1.1	A-	
132	622465	3	3	277	.422	.209	.422	.148	.213	.007	.373	120	.373	189	122	-0.546	0.134	0.6	1.0	1.3	1.1	A-	
133	634029	3	3	275	.695	.095	.156	.695	.051	.004	.459	302	195	.459	158	-1.730	0.146	-0.7	1.0	-1.4	8.0	A+	
134	634162	3	3	275	.546	.116	.146	.182	.546	.011	.522	219	234	152	.522	-1.027	0.135	-2.2	0.9	-1.8	0.9	A+	B-
135	626574	3	3	277	.823	.058	.079	.040	.823	.000	.466	215	321	210	.466	-2.732	0.171	-1.3	0.9	-1.2	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID		PCS		DV/-I	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:-	DT/A\	DT/D)	DT(C)	DT/D)	N/1	NACE	Z-	MS-	Z-	MS-	M	W
426		Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
136	636550	3	3	276	.645	.159	.091	.105	.645	.000	.519	315	224	223	.519	-1.653	0.138	-2.1	0.9	-2.3	0.8	A+	A-
137	622979	3	3	274	.752	.110	.752	.044	.091	.004	.392	204	.392	122	245	-2.152	0.154	0.5	1.0	-0.2	1.0	A+	A+
138	621008	3	3	274	.453	.117	.285	.453	.146	.000	.274	153	022	.274	219	-0.603	0.132	2.5	1.1	2.6	1.2	A-	A-
139	623107	3	3	276	.323	.323	.326	.188	.141	.022	.299	.299	069	094	068	-0.044	0.138	0.8	1.1	1.5	1.1	A+	
140	625516	3	3	275	.498	.498	.196	.189	.109	.007	.387	.387	134	109	257	-0.709	0.136	1.2	1.1	1.1	1.1	A+	
141	623113	4	3	233	.931	.034	.931	.009	.026	.000	.393	300	.393	082	235	-3.289	0.274	-0.6	0.9	-1.1	0.6	B+	
142	637175	4	4	232	.315	.315	.315	.306	.060	.004	.434	145	.434	230	048	0.431	0.153	-0.8	1.0	-0.4	1.0	A+	A-
143	633445	4	4	235	.843	.030	.102	.843	.026	.000	.404	288	226	.404	189	-2.327	0.194	-0.6	0.9	-0.7	0.8	A-	
144	635414	4	4	233	.794	.090	.043	.073	.794	.000	.589	352	291	302	.589	-1.892	0.176	-2.2	0.8	-2.4	0.7	A+	
145	639852	4	4	234	.543	.252	.111	.081	.543	.013	.498	208	128	255	.498	-0.601	0.143	-2.3	0.9	-1.9	0.9	A+	
146	623033	4	4	232	.341	.280	.211	.164	.341	.004	.308	131	190	005	.308	0.344	0.148	1.0	1.1	0.3	1.0	A+	A+
147	623013	4	4	233	.730	.730	.099	.073	.094	.004	.515	.515	355	235	139	-1.638	0.159	-2.5	0.8	-1.2	0.8	A-	
148	633852	4	4	233	.489	.120	.489	.155	.232	.004	.380	225	.380	194	060	-0.342	0.144	0.7	1.0	0.6	1.0	A+	
149	624765	4	4	233	.790	.052	.125	.790	.030	.004	.515	301	295	.515	272	-1.863	0.173	-1.8	0.8	-2.1	0.7	A+	
150	625527	4	3	232	.552	.194	.190	.052	.552	.013	.386	145	269	007	.386	-0.760	0.144	0.5	1.0	0.2	1.0	A-	A-
151	627004	4	3	232	.935	.935	.017	.013	.030	.004	.273	.273	121	205	168	-3.608	0.290	-0.1	1.0	-1.1	0.6	A+	A-
152	637177	4	4	235	.562	.149	.128	.562	.162	.000	.461	208	284	.461	162	-0.588	0.146	-0.4	1.0	-0.7	0.9	A-	
153	633432	4	4	233	.717	.107	.047	.129	.717	.000	.496	261	338	212	.496	-1.390	0.158	-1.3	0.9	-1.2	0.9	A+	
154	633464	4	4	234	.654	.086	.654	.115	.137	.009	.501	196	.501	218	214	-1.153	0.150	-2.0	0.9	-2.1	0.8	A+	
155	639854	4	4	232	.453	.319	.125	.453	.099	.004	.427	132	262	.427	189	-0.204	0.142	-1.2	0.9	-0.4	1.0	A+	A-
156	623136	4	4	233	.571	.167	.150	.107	.571	.004	.465	321	180	081	.465	-0.800	0.144	-1.6	0.9	-1.1	0.9	A-	
157	635900	4	4	233	.803	.133	.803	.026	.034	.004	.465	249	.465	247	219	-2.089	0.179	-1.0	0.9	-1.4	0.8	A-	
158	635412	4	4	233	.352	.172	.352	.378	.099	.000	.340	188	.340	082	173	0.404	0.147	0.1	1.0	0.9	1.1	A+	
159	630419	4	4	232	.375	.323	.151	.142	.375	.009	.306	092	151	064	.306	0.113	0.147	1.5	1.1	1.9	1.2	A-	A+
160	630295	4	3	235	.702	.209	.026	.055	.702	.009	.493	372	218	148	.493	-1.375	0.159	-1.1	0.9	-1.3	0.8	A+	
161	622466	4	4	2796	.729	.151	.729	.062	.055	.004	.471	271	.471	204	210	-1.565	0.046	-4.0	0.9	-4.5	0.8	A+	B+
162	633465	4	4	2796	.788	.066	.051	.092	.788	.004	.475	237	241	234	.475	-1.960	0.050	-4.2	0.9	-4.9	0.8	A+	A-
163	622994	4	4	2796	.748	.091	.088	.070	.748	.004	.473	249	246	195	.473	-1.686	0.048	-4.0	0.9	-4.9	0.8	A+	A-
164	622981	4	4	2796	.722	.722	.079	.081	.114	.005	.489	.489	224	232	246	-1.534	0.046	-4.2	0.9	-5.5	0.8	A+	B-
165	639855	4	4	2796	.330	.402	.141	.330	.123	.005	.319	075	168	.319	115	0.493	0.044	1.4	1.0	3.3	1.1	A+	A+
166	635475	4	4	2796	.315	.334	.109	.315	.238	.004	.205	074	191	.205	.039	0.567	0.044	7.1	1.1	8.4	1.3	A-	A-
167	623002	4	4	2796	.345	.182	.345	.341	.127	.006	.255	149	.255	054	058	0.393	0.043	6.7	1.1	6.8	1.2	A-	A-
168	635410	4	4	2796	.264	.291	.232	.264	.207	.007	.180	.003	092	.180	055	0.858	0.046	6.8	1.2	8.0	1.3	A+	A+
169	623118	4	3	2796	.548	.132	.155	.548	.157	.008	.448	202	189	.448	181	-0.620	0.042	-3.0	1.0	-2.1	1.0	A+	A-
170	633433	4	4	2796	.696	.696	.172	.061	.064	.007	.452	.452	225	215	210	-1.388	0.045	-2.7	0.9	-3.4	0.9	A+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Def	15	FT	PCS		D)/al	D/A\	D/D)	D/C)	D(D)	D/ \	DAD:-	DT/A)	DT/D)	DT/C)	DT/D)	Nana	DACE.	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
171	622426	4	4	234	.457	.218	.457	.103	.218	.004	.225	078	.225	076	082	-0.060	0.145	2.8	1.2	2.9	1.3	A-	
172	622986	4	4	234	.786	.068	.064	.786	.077	.004	.499	225	296	.499	196	-1.902	0.176	-0.8	0.9	-1.2	0.8	A+	
173	637007	4	4	234	.603	.128	.603	.145	.115	.009	.481	134	.481	198	277	-0.815	0.149	-1.5	0.9	-1.2	0.9	A-	1
174	626821	4	3	234	.380	.380	.184	.274	.154	.009	.284	.284	157	003	120	0.321	0.148	1.6	1.1	1.2	1.1	A-	
175	639853	4	4	467	.595	.161	.131	.595	.107	.006	.484	253	210	.484	152	-0.821	0.104	-1.6	0.9	-1.9	0.9	A-	A+
176	624798	4	4	232	.530	.147	.125	.530	.198	.000	.472	189	285	.472	185	-0.559	0.149	-1.2	0.9	-1.1	0.9	A-	A-
177	635447	4	4	232	.629	.629	.125	.099	.147	.000	.525	.525	329	237	209	-1.069	0.155	-1.6	0.9	-1.6	0.8	A-	A-
178	637015	4	4	232	.599	.052	.599	.323	.026	.000	.553	268	.553	389	188	-0.926	0.153	-2.3	0.9	-2.2	8.0	A+	A-
179	631096	4	3	232	.194	.254	.310	.233	.194	.009	.170	143	036	.043	.170	1.447	0.184	1.1	1.1	0.9	1.2	A+	A-
180	624770	4	4	232	.177	.427	.177	.207	.185	.004	.100	.211	.100	154	198	1.662	0.194	0.3	1.0	1.8	1.5	A+	A-
181	626571	4	4	233	.760	.150	.026	.760	.064	.000	.498	348	205	.498	229	-1.873	0.170	-1.3	0.9	-1.6	0.8	A+	
182	635901	4	4	233	.768	.077	.768	.090	.060	.004	.435	214	.435	256	127	-1.932	0.172	-0.4	1.0	-0.4	0.9	C+	
183	637147	4	3	233	.910	.034	.910	.013	.039	.004	.432	299	.432	148	154	-3.343	0.263	-0.2	0.9	-0.8	0.7	A+	
184	634143	4	3	233	.326	.245	.223	.326	.197	.009	.381	335	019	.381	005	0.454	0.153	-1.4	0.9	0.4	1.0	A+	
185	624845	4	4	233	.369	.155	.206	.262	.369	.009	.250	098	048	101	.250	0.217	0.149	1.1	1.1	1.6	1.2	A-	
186	633463	4	4	232	.470	.211	.280	.470	.039	.000	.077	026	.015	.077	179	-0.183	0.142	3.0	1.2	3.4	1.3	A+	
187	635471	4	4	232	.414	.224	.414	.194	.164	.004	.401	211	.401	112	115	0.064	0.144	-0.7	1.0	-0.3	1.0	A-	1
188	622464	4	4	232	.823	.091	.823	.035	.047	.004	.421	264	.421	121	188	-2.149	0.185	-0.5	0.9	-1.0	0.8	A+	
189	623022	4	4	232	.599	.599	.091	.060	.241	.009	.123	.123	165	241	.176	-0.826	0.145	3.5	1.2	3.3	1.3	A-	
190	625493	4	4	232	.582	.276	.116	.582	.017	.009	.397	209	199	.397	106	-0.751	0.145	-0.6	1.0	0.4	1.0	A+	1
191	623011	4	4	233	.781	.026	.120	.073	.781	.000	.314	240	119	205	.314	-1.778	0.169	0.5	1.1	-0.2	1.0	A+	
192	633855	4	4	233	.451	.270	.064	.215	.451	.000	.370	094	270	186	.370	-0.072	0.141	0.0	1.0	0.2	1.0	A-	
193	635442	4	4	233	.644	.056	.116	.644	.185	.000	.333	273	056	.333	203	-0.991	0.147	0.6	1.0	0.7	1.1	A-	1
194	637142	4	3	233	.867	.034	.013	.086	.867	.000	.365	256	193	198	.365	-2.464	0.204	-0.3	1.0	-0.7	8.0	A-	
195	637146	4	3	233	.897	.056	.897	.013	.034	.000	.385	290	.385	199	155	-2.740	0.224	-0.6	0.9	-1.4	0.7	A+	
196	622997	4	4	233	.519	.077	.335	.519	.069	.000	.423	223	160	.423	303	-0.392	0.141	-0.9	1.0	-0.5	1.0	A-	
197	636253	4	4	233	.717	.146	.717	.116	.017	.004	.267	202	.267	040	280	-1.377	0.156	1.1	1.1	0.3	1.0	A-	
198	629829	4	4	233	.747	.747	.142	.034	.073	.004	.427	.427	201	270	252	-1.579	0.162	-0.7	0.9	-1.2	0.9	A-	
199	624818	4	4	233	.253	.253	.116	.189	.442	.000	.013	.013	.025	109	.059	0.967	0.160	3.0	1.3	3.2	1.5	A+	1
200	627011	4	4	233	.421	.318	.421	.150	.112	.000	.371	265	.371	139	033	0.070	0.142	-0.3	1.0	1.1	1.1	A+	
201	623012	4	4	232	.190	.233	.384	.194	.190	.000	.211	013	055	129	.211	1.214	0.178	0.8	1.1	2.5	1.5	A-	A+
202	635473	4	4	232	.241	.216	.121	.241	.418	.004	.074	108	.014	.074	.052	0.888	0.166	2.6	1.2	3.5	1.5	A-	A-
203	637143	4	3	232	.759	.069	.039	.129	.759	.004	.493	230	132	328	.493	-1.850	0.165	-1.6	0.9	-1.8	0.8	A-	A-
204	623028	4	4	232	.448	.103	.448	.060	.384	.004	.432	139	.432	189	227	-0.226	0.144	-0.9	1.0	-1.2	0.9	A+	A+
205	622998	4	4	232	.737	.043	.078	.737	.138	.004	.447	134	273	.447	230	-1.717	0.161	-1.1	0.9	-0.9	0.9	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

D.f	ın	FT	PCS		D) (- I	D/A)	D/D)	D/C)	D/D)	D/ \	Din'-	DT(4)	DT(D)	DT(C)	DT/D)		B 4CE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
206	636254	4	4	232	.487	.207	.142	.487	.155	.009	.383	208	107	.383	114	-0.436	0.143	0.4	1.0	0.9	1.1	A+	B-
207	630294	4	4	232	.392	.108	.392	.237	.254	.009	.293	183	.293	104	032	0.026	0.146	1.8	1.1	2.4	1.2	A+	A+
208	632572	4	4	232	.651	.651	.116	.198	.022	.013	.336	.336	136	201	053	-1.258	0.150	1.1	1.1	0.9	1.1	A+	B+
209	627495	4	4	232	.565	.181	.151	.565	.095	.009	.527	276	173	.527	220	-0.810	0.144	-2.5	0.9	-2.1	0.9	A+	A+
210	624275	4	4	235	.702	.230	.038	.702	.030	.000	.501	337	255	.501	226	-1.341	0.157	-1.3	0.9	-1.7	0.8	A+	
211	635474	4	4	235	.315	.298	.315	.179	.209	.000	.288	148	.288	269	.092	0.686	0.155	2.2	1.2	2.4	1.3	B-	
212	626557	4	3	235	.860	.072	.051	.860	.013	.004	.453	262	323	.453	124	-2.521	0.205	-0.9	0.9	-1.3	0.7	A+	
213	637056	4	4	235	.817	.817	.077	.038	.068	.000	.456	.456	197	173	359	-2.113	0.183	-1.0	0.9	-1.0	0.8	B+	
214	636255	4	4	235	.723	.047	.162	.064	.723	.004	.431	172	294	189	.431	-1.486	0.161	-0.4	1.0	-0.4	0.9	A-	
215	636256	4	4	235	.677	.051	.677	.128	.136	.009	.365	178	.365	232	157	-1.229	0.155	1.0	1.1	0.7	1.1	A-	į
216	622451	4	4	235	.660	.660	.085	.238	.017	.000	.474	.474	189	366	123	-1.100	0.152	-0.8	1.0	-1.0	0.9	A+	
217	623119	4	3	235	.740	.136	.740	.047	.077	.000	.401	253	.401	231	151	-1.574	0.163	-0.1	1.0	0.0	1.0	B+	
218	625521	4	3	235	.362	.345	.362	.238	.051	.004	.323	130	.323	120	171	0.423	0.151	1.9	1.1	2.9	1.3	A-	į
219	635885	4	4	233	.640	.150	.103	.640	.107	.000	.408	155	287	.408	172	-0.968	0.148	-0.3	1.0	0.0	1.0	A-	
220	636257	4	4	233	.579	.155	.579	.155	.112	.000	.354	078	.354	218	215	-0.669	0.144	0.8	1.0	0.7	1.1	A-	
221	639432	4	4	233	.858	.060	.858	.022	.060	.000	.443	281	.443	208	243	-2.434	0.205	-0.6	0.9	-0.9	0.8	B+	
222	624771	4	N/A	233	.258	.258	.189	.197	.356	.000	.006	.006	161	161	.259	0.922	0.158	3.1	1.3	4.9	1.7	A+	
223	623116	4	4	233	.803	.129	.047	.022	.803	.000	.465	244	308	262	.465	-1.956	0.179	-0.6	0.9	-1.2	0.8	A-	į
224	622452	4	4	233	.262	.103	.047	.262	.588	.000	.190	141	170	.190	009	0.922	0.158	0.6	1.0	3.2	1.5	A-	
225	623029	4	4	233	.652	.082	.064	.652	.197	.004	.371	253	195	.371	137	-1.022	0.150	0.2	1.0	-0.1	1.0	A+	
226	622992	4	4	233	.876	.077	.876	.026	.022	.000	.450	224	.450	311	272	-2.614	0.217	-0.6	0.9	-1.0	0.8	A+	į
227	627417	4	4	233	.588	.588	.103	.137	.167	.004	.410	.410	192	248	143	-0.721	0.145	-0.2	1.0	-0.1	1.0	A-	
228	639370	4	4	234	.282	.449	.081	.180	.282	.009	.345	028	311	076	.345	0.704	0.156	0.1	1.0	0.1	1.0	B+	
229	633431	4	4	234	.752	.752	.064	.068	.107	.009	.449	.449	229	137	204	-1.691	0.164	-0.8	0.9	-0.6	0.9	A+	
230	635435	4	4	234	.415	.051	.415	.188	.333	.013	.436	169	.436	166	138	0.033	0.144	-1.3	0.9	-1.2	0.9	A-	
231	637144	4	3	234	.551	.197	.551	.120	.124	.009	.406	166	.406	210	083	-0.639	0.143	-0.2	1.0	-0.6	1.0	A-	1
232	627048	4	4	234	.372	.372	.342	.167	.107	.013	.312	.312	088	123	051	0.225	0.146	1.2	1.1	0.9	1.1	A-	
233	622455	4	4	234	.808	.808	.081	.060	.039	.013	.516	.516	189	217	273	-2.130	0.183	-1.3	0.9	-1.5	0.8	A+	
234	623095	4	4	234	.222	.406	.133	.222	.227	.013	.089	020	133	.089	.157	1.070	0.167	2.3	1.2	3.7	1.7	A+	
235	635881	4	4	234	.607	.231	.607	.111	.039	.013	.415	210	.415	170	070	-0.921	0.146	-0.2	1.0	-0.3	1.0	A-	
236	626556	4	3	234	.201	.312	.201	.274	.201	.013	.178	.032	.178	086	001	1.246	0.174	0.7	1.1	2.7	1.5	A-	
237	622990	4	4	234	.483	.081	.214	.483	.209	.013	.463	224	176	.463	123	-0.318	0.143	-1.6	0.9	-1.4	0.9	A-	
238	635941	4	4	232	.599	.134	.129	.599	.138	.000	.317	294	090	.317	073	-0.884	0.144	0.9	1.1	1.0	1.1	A+	A-
239	623122	4	3	232	.466	.289	.172	.466	.073	.000	.480	331	130	.480	154	-0.253	0.142	-2.1	0.9	-1.9	0.9	A-	A-
240	635472	4	4	232	.341	.185	.237	.237	.341	.000	.349	256	039	116	.349	0.354	0.148	0.0	1.0	1.1	1.1	A+	B+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Def	ın	FT	PCS		D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT/A)	DT/D)	DT/C)	DT/D)	D4	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
241	635411	4	4	232	.746	.078	.746	.086	.086	.004	.462	282	.462	222	207	-1.678	0.162	-0.9	0.9	-1.5	0.8	A-	A-
242	631025	4	4	232	.672	.073	.151	.672	.095	.009	.364	202	179	.364	152	-1.286	0.151	0.4	1.0	0.0	1.0	B+	A-
243	623132	4	3	232	.427	.358	.134	.078	.427	.004	.464	208	335	032	.464	-0.082	0.143	-1.5	0.9	-1.3	0.9	A+	A-
244	625490	4	4	232	.358	.233	.147	.254	.358	.009	.215	062	138	044	.215	0.244	0.147	2.3	1.1	2.5	1.2	A+	A+
245	623018	4	4	232	.422	.125	.267	.177	.422	.009	.235	163	065	065	.235	-0.074	0.143	2.8	1.2	2.0	1.2	A+	A-
246	628102	4	3	232	.466	.466	.147	.168	.207	.013	.338	.338	243	042	118	-0.281	0.142	1.0	1.1	1.0	1.1	A+	A+
247	625496	4	4	232	.535	.211	.535	.086	.155	.013	.428	207	.428	221	132	-0.608	0.143	-0.7	1.0	-0.5	1.0	A+	A-
248	635899	4	4	232	.578	.578	.129	.091	.185	.017	.446	.446	260	092	190	-0.817	0.144	-0.8	1.0	-1.1	0.9	B-	A+
249	622431	4	4	233	.657	.176	.125	.657	.034	.009	.480	340	182	.480	079	-1.246	0.150	-1.6	0.9	-1.3	0.9	A-	
250	633434	4	4	233	.794	.077	.039	.086	.794	.004	.406	260	166	150	.406	-2.054	0.174	-0.8	0.9	0.1	1.0	A+	
251	624284	4	4	233	.777	.064	.077	.077	.777	.004	.449	270	171	204	.449	-1.935	0.169	-1.3	0.9	-1.0	0.8	A-	
252	623026	4	3	233	.609	.155	.129	.609	.103	.004	.327	115	224	.327	073	-0.990	0.146	1.3	1.1	0.9	1.1	B-	
253	622993	4	4	233	.494	.416	.069	.494	.017	.004	.260	088	185	.260	148	-0.429	0.143	2.8	1.2	2.1	1.2	A-	
254	628103	4	3	233	.665	.150	.665	.120	.060	.004	.404	293	.404	050	206	-1.277	0.151	-0.2	1.0	-0.6	0.9	A-	
255	635356	4	4	233	.322	.159	.373	.322	.142	.004	.418	336	.010	.418	162	0.424	0.152	-0.8	0.9	-0.4	1.0	A+	
256	624846	4	3	233	.232	.189	.232	.331	.240	.009	.328	064	.328	090	101	0.979	0.168	-0.2	1.0	0.6	1.1	A+	Į.
257	634144	4	4	233	.712	.215	.004	.060	.712	.009	.464	346	087	147	.464	-1.550	0.157	-1.1	0.9	-1.3	0.8	A-	Į.
258	627071	4	4	233	.434	.163	.434	.236	.150	.017	.340	098	.340	162	109	-0.172	0.144	1.1	1.1	1.2	1.1	A+	
259	636551	4	4	233	.494	.155	.163	.494	.172	.017	.352	194	134	.352	070	-0.457	0.143	1.2	1.1	0.6	1.0	A-	
260	624796	4	4	233	.129	.296	.438	.133	.129	.004	.135	041	.042	075	.135	1.895	0.211	8.0	1.1	2.0	1.6	A+	
261	624810	4	4	233	.640	.060	.094	.640	.202	.004	.377	071	220	.377	195	-1.090	0.150	0.6	1.0	0.4	1.0	A-	
262	635574	4	4	233	.313	.262	.228	.313	.193	.004	.151	126	.022	.151	004	0.547	0.153	3.3	1.2	4.6	1.6	A-	
263	637140	4	3	233	.901	.026	.901	.056	.013	.004	.317	093	.317	205	101	-3.051	0.239	0.2	1.0	0.1	1.0	B-	
264	637145	4	3	233	.880	.073	.880	.022	.022	.004	.477	269	.477	221	218	-2.741	0.215	-0.9	0.9	-2.2	0.5	A-	
265	634033	4	4	233	.322	.090	.502	.322	.082	.004	.273	036	114	.273	142	0.500	0.152	1.8	1.1	2.0	1.2	B-	
266	636252	4	4	233	.897	.897	.034	.013	.052	.004	.440	.440	232	107	262	-2.940	0.230	-0.8	0.9	-1.7	0.6	A+	
267	639431	4	4	233	.571	.137	.185	.103	.571	.004	.495	210	296	118	.495	-0.740	0.145	-1.9	0.9	-1.6	0.9	A-	
268	624766	4	4	233	.575	.077	.228	.575	.116	.004	.450	218	132	.450	273	-0.740	0.145	-1.1	0.9	-1.1	0.9	A+	
269	635582	4	4	233	.442	.442	.403	.107	.043	.004	.386	.386	210	131	130	-0.113	0.144	0.1	1.0	1.3	1.1	A+	
270	623017	4	4	235	.740	.119	.038	.740	.102	.000	.462	176	200	.462	354	-1.547	0.163	-1.2	0.9	-1.6	0.8	A-	
271	625455	4	4	233	.640	.142	.052	.167	.640	.000	.365	143	304	157	.365	-0.968	0.148	0.6	1.0	0.6	1.1	A-	
272	622453	4	4	234	.756	.073	.064	.756	.098	.009	.474	240	221	.474	156	-1.718	0.165	-1.1	0.9	-1.4	0.8	A-	
273	623135	4	4	232	.263	.112	.263	.353	.263	.009	.111	146	088	.093	.111	0.757	0.158	2.6	1.2	2.7	1.4	A+	A-
274	632573	4	4	233	.451	.451	.210	.167	.159	.013	.174	.174	149	094	.109	-0.236	0.144	4.6	1.3	4.1	1.3	A-	
275	623020	4	4	233	.790	.082	.094	.026	.790	.009	.474	303	179	212	.474	-2.017	0.177	-1.1	0.9	-1.4	8.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Dof	ıc	FT	PCS	N	DVal	D/A)	D/D)	D/C)	D/D)	D/ \	D+D:a	DT/A)	DT/D\	DT/C)	DT/D)	Mass	MSE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	IV	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
276	633435	4	4	233	.687	.219	.047	.047	.687	.000	.361	162	263	210	.361	-1.215	0.152	0.3	1.0	-0.2	1.0	A-	1
277	623108	4	4	232	.591	.134	.147	.121	.591	.009	.535	272	196	224	.535	-0.915	0.145	-3.2	0.8	-2.7	0.8	A-	A+
278	633468	4	4	235	.745	.745	.051	.081	.119	.004	.490	.490	239	214	303	-1.620	0.165	-1.2	0.9	-0.9	0.9	A-	1
279	627696	4	4	233	.236	.219	.236	.451	.090	.004	.035	137	.035	.109	026	1.074	0.163	2.4	1.2	3.1	1.5	A-	
280	623115	4	4	233	.730	.116	.730	.099	.056	.000	.426	314	.426	170	166	-1.441	0.160	-0.4	1.0	-1.3	0.9	A-	1
281	622983	4	4	234	.727	.727	.073	.171	.021	.009	.375	.375	190	153	135	-1.560	0.160	0.3	1.0	0.0	1.0	A-	1
282	622454	4	4	232	.379	.052	.379	.405	.164	.000	.279	185	.279	213	.028	0.159	0.145	1.2	1.1	2.0	1.2	A-	A-
283	621395	4	4	233	.249	.159	.142	.249	.446	.004	.220	079	117	.220	010	0.871	0.164	1.0	1.1	2.5	1.4	A+	
284	632587	4	4	233	.442	.155	.202	.197	.442	.004	.547	202	258	185	.547	-0.113	0.144	-3.3	0.8	-3.1	0.8	A+	1
285	623019	4	4	233	.803	.803	.099	.073	.026	.000	.319	.319	192	158	181	-1.897	0.174	0.0	1.0	-0.1	1.0	A-	
286	634025	4	4	232	.724	.177	.724	.035	.056	.009	.434	254	.434	150	179	-1.648	0.159	-0.5	1.0	-1.1	0.9	A-	A-
287	626922	4	4	235	.494	.204	.494	.204	.098	.000	.446	255	.446	189	148	-0.247	0.145	-0.1	1.0	0.3	1.0	A+	
288	633469	4	4	233	.627	.219	.627	.060	.090	.004	.525	251	.525	295	262	-0.914	0.148	-2.0	0.9	-2.3	0.8	B+	
289	628471	4	4	234	.124	.419	.321	.124	.124	.013	.049	.114	.109	228	.049	1.899	0.210	1.0	1.1	2.5	1.7	A+	
290	637149	5	4	218	.913	.000	.913	.009	.078	.000	.298	.000	.298	068	289	-2.668	0.247	-0.1	1.0	-1.1	0.7	A+	
291	633440	5	5	221	.629	.177	.100	.629	.081	.014	.410	168	162	.410	129	-0.769	0.149	-0.7	1.0	-1.3	0.9	A+	
292	635884	5	5	221	.846	.846	.041	.045	.063	.005	.499	.499	327	200	202	-2.250	0.202	-1.0	0.9	-1.6	0.7	B-	1
293	637062	5	5	218	.390	.115	.330	.390	.161	.005	.197	132	.072	.197	176	0.252	0.150	3.0	1.2	2.5	1.2	A+	
294	623027	5	5	220	.750	.055	.050	.141	.750	.005	.553	298	261	299	.553	-1.459	0.167	-2.5	0.8	-2.6	0.7	A+	
295	622469	5	4	221	.439	.213	.122	.439	.213	.014	.393	024	176	.393	239	0.188	0.148	0.0	1.0	0.5	1.0	A-	1
296	639843	5	5	222	.788	.788	.045	.032	.131	.005	.372	.372	268	252	135	-1.669	0.177	0.0	1.0	-0.2	1.0	A+	
297	635417	5	5	221	.448	.448	.199	.154	.186	.014	.347	.347	087	098	134	0.019	0.147	0.9	1.1	0.4	1.0	A+	
298	620819	5	5	220	.486	.118	.177	.209	.486	.009	.449	258	088	219	.449	-0.205	0.147	-0.9	1.0	-0.2	1.0	A-	A-
299	635605	5	5	221	.285	.240	.104	.285	.362	.009	.187	020	190	.187	.063	0.895	0.157	1.1	1.1	2.7	1.3	A+	
300	637148	5	4	221	.833	.014	.018	.127	.833	.009	.431	149	177	217	.431	-1.982	0.191	-0.7	0.9	-1.1	0.8	A-	
301	633439	5	5	221	.448	.281	.154	.109	.448	.009	.321	142	064	131	.321	0.002	0.146	1.1	1.1	0.9	1.1	A-	1
302	620820	5	5	218	.537	.197	.151	.106	.537	.009	.429	272	123	086	.429	-0.453	0.148	-0.8	1.0	-0.9	0.9	A+	
303	626566	5	5	220	.764	.764	.041	.123	.068	.005	.490	.490	212	279	253	-1.545	0.170	-1.7	0.9	-1.6	0.8	A+	
304	623129	5	5	221	.819	.072	.068	.819	.032	.009	.513	261	292	.513	176	-1.865	0.187	-1.6	0.8	-2.2	0.6	C+	1
305	629858	5	4	222	.383	.140	.153	.315	.383	.009	.307	260	178	.027	.307	0.441	0.148	0.5	1.0	0.5	1.0	A-	
306	639864	5	5	221	.765	.167	.765	.050	.009	.009	.464	273	.464	209	061	-1.617	0.171	-1.2	0.9	-1.1	8.0	A-	
307	627291	5	5	220	.555	.127	.241	.073	.555	.005	.429	198	218	175	.429	-0.534	0.148	-0.5	1.0	-0.4	1.0	C+	A+
308	639349	5	5	218	.541	.541	.257	.087	.106	.009	.513	.513	290	213	202	-0.257	0.148	-2.0	0.9	-2.2	0.9	A-	
309	626818	5	5	221	.371	.190	.371	.050	.380	.009	.362	238	.362	189	017	0.371	0.149	-0.3	1.0	0.3	1.0	A-	
310	627692	5	5	2867	.523	.135	.523	.197	.141	.004	.394	167	.394	184	142	-0.273	0.040	-1.1	1.0	-1.1	1.0	A+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Dof	ID	FT	PCS	N	DVal	D/A)	D/D)	D(C)	D/D/	D/ \	D+D:a	DT/A)	DT/D\	DT/C)	PT(D)	Mass	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PI(D)	Meas	MSE	in	in	out	out	/F	/B
311	633441	5	5	2867	.346	.112	.346	.181	.357	.005	.329	076	.329	144	120	0.581	0.042	1.4	1.0	2.0	1.1	A-	A+
312	626569	5	5	2867	.354	.200	.354	.296	.145	.006	.239	174	.239	024	035	0.542	0.042	6.7	1.1	7.5	1.2	B-	A+
313	635887	5	5	2867	.474	.241	.110	.474	.169	.005	.356	089	198	.356	149	-0.041	0.040	1.1	1.0	1.5	1.0	A-	A+
314	626554	5	5	2867	.608	.129	.102	.155	.608	.006	.408	157	218	159	.408	-0.685	0.041	-1.8	1.0	-2.0	1.0	A+	A-
315	628059	5	5	2867	.595	.116	.595	.155	.127	.007	.351	155	.351	103	186	-0.621	0.041	1.7	1.0	2.6	1.1	A+	A-
316	635609	5	5	2867	.218	.431	.140	.218	.202	.008	.172	.079	127	.172	095	1.328	0.048	3.9	1.1	6.4	1.3	A-	A+
317	627072	5	4	2867	.637	.145	.092	.116	.637	.011	.425	227	210	108	.425	-0.841	0.042	-2.8	1.0	-2.3	0.9	A+	A-
318	623109	5	5	2867	.524	.137	.524	.203	.124	.011	.364	174	.364	109	151	-0.290	0.041	1.6	1.0	1.3	1.0	A+	A-
319	630296	5	5	2867	.479	.090	.218	.200	.479	.014	.370	165	109	157	.370	-0.082	0.041	1.1	1.0	0.9	1.0	A+	A-
320	625492	5	5	221	.525	.177	.149	.525	.149	.000	.361	110	233	.361	155	-0.226	0.146	-0.1	1.0	-0.2	1.0	B+	
321	626926	5	5	221	.620	.199	.620	.081	.091	.009	.198	018	.198	204	054	-0.703	0.150	2.7	1.2	2.7	1.2	A+	
322	635607	5	4	221	.425	.213	.190	.425	.167	.005	.354	.056	256	.354	195	0.245	0.147	0.5	1.0	0.3	1.0	A+	
323	623121	5	5	221	.520	.045	.326	.095	.520	.014	.471	273	254	076	.471	-0.219	0.146	-2.2	0.9	-2.0	0.9	A+	
324	623140	5	5	221	.615	.167	.615	.167	.032	.018	.311	132	.311	125	107	-0.694	0.151	0.7	1.0	-0.1	1.0	A-	
325	624283	5	5	221	.833	.833	.081	.068	.018	.000	.459	.459	281	274	193	-2.089	0.193	-0.6	0.9	-1.6	0.7	A+	A-
326	635608	5	4	221	.362	.362	.226	.217	.195	.000	.346	.346	133	152	122	0.505	0.152	-0.6	1.0	-0.5	0.9	A-	A+
327	637154	5	5	221	.629	.086	.167	.629	.118	.000	.481	142	281	.481	272	-0.810	0.153	-2.0	0.9	-2.1	0.8	A+	A-
328	627772	5	5	221	.747	.050	.131	.747	.068	.005	.499	213	245	.499	320	-1.494	0.169	-1.2	0.9	-1.2	0.8	A-	B-
329	625513	5	5	221	.308	.136	.434	.308	.104	.018	.337	245	.002	.337	163	0.775	0.158	0.4	1.0	1.4	1.2	A-	A-
330	626573	5	5	221	.692	.167	.081	.692	.054	.005	.399	238	183	.399	097	-1.080	0.158	0.0	1.0	-0.3	1.0	A-	
331	638016	5	5	221	.597	.077	.100	.597	.222	.005	.511	236	222	.511	237	-0.586	0.149	-3.2	0.8	-3.0	0.8	A+	
332	632602	5	5	221	.353	.353	.177	.249	.213	.009	.262	.262	076	030	136	0.585	0.151	0.6	1.0	1.0	1.1	A+	
333	628021	5	5	221	.579	.122	.208	.579	.077	.014	.520	178	333	.520	108	-0.519	0.149	-2.4	0.9	-1.9	0.9	A-	
334	626563	5	5	221	.249	.249	.158	.167	.407	.018	.283	.283	070	098	039	1.178	0.167	0.3	1.0	0.5	1.1	A+	
335	626577	5	5	222	.523	.135	.270	.523	.068	.005	.365	143	197	.365	097	-0.257	0.145	-0.4	1.0	-0.7	1.0	A-	
336	637151	5	5	222	.342	.342	.203	.257	.189	.009	.276	.276	007	064	147	0.616	0.153	0.7	1.0	0.5	1.0	A-	
337	626564	5	3	222	.581	.581	.099	.126	.180	.014	.418	.418	042	181	236	-0.551	0.147	-0.1	1.0	0.2	1.0	A+	
338	624753	5	5	222	.464	.104	.248	.171	.464	.014	.392	180	119	101	.392	0.012	0.146	-0.9	1.0	-0.3	1.0	A-	
339	627009	5	5	222	.189	.302	.279	.189	.221	.009	.182	.040	.009	.182	154	1.551	0.184	0.7	1.1	1.6	1.3	A+	
340	623103	5	5	218	.775	.064	.096	.775	.064	.000	.334	306	129	.334	108	-1.455	0.172	-0.2	1.0	0.0	1.0	A+	
341	635439	5	5	218	.762	.762	.078	.028	.133	.000	.291	.291	225	170	105	-1.368	0.169	0.4	1.0	0.8	1.1	A+	
342	635604	5	5	218	.500	.243	.096	.500	.161	.000	.413	189	229	.413	158	-0.039	0.147	-0.3	1.0	-0.5	1.0	A+	
343	632605	5	5	218	.220	.188	.482	.110	.220	.000	.338	090	128	131	.338	1.442	0.174	0.2	1.0	-0.3	1.0	A-	
344	635606	5	5	218	.509	.106	.229	.156	.509	.000	.390	133	309	068	.390	-0.083	0.147	0.2	1.0	0.3	1.0	A+	
345	626565	5	3	218	.518	.161	.156	.518	.165	.000	.447	223	164	.447	221	-0.126	0.147	-0.8	1.0	-0.7	1.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS		D) / I	D/A\	D/D\	5/6\	D/D)	5/\	5.5.	D=(A)	D=(D)	D=(a)	D=/D)			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
346	627493	5	5	218	.610	.610	.147	.115	.128	.000	.482	.482	275	224	198	-0.568	0.150	-1.5	0.9	-1.8	0.9	B+	
347	622435	5	5	218	.518	.165	.174	.518	.142	.000	.501	133	201	.501	357	-0.104	0.147	-2.4	0.9	-2.3	0.9	A+	
348	627681	5	5	218	.445	.147	.445	.179	.225	.005	.423	219	.423	223	103	0.214	0.148	-0.4	1.0	-0.1	1.0	A-	
349	621388	5	5	218	.688	.119	.688	.078	.101	.014	.461	137	.461	251	294	-1.018	0.160	-1.2	0.9	-0.9	0.9	B+	
350	632518	5	4	218	.372	.124	.289	.372	.202	.014	.280	176	069	.280	082	0.563	0.152	1.8	1.1	2.1	1.2	B-	
351	635440	5	5	221	.584	.584	.054	.213	.140	.009	.295	.295	152	093	072	-0.539	0.146	1.1	1.1	1.2	1.1	B-	
352	628104	5	5	221	.742	.081	.081	.742	.086	.009	.461	220	158	.461	180	-1.361	0.164	-1.2	0.9	-1.7	0.8	A-	
353	623112	5	5	221	.810	.810	.068	.086	.027	.009	.496	.496	274	284	.012	-1.807	0.182	-1.4	0.9	-1.6	0.8	A-	
354	635610	5	5	221	.661	.077	.661	.154	.100	.009	.452	125	.452	264	125	-0.915	0.152	-1.5	0.9	-1.7	0.9	A-	
355	626817	5	5	221	.267	.407	.072	.244	.267	.009	.261	050	014	091	.261	0.996	0.160	0.5	1.0	0.6	1.1	A+	
356	623087	5	5	221	.706	.027	.059	.199	.706	.009	.520	243	166	276	.520	-1.154	0.157	-2.3	0.8	-2.5	0.8	A+	
357	632519	5	4	221	.796	.050	.796	.045	.100	.009	.428	140	.428	158	203	-1.710	0.177	-0.6	0.9	-1.5	0.8	A-	
358	622988	5	5	221	.226	.457	.199	.226	.109	.009	.238	.042	163	.238	024	1.240	0.169	0.4	1.0	1.0	1.1	A+	
359	623085	5	5	221	.208	.208	.195	.475	.113	.009	.094	.094	187	.229	096	1.358	0.173	1.6	1.2	2.3	1.4	A+	
360	632607	5	5	221	.520	.100	.158	.520	.213	.009	.340	134	068	.340	139	-0.244	0.144	0.3	1.0	0.2	1.0	A+	
361	635448	5	N/A	221	.195	.054	.195	.534	.213	.005	.095	226	.095	067	.176	1.408	0.179	1.2	1.1	2.7	1.5	A+	
362	639865	5	5	221	.348	.285	.190	.348	.167	.009	.093	.152	162	.093	079	0.497	0.151	3.3	1.2	3.3	1.3	A-	
363	624815	5	5	221	.796	.796	.050	.072	.072	.009	.468	.468	211	296	155	-1.874	0.183	-0.8	0.9	-1.2	0.8	A+	
364	632604	5	5	221	.887	.059	.018	.887	.027	.009	.468	226	173	.468	321	-2.727	0.237	-0.9	0.9	-1.2	0.7	B+	
365	623124	5	5	221	.760	.032	.760	.145	.059	.005	.437	207	.437	258	148	-1.598	0.171	-0.7	0.9	-0.5	0.9	B+	
366	620999	5	5	221	.548	.109	.104	.235	.548	.005	.346	061	200	159	.346	-0.461	0.146	0.8	1.0	8.0	1.1	A-	
367	628315	5	5	221	.634	.253	.036	.634	.072	.005	.545	396	328	.545	017	-0.882	0.151	-2.6	0.9	-2.7	0.8	B+	
368	627683	5	5	221	.679	.140	.679	.104	.072	.005	.521	258	.521	278	169	-1.119	0.156	-1.9	0.9	-2.0	0.8	A+	
369	630396	5	5	221	.317	.095	.317	.100	.480	.009	.070	162	.070	272	.257	0.647	0.154	3.6	1.2	3.9	1.4	A+	
370	627007	5	5	221	.670	.109	.131	.670	.081	.009	.592	301	256	.592	241	-1.082	0.156	-3.0	0.8	-3.1	0.7	A+	
371	623104	5	5	218	.491	.087	.184	.234	.491	.005	.390	083	200	167	.390	-0.209	0.147	-0.8	1.0	-0.5	1.0	A-	
372	625535	5	5	218	.381	.239	.381	.161	.211	.009	.335	103	.335	080	133	0.294	0.150	0.4	1.0	1.6	1.2	A+	
373	626815	5	5	218	.922	.922	.032	.023	.018	.005	.423	.423	221	198	158	-3.210	0.278	-0.2	0.9	-1.1	0.6	A+	
374	639866	5	N/A	218	.174	.147	.115	.174	.555	.009	.036	204	063	.036	.202	1.497	0.187	1.5	1.2	3.3	1.8	B+	
375	630408	5	5	218	.826	.826	.151	.000	.018	.005	.475	.475	373	.000	171	-2.117	0.193	-0.7	0.9	-0.9	0.8	B+	
376	628023	5	5	218	.849	.055	.849	.046	.041	.009	.517	215	.517	329	161	-2.344	0.208	-1.0	0.9	-1.8	0.7	A-	
377	637139	5	5	218	.362	.156	.280	.188	.362	.014	.377	117	197	024	.377	0.380	0.152	-0.4	1.0	0.0	1.0	A+	
378	628063	5	5	218	.844	.844	.028	.055	.055	.018	.499	.499	017	345	214	-2.360	0.210	-0.7	0.9	-0.9	0.8	A+	
379	624819	5	5	218	.688	.142	.106	.688	.051	.014	.505	200	259	.505	200	-1.239	0.160	-1.4	0.9	-1.6	0.8	B-	
380	621000	5	5	218	.560	.073	.560	.248	.101	.018	.512	115	.512	248	245	-0.584	0.150	-2.2	0.9	-2.1	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-4->	- 4-1	- / - >										Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
381	620818	5	5	220	.832	.036	.832	.050	.082	.000	.449	210	.449	291	238	-2.001	0.189	-1.3	0.9	-1.9	0.7	A-	
382	628105	5	5	220	.932	.014	.018	.932	.036	.000	.188	173	077	.188	090	-3.100	0.273	0.1	1.0	0.4	1.1	A+	
383	626985	5	5	220	.632	.086	.136	.632	.146	.000	.405	115	238	.405	230	-0.796	0.150	-0.8	1.0	-0.7	0.9	A-	
384	626558	5	3	220	.505	.068	.314	.505	.105	.009	.344	116	177	.344	162	-0.207	0.146	1.0	1.1	0.9	1.1	A+	
385	637172	5	5	220	.718	.132	.055	.091	.718	.005	.458	174	239	284	.458	-1.270	0.161	-1.2	0.9	-1.6	8.0	A+	
386	628308	5	5	220	.468	.136	.314	.077	.468	.005	.394	237	118	186	.394	-0.023	0.146	0.0	1.0	-0.1	1.0	A+	
387	626812	5	3	220	.759	.759	.068	.064	.105	.005	.391	.391	282	155	153	-1.516	0.169	-0.3	1.0	-0.8	0.9	A+	
388	635944	5	5	220	.482	.482	.159	.227	.127	.005	.409	.409	176	090	274	-0.088	0.146	-0.3	1.0	-0.5	1.0	A+	
389	626544	5	5	220	.705	.705	.114	.073	.105	.005	.452	.452	269	223	170	-1.193	0.159	-1.4	0.9	-0.4	0.9	A-	
390	639867	5	5	220	.273	.250	.186	.273	.277	.014	.117	053	043	.117	026	0.948	0.163	2.9	1.2	3.1	1.4	A-	
391	622432	5	5	221	.765	.765	.109	.095	.032	.000	.359	.359	139	308	106	-1.459	0.168	-0.1	1.0	-0.6	0.9	B+	
392	633848	5	5	221	.552	.244	.552	.158	.045	.000	.271	215	.271	082	061	-0.337	0.146	2.5	1.1	1.6	1.1	A-	
393	639366	5	5	221	.873	.027	.068	.032	.873	.000	.312	230	137	183	.312	-2.297	0.211	-0.2	1.0	-0.7	0.8	A+	
394	626999	5	5	221	.683	.118	.683	.095	.104	.000	.330	253	.330	109	131	-0.990	0.155	0.3	1.0	0.7	1.1	A+	
395	628120	5	4	221	.281	.172	.281	.262	.276	.009	.315	116	.315	068	113	1.013	0.162	0.5	1.0	1.9	1.2	A-	
396	630721	5	5	221	.493	.113	.303	.493	.081	.009	.436	215	236	.436	056	-0.066	0.146	-0.8	1.0	-0.5	1.0	A-	
397	623128	5	5	221	.692	.045	.100	.154	.692	.009	.530	135	334	252	.530	-1.055	0.157	-2.4	0.8	-2.5	0.7	A-	
398	623131	5	5	221	.552	.158	.027	.253	.552	.009	.538	318	142	235	.538	-0.346	0.147	-3.3	0.8	-1.9	0.9	B+	
399	627494	5	5	221	.529	.113	.529	.145	.208	.005	.457	111	.457	264	204	-0.232	0.146	-1.3	0.9	-1.3	0.9	A+	
400	624817	5	5	221	.294	.113	.154	.294	.430	.009	.309	133	141	.309	045	0.941	0.160	1.2	1.1	0.7	1.1	B-	
401	625498	5	4	221	.534	.262	.140	.534	.050	.014	.451	197	244	.451	127	-0.273	0.147	-1.2	0.9	-1.1	0.9	A-	
402	623102	5	5	222	.905	.036	.045	.014	.905	.000	.407	336	237	066	.407	-2.733	0.246	-0.5	0.9	-1.0	0.7	A+	
403	635436	5	5	222	.635	.081	.635	.090	.194	.000	.340	222	.340	177	133	-0.763	0.150	0.4	1.0	0.4	1.0	A+	
404	635441	5	5	222	.721	.721	.036	.149	.095	.000	.384	.384	163	212	226	-1.220	0.160	-0.1	1.0	-0.4	1.0	A-	
405	627046	5	5	222	.698	.144	.104	.698	.054	.000	.424	142	328	.424	198	-1.094	0.157	-0.6	1.0	-0.9	0.9	B+	
406	628967	5	5	222	.703	.167	.703	.045	.086	.000	.469	286	.469	200	237	-1.118	0.158	-1.3	0.9	-1.6	0.8	A+	
407	637150	5	N/A	222	.158	.045	.401	.392	.158	.005	.063	091	018	.009	.063	1.807	0.194	0.8	1.1	1.8	1.4	A+	
408	624764	5	5	222	.342	.086	.342	.293	.270	.009	.144	167	.144	.016	014	0.628	0.151	2.9	1.2	2.6	1.2	A+	
409	624768	5	5	222	.617	.230	.617	.050	.095	.009	.383	167	.383	070	267	-0.687	0.149	-0.1	1.0	0.1	1.0	A-	
410	628470	5	5	222	.653	.113	.144	.068	.653	.023	.555	231	239	311	.555	-0.894	0.153	-3.3	0.8	-3.0	0.8	A-	
411	624839	5	5	222	.491	.072	.491	.176	.243	.018	.538	232	.538	280	194	-0.119	0.145	-3.4	0.8	-3.0	0.8	A+	
412	627073	5	4	222	.667	.108	.131	.667	.081	.014	.443	203	274	.443	182	-0.983	0.155	-0.9	0.9	-1.2	0.9	A+	
413	623110	5	5	221	.692	.104	.068	.692	.127	.009	.496	232	172	.496	213	-1.186	0.158	-1.8	0.9	-1.6	8.0	A-	
414	635437	5	5	221	.846	.036	.846	.059	.050	.009	.375	131	.375	188	104	-2.227	0.199	-0.2	1.0	-0.2	1.0	B+	
415	637173	5	3	221	.747	.086	.122	.036	.747	.009	.374	170	161	098	.374	-1.503	0.167	0.2	1.0	-0.5	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS											0 - 5				Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
416	627358	5	5	221	.507	.262	.507	.163	.059	.009	.348	109	.348	102	189	-0.257	0.146	0.9	1.1	0.5	1.0	A-	
417	622438	5	5	221	.774	.036	.068	.113	.774	.009	.399	236	243	057	.399	-1.677	0.173	-0.5	1.0	0.6	1.1	A+	
418	623117	5	5	221	.593	.023	.136	.593	.240	.009	.428	197	253	.428	118	-0.671	0.149	-0.8	1.0	-0.5	1.0	B-	
419	637152	5	4	221	.656	.656	.045	.222	.068	.009	.440	.440	246	171	171	-0.991	0.153	-0.8	1.0	-0.8	0.9	A+	
420	625489	5	5	221	.253	.434	.100	.204	.253	.009	.211	.094	176	104	.211	1.037	0.165	1.3	1.1	1.9	1.3	C+	
421	639863	5	5	221	.652	.652	.154	.072	.109	.014	.544	.544	255	299	129	-0.979	0.154	-2.7	0.8	-2.5	8.0	A-	
422	628057	5	5	221	.724	.118	.724	.077	.068	.014	.484	196	.484	118	288	-1.382	0.163	-1.3	0.9	-1.6	0.8	A-	
423	633436	5	5	221	.548	.018	.548	.181	.240	.014	.392	006	.392	184	174	-0.459	0.147	0.3	1.0	-0.3	1.0	A+	
424	635940	5	5	220	.455	.455	.318	.136	.091	.000	.363	.363	258	168	011	-0.044	0.148	1.1	1.1	0.6	1.0	A-	C-
425	627364	5	5	220	.623	.255	.050	.623	.073	.000	.373	316	161	.373	031	-0.857	0.151	0.3	1.0	0.0	1.0	A+	B+
426	637174	5	3	220	.586	.123	.091	.200	.586	.000	.496	298	210	216	.496	-0.677	0.149	-2.0	0.9	-2.2	0.8	A+	A-
427	628251	5	5	220	.486	.177	.214	.486	.123	.000	.340	203	175	.340	064	-0.196	0.147	1.4	1.1	1.3	1.1	A-	A+
428	624805	5	5	220	.955	.014	.955	.014	.018	.000	.239	205	.239	174	044	-3.780	0.346	0.1	1.0	-0.4	0.8	A+	A-
429	622439	5	5	220	.736	.086	.068	.109	.736	.000	.494	192	274	304	.494	-1.475	0.164	-1.8	0.9	-2.1	0.7	A-	B-
430	637153	5	4	220	.718	.064	.718	.091	.123	.005	.418	206	.418	152	261	-1.387	0.162	-0.6	1.0	-0.6	0.9	A-	A+
431	625547	5	5	220	.391	.146	.064	.396	.391	.005	.335	258	226	019	.335	0.284	0.151	0.8	1.1	0.9	1.1	A+	A-
432	621001	5	5	220	.491	.196	.491	.100	.209	.005	.489	238	.489	130	252	-0.205	0.147	-2.0	0.9	-1.9	0.9	A+	A-
433	639842	5	5	220	.596	.168	.596	.150	.077	.009	.343	118	.343	233	104	-0.743	0.150	1.1	1.1	1.3	1.1	A+	A+
434	633437	5	5	220	.705	.068	.114	.705	.105	.009	.434	231	255	.434	149	-1.323	0.161	-0.6	1.0	-0.9	0.9	A+	A+
435	623105	5	5	221	.290	.190	.100	.416	.290	.005	.289	193	246	.087	.289	0.820	0.158	0.1	1.0	0.0	1.0	A+	
436	626927	5	5	218	.569	.165	.133	.569	.128	.005	.453	168	164	.453	247	-0.602	0.149	-1.2	0.9	-0.8	0.9	A+	
437	632608	5	5	220	.750	.091	.750	.077	.082	.000	.490	288	.490	241	237	-1.439	0.166	-2.0	0.8	-1.9	0.8	A-	
438	625460	5	5	221	.742	.742	.104	.068	.081	.005	.440	.440	187	250	202	-1.326	0.164	-1.1	0.9	-1.1	0.9	A+	
439	626923	5	5	222	.554	.225	.185	.554	.036	.000	.337	133	178	.337	229	-0.371	0.145	0.7	1.0	1.0	1.1	A-	
440	628065	5	4	221	.335	.262	.335	.158	.235	.009	.435	182	.435	146	066	0.583	0.153	-1.5	0.9	-0.4	1.0	A+	
441	633443	5	5	220	.755	.755	.123	.091	.027	.005	.367	.367	181	238	134	-1.579	0.168	-0.1	1.0	-0.7	0.9	A-	A-
442	621390	5	N/A	218	.106	.395	.106	.307	.184	.009	082	.227	082	.024	231	2.462	0.233	1.3	1.2	2.8	1.9	A-	
443	626820	5	5	221	.697	.045	.140	.109	.697	.009	.550	202	281	210	.550	-1.105	0.156	-2.9	0.8	-3.0	0.7	B+	
444	624842	5	5	218	.537	.197	.133	.537	.119	.014	.450	134	115	.450	281	-0.463	0.148	-1.0	1.0	-1.1	0.9	A-	
445	624800	5	5	218	.307	.083	.307	.495	.110	.005	.237	039	.237	056	150	0.674	0.157	1.6	1.1	1.1	1.1	A-	
446	627413	5	5	220	.286	.491	.155	.286	.068	.000	.433	209	113	.433	199	0.904	0.160	-0.9	0.9	-0.7	0.9	A+	
447	630403	5	5	221	.516	.516	.186	.177	.118	.005	.358	.358	223	037	228	-0.173	0.146	0.7	1.0	0.8	1.1	A-	igsquare
448	624804	5	5	222	.676	.126	.162	.036	.676	.000	.509	371	147	327	.509	-0.972	0.154	-2.0	0.9	-1.6	0.9	A-	
449	626570	5	5	221	.312	.235	.339	.104	.312	.009	.381	116	050	195	.381	0.703	0.156	-0.6	1.0	0.1	1.0	A+	
450	624773	5	4	220	.500	.500	.114	.196	.186	.005	.403	.403	164	173	186	-0.271	0.147	0.2	1.0	0.0	1.0	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

	10	FT	PCS		D) /- I	D(A)	D(D)	D(C)	D(D)	D()	D.D.	DT/A)	DT/D)	DT(C)	DT/D)		D.ACE	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
451	633442	5	5	218	.748	.748	.083	.138	.032	.000	.326	.326	243	131	168	-1.311	0.167	0.3	1.0	0.4	1.1	A-	
452	629854	5	5	221	.326	.199	.326	.204	.262	.009	.185	.009	.185	161	.051	0.679	0.152	2.0	1.1	2.0	1.2	B+	
453	623060	5	5	221	.778	.118	.063	.778	.032	.009	.511	225	276	.511	231	-1.738	0.177	-1.2	0.9	-1.7	0.8	B+	
454	627488	5	5	220	.396	.241	.396	.086	.273	.005	.375	146	.375	181	133	0.326	0.149	-0.3	1.0	1.8	1.2	A+	
455	624292	6	6	304	.599	.161	.599	.099	.135	.007	.232	066	.232	106	113	-0.485	0.126	2.7	1.1	2.6	1.2	A-	A-
456	626934	6	6	303	.630	.129	.076	.630	.162	.003	.384	233	277	.384	043	-0.580	0.129	0.3	1.0	0.1	1.0	A-	B+
457	627013	6	4	304	.915	.053	.020	.013	.915	.000	.459	287	305	191	.459	-2.724	0.220	-0.9	0.9	-1.9	0.5	A+	A-
458	632646	6	6	305	.446	.157	.292	.446	.102	.003	.342	237	096	.342	118	0.370	0.125	1.1	1.1	0.8	1.1	A+	A+
459	624829	6	6	304	.454	.109	.227	.211	.454	.000	.086	016	.008	100	.086	0.303	0.123	5.0	1.2	5.6	1.3	A-	
460	630378	6	6	304	.734	.095	.092	.066	.734	.013	.486	149	243	316	.486	-1.231	0.140	-2.3	0.9	-1.9	0.8	A-	A-
461	624297	6	6	303	.693	.693	.102	.106	.092	.007	.321	.321	200	031	166	-0.916	0.135	1.1	1.1	0.9	1.1	A+	A-
462	635654	6	6	304	.658	.109	.658	.125	.099	.010	.474	315	.474	165	200	-0.728	0.133	-1.5	0.9	-1.4	0.9	A+	C-
463	639363	6	6	305	.341	.315	.226	.112	.341	.007	.330	193	.063	279	.330	0.876	0.130	0.4	1.0	1.7	1.2	A-	A-
464	633448	6	6	304	.599	.095	.599	.201	.076	.030	.386	212	.386	126	110	-0.438	0.127	-0.2	1.0	-0.6	1.0	B+	
465	623114	6	6	303	.673	.112	.673	.145	.063	.007	.401	179	.401	195	158	-0.809	0.133	-0.1	1.0	-0.5	1.0	A+	B-
466	626932	6	6	304	.852	.852	.046	.030	.072	.000	.486	.486	329	216	259	-1.975	0.172	-1.3	0.9	-2.7	0.6	A-	B-
467	635660	6	4	305	.390	.180	.390	.148	.282	.000	.284	074	.284	062	196	0.643	0.127	1.6	1.1	2.7	1.2	A-	A-
468	626822	6	6	304	.816	.072	.059	.053	.816	.000	.478	282	290	195	.478	-1.583	0.155	-1.9	0.8	-2.4	0.7	A-	
469	625478	6	6	304	.546	.109	.546	.217	.115	.013	.315	145	.315	167	067	-0.253	0.125	1.3	1.1	2.3	1.1	B+	B+
470	626776	6	6	303	.406	.112	.112	.406	.363	.007	.390	075	245	.390	126	0.499	0.126	-0.3	1.0	-0.2	1.0	A+	A-
471	624296	6	6	304	.895	.895	.033	.033	.033	.007	.474	.474	258	249	259	-2.537	0.206	-1.0	0.9	-1.9	0.6	A+	A+
472	628055	6	6	305	.433	.036	.479	.433	.049	.003	.327	328	109	.327	221	0.422	0.125	1.2	1.1	1.3	1.1	A+	B-
473	627289	6	6	304	.559	.095	.234	.089	.559	.023	.492	083	216	296	.492	-0.229	0.125	-2.8	0.9	-2.7	0.9	A+	
474	633444	6	6	304	.671	.122	.671	.118	.066	.023	.546	293	.546	245	220	-0.923	0.134	-3.3	0.8	-3.1	0.7	A-	A-
475	639351	6	6	2733	.449	.374	.105	.070	.449	.003	.269	042	158	220	.269	0.315	0.042	6.5	1.1	5.9	1.1	A+	A+
476	633449	6	6	2733	.587	.071	.199	.587	.140	.003	.367	165	181	.367	165	-0.343	0.042	0.5	1.0	0.2	1.0	A+	A-
477	639377	6	6	2733	.667	.109	.667	.085	.136	.002	.482	201	.482	290	217	-0.743	0.044	-6.0	0.9	-6.2	0.8	A-	A-
478	628472	6	6	2733	.408	.202	.203	.183	.408	.003	.381	170	145	127	.381	0.511	0.042	-0.8	1.0	-0.5	1.0	A+	A-
479	639389	6	6	2733	.435	.435	.248	.103	.208	.006	.425	.425	129	269	140	0.379	0.042	-3.8	1.0	-3.0	0.9	A-	A-
480	624831	6	6	2733	.422	.206	.219	.422	.146	.007	.179	.009	102	.179	088	0.434	0.042	9.9	1.2	9.9	1.3	A-	A+
481	624761	6	6	2733	.733	.733	.062	.062	.136	.008	.459	.459	243	280	167	-1.122	0.047	-4.2	0.9	-3.9	0.9	A+	A+
482	626546	6	4	2733	.437	.437	.154	.116	.283	.011	.324	.324	181	166	044	0.357	0.042	3.8	1.1	3.4	1.1	A+	A-
483	639362	6	6	2733	.506	.283	.126	.506	.070	.015	.374	085	275	.374	134	0.018	0.042	0.2	1.0	0.8	1.0	A-	A+
484	625483	6	6	2733	.247	.054	.143	.540	.247	.015	.184	169	110	.045	.184	1.356	0.047	4.6	1.1	7.8	1.3	A+	A+
485	639406	6	6	303	.835	.026	.835	.020	.116	.003	.363	128	.363	108	256	-1.840	0.164	-0.4	1.0	-1.2	0.8	A-	A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

D - 6	ın	FT	PCS		D) / - I	D/A)	D/D)	D(C)	D(D)	D()	Din'-	DT/A)	DT/D)	DT/C)	DT/D)		B 4CE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
486	624288	6	6	303	.726	.726	.178	.073	.017	.007	.386	.386	187	239	069	-1.122	0.139	-0.4	1.0	0.2	1.0	A-	A-
487	639397	6	6	303	.716	.106	.716	.139	.033	.007	.374	138	.374	238	080	-1.065	0.137	-0.5	1.0	-0.5	1.0	A+	A-
488	624808	6	6	303	.568	.568	.112	.109	.205	.007	.447	.447	223	166	172	-0.297	0.126	-1.7	0.9	-1.7	0.9	A+	A+
489	623057	6	6	303	.588	.132	.139	.588	.135	.007	.483	101	327	.483	178	-0.393	0.127	-2.1	0.9	-2.0	0.9	A+	A+
490	639400	6	6	303	.488	.488	.238	.172	.096	.007	.376	.376	017	318	105	0.081	0.125	-0.1	1.0	0.2	1.0	B-	A-
491	635611	6	6	303	.340	.046	.485	.340	.122	.007	.431	182	144	.431	196	0.812	0.131	-1.1	0.9	-1.0	0.9	B-	B-
492	639347	6	6	303	.581	.139	.116	.158	.581	.007	.482	219	216	173	.482	-0.361	0.126	-1.6	0.9	-1.4	0.9	A+	A-
493	622437	6	6	303	.531	.201	.149	.531	.112	.007	.382	172	178	.382	090	-0.123	0.125	0.3	1.0	0.0	1.0	A+	A-
494	627682	6	6	303	.442	.152	.248	.149	.442	.010	.373	155	159	073	.373	0.299	0.126	-0.1	1.0	0.1	1.0	A +	C-
495	632949	6	6	303	.310	.320	.310	.244	.116	.010	.276	.096	.276	215	140	0.969	0.134	1.2	1.1	1.7	1.2	A-	A+
496	639436	6	3	303	.396	.360	.396	.096	.139	.010	.153	001	.153	217	.072	0.524	0.128	4.3	1.2	3.2	1.2	A+	A-
497	639880	6	6	303	.660	.096	.188	.040	.660	.017	.531	308	191	236	.531	-0.785	0.132	-2.8	0.9	-2.2	0.8	A+	A+
498	621385	6	6	303	.333	.102	.333	.452	.092	.020	.387	228	.387	030	221	0.824	0.132	-0.9	1.0	-0.8	0.9	A+	A+
499	639877	6	6	608	.382	.160	.382	.133	.313	.013	.389	219	.389	211	030	0.626	0.091	-0.9	1.0	1.1	1.1	A+	A-
500	620814	6	6	304	.602	.076	.072	.250	.602	.000	.414	072	206	301	.414	-0.423	0.127	-1.3	0.9	-0.7	1.0	A-	
501	629914	6	6	304	.704	.197	.704	.059	.036	.003	.290	097	.290	256	142	-0.929	0.135	0.6	1.0	0.5	1.1	A-	
502	632647	6	6	304	.753	.010	.158	.753	.079	.000	.290	108	136	.290	241	-1.204	0.142	-0.2	1.0	-0.1	1.0	A-	
503	639369	6	6	304	.750	.089	.059	.102	.750	.000	.433	158	229	293	.433	-1.225	0.143	-1.3	0.9	0.0	1.0	A+	
504	624802	6	6	304	.701	.095	.161	.043	.701	.000	.387	184	192	259	.387	-0.917	0.135	-0.5	1.0	-0.5	1.0	A+	
505	639401	6	N/A	304	.030	.411	.030	.533	.026	.000	.027	142	.027	.169	120	4.390	0.417	0.3	1.1	0.1	1.0	A-	
506	639352	6	6	304	.556	.138	.099	.556	.207	.000	.516	247	276	.516	220	-0.200	0.125	-3.5	0.9	-3.0	0.8	A-	
507	624837	6	3	304	.543	.543	.240	.151	.063	.003	.350	.350	158	217	093	-0.114	0.125	-0.3	1.0	-0.6	1.0	A+	
508	624813	6	6	304	.516	.178	.099	.204	.516	.003	.451	220	260	141	.451	-0.020	0.124	-1.3	1.0	-1.2	0.9	A+	
509	623089	6	6	304	.540	.385	.540	.013	.059	.003	.287	167	.287	138	167	-0.098	0.125	1.8	1.1	0.7	1.0	B-	
510	627059	6	N/A	304	.263	.444	.132	.155	.263	.007	.080	.132	176	076	.080	1.282	0.140	3.0	1.2	3.8	1.5	A-	
511	639437	6	3	304	.576	.576	.174	.072	.174	.003	.275	.275	106	183	110	-0.303	0.126	1.6	1.1	2.0	1.1	A-	
512	624844	6	6	304	.530	.086	.191	.188	.530	.007	.517	165	306	212	.517	-0.090	0.125	-3.3	0.9	-3.2	0.8	B+	
513	621387	6	6	304	.339	.191	.339	.211	.253	.007	.246	011	.246	238	012	0.839	0.131	2.1	1.1	2.1	1.2	A-	
514	639878	6	6	608	.273	.273	.239	.275	.194	.020	.391	.391	112	099	137	1.184	0.097	-1.6	0.9	-0.5	1.0	A+	A+
515	623096	6	6	303	.815	.815	.050	.099	.036	.000	.282	.282	095	178	191	-1.516	0.156	0.3	1.0	0.0	1.0	B+	A+
516	635398	6	6	303	.822	.036	.033	.822	.109	.000	.415	191	194	.415	283	-1.566	0.158	-1.1	0.9	-1.7	0.8	A+	A+
517	639354	6	6	303	.488	.142	.488	.132	.238	.000	.346	104	.346	240	130	0.252	0.124	0.7	1.0	1.1	1.1	A-	B-
518	639379	6	6	303	.551	.254	.551	.109	.076	.010	.498	230	.498	252	232	-0.064	0.126	-2.8	0.9	-2.3	0.9	A-	A-
519	625536	6	6	303	.703	.030	.195	.703	.069	.003	.501	193	254	.501	378	-0.822	0.135	-2.6	0.9	-2.5	0.8	A-	A-
520	639405	6	6	303	.201	.165	.558	.201	.076	.000	.292	.023	202	.292	096	1.813	0.153	0.4	1.0	1.1	1.2	A+	B-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

	-=	FT	PCS						>						,			Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
521	635455	6	N/A	303	.525	.086	.122	.267	.525	.000	.329	174	221	098	.329	0.080	0.125	1.0	1.0	0.8	1.1	A+	A-
522	625485	6	3	303	.343	.472	.119	.343	.066	.000	.110	.038	158	.110	081	0.963	0.131	3.9	1.2	4.1	1.4	A-	A-
523	625464	6	6	303	.429	.102	.330	.139	.429	.000	.423	255	127	210	.423	0.534	0.126	-1.2	0.9	-0.9	0.9	A-	B-
524	622984	6	6	303	.845	.053	.845	.063	.036	.003	.428	279	.428	194	227	-1.776	0.168	-1.1	0.9	-1.3	8.0	A-	A+
525	627780	6	6	303	.469	.172	.469	.198	.152	.010	.396	182	.396	126	213	0.317	0.125	-0.2	1.0	-0.1	1.0	A-	A+
526	639444	6	3	303	.356	.356	.076	.248	.310	.010	.272	.272	184	223	.049	0.872	0.130	1.8	1.1	2.0	1.2	A-	A-
527	627010	6	6	303	.720	.083	.720	.152	.033	.013	.489	296	.489	288	143	-0.961	0.139	-1.6	0.9	-2.1	0.8	A+	A-
528	635652	6	6	303	.654	.654	.231	.050	.053	.013	.497	.497	321	208	209	-0.595	0.131	-2.2	0.9	-2.1	0.8	A-	A+
529	639879	6	6	303	.452	.267	.211	.056	.452	.013	.433	134	230	230	.433	0.392	0.126	-1.1	1.0	-1.0	0.9	A+	A-
530	625531	6	6	303	.729	.086	.066	.729	.119	.000	.497	274	204	.497	288	-1.089	0.137	-1.7	0.9	-2.2	0.8	A+	
531	639346	6	N/A	303	.116	.116	.317	.515	.050	.003	.037	.037	028	.093	218	2.402	0.191	0.9	1.1	1.1	1.2	A+	
532	627356	6	6	303	.333	.347	.175	.145	.333	.000	.380	190	156	083	.380	0.838	0.130	-1.2	0.9	-1.2	0.9	B-	
533	639386	6	6	303	.710	.086	.073	.710	.129	.003	.412	294	231	.412	125	-0.991	0.135	-0.7	1.0	-1.1	0.9	A+	
534	626924	6	6	303	.363	.152	.363	.320	.162	.003	.272	109	.272	045	159	0.704	0.128	0.6	1.0	1.4	1.1	A-	
535	639417	6	6	303	.330	.026	.439	.201	.330	.003	.309	132	027	246	.309	0.854	0.130	0.2	1.0	0.6	1.1	A+	
536	625467	6	6	303	.875	.030	.875	.036	.053	.007	.438	162	.438	243	219	-2.193	0.187	-0.4	0.9	-1.4	0.7	A-	
537	623086	6	6	303	.512	.066	.145	.271	.512	.007	.372	097	240	122	.372	-0.013	0.123	-0.1	1.0	0.0	1.0	A+	
538	626553	6	6	303	.307	.241	.228	.307	.218	.007	.237	024	160	.237	021	0.975	0.133	1.3	1.1	2.1	1.2	A-	
539	625497	6	4	303	.297	.188	.119	.389	.297	.007	.299	201	151	.028	.299	1.028	0.134	0.3	1.0	0.4	1.0	A+	<u> </u>
540	634135	6	6	303	.446	.079	.238	.231	.446	.007	.394	244	059	194	.394	0.292	0.124	-0.8	1.0	-0.8	1.0	A+	
541	623130	6	6	303	.644	.109	.109	.132	.644	.007	.528	192	211	308	.528	-0.640	0.128	-3.3	0.9	-3.3	0.8	A+	
542	629823	6	6	303	.406	.254	.406	.152	.178	.010	.329	124	.329	249	.018	0.471	0.125	0.4	1.0	0.2	1.0	C+	
543	635658	6	6	303	.211	.317	.224	.211	.241	.007	.138	.092	136	.138	045	1.566	0.149	1.3	1.1	1.9	1.2	A+	
544	623123	6	6	303	.323	.132	.271	.323	.264	.010	.202	122	.094	.202	156	0.900	0.131	1.6	1.1	1.7	1.1	A+	
545	635397	6	6	304	.625	.128	.135	.625	.112	.000	.398	194	244	.398	141	-0.603	0.128	-0.5	1.0	-0.8	0.9	A-	A-
546	639367	6	6	304	.766	.069	.766	.053	.109	.003	.316	122	.316	244	098	-1.383	0.144	0.2	1.0	0.2	1.0	A-	A-
547	639348	6	N/A	304	.115	.401	.115	.309	.171	.003	.049	.086	.049	093	.008	2.320	0.187	0.8	1.1	3.1	1.8	A-	A+
548	633853	6	6	304	.526	.230	.053	.526	.188	.003	.417	226	210	.417	124	-0.129	0.124	-0.2	1.0	-0.8	1.0	A-	A-
549	639345	6	6	304	.303	.299	.076	.319	.303	.003	.191	.012	203	047	.191	0.969	0.134	2.7	1.2	2.9	1.3	A+	A-
550	639390	6	6	304	.309	.214	.309	.339	.132	.007	.139	045	.139	102	.064	0.927	0.133	3.1	1.2	4.1	1.4	A-	A-
551	635617	6	6	304	.628	.099	.628	.184	.082	.007	.368	149	.368	163	171	-0.633	0.128	0.0	1.0	0.8	1.1	B+	A+
552	639416	6	6	304	.372	.257	.316	.372	.049	.007	.492	200	208	.492	144	0.601	0.128	-2.5	0.9	-2.2	0.9	A-	A-
553	624755	6	6	304	.691	.135	.691	.079	.089	.007	.456	218	.456	165	243	-0.958	0.133	-1.7	0.9	-1.6	0.9	A-	B-
554	627047	6	6	304	.418	.306	.171	.095	.418	.010	.363	041	244	148	.363	0.364	0.126	0.3	1.0	0.4	1.0	A+	A+
555	621155	6	6	304	.507	.171	.250	.507	.063	.010	.369	206	122	.369	122	-0.059	0.124	0.5	1.0	-0.1	1.0	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-4-5	- 1-1		>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
556	624757	6	6	304	.691	.691	.132	.095	.066	.016	.305	.305	169	083	106	-0.991	0.135	0.9	1.1	1.2	1.1	A+	A+
557	639425	6	3	304	.237	.293	.339	.237	.122	.010	.259	097	068	.259	028	1.337	0.144	1.0	1.1	1.1	1.1	A-	A-
558	626929	6	6	304	.592	.115	.151	.592	.132	.010	.484	139	318	.484	162	-0.468	0.126	-2.1	0.9	-2.2	0.9	A-	A-
559	635653	6	6	304	.516	.516	.181	.148	.138	.016	.443	.443	094	239	216	-0.126	0.125	-1.3	0.9	-0.9	1.0	A+	A-
560	639872	6	6	304	.569	.569	.237	.092	.079	.023	.404	.404	135	210	205	-0.400	0.127	-0.4	1.0	-0.4	1.0	A+	A-
561	633450	6	6	304	.684	.063	.158	.072	.684	.023	.541	207	296	258	.541	-0.996	0.135	-3.2	0.8	-3.1	0.7	A+	A-
562	639428	6	6	303	.759	.125	.086	.026	.759	.003	.555	334	292	165	.555	-1.304	0.145	-2.7	0.8	-2.8	0.7	A-	A-
563	639350	6	6	303	.805	.106	.805	.066	.020	.003	.434	207	.434	269	168	-1.622	0.156	-0.7	0.9	-1.2	0.8	A+	A+
564	635416	6	6	303	.508	.152	.201	.508	.135	.003	.447	210	204	.447	140	0.013	0.125	-1.8	0.9	-1.4	0.9	A-	A-
565	635902	6	6	303	.749	.109	.053	.086	.749	.003	.518	211	257	296	.518	-1.221	0.143	-2.6	0.8	-2.1	0.8	A+	A+
566	628039	6	6	303	.502	.122	.135	.238	.502	.003	.301	012	237	112	.301	0.044	0.125	2.0	1.1	1.9	1.1	A-	A-
567	639391	6	8	303	.696	.696	.116	.142	.043	.003	.514	.514	232	261	260	-0.931	0.135	-2.2	0.9	-2.4	0.8	A-	A+
568	635618	6	6	303	.878	.030	.056	.878	.026	.010	.474	273	214	.474	179	-2.313	0.192	-1.0	0.9	-1.5	0.7	A+	A-
569	635616	6	6	303	.568	.119	.568	.139	.168	.007	.507	112	.507	334	186	-0.273	0.126	-2.7	0.9	-2.7	0.8	A+	A+
570	624832	6	6	303	.568	.568	.215	.099	.112	.007	.404	.404	101	175	243	-0.273	0.126	-0.2	1.0	-0.2	1.0	A+	B-
571	639404	6	6	303	.446	.251	.116	.446	.182	.007	.241	029	222	.241	017	0.308	0.125	3.2	1.2	3.1	1.2	A+	A-
572	623097	6	6	303	.871	.076	.871	.023	.023	.007	.418	210	.418	188	174	-2.210	0.186	-0.3	1.0	-1.3	0.8	A-	C-
573	623090	6	6	303	.178	.281	.228	.307	.178	.007	.052	007	085	.106	.052	1.841	0.159	1.7	1.2	3.4	1.6	A-	A-
574	639427	6	3	303	.271	.363	.175	.185	.271	.007	.238	.039	095	150	.238	1.208	0.138	1.4	1.1	2.2	1.2	A+	A+
575	639361	6	6	303	.832	.076	.832	.056	.026	.010	.478	345	.478	130	161	-1.836	0.166	-1.2	0.9	-2.2	0.7	A-	A+
576	627697	6	5	303	.634	.162	.634	.096	.099	.010	.459	195	.459	281	117	-0.611	0.130	-1.2	0.9	-1.6	0.9	A+	A-
577	639873	6	6	303	.442	.139	.178	.442	.228	.013	.470	211	223	.470	100	0.311	0.126	-2.1	0.9	-1.8	0.9	A+	A-
578	633451	6	6	303	.515	.221	.102	.515	.142	.020	.360	077	235	.360	100	-0.044	0.126	0.9	1.0	0.9	1.1	A-	B+
579	639376	6	6	304	.734	.220	.734	.023	.023	.000	.324	213	.324	215	152	-1.138	0.141	0.8	1.1	0.7	1.1	A+	A-
580	639353	6	6	304	.720	.720	.109	.092	.079	.000	.537	.537	352	262	207	-1.059	0.139	-2.4	0.8	-2.5	0.8	A-	A-
581	635449	6	6	304	.526	.247	.526	.092	.135	.000	.394	100	.394	265	225	-0.058	0.125	0.1	1.0	0.0	1.0	B-	A-
582	635415	6	6	304	.766	.089	.033	.766	.112	.000	.385	323	160	.385	134	-1.324	0.146	-0.4	1.0	-0.5	0.9	A+	B-
583	639399	6	6	304	.615	.135	.135	.615	.115	.000	.500	293	220	.500	213	-0.491	0.128	-2.2	0.9	-2.3	0.8	A+	A-
584	639398	6	6	304	.717	.118	.109	.717	.056	.000	.513	263	287	.513	247	-1.040	0.138	-2.1	0.9	-2.0	0.8	A+	A+
585	635620	6	6	304	.513	.204	.148	.135	.513	.000	.455	138	225	268	.455	0.004	0.125	-1.5	0.9	-0.9	0.9	A-	A-
586	639387	6	6	304	.901	.030	.901	.026	.040	.003	.415	216	.415	272	225	-2.539	0.206	-0.9	0.9	-1.6	0.7	A+	A+
587	624834	6	6	304	.141	.138	.171	.549	.141	.000	012	012	142	.124	012	2.149	0.173	1.5	1.2	3.3	1.8	A-	A+
588	624752	6	5	304	.461	.207	.214	.461	.112	.007	.289	036	108	.289	242	0.236	0.125	2.7	1.1	1.9	1.1	A+	A+
589	630726	6	6	304	.898	.056	.026	.898	.013	.007	.462	271	309	.462	169	-2.580	0.209	-0.7	0.9	-2.0	0.6	A+	A-
590	639433	6	3	304	.457	.457	.079	.378	.076	.010	.206	.206	150	.063	289	0.266	0.125	3.6	1.2	4.2	1.3	C-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

	-=	FT	PCS						>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
591	639430	6	6	304	.875	.030	.040	.049	.875	.007	.501	194	356	251	.501	-2.299	0.191	-1.1	0.9	-2.3	0.6	A-	A+
592	635355	6	8	304	.747	.053	.747	.046	.145	.010	.421	304	.421	259	127	-1.262	0.145	-0.4	1.0	-0.2	1.0	A-	A-
593	635659	6	5	304	.408	.155	.191	.237	.408	.010	.292	108	112	105	.292	0.488	0.126	2.1	1.1	1.8	1.1	A+	A-
594	639874	6	6	304	.665	.122	.665	.092	.112	.010	.563	291	.563	332	186	-0.778	0.133	-2.7	0.9	-2.8	8.0	B+	A-
595	633452	6	6	304	.707	.026	.188	.707	.066	.013	.463	211	302	.463	181	-1.036	0.139	-1.0	0.9	-1.1	0.9	A-	A+
596	622440	6	6	305	.721	.220	.721	.039	.020	.000	.480	414	.480	177	067	-1.007	0.138	-1.5	0.9	-1.5	0.9	B-	A-
597	635945	6	6	305	.702	.053	.702	.098	.141	.007	.442	208	.442	206	243	-0.912	0.136	-0.8	1.0	-0.9	0.9	A-	A+
598	635450	6	6	305	.571	.053	.571	.167	.210	.000	.300	222	.300	144	112	-0.220	0.126	1.9	1.1	1.8	1.1	A-	A+
599	635615	6	6	305	.741	.134	.085	.036	.741	.003	.417	182	277	199	.417	-1.133	0.141	-0.7	1.0	-0.4	1.0	A-	A-
600	639403	6	6	305	.790	.075	.790	.059	.075	.000	.526	300	.526	332	215	-1.443	0.151	-2.1	0.8	-2.5	0.7	B+	A+
601	635453	6	6	305	.679	.144	.105	.679	.069	.003	.454	195	301	.454	186	-0.778	0.133	-1.4	0.9	-0.2	1.0	A-	A+
602	624806	6	6	305	.653	.098	.108	.653	.138	.003	.512	359	232	.512	176	-0.638	0.131	-2.2	0.9	-2.1	0.8	A+	C-
603	639388	6	6	305	.859	.016	.043	.079	.859	.003	.544	183	340	346	.544	-2.014	0.175	-1.9	0.8	-2.9	0.5	A-	A-
604	625480	6	6	305	.600	.151	.600	.102	.148	.000	.364	235	.364	167	124	-0.364	0.127	0.8	1.0	0.2	1.0	A-	B-
605	624827	6	6	305	.571	.571	.138	.164	.128	.000	.392	.392	288	152	115	-0.220	0.126	0.0	1.0	0.2	1.0	A+	B-
606	632917	6	6	305	.771	.053	.026	.771	.151	.000	.456	381	303	.456	163	-1.310	0.146	-1.3	0.9	-0.1	1.0	A+	A+
607	639434	6	3	305	.321	.351	.321	.105	.213	.010	.271	060	.271	007	207	0.977	0.132	1.9	1.1	0.9	1.1	A-	A+
608	639426	6	4	305	.607	.167	.030	.190	.607	.007	.367	181	303	141	.367	-0.416	0.128	0.6	1.0	0.3	1.0	A+	A+
609	624767	6	5	305	.226	.177	.125	.226	.466	.007	.220	191	209	.220	.111	1.531	0.145	0.8	1.1	2.4	1.3	A+	A+
610	639875	6	6	305	.820	.056	.059	.820	.059	.007	.556	349	293	.556	252	-1.698	0.161	-2.4	0.8	-2.8	0.6	A+	A+
611	624824	6	4	305	.741	.039	.161	.049	.741	.010	.523	265	296	274	.523	-1.164	0.143	-2.0	0.9	-2.4	0.8	A-	A-
612	635454	6	6	304	.727	.095	.727	.102	.076	.000	.285	082	.285	136	235	-1.019	0.136	0.8	1.1	0.5	1.1	A+	
613	639378	6	6	304	.572	.138	.572	.171	.118	.000	.323	136	.323	239	071	-0.241	0.123	1.0	1.0	0.6	1.0	A-	
614	639371	6	6	304	.678	.036	.079	.207	.678	.000	.329	300	183	119	.329	-0.753	0.130	-0.4	1.0	0.6	1.1	A+	
615	635882	6	6	304	.674	.092	.674	.079	.155	.000	.383	221	.383	125	227	-0.736	0.130	-1.1	0.9	-0.3	1.0	A-	
616	639368	6	6	304	.717	.092	.079	.717	.112	.000	.355	174	310	.355	082	-0.964	0.134	-0.5	1.0	-0.6	0.9	A+	
617	635612	6	6	304	.645	.092	.158	.645	.105	.000	.374	148	199	.374	208	-0.587	0.127	-1.1	1.0	-0.6	1.0	A-	
618	624295	6	6	304	.533	.155	.533	.155	.158	.000	.399	299	.399	126	125	-0.059	0.123	-0.8	1.0	-1.0	1.0	A-	
619	639402	6	6	304	.372	.214	.306	.372	.109	.000	.200	120	026	.200	115	0.691	0.126	2.6	1.1	2.5	1.2	A+	
620	627774	6	6	304	.740	.072	.740	.148	.040	.000	.367	091	.367	282	192	-1.094	0.138	-0.6	1.0	-0.8	0.9	A-	
621	623088	6	4	304	.615	.158	.086	.615	.135	.007	.338	083	192	.338	165	-0.454	0.126	0.3	1.0	-0.4	1.0	A+	
622	623083	6	5	304	.566	.059	.345	.566	.020	.010	.261	200	087	.261	082	-0.228	0.124	1.9	1.1	1.5	1.1	A+	
623	623036	6	6	304	.724	.724	.102	.125	.030	.020	.447	.447	269	210	066	-1.070	0.138	-1.5	0.9	-1.6	8.0	B+	
624	639435	6	3	304	.263	.135	.263	.319	.263	.020	.119	224	.119	.101	.038	1.239	0.138	2.7	1.2	2.8	1.3	B-	
625	627061	6	6	304	.661	.118	.661	.122	.076	.023	.463	191	.463	185	199	-0.735	0.131	-1.7	0.9	-1.9	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS				- 4-1		>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
626	624843	6	5	304	.477	.286	.118	.095	.477	.023	.515	252	144	179	.515	0.157	0.124	-3.6	0.9	-3.5	0.8	A+	
627	639876	6	6	304	.605	.605	.217	.040	.109	.030	.363	.363	203	153	053	-0.471	0.127	-0.2	1.0	0.9	1.1	A+	
628	633446	6	6	304	.477	.477	.135	.253	.135	.000	.273	.273	289	.035	156	0.175	0.124	2.8	1.1	2.9	1.2	A+	A-
629	635619	6	6	305	.246	.246	.134	.266	.354	.000	.250	.250	201	195	.099	1.422	0.142	0.7	1.1	2.7	1.4	A-	A-
630	635662	6	4	304	.322	.260	.128	.322	.286	.003	.261	151	.001	.261	114	0.934	0.130	1.2	1.1	1.2	1.1	A+	
631	623111	6	6	304	.668	.086	.066	.178	.668	.003	.380	112	198	212	.380	-0.821	0.131	-0.1	1.0	-0.8	0.9	A+	A+
632	624754	6	6	303	.363	.588	.363	.023	.020	.007	.242	063	.242	163	223	0.711	0.129	2.6	1.1	2.4	1.2	A-	A+
633	628060	6	6	304	.513	.168	.174	.513	.138	.007	.412	100	176	.412	265	0.007	0.125	-0.5	1.0	-0.4	1.0	A-	A-
634	627415	6	6	305	.266	.348	.157	.230	.266	.000	.287	132	173	003	.287	1.304	0.138	0.6	1.0	1.7	1.2	A+	A+
635	624287	6	6	304	.793	.049	.069	.793	.066	.023	.559	278	297	.559	203	-1.534	0.154	-2.6	0.8	-3.2	0.6	A+	į
636	624763	6	6	304	.556	.174	.165	.556	.092	.013	.412	101	232	.412	193	-0.304	0.125	-0.6	1.0	-1.0	0.9	A+	B+
637	627960	6	6	303	.320	.320	.122	.073	.469	.017	.216	.216	216	255	.152	0.923	0.133	2.6	1.2	2.6	1.2	A-	A+
638	633447	6	6	305	.712	.712	.098	.085	.105	.000	.296	.296	078	216	165	-0.951	0.136	1.1	1.1	1.3	1.1	A-	A-
639	639392	6	6	304	.293	.240	.211	.257	.293	.000	.297	129	062	126	.297	1.096	0.134	0.2	1.0	1.3	1.1	A-	
640	635661	6	4	304	.474	.474	.105	.191	.227	.003	.224	.224	136	095	036	0.119	0.124	3.1	1.1	2.7	1.2	A-	A+
641	624289	6	6	303	.762	.050	.079	.762	.102	.007	.450	213	213	.450	191	-1.331	0.146	-0.8	0.9	-1.4	0.8	A+	A-
642	624756	6	6	304	.464	.211	.161	.464	.165	.000	.140	076	053	.140	054	0.253	0.125	4.9	1.2	4.7	1.3	A+	A+
643	628061	6	6	305	.777	.777	.128	.053	.036	.007	.447	.447	224	280	228	-1.382	0.149	-0.9	0.9	-1.5	0.8	A-	A-
644	628112	6	6	304	.434	.214	.434	.217	.122	.013	.378	141	.378	192	052	0.378	0.124	-0.4	1.0	-0.7	1.0	A+	
645	626567	6	6	304	.461	.174	.138	.217	.461	.010	.460	143	191	204	.460	0.159	0.125	-1.7	0.9	-1.5	0.9	A+	A+
646	624840	6	6	303	.551	.165	.076	.551	.198	.010	.456	130	220	.456	222	-0.186	0.126	-1.8	0.9	-1.7	0.9	A+	A-
647	627030	6	6	304	.549	.145	.549	.089	.207	.010	.418	189	.418	327	080	-0.192	0.126	-0.3	1.0	0.0	1.0	A-	A+
648	627052	7	3	280	.839	.839	.057	.014	.086	.004	.389	.389	169	077	264	-1.676	0.173	-0.6	0.9	-0.8	0.9	B+	
649	639447	7	7	280	.775	.136	.775	.029	.061	.000	.447	334	.447	183	175	-1.145	0.152	-1.3	0.9	-1.6	0.8	A-	
650	627058	7	3	280	.446	.214	.196	.139	.446	.004	008	.008	.069	081	008	0.593	0.130	7.3	1.4	6.7	1.5	A-	A-
651	639380	7	7	279	.545	.545	.204	.161	.086	.004	.304	.304	166	053	157	0.000	0.129	1.7	1.1	1.2	1.1	A-	
652	624286	7	7	280	.711	.136	.711	.093	.054	.007	.499	251	.499	182	222	-0.801	0.141	-2.0	0.9	-2.2	0.8	A-	
653	624822	7	4	280	.246	.343	.132	.271	.246	.007	.173	.067	098	093	.173	1.549	0.147	1.7	1.1	2.9	1.4	B+	
654	636003	7	7	280	.457	.457	.071	.257	.214	.000	.222	.222	303	128	.057	0.495	0.130	3.4	1.2	3.4	1.2	A-	
655	633454	7	7	280	.811	.071	.811	.054	.061	.004	.545	240	.545	288	310	-1.376	0.166	-1.9	0.8	-2.4	0.7	B+	A-
656	635909	7	7	279	.491	.118	.491	.179	.204	.007	.454	179	.454	223	155	0.239	0.129	-1.8	0.9	-1.9	0.9	A+	
657	634300	7	7	280	.561	.143	.179	.561	.107	.011	.460	203	210	.460	126	-0.051	0.130	-1.9	0.9	-2.0	0.9	C+	
658	626992	7	3	280	.875	.025	.875	.029	.071	.000	.353	220	.353	159	217	-1.933	0.188	-0.5	0.9	-0.8	0.8	A+	
659	639438	7	7	280	.882	.054	.029	.882	.036	.000	.435	348	181	.435	172	-1.958	0.198	-0.9	0.9	-1.4	0.7	A+	B-
660	628116	7	3	279	.548	.548	.093	.118	.237	.004	.483	.483	252	239	162	-0.017	0.129	-2.7	0.9	-2.0	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-4-1	- 1-1											Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
661	626764	7	7	280	.771	.771	.057	.057	.107	.007	.448	.448	223	235	143	-1.166	0.152	-1.2	0.9	-0.9	0.9	A-	
662	639394	7	7	280	.500	.171	.500	.143	.179	.007	.339	200	.339	150	026	0.248	0.130	1.1	1.1	1.1	1.1	A+	
663	628476	7	4	280	.254	.264	.254	.389	.093	.000	.110	041	.110	.014	127	1.553	0.147	2.7	1.2	3.5	1.5	B+	
664	636008	7	8	280	.750	.075	.068	.107	.750	.000	.470	160	259	311	.470	-0.926	0.149	-1.3	0.9	-1.8	8.0	A+	A-
665	633455	7	7	279	.896	.025	.050	.896	.025	.004	.427	203	253	.427	145	-2.242	0.205	-0.7	0.9	-2.0	0.6	A+	
666	639420	7	7	280	.304	.304	.300	.207	.182	.007	.232	.232	041	103	022	1.195	0.138	1.3	1.1	1.7	1.2	A-	
667	634299	7	7	280	.646	.132	.646	.093	.114	.014	.523	187	.523	244	239	-0.491	0.137	-2.3	0.9	-2.3	0.8	A-	
668	630377	7	7	2516	.845	.049	.845	.053	.052	.002	.355	200	.355	177	162	-1.665	0.058	-1.0	1.0	-2.1	0.9	A+	A+
669	627055	7	3	2516	.725	.066	.725	.159	.047	.003	.422	200	.422	242	181	-0.837	0.048	-2.5	0.9	-2.5	0.9	A-	A-
670	625552	7	7	2516	.328	.176	.246	.328	.247	.004	.355	128	117	.355	122	1.134	0.046	0.2	1.0	0.7	1.0	A-	A-
671	623032	7	4	2516	.762	.091	.069	.762	.075	.003	.396	185	227	.396	165	-1.067	0.050	-1.4	1.0	-2.5	0.9	A+	A+
672	629824	7	7	2516	.407	.139	.407	.235	.215	.005	.250	100	.250	109	065	0.736	0.044	6.4	1.1	7.6	1.2	A-	A+
673	621386	7	7	2516	.734	.734	.097	.121	.044	.005	.435	.435	181	236	223	-0.902	0.049	-3.0	0.9	-3.2	0.9	A+	A-
674	628106	7	7	2516	.467	.301	.467	.085	.143	.004	.303	032	.303	239	154	0.449	0.043	4.2	1.1	3.8	1.1	A-	A-
675	639419	7	7	2516	.417	.197	.068	.417	.314	.005	.462	283	222	.462	097	0.691	0.044	-6.5	0.9	-3.9	0.9	A+	A-
676	627967	7	7	2516	.425	.111	.271	.186	.425	.006	.414	155	134	202	.414	0.647	0.044	-2.8	1.0	-1.3	1.0	A-	A-
677	633456	7	7	2516	.657	.050	.116	.170	.657	.006	.465	231	253	190	.465	-0.483	0.046	-4.6	0.9	-4.1	0.9	B+	A+
678	622603	7	7	558	.502	.034	.238	.224	.502	.002	.307	049	179	137	.307	0.286	0.092	2.5	1.1	2.1	1.1	A+	
679	622817	7	7	558	.785	.038	.125	.785	.050	.002	.453	221	291	.453	168	-1.213	0.110	-1.9	0.9	-2.6	0.8	A-	į
680	639383	7	7	558	.713	.063	.106	.115	.713	.004	.487	200	245	267	.487	-0.779	0.101	-3.1	0.9	-3.2	0.8	A-	
681	630380	7	8	558	.744	.045	.052	.158	.744	.002	.392	193	166	228	.392	-0.950	0.104	-0.7	1.0	-1.1	0.9	A+	
682	626769	7	7	558	.781	.781	.134	.034	.048	.002	.432	.432	305	189	135	-1.189	0.109	-1.5	0.9	-1.9	0.8	A-	
683	630286	7	7	558	.296	.296	.350	.154	.195	.005	.307	.307	051	156	114	1.302	0.099	0.7	1.0	1.3	1.1	A-	
684	625543	7	3	558	.263	.253	.263	.208	.272	.004	.115	.059	.115	109	047	1.485	0.102	3.6	1.2	4.8	1.4	A-	
685	625514	7	7	558	.575	.301	.082	.039	.575	.002	.404	212	227	147	.404	-0.053	0.092	-0.6	1.0	-0.9	1.0	A-	
686	621207	7	7	279	.699	.068	.115	.699	.115	.004	.526	145	286	.526	346	-0.623	0.141	-2.7	0.8	-2.9	0.7	A-	
687	633851	7	7	279	.488	.054	.136	.488	.319	.004	.208	152	221	.208	.024	0.437	0.130	3.7	1.2	3.8	1.3	B+	
688	639415	7	7	279	.878	.878	.075	.011	.036	.000	.465	.465	417	148	144	-1.918	0.195	-1.1	0.9	-1.4	0.7	A+	
689	634073	7	7	279	.728	.082	.728	.115	.075	.000	.433	199	.433	339	115	-0.754	0.144	-1.5	0.9	-1.6	0.8	A-	
690	625510	7	7	558	.262	.093	.262	.624	.018	.004	.039	064	.039	.048	079	1.516	0.103	4.0	1.2	6.0	1.6	A-	
691	628024	7	7	558	.618	.090	.215	.618	.074	.004	.449	201	237	.449	200	-0.278	0.094	-2.2	0.9	-2.6	0.9	A+	
692	639445	7	3	279	.301	.348	.301	.136	.215	.000	.093	.140	.093	135	154	1.388	0.140	2.7	1.2	3.2	1.3	A-	
693	633847	7	7	559	.528	.106	.195	.168	.528	.004	.305	125	114	130	.305	0.148	0.092	2.6	1.1	2.7	1.1	A-	
694	636005	7	7	559	.424	.177	.424	.258	.136	.005	.435	052	.435	180	258	0.641	0.093	-2.1	0.9	-1.7	0.9	A-	
695	639412	7	7	559	.850	.007	.061	.850	.077	.005	.411	137	239	.411	190	-1.755	0.126	-1.1	0.9	-1.0	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-4-1	- 4-1	- (-)	>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
696	633844	7	7	559	.483	.091	.152	.267	.483	.007	.401	150	205	109	.401	0.358	0.092	-0.1	1.0	0.0	1.0	A-	
697	635990	7	8	559	.556	.147	.556	.127	.161	.009	.406	191	.406	262	029	0.005	0.093	-0.8	1.0	-0.1	1.0	A+	
698	633408	7	7	559	.472	.472	.132	.109	.279	.007	.261	.261	139	238	.058	0.409	0.092	3.7	1.1	4.2	1.2	A-	
699	627049	7	7	559	.479	.297	.106	.479	.109	.009	.385	231	219	.385	.057	0.373	0.092	0.2	1.0	0.9	1.0	B-	
700	627006	7	7	279	.728	.086	.728	.093	.086	.007	.498	184	.498	310	165	-0.878	0.147	-1.6	0.9	-1.6	8.0	A+	
701	626995	7	3	559	.632	.632	.143	.149	.070	.007	.373	.373	274	062	104	-0.363	0.095	0.5	1.0	-0.2	1.0	A-	
702	626989	7	7	559	.846	.034	.079	.032	.846	.009	.462	127	287	157	.462	-1.739	0.126	-1.3	0.9	-1.8	0.8	A+	
703	628309	7	7	279	.488	.172	.176	.488	.158	.007	.390	068	151	.390	214	0.376	0.132	0.3	1.0	-0.1	1.0	A+	
704	639423	7	7	279	.516	.516	.090	.093	.290	.011	.389	.389	279	173	074	0.221	0.132	0.4	1.0	-0.1	1.0	A-	
705	639355	7	7	279	.398	.229	.233	.129	.398	.011	.293	022	061	207	.293	0.815	0.134	1.9	1.1	1.4	1.1	A-	
706	629850	7	7	279	.599	.061	.237	.599	.093	.011	.490	159	307	.490	134	-0.186	0.135	-2.2	0.9	-2.0	0.9	A+	
707	626559	7	7	279	.169	.488	.169	.222	.111	.011	.012	.112	.012	032	043	2.194	0.170	2.2	1.2	4.0	1.9	A-	
708	639372	7	7	279	.344	.222	.290	.344	.143	.000	.253	237	.044	.253	119	1.066	0.135	2.0	1.1	2.0	1.2	A-	
709	635943	7	7	279	.652	.047	.258	.043	.652	.000	.375	101	211	320	.375	-0.430	0.136	-0.3	1.0	-0.2	1.0	A+	
710	639605	7	8	279	.918	.039	.918	.025	.018	.000	.368	240	.368	247	120	-2.430	0.226	-0.7	0.9	-1.1	0.7	A-	
711	627412	7	3	279	.434	.133	.394	.434	.039	.000	.248	298	.002	.248	117	0.643	0.131	2.1	1.1	2.9	1.2	A+	
712	626990	7	7	279	.731	.108	.072	.090	.731	.000	.347	223	059	243	.347	-0.866	0.146	0.2	1.0	-0.2	1.0	A+	
713	638833	7	7	279	.470	.158	.172	.470	.197	.004	.332	269	110	.332	032	0.455	0.130	8.0	1.0	0.7	1.1	A+	
714	627050	7	7	279	.853	.050	.054	.853	.043	.000	.464	344	273	.464	137	-1.743	0.180	-1.2	0.9	-1.5	0.7	A-	
715	628241	7	N/A	279	.233	.412	.233	.169	.186	.000	.081	.209	.081	296	068	1.692	0.150	2.3	1.2	2.9	1.4	A-	
716	625476	7	7	279	.520	.208	.082	.520	.190	.000	.411	214	278	.411	107	0.219	0.130	-1.2	1.0	0.4	1.0	A+	
717	627414	7	6	279	.918	.918	.022	.032	.029	.000	.387	.387	253	168	239	-2.430	0.226	-0.7	0.9	-1.7	0.6	A-	
718	627062	7	7	279	.878	.050	.025	.047	.878	.000	.483	322	145	309	.483	-1.989	0.195	-1.4	0.8	-2.3	0.6	A+	
719	634301	7	7	279	.563	.186	.093	.158	.563	.000	.423	199	151	242	.423	0.015	0.131	-0.8	1.0	-0.5	1.0	A+	
720	633390	7	7	279	.308	.122	.333	.237	.308	.000	.365	134	.001	295	.365	1.255	0.139	-0.7	1.0	-0.5	1.0	A-	
721	639385	7	N/A	279	.111	.125	.466	.111	.294	.004	.032	258	.241	.032	087	2.717	0.201	0.8	1.1	2.3	1.6	A+	
722	639408	7	7	279	.699	.699	.104	.122	.075	.000	.378	.378	226	131	235	-0.680	0.141	-0.5	1.0	-0.9	0.9	A-	
723	627473	7	7	280	.407	.404	.407	.071	.118	.000	.292	137	.292	156	112	0.747	0.131	1.4	1.1	1.0	1.1	A+	
724	633405	7	6	280	.332	.343	.332	.107	.214	.004	.304	067	.304	074	195	1.121	0.136	0.6	1.0	0.4	1.0	A-	
725	628131	7	8	280	.632	.136	.200	.632	.032	.000	.259	104	199	.259	056	-0.324	0.133	2.0	1.1	1.8	1.1	A+	
726	627363	7	7	280	.932	.932	.011	.032	.025	.000	.278	.278	109	197	153	-2.625	0.243	0.0	1.0	-0.7	8.0	A+	
727	635669	7	4	280	.550	.550	.164	.221	.064	.000	.248	.248	238	017	114	0.073	0.130	2.2	1.1	2.2	1.1	A-	
728	639422	7	7	280	.350	.121	.282	.246	.350	.000	.236	201	071	035	.236	1.030	0.134	1.5	1.1	1.2	1.1	A-	
729	625524	7	7	280	.446	.446	.239	.096	.218	.000	.358	.358	090	304	121	0.559	0.130	0.3	1.0	0.4	1.0	A+	
730	639424	7	7	280	.793	.139	.054	.793	.014	.000	.465	400	178	.465	082	-1.239	0.156	-1.9	0.9	-1.9	0.8	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
731	626988	7	7	280	.254	.307	.154	.254	.282	.004	.266	154	176	.266	.061	1.558	0.146	0.3	1.0	2.3	1.3	A+	
732	627043	7	7	280	.800	.039	.089	.068	.800	.004	.547	243	381	236	.547	-1.305	0.159	-1.9	0.8	-2.7	0.7	A+	
733	639374	7	7	280	.696	.086	.086	.696	.132	.000	.442	304	334	.442	073	-0.658	0.139	-1.4	0.9	-1.2	0.9	A+	
734	639579	7	8	280	.625	.189	.089	.093	.625	.004	.303	105	149	213	.303	-0.300	0.133	0.8	1.0	0.9	1.1	A+	
735	634302	7	7	280	.454	.189	.454	.125	.232	.000	.286	234	.286	185	.025	0.525	0.129	1.6	1.1	1.8	1.1	B+	
736	627782	7	7	280	.564	.179	.564	.114	.143	.000	.370	263	.370	104	141	0.005	0.130	0.3	1.0	0.1	1.0	A+	
737	628310	7	3	280	.361	.129	.161	.350	.361	.000	.229	223	102	.004	.229	0.975	0.134	2.2	1.1	2.2	1.2	A-	
738	630298	7	3	280	.329	.293	.271	.329	.104	.004	.257	008	130	.257	127	1.089	0.136	1.4	1.1	2.5	1.2	A-	
739	639356	7	7	280	.471	.471	.129	.250	.143	.007	.084	.084	072	.054	073	0.373	0.130	5.8	1.3	5.2	1.3	A+	
740	639360	7	7	280	.439	.050	.104	.439	.404	.004	.161	225	064	.161	.019	0.540	0.130	4.3	1.2	4.3	1.3	A-	
741	625459	7	7	280	.889	.071	.889	.025	.011	.004	.388	259	.388	098	189	-2.158	0.201	-0.4	0.9	-0.4	0.9	B+	
742	629848	7	7	280	.329	.329	.289	.186	.189	.007	.234	.234	064	098	028	1.087	0.136	1.7	1.1	2.9	1.3	A+	
743	623058	7	N/A	280	.179	.514	.143	.157	.179	.007	.067	.301	205	200	.067	2.006	0.163	1.8	1.2	3.3	1.6	A-	
744	625509	7	7	280	.382	.446	.032	.132	.382	.007	.473	281	220	058	.473	0.815	0.133	-2.0	0.9	-2.1	0.9	A-	
745	635908	7	7	280	.371	.293	.371	.189	.136	.011	.330	151	.330	069	092	0.862	0.133	0.6	1.0	1.3	1.1	A+	
746	626986	7	7	280	.686	.079	.143	.086	.686	.007	.632	335	351	173	.632	-0.678	0.140	-4.4	0.8	-4.2	0.7	B+	
747	633850	7	7	280	.679	.086	.679	.186	.043	.007	.435	154	.435	219	212	-0.639	0.139	-0.9	1.0	-0.4	1.0	A-	
748	627053	7	7	280	.418	.275	.193	.104	.418	.011	.390	114	122	186	.390	0.634	0.131	-0.1	1.0	0.0	1.0	A+	
749	633133	7	7	280	.568	.568	.161	.207	.054	.011	.295	.295	100	100	142	-0.086	0.132	2.2	1.1	2.1	1.1	A-	
750	627785	7	7	280	.432	.207	.114	.432	.236	.011	.377	116	181	.377	107	0.565	0.131	0.4	1.0	-0.2	1.0	A+	
751	635663	7	7	280	.614	.614	.221	.043	.111	.011	.524	.524	264	217	206	-0.316	0.134	-2.6	0.9	-2.4	0.8	B+	
752	633849	7	7	280	.539	.236	.129	.539	.086	.011	.413	189	217	.413	058	0.052	0.131	-0.4	1.0	-0.1	1.0	B-	
753	635369	7	8	280	.929	.929	.014	.032	.011	.014	.363	.363	086	193	090	-2.866	0.263	0.0	1.0	-0.8	0.7	A+	
754	639421	7	N/A	280	.171	.154	.546	.171	.114	.014	.128	188	.205	.128	134	2.055	0.166	0.9	1.1	3.4	1.7	A-	
755	626941	7	7	280	.761	.761	.064	.068	.107	.000	.381	.381	219	215	177	-1.054	0.149	-0.5	1.0	-0.6	0.9	A+	
756	639365	7	7	280	.632	.218	.068	.632	.082	.000	.448	320	145	.448	171	-0.344	0.134	-1.3	0.9	-1.2	0.9	A-	
757	639611	7	8	280	.243	.575	.129	.054	.243	.000	.119	.097	188	159	.119	1.619	0.149	2.5	1.2	3.6	1.5	A+	
758	639357	7	7	280	.625	.193	.625	.007	.175	.000	.372	323	.372	051	127	-0.308	0.133	0.2	1.0	-0.1	1.0	A+	
759	635903	7	7	280	.764	.100	.061	.075	.764	.000	.395	236	207	179	.395	-1.077	0.150	-0.7	0.9	-0.7	0.9	A+	
760	635911	7	7	280	.450	.132	.239	.179	.450	.000	.341	157	177	107	.341	0.529	0.130	1.1	1.1	8.0	1.1	A-	
761	627051	7	7	280	.475	.057	.293	.175	.475	.000	.565	104	493	089	.565	0.410	0.130	-4.2	0.8	-3.4	0.8	A+	
762	628130	7	7	280	.436	.436	.118	.093	.354	.000	.422	.422	199	152	212	0.597	0.130	-0.7	1.0	-0.5	1.0	A+	
763	639409	7	7	280	.514	.164	.189	.132	.514	.000	.498	139	215	335	.498	0.225	0.129	-2.4	0.9	-2.3	0.9	A-	
764	640044	7	4	280	.761	.079	.082	.761	.079	.000	.393	103	233	.393	283	-1.054	0.149	-0.7	0.9	-0.5	0.9	A+	
765	633134	7	7	280	.236	.021	.536	.236	.207	.000	.255	150	151	.255	028	1.664	0.150	1.0	1.1	1.7	1.2	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-4-1	- 4-1		>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
766	625511	7	7	280	.407	.407	.354	.118	.121	.000	.361	.361	188	158	113	0.734	0.131	0.7	1.0	0.0	1.0	A+	
767	639440	7	7	280	.718	.107	.718	.096	.079	.000	.529	234	.529	357	225	-0.799	0.142	-2.7	0.8	-2.5	0.7	A+	
768	625517	7	7	280	.575	.575	.157	.154	.114	.000	.392	.392	297	071	190	-0.063	0.131	0.0	1.0	-0.3	1.0	B+	
769	637141	7	3	280	.314	.221	.432	.314	.032	.000	.215	375	.097	.215	.044	1.207	0.138	2.0	1.1	3.3	1.3	C+	
770	635942	7	7	280	.682	.139	.089	.682	.089	.000	.417	217	214	.417	203	-0.602	0.138	-0.9	1.0	-0.5	0.9	A+	
771	628477	7	4	280	.343	.211	.343	.282	.164	.000	.311	160	.311	066	143	1.056	0.136	1.1	1.1	1.3	1.1	A+	
772	633846	7	7	280	.829	.036	.096	.829	.039	.000	.461	220	307	.461	219	-1.484	0.171	-1.0	0.9	-2.1	0.7	A-	A+
773	639373	7	7	280	.475	.050	.475	.311	.161	.004	.277	203	.277	079	146	0.513	0.130	1.3	1.1	1.6	1.1	A+	A+
774	627001	7	7	280	.207	.232	.189	.371	.207	.000	.152	.006	117	037	.152	1.888	0.155	1.3	1.1	2.2	1.3	A-	A-
775	639382	7	7	280	.593	.121	.593	.139	.146	.000	.315	193	.315	202	062	-0.076	0.132	1.2	1.1	1.4	1.1	A-	B-
776	630728	7	7	280	.343	.343	.150	.368	.139	.000	.291	.291	155	011	224	1.107	0.135	1.0	1.1	1.5	1.1	A-	A-
777	628322	7	7	280	.718	.718	.093	.096	.093	.000	.489	.489	314	186	256	-0.733	0.143	-1.6	0.9	-2.1	0.8	A-	A-
778	639414	7	7	280	.432	.314	.168	.432	.086	.000	.434	357	.022	.434	205	0.687	0.130	-1.4	0.9	-1.1	0.9	A-	A+
779	635912	7	7	280	.682	.086	.075	.157	.682	.000	.418	230	249	178	.418	-0.513	0.138	-0.9	1.0	-0.8	0.9	A+	A-
780	633135	7	3	280	.371	.371	.296	.111	.221	.000	.224	.224	185	105	.023	0.999	0.133	2.0	1.1	1.9	1.2	A+	A+
781	621154	7	7	280	.800	.143	.800	.036	.021	.000	.441	347	.441	154	181	-1.186	0.158	-1.3	0.9	-2.0	0.7	A+	A-
782	633453	7	7	280	.682	.193	.075	.682	.050	.000	.498	309	273	.498	174	-0.552	0.139	-1.8	0.9	-1.7	0.9	A-	A-
783	635349	7	7	280	.818	.818	.068	.036	.079	.000	.482	.482	303	244	241	-1.426	0.168	-1.1	0.9	-1.7	0.8	A-	A-
784	627067	7	7	280	.186	.179	.221	.407	.186	.007	.144	149	038	.067	.144	2.036	0.161	1.1	1.1	2.6	1.4	A-	A-
785	627068	7	7	280	.536	.132	.171	.536	.161	.000	.388	020	272	.388	230	0.198	0.130	-0.3	1.0	0.3	1.0	A+	A-
786	633391	7	N/A	280	.064	.186	.064	.532	.218	.000	070	069	070	.105	021	3.593	0.278	0.4	1.1	1.3	1.5	A-	A+
787	635879	7	7	280	.657	.132	.154	.657	.057	.000	.440	237	262	.440	147	-0.400	0.136	-1.2	0.9	-0.8	0.9	A-	A-
788	624830	7	7	280	.600	.600	.150	.175	.075	.000	.410	.410	148	283	153	-0.128	0.132	-0.4	1.0	-0.2	1.0	C+	A-
789	633460	7	7	279	.358	.358	.176	.387	.075	.004	.269	.269	061	142	061	0.884	0.134	1.4	1.1	2.0	1.2	A+	
790	633459	7	7	279	.602	.602	.136	.140	.118	.004	.426	.426	192	215	146	-0.273	0.131	-1.0	1.0	-1.3	0.9	A-	
791	635880	7	7	279	.652	.133	.122	.652	.090	.004	.452	123	340	.452	145	-0.523	0.135	-1.5	0.9	-1.3	0.9	A-	
792	628321	7	7	279	.634	.229	.093	.039	.634	.004	.458	199	267	198	.458	-0.432	0.133	-1.7	0.9	-1.7	0.9	A-	
793	628056	7	7	279	.294	.373	.294	.179	.151	.004	.353	131	.353	.001	215	1.221	0.140	-0.2	1.0	0.0	1.0	A+	
794	628148	7	7	279	.620	.620	.176	.100	.093	.011	.432	.432	276	123	134	-0.379	0.133	-1.1	0.9	-1.1	0.9	A-	
795	626993	7	7	279	.308	.072	.444	.165	.308	.011	.316	223	.028	199	.316	1.133	0.138	0.5	1.0	0.7	1.1	A+	
796	639359	7	7	280	.436	.082	.229	.250	.436	.004	.272	153	031	137	.272	0.544	0.129	1.8	1.1	1.6	1.1	A-	
797	639443	7	3	280	.446	.325	.089	.446	.132	.007	.248	.030	177	.248	146	0.491	0.129	2.3	1.1	2.6	1.2	A-	
798	626991	7	3	280	.682	.154	.086	.682	.071	.007	.514	208	255	.514	217	-0.644	0.138	-2.6	0.9	-2.2	0.8	A+	
799	630414	7	7	280	.332	.100	.075	.332	.486	.007	.143	198	261	.143	.196	1.046	0.135	3.1	1.2	3.2	1.3	A+	
800	634076	7	5	280	.629	.046	.629	.086	.232	.007	.290	174	.290	202	023	-0.369	0.133	1.5	1.1	1.5	1.1	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
801	625529	7	3	280	.779	.093	.779	.075	.046	.007	.377	116	.377	137	235	-1.213	0.154	-0.3	1.0	-0.3	1.0	A+	
802	630730	7	7	280	.336	.411	.111	.136	.336	.007	.246	.094	177	203	.246	1.027	0.135	1.7	1.1	1.2	1.1	A-	
803	627040	7	7	280	.468	.096	.361	.064	.468	.011	.306	155	004	273	.306	0.384	0.129	1.3	1.1	1.4	1.1	A+	
804	627684	7	3	280	.775	.036	.107	.082	.775	.000	.338	181	201	165	.338	-1.088	0.154	0.2	1.0	0.0	1.0	A-	B-
805	625487	7	7	279	.262	.280	.262	.376	.079	.004	.092	135	.092	.132	084	1.404	0.145	2.8	1.2	3.4	1.4	A-	
806	627464	7	7	280	.882	.036	.882	.054	.021	.007	.488	265	.488	196	184	-2.072	0.197	-1.0	0.9	-2.0	0.6	A+	
807	639375	7	7	280	.696	.696	.193	.068	.036	.007	.514	.514	297	192	211	-0.738	0.141	-2.2	0.9	-2.0	0.8	A+	
808	633458	7	7	280	.693	.693	.057	.096	.154	.000	.325	.325	303	230	033	-0.660	0.139	0.6	1.0	0.5	1.1	A+	
809	626996	7	6	280	.382	.146	.368	.382	.104	.000	.168	201	.025	.168	075	0.911	0.132	3.6	1.2	3.4	1.3	A+	A+
810	628098	7	4	279	.412	.111	.136	.412	.333	.007	.321	098	133	.321	128	0.611	0.131	0.9	1.0	1.0	1.1	A+	
811	639358	7	7	280	.575	.575	.161	.118	.139	.007	.450	.450	223	091	213	-0.109	0.130	-1.6	0.9	-1.8	0.9	A-	
812	635665	7	5	280	.318	.221	.189	.257	.318	.014	.315	004	152	110	.315	1.134	0.138	0.5	1.0	1.5	1.1	B+	
813	627361	7	7	280	.446	.164	.329	.446	.061	.000	.319	292	074	.319	066	0.546	0.130	1.6	1.1	1.1	1.1	B+	
814	627056	7	3	279	.652	.075	.197	.652	.068	.007	.294	078	093	.294	215	-0.528	0.135	1.3	1.1	1.1	1.1	A-	
815	639407	7	7	280	.275	.275	.382	.232	.107	.004	.063	.063	.087	.025	193	1.353	0.141	3.2	1.2	3.6	1.4	B+	
816	626943	7	7	280	.732	.061	.057	.732	.143	.007	.413	208	198	.413	159	-0.944	0.146	-0.4	1.0	-0.7	0.9	A-	
817	639364	7	7	280	.800	.054	.064	.800	.082	.000	.448	213	292	.448	217	-1.314	0.158	-1.2	0.9	-1.8	0.7	B-	
818	633457	7	7	280	.611	.139	.611	.186	.064	.000	.199	.031	.199	112	264	-0.164	0.133	3.0	1.2	3.5	1.3	A-	B+
819	626997	7	6	279	.738	.140	.738	.054	.061	.007	.351	110	.351	174	223	-1.006	0.146	-0.1	1.0	0.3	1.0	B+	į
820	630429	7	4	280	.314	.314	.232	.154	.293	.007	.294	.294	.055	190	119	1.138	0.137	0.4	1.0	1.1	1.1	B+	
821	625506	7	7	280	.779	.054	.779	.071	.086	.011	.560	235	.560	322	214	-1.257	0.156	-2.2	0.8	-3.0	0.6	A+	
822	635668	7	5	280	.196	.361	.311	.132	.196	.000	.152	014	.074	258	.152	1.929	0.160	1.6	1.2	2.4	1.4	A-	
823	627362	7	7	280	.650	.650	.036	.054	.261	.000	.379	.379	289	256	158	-0.344	0.135	-0.1	1.0	-0.6	1.0	A-	A+
824	633498	8	8	144	.507	.076	.507	.368	.049	.000	.163	081	.163	076	109	0.360	0.177	2.3	1.1	1.7	1.1	A+	
825	639580	8	8	145	.435	.110	.435	.207	.248	.000	.188	321	.188	.114	091	0.902	0.178	2.2	1.1	2.0	1.2	A-	
826	624848	8	4	143	.518	.273	.518	.140	.070	.000	.358	156	.358	132	250	0.428	0.178	-0.2	1.0	0.0	1.0	A+	
827	639612	8	7	144	.639	.639	.188	.118	.056	.000	.252	.252	253	004	091	-0.058	0.184	1.1	1.1	0.7	1.1	A+	
828	628115	8	5	144	.278	.083	.278	.063	.569	.007	.337	205	.337	159	076	1.419	0.196	-0.4	1.0	0.6	1.1	C-	
829	627963	8	8	144	.486	.028	.104	.375	.486	.007	.337	194	215	103	.337	0.442	0.177	0.3	1.0	0.0	1.0	A+	
830	628311	8	3	145	.317	.228	.228	.317	.228	.000	.278	117	046	.278	145	1.472	0.189	0.6	1.0	0.7	1.1	A-	
831	628242	8	8	143	.469	.175	.469	.126	.231	.000	.193	103	.193	096	061	0.650	0.178	2.0	1.1	2.0	1.1	A+	
832	639857	8	8	144	.875	.875	.028	.083	.014	.000	.356	.356	214	292	017	-1.568	0.259	-0.5	0.9	-0.4	0.9	A+	
833	639441	8	4	144	.799	.069	.083	.799	.042	.007	.483	206	371	.483	104	-1.249	0.222	-0.9	0.9	-1.4	8.0	A+	
834	633497	8	8	145	.524	.055	.214	.207	.524	.000	.317	165	116	181	.317	0.491	0.177	0.6	1.0	0.5	1.0	A+	
835	639588	8	8	143	.706	.063	.203	.028	.706	.000	.586	308	401	185	.586	-0.481	0.193	-2.5	0.8	-2.7	0.7	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS					5						0 - 5				Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
836	625522	8	4	144	.833	.007	.833	.104	.056	.000	.403	097	.403	281	245	-1.207	0.232	-0.7	0.9	-1.1	0.8	A-	
837	639610	8	8	144	.750	.042	.049	.750	.160	.000	.395	270	286	.395	151	-0.896	0.204	-0.7	0.9	-0.8	0.9	A+	
838	624828	8	5	144	.813	.056	.090	.813	.035	.007	.340	082	217	.340	169	-1.272	0.224	-0.3	1.0	-0.3	0.9	B+	
839	625520	8	7	145	.641	.117	.641	.041	.200	.000	.318	294	.318	239	026	-0.060	0.184	0.2	1.0	0.6	1.1	A-	
840	625508	8	3	143	.594	.042	.594	.280	.084	.000	.492	286	.492	250	260	0.075	0.181	-1.9	0.9	-1.9	0.9	A+	
841	626775	8	8	144	.639	.306	.028	.028	.639	.000	.449	318	165	256	.449	-0.058	0.184	-1.3	0.9	-1.4	0.9	C-	
842	639856	8	8	144	.819	.819	.042	.083	.042	.014	.548	.548	247	384	161	-1.447	0.236	-1.2	0.8	-2.0	0.6	B+	1
843	639439	8	4	144	.854	.854	.049	.042	.049	.007	.386	.386	221	215	116	-1.606	0.248	-0.5	0.9	-0.9	0.8	A+	
844	627686	8	3	1298	.508	.012	.474	.005	.508	.002	.263	071	215	089	.263	0.406	0.059	3.5	1.1	2.9	1.1	A+	A+
845	626768	8	8	1298	.504	.220	.109	.164	.504	.003	.371	078	231	181	.371	0.421	0.060	-0.9	1.0	-0.9	1.0	A+	A-
846	639592	8	8	1298	.500	.207	.500	.126	.164	.004	.399	127	.399	192	186	0.438	0.060	-1.6	1.0	-1.5	1.0	A-	B-
847	622606	8	8	1298	.633	.172	.138	.633	.052	.006	.350	125	158	.350	202	-0.195	0.062	0.2	1.0	0.3	1.0	A-	A-
848	624758	8	6	1298	.307	.307	.201	.197	.289	.007	.265	.265	052	099	084	1.371	0.064	1.8	1.1	3.4	1.2	A+	A+
849	621161	8	7	1298	.408	.297	.164	.125	.408	.007	.482	167	195	195	.482	0.866	0.060	-6.1	0.9	-4.8	0.9	A-	C-
850	628474	8	N/A	1298	.212	.212	.275	.277	.230	.007	.070	.070	115	015	.129	1.942	0.072	4.6	1.2	5.5	1.4	A-	A+
851	628319	8	4	1298	.608	.047	.260	.608	.077	.008	.398	192	181	.398	182	-0.076	0.061	-1.5	1.0	-1.7	1.0	A-	A-
852	639600	8	8	1298	.735	.103	.735	.067	.089	.007	.493	246	.493	243	203	-0.746	0.067	-4.0	0.9	-4.5	0.8	A-	B-
853	633499	8	8	1298	.498	.140	.218	.498	.135	.009	.345	116	190	.345	079	0.441	0.060	0.6	1.0	1.1	1.0	A+	A+
854	633845	8	7	145	.600	.021	.145	.228	.600	.007	.398	090	184	191	.398	0.047	0.182	-0.9	0.9	-1.1	0.9	A+	
855	638830	8	7	145	.766	.766	.041	.103	.083	.007	.191	.191	224	.110	118	-0.896	0.211	1.1	1.1	1.9	1.4	A+	
856	639595	8	8	145	.628	.007	.628	.193	.159	.014	.339	.015	.339	073	216	-0.147	0.187	0.4	1.0	0.0	1.0	A-	
857	622607	8	8	145	.490	.055	.048	.490	.393	.014	.316	208	175	.316	031	0.519	0.180	1.2	1.1	0.6	1.0	A-	
858	635384	8	8	145	.435	.200	.124	.435	.228	.014	.118	.004	.082	.118	071	0.814	0.181	3.9	1.3	4.0	1.4	A-	
859	639603	8	8	145	.379	.110	.379	.469	.028	.014	.248	094	.248	012	168	1.049	0.184	1.3	1.1	1.4	1.1	B+	
860	635367	8	8	145	.531	.241	.069	.145	.531	.014	.501	144	282	168	.501	0.324	0.180	-2.5	0.9	-2.4	0.8	A+	
861	628254	8	8	145	.669	.276	.669	.021	.021	.014	.378	180	.378	065	215	-0.362	0.192	-0.1	1.0	-0.4	0.9	A+	
862	640047	8	3	145	.152	.552	.152	.200	.083	.014	.021	.341	.021	180	175	2.512	0.248	0.9	1.2	2.4	1.7	A+	
863	640045	8	4	145	.469	.138	.269	.469	.110	.014	.359	116	169	.359	021	0.617	0.180	0.0	1.0	0.2	1.0	A+	
864	627486	8	8	145	.207	.648	.014	.117	.207	.014	.331	.009	106	213	.331	2.028	0.217	0.0	1.0	-0.5	0.9	A+	
865	639585	8	8	145	.435	.386	.069	.435	.097	.014	.433	072	207	.433	237	0.781	0.181	-1.4	0.9	-1.4	0.9	A+	
866	638663	8	4	145	.807	.090	.807	.048	.041	.014	.500	244	.500	211	127	-1.229	0.230	-0.9	0.9	-1.4	0.7	A-	
867	640050	8	4	145	.807	.807	.103	.048	.028	.014	.483	.483	209	200	165	-1.176	0.227	-1.2	0.8	-1.4	0.7	A+	
868	639858	8	8	145	.724	.152	.724	.069	.035	.021	.490	227	.490	208	147	-0.705	0.204	-1.3	0.9	-1.6	0.8	A-	igsquare
869	622604	8	8	145	.855	.041	.041	.855	.062	.000	.235	209	129	.235	063	-1.656	0.246	0.4	1.1	0.5	1.1	A-	
870	639607	8	8	145	.628	.103	.179	.090	.628	.000	.359	184	167	187	.359	-0.235	0.185	-0.4	1.0	-0.6	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS			-4-1	- 4-1		>									Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
871	628245	8	8	145	.821	.048	.821	.097	.035	.000	.342	169	.342	280	068	-1.374	0.228	-0.1	1.0	0.5	1.1	A+	
872	639598	8	8	145	.462	.193	.462	.310	.035	.000	.372	220	.372	126	219	0.554	0.180	-0.1	1.0	-0.6	1.0	A-	
873	635905	8	8	145	.835	.041	.069	.055	.835	.000	.509	136	355	316	.509	-1.482	0.234	-1.4	0.8	-1.8	0.6	A+	
874	638831	8	7	145	.545	.228	.145	.545	.069	.014	.392	016	379	.392	103	0.134	0.181	0.1	1.0	-0.2	1.0	A-	
875	628122	8	8	145	.703	.152	.703	.083	.048	.014	.506	290	.506	156	220	-0.679	0.197	-1.4	0.9	-1.5	0.8	B+	
876	635352	8	7	145	.503	.090	.269	.124	.503	.014	.427	168	189	135	.427	0.332	0.181	-0.4	1.0	-0.2	1.0	A-	
877	640051	8	4	145	.497	.103	.497	.269	.117	.014	.437	176	.437	190	136	0.365	0.181	-1.8	0.9	-1.1	0.9	C+	
878	640046	8	4	145	.897	.014	.897	.021	.055	.014	.444	183	.444	241	187	-2.218	0.299	-0.5	0.9	-1.2	0.6	A+	
879	635371	8	8	145	.317	.497	.117	.317	.055	.014	.138	.148	328	.138	.020	1.252	0.192	2.0	1.2	3.1	1.4	A-	
880	633427	8	8	145	.428	.317	.179	.055	.428	.021	.129	.004	.064	184	.129	0.689	0.183	3.8	1.3	3.8	1.4	A+	
881	628121	8	8	145	.655	.655	.076	.179	.076	.014	.540	.540	199	339	139	-0.415	0.190	-1.8	0.9	-2.2	0.8	A+	
882	635732	8	5	145	.448	.166	.235	.145	.448	.007	.584	354	167	201	.584	0.600	0.181	-3.5	0.8	-3.3	0.7	B+	
883	639859	8	8	145	.393	.283	.110	.393	.207	.007	.140	.028	031	.140	132	0.867	0.184	2.7	1.2	2.5	1.3	A-	
884	628243	8	8	143	.608	.608	.161	.042	.189	.000	.199	.199	081	025	160	-0.137	0.184	0.9	1.1	1.1	1.1	A-	
885	626950	8	8	143	.392	.091	.392	.399	.119	.000	.302	134	.302	157	099	0.874	0.182	0.6	1.0	0.3	1.0	A-	
886	639574	8	8	143	.322	.483	.322	.077	.119	.000	.226	187	.226	.030	063	1.219	0.189	1.1	1.1	1.1	1.1	A-	
887	622429	8	8	143	.776	.776	.042	.042	.140	.000	.358	.358	168	059	299	-1.062	0.214	-0.3	1.0	-0.4	0.9	A+	
888	636010	8	8	143	.657	.112	.175	.657	.049	.007	.334	017	285	.334	228	-0.408	0.190	0.3	1.0	-0.1	1.0	A-	
889	638880	8	7	143	.685	.105	.168	.685	.042	.000	.413	164	262	.413	219	-0.527	0.193	-0.6	1.0	-0.6	0.9	A+	
890	628253	8	8	143	.518	.231	.161	.091	.518	.000	.328	.008	305	192	.328	0.290	0.179	0.4	1.0	0.2	1.0	A+	
891	635934	8	8	143	.790	.091	.790	.070	.049	.000	.568	354	.568	331	210	-1.109	0.217	-1.7	0.8	-2.2	0.7	A+	
892	640055	8	4	143	.476	.140	.161	.224	.476	.000	.161	008	055	138	.161	0.483	0.179	2.1	1.1	3.1	1.3	A+	
893	640048	8	5	143	.413	.056	.252	.280	.413	.000	.406	093	183	221	.406	0.808	0.181	-1.6	0.9	-1.6	0.9	A-	
894	627680	8	4	143	.294	.294	.294	.231	.182	.000	.253	.253	039	089	157	1.366	0.193	0.4	1.0	0.4	1.1	A-	
895	639442	8	3	143	.203	.385	.203	.252	.161	.000	.119	176	.119	.056	.037	1.955	0.219	0.5	1.1	1.0	1.2	A+	
896	635353	8	7	143	.867	.035	.042	.867	.056	.000	.531	185	367	.531	317	-1.784	0.262	-0.9	0.8	-2.0	0.5	A-	
897	634075	8	5	143	.245	.245	.168	.511	.077	.000	.139	.139	294	.184	157	1.684	0.205	8.0	1.1	1.3	1.2	C+	
898	639860	8	8	143	.748	.084	.098	.748	.070	.000	.503	101	346	.503	343	-0.885	0.206	-1.4	0.9	-1.8	0.7	A+	
899	636056	8	8	145	.738	.097	.738	.055	.103	.007	.368	126	.368	254	092	-0.926	0.204	0.1	1.0	-0.1	1.0	A-	
900	640049	8	6	145	.869	.035	.028	.869	.062	.007	.506	229	164	.506	264	-1.925	0.263	-1.1	0.8	-1.7	0.5	A-	
901	636016	8	8	145	.890	.007	.069	.890	.028	.007	.357	039	196	.357	127	-2.150	0.283	-0.1	1.0	-0.5	0.8	A-	
902	625550	8	8	145	.814	.021	.035	.117	.814	.014	.479	174	069	341	.479	-1.484	0.233	-0.8	0.9	-1.4	0.7	A-	
903	621164	8	6	145	.538	.179	.131	.538	.138	.014	.465	166	235	.465	094	0.119	0.182	-1.3	0.9	-1.4	0.9	B+	
904	639609	8	7	145	.524	.062	.069	.331	.524	.014	.271	150	216	.025	.271	0.185	0.181	1.8	1.1	2.1	1.2	A-	
905	640053	8	6	145	.772	.062	.041	.772	.110	.014	.488	165	203	.488	217	-1.161	0.216	-1.4	0.8	-1.5	0.7	C+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

	I.D.	FT	PCS		D) /- I	D(A)	D(D)	D/C)	D(D)	D()	D+D'-	DT(4)	DT/D)	DT(C)	DT/D)		2465	Z-	MS-	Z-	MS-	M	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
906	635935	8	8	145	.828	.069	.828	.055	.035	.014	.525	170	.525	216	271	-1.574	0.239	-1.5	0.8	-1.9	0.6	A-	
907	628132	8	8	145	.628	.628	.152	.117	.083	.021	.520	.520	235	269	061	-0.343	0.189	-1.8	0.9	-1.9	0.8	A+	
908	635930	8	8	145	.538	.110	.538	.159	.172	.021	.251	087	.251	104	.010	0.105	0.183	1.5	1.1	1.5	1.2	A+	
909	635377	8	8	145	.255	.400	.255	.124	.200	.021	.088	034	.088	.092	.030	1.558	0.205	2.5	1.3	2.9	1.5	A-	
910	621202	8	4	145	.421	.276	.421	.186	.097	.021	.330	105	.330	178	.059	0.672	0.183	0.3	1.0	0.8	1.1	A+	
911	635354	8	7	145	.455	.055	.069	.400	.455	.021	.342	111	183	071	.342	0.504	0.182	1.1	1.1	1.2	1.1	A+	
912	634317	8	5	145	.524	.145	.159	.152	.524	.021	.420	121	207	078	.420	0.172	0.182	-0.9	0.9	-0.8	0.9	B+	
913	639861	8	8	145	.221	.248	.221	.255	.255	.021	.062	.025	.062	062	.124	1.779	0.215	2.2	1.3	2.8	1.6	A+	
914	627035	8	8	144	.861	.861	.035	.076	.028	.000	.181	.181	186	093	023	-1.616	0.247	0.1	1.0	0.5	1.1	A-	
915	636001	8	8	144	.667	.146	.111	.667	.076	.000	.326	188	142	.326	160	-0.387	0.186	-0.3	1.0	-0.6	0.9	A+	
916	639604	8	8	144	.806	.090	.806	.028	.076	.000	.271	076	.271	208	193	-1.185	0.218	-0.1	1.0	-0.3	0.9	A-	
917	636050	8	8	144	.708	.028	.083	.181	.708	.000	.249	073	128	172	.249	-0.602	0.192	0.5	1.0	1.1	1.2	A-	
918	636007	8	8	144	.778	.097	.076	.778	.035	.014	.362	168	229	.362	048	-1.061	0.213	-0.3	1.0	-0.6	0.9	A-	
919	626781	8	6	144	.486	.111	.132	.486	.264	.007	.386	174	113	.386	179	0.442	0.177	-0.5	1.0	-0.6	1.0	A-	
920	639583	8	8	144	.486	.090	.250	.167	.486	.007	.244	167	.130	294	.244	0.442	0.177	1.6	1.1	1.5	1.1	A-	
921	639596	8	8	144	.215	.215	.472	.208	.097	.007	.127	.127	016	033	032	1.842	0.214	1.3	1.2	1.7	1.3	A+	
922	639581	8	8	144	.819	.049	.819	.111	.014	.007	.356	011	.356	309	142	-1.323	0.227	-0.5	0.9	0.0	1.0	A+	
923	633501	8	8	144	.486	.486	.125	.188	.194	.007	.423	.423	192	193	131	0.442	0.177	-1.2	0.9	-1.0	0.9	A+	
924	630671	8	4	144	.313	.146	.250	.313	.285	.007	.250	155	016	.250	074	1.274	0.191	0.7	1.1	1.5	1.2	A+	
925	628111	8	6	144	.431	.125	.132	.306	.431	.007	.291	057	140	124	.291	0.697	0.179	1.0	1.1	0.6	1.1	A+	
926	635382	8	8	144	.215	.361	.181	.236	.215	.007	.224	.077	134	134	.224	1.842	0.214	0.9	1.1	0.5	1.1	A-	
927	621208	8	4	144	.549	.063	.201	.181	.549	.007	.488	219	264	164	.488	0.157	0.178	-2.3	0.9	-2.0	0.8	A+	
928	628013	8	4	144	.375	.299	.208	.375	.111	.007	.275	184	.001	.275	090	0.960	0.183	0.8	1.1	1.2	1.1	A-	
929	625518	8	6	144	.410	.167	.257	.410	.160	.007	.423	104	233	.423	127	0.794	0.180	-1.2	0.9	-0.7	0.9	A+	
930	639868	8	8	144	.347	.229	.347	.236	.181	.007	.393	130	.393	229	037	1.096	0.186	-0.5	1.0	-0.7	0.9	A+	
931	627470	8	8	145	.448	.331	.172	.448	.048	.000	.319	064	293	.319	085	0.838	0.178	0.5	1.0	0.6	1.1	A+	
932	639601	8	8	145	.745	.745	.055	.131	.069	.000	.456	.456	144	275	289	-0.608	0.200	-1.1	0.9	-1.5	8.0	A-	
933	634074	8	6	145	.421	.048	.290	.421	.241	.000	.235	033	.071	.235	330	0.966	0.179	1.6	1.1	1.4	1.1	A-	
934	639573	8	8	145	.800	.800	.097	.021	.083	.000	.398	.398	250	184	215	-0.954	0.217	-0.8	0.9	-0.6	0.9	B-	
935	639578	8	8	145	.793	.041	.083	.083	.793	.000	.443	168	216	314	.443	-0.908	0.214	-0.9	0.9	-1.4	0.8	A-	
936	626819	8	6	145	.524	.028	.083	.524	.366	.000	.344	284	194	.344	149	0.491	0.177	0.2	1.0	0.3	1.0	B+	
937	628128	8	4	145	.372	.228	.372	.269	.131	.000	.296	109	.296	245	.034	1.196	0.182	0.5	1.0	8.0	1.1	A-	
938	635933	8	8	145	.393	.283	.393	.159	.159	.007	.345	062	.345	263	096	1.091	0.181	0.0	1.0	0.3	1.0	A+	
939	639590	8	8	145	.579	.117	.207	.097	.579	.000	.585	211	372	238	.585	0.236	0.179	-3.4	0.8	-3.0	0.8	A-	
940	639591	8	8	145	.662	.152	.662	.062	.124	.000	.536	301	.536	204	292	-0.163	0.186	-2.2	0.8	-2.3	0.8	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

		FT	PCS															Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
941	628313	8	6	145	.200	.035	.469	.297	.200	.000	.340	239	116	075	.340	2.162	0.217	-0.3	1.0	-0.2	1.0	A-	
942	635364	8	8	145	.283	.435	.283	.145	.131	.007	.256	125	.256	108	068	1.639	0.195	0.7	1.1	0.6	1.1	A-	
943	635388	8	8	145	.255	.255	.193	.331	.221	.000	.087	.087	172	.037	.031	1.814	0.200	1.8	1.2	1.9	1.3	A-	
944	633504	8	8	145	.710	.710	.048	.110	.131	.000	.485	.485	138	259	324	-0.414	0.193	-1.5	0.9	-1.6	0.8	A+	
945	635358	8	7	145	.572	.076	.262	.572	.083	.007	.358	019	243	.358	202	0.258	0.179	0.0	1.0	0.4	1.0	A+	
946	622609	8	8	145	.310	.310	.235	.262	.193	.000	.157	.157	095	.010	094	1.509	0.190	1.4	1.1	2.4	1.3	A-	
947	634304	8	8	145	.497	.124	.207	.497	.172	.000	.228	049	278	.228	.040	0.617	0.177	1.7	1.1	1.8	1.1	A+	
948	629913	8	8	143	.539	.175	.539	.238	.049	.000	.393	046	.393	354	129	0.333	0.178	-0.6	1.0	-0.6	1.0	A+	
949	639602	8	8	143	.713	.028	.713	.133	.126	.000	.364	201	.364	379	008	-0.518	0.195	-0.7	0.9	0.4	1.0	A-	
950	629912	8	8	143	.636	.245	.049	.636	.070	.000	.314	125	154	.314	252	-0.125	0.184	0.3	1.0	0.2	1.0	B-	
951	628244	8	8	143	.776	.042	.063	.776	.119	.000	.351	308	233	.351	087	-0.886	0.210	-0.3	1.0	-0.4	0.9	A+	
952	630386	8	6	143	.462	.245	.140	.147	.462	.007	.417	.027	349	261	.417	0.672	0.178	-0.9	1.0	-1.0	0.9	B+	
953	634314	8	6	143	.364	.224	.364	.154	.259	.000	057	182	057	.007	.230	1.138	0.183	4.2	1.3	3.7	1.4	A-	
954	627694	8	4	143	.273	.252	.161	.315	.273	.000	.328	044	138	164	.328	1.607	0.197	-0.3	1.0	0.2	1.0	A+	
955	635936	8	8	143	.413	.294	.175	.413	.119	.000	.430	279	116	.430	126	0.906	0.180	-1.3	0.9	-0.9	0.9	A+	
956	627773	8	3	143	.308	.203	.308	.203	.287	.000	.381	099	.381	240	087	1.419	0.190	-0.7	1.0	-0.6	0.9	A+	
957	628129	8	4	143	.406	.259	.147	.406	.189	.000	.258	.089	128	.258	307	0.939	0.180	0.9	1.1	1.3	1.1	A-	
958	630669	8	6	143	.217	.217	.280	.273	.231	.000	.060	.060	006	096	.050	1.940	0.211	1.2	1.1	2.1	1.4	B+	
959	635389	8	8	143	.434	.196	.182	.434	.189	.000	.227	167	176	.227	.056	0.810	0.179	1.5	1.1	1.5	1.1	A+	
960	639594	8	8	143	.559	.147	.154	.140	.559	.000	.242	147	088	105	.242	0.237	0.179	1.3	1.1	1.6	1.1	A+	
961	630413	8	7	143	.413	.119	.070	.413	.399	.000	.190	181	310	.190	.090	0.906	0.180	1.8	1.1	2.0	1.2	A+	
962	627979	8	3	143	.336	.490	.091	.084	.336	.000	.084	.118	164	186	.084	1.276	0.187	2.5	1.2	2.1	1.2	A+	
963	638828	8	7	143	.329	.182	.182	.329	.308	.000	.329	102	.023	.329	269	1.311	0.187	0.1	1.0	-0.2	1.0	A+	
964	635730	8	8	143	.301	.301	.273	.182	.245	.000	.418	.418	140	123	191	1.455	0.191	-1.1	0.9	-0.8	0.9	A-	
965	630375	8	8	144	.326	.396	.222	.056	.326	.000	.249	146	.014	224	.249	1.407	0.188	1.0	1.1	0.8	1.1	A-	
966	636011	8	8	144	.972	.014	.972	.014	.000	.000	.239	137	.239	198	.000	-3.234	0.509	0.1	1.0	-0.9	0.5	A-	
967	635459	8	8	144	.854	.854	.049	.014	.083	.000	.260	.260	090	264	150	-1.377	0.244	-0.1	1.0	0.2	1.0	A-	
968	628117	8	3	144	.396	.208	.097	.299	.396	.000	.456	207	020	291	.456	1.067	0.181	-1.5	0.9	-1.4	0.9	A+	
969	640054	8	6	144	.264	.049	.146	.264	.542	.000	.122	055	069	.122	036	1.743	0.199	1.2	1.1	2.6	1.4	A-	
970	635937	8	8	144	.500	.167	.139	.500	.194	.000	.478	282	059	.478	287	0.588	0.177	-2.0	0.9	-1.8	0.9	B-	
971	639606	8	8	144	.924	.924	.014	.028	.035	.000	.396	.396	174	213	273	-2.143	0.319	-0.5	0.9	-1.4	0.5	A+	
972	634158	8	8	144	.625	.243	.083	.625	.049	.000	.270	151	046	.270	248	0.009	0.182	0.8	1.1	1.1	1.1	A+	
973	639575	8	8	144	.576	.271	.576	.076	.076	.000	.267	056	.267	157	246	0.238	0.179	1.2	1.1	0.6	1.1	A+	
974	640052	8	3	144	.792	.000	.035	.174	.792	.000	.368	.000	216	291	.368	-0.908	0.214	-0.4	1.0	-0.8	0.9	A+	
975	622417	8	6	144	.465	.215	.465	.146	.174	.000	.207	129	.207	070	067	0.745	0.177	2.1	1.1	1.7	1.1	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref ID Grade Grade N PVal P(A) P(B) P(C) P(D) P(-) PtBis PT(A) 976 635731 8 4 144 .326 .222 .243 .326 .208 .000 .142 007 977 628320 8 4 144 .826 .028 .826 .063 .083 .000 .359 083 978 634072 8 4 144 .875 .063 .049 .875 .014 .000 .456 290 979 634071 8 7 144 .264 .639 .056 .042 .264 .000 .475 302 980 635938 8 8 144 .451 .125 .451 .264 .160 .000 .026 025 981 635950 8 8 144 .792 .153 .792 .028 .028 .000 </th <th>07198 .142 .052 33 .359251223 90260 .456211 02116190 .475 02248 .288125 02248 .288125 025 .026017 .008 87 .306197149 44057390163 64 .109122067 71190 .495207 89285308092</th> <th>1.407 0.188 -1.154 0.228 -1.568 0.259 1.743 0.199 1.166 0.182 0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226</th> <th>in in 1.8 1.1 -0.3 1.0 -0.9 0.9 -1.5 0.9 0.7 1.0 4.2 1.3 0.0 1.0 -1.1 0.9 2.3 1.2</th> <th>-1.0 -1.5 -1.2 0.6 4.3 -0.2</th> <th>1.3 A 0.8 A 0.6 A 0.8 A 1.1 A 1.4 A</th> <th>/F /B \\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\</th>	07198 .142 .052 33 .359251223 90260 .456211 02116190 .475 02248 .288125 02248 .288125 025 .026017 .008 87 .306197149 44057390163 64 .109122067 71190 .495207 89285308092	1.407 0.188 -1.154 0.228 -1.568 0.259 1.743 0.199 1.166 0.182 0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	in in 1.8 1.1 -0.3 1.0 -0.9 0.9 -1.5 0.9 0.7 1.0 4.2 1.3 0.0 1.0 -1.1 0.9 2.3 1.2	-1.0 -1.5 -1.2 0.6 4.3 -0.2	1.3 A 0.8 A 0.6 A 0.8 A 1.1 A 1.4 A	/F /B \\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\
977 628320 8 4 144 .826 .028 .826 .063 .083 .000 .359 083 978 634072 8 4 144 .875 .063 .049 .875 .014 .000 .456 290 979 634071 8 7 144 .264 .639 .056 .042 .264 .000 .475 302 980 635938 8 8 144 .375 .299 .201 .375 .125 .000 .288 .002 981 635390 8 8 144 .451 .125 .451 .264 .160 .000 .026 025 982 639950 8 8 144 .792 .153 .792 .028 .028 .000 .306 187 983 639593 8 8 144 .507 .507 .160 .146 .188 .000	33 .359 251 223 90 260 .456 211 92 116 190 .475 92 248 .288 125 92 026 017 .008 87 .306 197 149 44 057 390 163 64 .109 122 067 71 190 .495 207 39 285 308 092	-1.154 0.228 -1.568 0.259 1.743 0.199 1.166 0.182 0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	-0.3 1.0 -0.9 0.9 -1.5 0.9 0.7 1.0 4.2 1.3 0.0 1.0 -1.1 0.9	-1.0 -1.5 -1.2 0.6 4.3 -0.2	0.8 A 0.6 A 0.8 A 1.1 A 1.4 A	\- \+ \+
978 634072 8 4 144 .875 .063 .049 .875 .014 .000 .456 290 979 634071 8 7 144 .264 .639 .056 .042 .264 .000 .475 302 980 635938 8 8 144 .375 .299 .201 .375 .125 .000 .288 .002 981 635390 8 8 144 .451 .125 .451 .264 .160 .000 .026 025 982 639950 8 8 144 .792 .153 .792 .028 .000 .306 187 983 639593 8 8 144 .507 .507 .160 .146 .188 .000 .444 .444 984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109	90 260 .456 211 92 116 190 .475 92 248 .288 125 95 .026 017 .008 87 .306 197 149 44 057 390 163 64 .109 122 067 71 190 .495 207 89 285 308 092	-1.568 0.259 1.743 0.199 1.166 0.182 0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	-0.9 0.9 -1.5 0.9 0.7 1.0 4.2 1.3 0.0 1.0 -1.1 0.9	-1.5 -1.2 0.6 4.3 -0.2	0.6 A 0.8 A 1.1 A 1.4 A	\+ \+ \+
979 634071 8 7 144 .264 .639 .056 .042 .264 .000 .475 302 980 635938 8 8 144 .375 .299 .201 .375 .125 .000 .288 .002 981 635390 8 8 144 .451 .125 .451 .264 .160 .000 .026 025 982 639950 8 8 144 .792 .153 .792 .028 .000 .306 187 983 639593 8 8 144 .507 .507 .160 .146 .188 .000 .444 .444 984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109 .064 985 636000 8 8 144 .681 .681 .069 .146 .090 .014 .489	02 116 190 .475 02 248 .288 125 05 .026 017 .008 87 .306 197 149 44 057 390 163 64 .109 122 067 71 190 .495 207 39 285 308 092	1.743 0.199 1.166 0.182 0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	-1.5 0.9 0.7 1.0 4.2 1.3 0.0 1.0 -1.1 0.9	-1.2 0.6 4.3 -0.2	0.8 A 1.1 A 1.4 A	\+ \+
980 635938 8 8 144 375 .299 .201 .375 .125 .000 .288 .002 981 635390 8 8 144 .451 .125 .451 .264 .160 .000 .026 025 982 639950 8 8 144 .792 .153 .792 .028 .000 .306 187 983 639593 8 8 144 .507 .507 .160 .146 .188 .000 .444 .444 984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109 .064 985 636000 8 8 144 .792 .063 .049 .792 .076 .021 .495 371 986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489	02 248 .288 125 25 .026 017 .008 87 .306 197 149 44 057 390 163 54 .109 122 067 71 190 .495 207 39 285 308 092	1.166 0.182 0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	0.7 1.0 4.2 1.3 0.0 1.0 -1.1 0.9	0.6 4.3 -0.2	1.1 A 1.4 A	۱+
981 635390 8 8 144 .451 .125 .451 .264 .160 .000 .026 025 982 639950 8 8 144 .792 .153 .792 .028 .000 .306 187 983 639593 8 8 144 .507 .507 .160 .146 .188 .000 .444 .444 984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109 .064 985 636000 8 8 144 .792 .063 .049 .792 .076 .021 .495 371 986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489 .489 987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043	25 .026 017 .008 87 .306 197 149 44 057 390 163 54 .109 122 067 71 190 .495 207 39 285 308 092	0.809 0.178 -1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	4.2 1.3 0.0 1.0 -1.1 0.9	4.3	1.4 A	
982 639950 8 8 144 .792 .153 .792 .028 .000 .306 187 983 639593 8 8 144 .507 .507 .160 .146 .188 .000 .444 .444 984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109 .064 985 636000 8 8 144 .792 .063 .049 .792 .076 .021 .495 371 986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489 .489 987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043 .191 988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409	.306 197 149 .44 057 390 163 .44 .109 122 067 .71 190 .495 207 .399 285 308 092	-1.161 0.216 0.320 0.177 0.897 0.182 -1.286 0.226	0.0 1.0 -1.1 0.9	-0.2		\+
983 639593 8 8 144 .507 .507 .160 .146 .188 .000 .444 .444 984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109 .064 985 636000 8 8 144 .792 .063 .049 .792 .076 .021 .495 371 986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489 .489 987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043 .191 988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409 091 989 633500 8 8 144 .160 .188 .160 .278 .368 .007	44 057 390 163 64 .109 122 067 71 190 .495 207 39 285 308 092	0.320 0.177 0.897 0.182 -1.286 0.226	-1.1 0.9		1 () ^	_
984 635383 8 8 144 .382 .194 .382 .278 .146 .000 .109 .064 985 636000 8 8 144 .792 .063 .049 .792 .076 .021 .495 371 986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489 .489 987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043 .191 988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409 091 989 633500 8 8 144 .160 .188 .160 .278 .368 .007 .178 .097 990 628312 8 3 144 .201 .368 .243 .201 .181 .007	.64 .109 122 067 .71 190 .495 207 .39 285 308 092	0.897 0.182 -1.286 0.226				4-
985 636000 8 8 144 .792 .063 .049 .792 .076 .021 .495 371 986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489 .489 987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043 .191 988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409 091 989 633500 8 8 144 .160 .188 .160 .278 .368 .007 .178 .097 990 628312 8 3 144 .201 .368 .243 .201 .181 .007 .108 .041 991 628247 8 4 144 .167 .056 .549 .222 .167 .007	71190 .495207 39285308092	-1.286 0.226	2.3 1.2	-1.3		4-
986 639576 8 8 144 .681 .681 .069 .146 .090 .014 .489 .489 987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043 .191 988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409 091 989 633500 8 8 144 .160 .188 .160 .278 .368 .007 .178 .097 990 628312 8 3 144 .201 .368 .243 .201 .181 .007 .108 .041 991 628247 8 4 144 .167 .056 .549 .222 .167 .007 .296 227 992 627065 8 4 144 .604 .097 .181 .604 .111 .007	39285308092			2.7		۱+
987 638827 8 7 144 .250 .361 .250 .174 .215 .000 .043 .191 988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409 091 989 633500 8 8 144 .160 .188 .160 .278 .368 .007 .178 .097 990 628312 8 3 144 .201 .368 .243 .201 .181 .007 .108 .041 991 628247 8 4 144 .167 .056 .549 .222 .167 .007 .296 227 992 627065 8 4 144 .604 .097 .181 .604 .111 .007 .412 339 993 635363 8 8 144 .361 .319 .361 .215 .097 .007			-1.2 0.9	-1.3		4-
988 639952 8 8 144 .507 .354 .069 .063 .507 .007 .409 091 989 633500 8 8 144 .160 .188 .160 .278 .368 .007 .178 .097 990 628312 8 3 144 .201 .368 .243 .201 .181 .007 .108 .041 991 628247 8 4 144 .167 .056 .549 .222 .167 .007 .296 227 992 627065 8 4 144 .604 .097 .181 .604 .111 .007 .412 339 993 635363 8 8 144 .396 .090 .396 .340 .167 .007 .058 125 994 636054 8 8 144 .361 .319 .361 .215 .097 .007	91 .043128152	-0.560 0.193	-1.3 0.9	-1.3	0.9 A	۱+
989 633500 8 8 144 .160 .188 .160 .278 .368 .007 .178 .097 990 628312 8 3 144 .201 .368 .243 .201 .181 .007 .108 .041 991 628247 8 4 144 .167 .056 .549 .222 .167 .007 .296 227 992 627065 8 4 144 .604 .097 .181 .604 .111 .007 .412 339 993 635363 8 8 144 .396 .090 .396 .340 .167 .007 .058 125 994 636054 8 8 144 .361 .319 .361 .215 .097 .007 .229 099 995 630289 8 4 144 .514 .250 .139 .514 .090 .007		1.628 0.203	1.3 1.1	2.0	1.3 A	4-
990 628312 8 3 144 .201 .368 .243 .201 .181 .007 .108 .041 991 628247 8 4 144 .167 .056 .549 .222 .167 .007 .296 227 992 627065 8 4 144 .604 .097 .181 .604 .111 .007 .412 339 993 635363 8 8 144 .396 .090 .396 .340 .167 .007 .058 125 994 636054 8 8 144 .361 .319 .361 .215 .097 .007 .229 099 995 630289 8 4 144 .514 .250 .139 .514 .090 .007 .455 124 996 634316 8 4 144 .514 .250 .139 .514 .090 .007	91236342 .409	0.304 0.178	-0.7 1.0	-0.7	1.0 A	\+
991 628247 8 4 144 .167 .056 .549 .222 .167 .007 .296 227 992 627065 8 4 144 .604 .097 .181 .604 .111 .007 .412 339 993 635363 8 8 144 .396 .090 .396 .340 .167 .007 .058 125 994 636054 8 8 144 .361 .319 .361 .215 .097 .007 .229 099 995 630289 8 4 144 .514 .250 .139 .514 .090 .007 .455 124 996 634316 8 4 144 .514 .250 .139 .514 .090 .007 .455 124	97 .178122063	2.192 0.236	0.2 1.0	1.8	1.4 A	\+
992 627065 8 4 144 .604 .097 .181 .604 .111 .007 .412 339 993 635363 8 8 144 .396 .090 .396 .340 .167 .007 .058 125 994 636054 8 8 144 .361 .319 .361 .215 .097 .007 .229 099 995 630289 8 4 144 .743 .076 .049 .743 .125 .007 .624 270 996 634316 8 4 144 .514 .250 .139 .514 .090 .007 .455 124	41 .071 .108196	1.885 0.217	1.0 1.1	1.6	1.3 A	\+
993 635363 8 8 144 .396 .090 .396 .340 .167 .007 .058 125 994 636054 8 8 144 .361 .319 .361 .215 .097 .007 .229 099 995 630289 8 4 144 .743 .076 .049 .743 .125 .007 .624 270 996 634316 8 4 144 .514 .250 .139 .514 .090 .007 .455 124	27123 .050 .296	2.137 0.232	-0.1 1.0	0.0	1.0 A	۱+
994 636054 8 8 144 .361 .319 .361 .215 .097 .007 .229 099 995 630289 8 4 144 .743 .076 .049 .743 .125 .007 .624 270 996 634316 8 4 144 .514 .250 .139 .514 .090 .007 .455 124	39150 .412081	-0.117 0.182	-1.2 0.9	-1.0	0.9 A	4-
995 630289 8 4 144 .743 .076 .049 .743 .125 .007 .624 270 996 634316 8 4 144 .514 .250 .139 .514 .090 .007 .455 124	25 .058 .067016	0.819 0.181	3.5 1.2	3.9	1.4 A	۱+
996 634316 8 4 144 .514 .250 .139 .514 .090 .007 .455124	99 .229 .018179	0.987 0.184	1.4 1.1	1.5	1.1 A	4-
	70316 .624347	-0.886 0.204	-2.4 0.8	-2.7	0.6 A	\+
997 634155 8 8 144 .340 .167 .340 .354 .132 .007 .304078	24318 .455159	0.272 0.178	-1.4 0.9	-1.2	0.9 A	4-
	78 .304035238	1.090 0.186	0.4 1.0	0.5	1.1 A	۱+
998 627484 8 8 144 .528 .528 .028 .229 .208 .007 .304 .304	04202341 .105	0.240 0.178	0.5 1.0	0.3	1.0 A	4-
999 636213 8 8 143 .378 .154 .231 .238 .378 .000 .318072	72179125 .318	1.071 0.182	0.3 1.0	0.0	1.0 A	4-
1000 639599 8 8 144 .771 .049 .771 .139 .042 .000 .372194	94 .372290072	-0.774 0.208	-0.4 1.0	-0.8	0.9 A	4-
1001 633503 8 8 144 .688 .049 .181 .083 .688 .000 .235264	64021159 .235	-0.546 0.191	1.0 1.1	1.6	1.2 A	۱+
1002 629857 8 4 144 .278 .104 .278 .438 .174 .007 .360105	05 .360235 .022	1.463 0.197	-0.2 1.0	-0.1	1.0 A	4-
1003 634156 8 8 145 .283 .283 .062 .166 .490 .000 .301 .301	01043219088	1.657 0.194	0.3 1.0	0.2	1.0 A	۱+
1004 639577 8 8 143 .594 .594 .259 .077 .070 .000 .503 .503	03261272236	0.075 0.181	-2.1 0.9	-2.0	0.9 A	۱+
1005 635385 8 8 144 .236 .076 .236 .243 .444 .000 .384123	23 .384115164	1.908 0.206	-0.7 0.9	-0.2	1.0 A	۱+
1006 635351 8 N/A 144 .097 .097 .431 .368 .097 .007 .142051	51204 .191 .142	2.883 0.297	0.0 1.0	0.3	1.1 A	۱+
1007 627964 8 8 144 .729 .729 .097 .076 .090 .007 .414 .414	14 404 242 450	-0.741 0.198	-0.9 0.9	-0.9	0.9 A	4-
1008 626786 8 8 145 .497 .035 .207 .255 .497 .007 .570294	14 181 242 158	0.607 0.178	-3.2 0.8	-3.1	0.8 A	4-
1009 636212 8 8 144 .924 .007 .042 .028 .924 .000 .232206		-2.143 0.319	0.0 1.0	-0.4	0.8 A	۱+
1010 639597 8 8 144 .750 .049 .132 .750 .063 .007 .417292	94302234 .570	-0.928 0.206	-0.5 0.9	-0.5	0.9 A	4-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

1011 63500 8	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1012 629860 8			Grade	Grade			. ,			. ,									in	in	out		/F	/B
1014 639408 8				_																				\vdash
1016 639508 8	-																							—
1015 635386 8																							Α-	
1016 635350 8																							_	
1017 628143 8	-																						A-	<u> </u>
1018	1016	635350					.313	.153			.007			038					0.7	1.1		1.1	A+	<u> </u>
1019 622816 EC EC 173 .509 .093 .139 .254 .509 .006 .415 .116 .255 .118 .415 0.496 0.163 .1.3 0.9 .0.4 1.0 A 1020 639932 EC EC 173 .231 .312 .110 .231 .335 .012 .269 .070 .110 .266 .145 1.804 0.189 0.1 1.0 0.3 1.0 A 1021 639920 EC EC EC 171 .515 .146 .123 .515 .211 .006 .503 .168 .283 .503 .165 .0573 0.168 .204 0.189 0.1 1.0 0.3 1.0 A 1022 634313 EC EC 173 .497 .075 .150 .254 .497 .023 .424 .146 .079 .199 .424 0.474 0.168 0.4 1.0 0.3 1.0 A 1023 633540 EC EC 172 .576 .227 .576 .070 .116 .012 .437 .204 .437 .151 .163 .0115 0.169 .0.7 1.0 .0.6 1.0 A 1024 622613 EC EC 173 .457 .121 .249 .457 .150 .023 .389 .147 .113 .389 .024 0.677 0.167 0.2 1.0 .0.1 1.0 A 1026 633971 EC EC 173 .515 .243 .515 .139 .081 .023 .248 .141 .248 .002 .125 0.449 0.166 .22 1.1 .25 1.2 A 1026 633931 EC EC 174 .626 .626 .149 .092 .092 .040 .468 .468 .150 .157 .153 .139 0.187 .034 .034 .102 .034	-	628143	8	8	145						.000					194		0.205	-1.2	0.9	-1.8		A-	
1020 639932 EC EC 173 231 312 110 231 335 012 269 0.70 -110 2.69 -1.45 1.804 0.189 0.1 1.0 0.3 1.0 0.4 1.0	1018	626785	8	8	143	.580	.580	.126	.063	.231	.000	.428	.428	446	211	030	0.140	0.180	-1.0	0.9	-1.1	0.9	C-	
1021 639920 EC EC 171 5.15 1.46 1.23 5.15 2.11 0.06 5.03 -1.68 2.283 5.03 -1.65 0.573 0.168 -2.0 0.9 -1.6 0.9 A	1019	622816	EC	EC	173	.509	.093	.139	.254	.509	.006	.415	116		118	.415	0.496	0.163	-1.3	0.9	-0.4	1.0	A-	
1022 634313 EC EC 173 .497 .075 .150 .254 .497 .023 .424 .146 .079 .199 .424 0.474 0.168 .0.4 1.0 0.3 1.0 A+ 1023 633540 EC EC 172 .576 .227 .576 .070 .116 .012 .437 .724 .437 .151 .163 0.115 0.169 .0.7 1.0 .0.6 1.0 A+ 1025 622126 EC EC 173 .457 .121 .249 .457 .151 .150 .033 .389 .147 .113 .389 .024 .0.677 0.167 0.2 1.0 .0.1 1.0 .0.1 1.0 A+ 1025 623126 EC EC EC 173 .515 .243 .515 .139 .081 .023 .248 .141 .248 .002 .125 0.449 0.166 .2.2 1.1 .2.5 1.2 A- 1026 639971 EC EC 174 .626 .626 .149 .092 .092 .004 .468 .468 .150 .177 .059 .0.227 .0.172 .1.4 .0.9 .1.6 .0.9 A- 1027 629853 EC EC EC 174 .253 .149 .253 .368 .213 .017 .353 .202 .353 .037 .113 .1930 0.187 .0.3 1.0 0.1 1.0 A+ 1028 630391 EC EC EC 174 .764 .764 .764 .121 .052 .058 .006 .342 .342 .085 .318 .067 -0.713 0.192 0.1 1.0 0.9 .1.3 0.8 B+ 1029 622815 EC EC 173 .347 .137 .112 .353 .006 .215 .215 .0.21 .148 .026 .1.252 0.171 1.4 1.1 1.2 1.1 A+ 1032 634349 EC EC 173 .480 .231 .173 .116 .480 .000 .239 .108 .065 .155 .239 0.688 0.165 .19 1.1 1.6 1.1 A+ 1033 633536 EC EC EC 174 .443 .052 .443 .218 .276 .012 .053 .133 .053 .154 .264 0.709 0.167 .57 1.4 .57 1.5 A+ 1034 .63659 EC EC .174 .454 .132 .454 .305 .092 .017 .394 .172 .334 .155 .458 .0.288 .181 .14 0.9 .1.6 0.1 1.0 .5 1.0 A+ 1034 .63659 EC EC .174 .454 .355 .355 .019 .101 .661 .035 .548 .174 .239 .145 .548 .0.288 .181 .14 0.9 .1.6 0.1 1.0 .5 1.0 A+ 1036 .63659 EC EC .173 .416 .416 .416 .655 .029 .035 .503 .327	1020	639932	EC	EC	173	.231	.312	.110	.231	.335	.012	.269	.070	110	.269	145	1.804	0.189	0.1	1.0	0.3	1.0	A+	
1023 633540 EC EC 172 .576 .227 .576 .707 .116 .012 .437 .204 .437 .151 .163 .0.115 0.169 .0.7 .1.0 .0.6 1.0 A+ 1024 .62613 EC EC 173 .457 .121 .249 .457 .150 .023 .389 .147 .113 .389 .024 .0.677 0.167 0.2 .1.0 .0.1 1.0 A+ 1025 .623126 EC EC 173 .515 .243 .515 .139 .081 .023 .248 .141 .248 .002 .125 0.449 0.166 .2.2 1.1 .2.5 1.2 A- 1026 .639971 EC EC 174 .626 .626 .149 .092 .092 .040 .468 .468 .150 .177 .059 -0.227 0.172 .1.4 .0.9 .1.6 .0.9 A- 1027 .629853 EC EC 174 .253 .149 .253 .368 .213 .017 .353 .202 .353 .037 .113 .1930 0.187 0.3 .0.0 .0.1 1.0 .4+ 1028 .639919 EC EC .174 .754 .058 .058 .006 .035 .490 .226 .499 .190 .132 .0.822 .0.196 .1.0 0.9 .1.3 0.88 B+ 1029 .62815 EC EC .174 .484 .212 .052 .058 .006 .342 .342 .085 .318 .067 -0.713 0.192 0.1 1.0 .0.4 1.1 A+ 1031 .639919 EC EC .173 .347 .347 .173 .121 .353 .006 .215 .215 .021 .148 .026 .1.52 0.171 .1.4 .1.1 .1.2 .1.1 A+ 1032 .634349 EC EC .174 .454 .132 .454 .305 .092 .017 .394 .135 .135 .058 .066 .155 .239 .0688 .0165 .1.9 .1.1 .1.6 .1.1 A+ 1033 .633336 EC EC .174 .454 .132 .454 .305 .092 .017 .394 .172 .394 .155 .107 .0.606 .0.166 .0.167 .5.7 .1.4 .5.7 .1.5 A+ 1034 .63659 EC EC .174 .454 .132 .454 .035 .092 .017 .394 .135 .313 .053 .154 .264 .0.709 .1.67 .1.6 .1.1 .1.5 .1.1 .1.6 .1.1 .1.5 .1.1 .1.6 .1.1 .3.4 .0.36 .33336 .2.16 .2.16 .2.16 .0.35 .3.35 .	1021	639920	EC	EC	171	.515	.146	.123	.515	.211	.006	.503	168	283	.503	165	0.573	0.168	-2.0	0.9	-1.6	0.9	A-	
1024 622613 EC EC 173 .457 .121 .249 .457 .150 .023 .389 .147 .113 .389 .024 0.677 0.167 0.2 1.0 -0.1 1.0 A+ 1025 623126 EC EC 174 .626 626 .149 .092 .092 .092 .048 .468 .458 .150 .017 .059 .0.227 0.172 .14 .0.9 .16 .0.9 .0.9 .0.10 .0.1 .	1022	634313	EC	EC	173	.497	.075	.150	.254	.497	.023	.424	146	079	199	.424	0.474	0.168	-0.4	1.0	-0.3	1.0	A+	
1025 623126 EC EC 173 .515 .243 .515 .139 .081 .023 .248 141 .248 .002 125 0.449 0.166 .22 .1.1 .2.5 1.2 A 1026 639971 EC EC .174 .626 .626 .149 .092 .092 .040 .468 .468 150 177 .059 .0.227 .0.172 .1.4 .0.9 .1.6 .0.9 A 1027 .0.92853 EC EC .174 .253 .149 .253 .368 .213 .017 .353 202 .353 .037 .113 .1.930 .0.187 .0.13 .1.0 .0.1 .1.0 A 1028 .630391 EC EC .173 .734 .127 .734 .058 .046 .035 .490 226 .490 190 .132 .0.822 .0.196 .1.0 .0.9 .1.3 .0.8 B 1029 .022815 EC EC .174 .764 .764 .764 .121 .0.52 .0.58 .0.66 .342 .342 .0.85 .318 .0.67 .0.713 .0.192 .0.1 .1.0 .0.4 .1.1 A 1031 .0.9919 EC EC .173 .347 .173 .121 .353 .006 .315 .0.21 .0.21 .0.21 .0.21 .0.21 .0.22 .0.21 .1.48 .0.26 .1.25 .0.711 .1.4 .1.1 .1.2 .1.1 A 1032 .634349 EC EC .173 .480 .231 .173 .116 .480 .000 .239 .1.08 .0.65 .155 .239 .0.688 .0.65 .1.55 .1.01 .1.4 .1.1	1023	633540	EC	EC	172	.576	.227	.576	.070	.116	.012	.437	204	.437	151	163	0.115	0.169	-0.7	1.0	-0.6	1.0	A+	l
1026 639971 EC EC 174 .626 .626 .149 .092 .092 .040 .468 .468 .150 .177 .059 .0.227 0.172 .1.4 0.9 .1.6 0.9 A 1027 629853 EC EC 174 .253 .149 .253 .368 .213 .017 .353 .202 .353 .037 .113 1.930 0.187 .0.3 1.0 0.1 1.0 A 1028 630391 EC EC 173 .734 .127 .734 .058 .046 .035 .490 .226 .490 .190 .132 .0.822 0.196 .1.0 0.9 .1.3 0.8 B 1029 622815 EC EC 174 .764 .764 .121 .052 .058 .006 .342 .085 .318 .067 -0.713 0.192 0.1 1.0 0.4 1.1 A 1130 639933 EC EC 173 .347 .347 .173 .121 .353 .006 .215 .215 .021 .148 .026 .1.252 0.171 1.4 1.1 1.2 1.1 A 1131 1.2 1.1 A 1132 .344 .348 .231 .173 .116 .480 .000 .239 .108 .065 .155 .239 0.688 0.165 1.9 1.1 1.6 1.1 A 1.1 .12 .1.1 A 1.3 .347 .347 .347 .348 .328 .276 .012 .053 .133 .053 .154 .264 0.709 0.167 5.7 1.4 5.7 1.5 A 1.034 632611 EC EC .174 .454 .132 .454 .305 .092 .017 .394 .172 .394 .155 .107 0.606 0.166 -0.1 1.0 0.9 .0.5 1.0 A 1.0 .0.5 .0	1024	622613	EC	EC	173	.457	.121	.249	.457	.150	.023	.389	147	113	.389	024	0.677	0.167	0.2	1.0	-0.1	1.0	A+	
1027 629853 EC EC 174 .253 .149 .253 .368 .213 .017 .353 .202 .353 .037 .113 1.930 0.187 -0.3 1.0 0.1 1.0 0.4 1.028 630391 EC EC 173 .734 .127 .734 .058 .046 .035 .490 .226 .490 190 132 -0.822 0.196 .1.0 0.9 -1.3 0.8 B+ 1.029 622815 EC EC 174 .764 .764 .121 .052 .058 .006 .342 .342 .085 .318 .067 -0.713 0.192 0.1 1.0 0.4 1.1 A+ 1.031 639919 EC EC 173 .347 .373 .121 .353 .006 .215 .215 .021 .148 .026 1.252 0.171 1.4 1.1 1.2 1.1 A+ 1.031 639919 EC EC 173 .480 .231 .173 .116 .480 .000 .239 .108 .065 .155 .239 0.688 0.165 1.9 1.1 1.6 1.1 A+ 1.032 634349 EC EC 174 .443 .052 .443 .218 .276 .012 .053 .133 .053 .154 .264 0.709 0.167 5.7 1.4 5.7 1.5 A+ 1.034 632611 EC EC 174 .661 .075 .109 .121 .661 .035 .548 .174 .239 .145 .548 -0.288 0.181 -1.4 0.9 -1.6 0.8 A+ 1.035 621166 EC EC 173 .486 .202 .139 .468 .168 .023 .338 .005 .221 .338 .007 .078 .078 0.611 0.169 1.6 1.1 5.1 1.5 1.0 8+ 1.036 630659 EC EC 173 .486 .202 .139 .468 .168 .012 .407 .186 .407 .084 .111 0.943 0.166 -1.1 0.9 -0.9 0.9 0.9 B+ 1.036 63092 EC EC EC 173 .335 .335 .121 .330 .197 .017 .354 .354 .090 .132 .044 .1216 0.171 -0.6 1.0 -0.5 1.0 A+ 1.036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .036 .037 .133 .068 .052 .270 .3214 .0073 -1.2 0.9 -1.5 0.9 .1.5 0.9 A+ 1.036 .03	1025	623126	EC	EC	173	.515	.243	.515	.139	.081	.023	.248	141	.248	.002	125	0.449	0.166	2.2	1.1	2.5	1.2	A-	
1028 630391 EC EC 173 .734 .127 .734 .058 .046 .035 .490 226 .490 190 132 0.822 .0.196 1.0 .0.9 1.3 .0.8 B+ .029 .02815 EC EC .174 .764 .764 .121 .052 .058 .006 .342 .342 0.85 318 0.67 0.713 .0.192 .0.1 .1.0 .0.4 .1.1 A+ .1.1 .1.2 .1.1 .4+ .1.1 .1.3 .1.1	1026	639971	EC	EC	174	.626	.626	.149	.092	.092	.040	.468	.468	150	177	059	-0.227	0.172	-1.4	0.9	-1.6	0.9	A-	
1029 622815 EC EC 174 .764 .764 .764 .121 .052 .058 .006 .342 .342 085 318 067 0713 .0.192 .0.1 1.0 0.4 1.1 A+ 1.030 639933 EC EC .173 .347 .347 .173 .121 .353 .006 .215 .215 021 148 026 .1.252 .0.171 1.4 .1.1 1.2 1.1 A+ 1.031 .03919 EC EC .173 .480 .231 .173 .116 .480 .000 .239 .108 065 155 .239 .0.688 .0.165 .1.9 .1.1 .1.6 .1.1 A+ .1.1 .1.2 .1.1 .4.1 .1.2 .1.1 .4.1 .0.31 .0.33 .3.353 .2.1 .3.34 .3.44 .3.52 .3.45 .3.05 .0.21 .0.53 .3.35 .1.33 .0.53 .1.54 .2.64 .0.709 .0.167 .5.7 .1.4 .5.7 .1.5 A+ .1.3 .3.4	1027	629853	EC	EC	174	.253	.149	.253	.368	.213	.017	.353	202	.353	.037	113	1.930	0.187	-0.3	1.0	0.1	1.0	A+	
1030 639933 EC EC 173 .347 .347 .173 .121 .353 .006 .215 .215 021 .148 026 1.252 0.171 1.4 1.1 1.2 1.1 A+ 1.031 639919 EC EC 173 .480 .231 .173 .116 .480 .000 .239 .108 065 155 .239 0.688 0.165 1.9 1.1 1.6 1.1 A+ 1.032 634349 EC EC 174 .443 .052 .443 .218 .276 .012 .053 133 .053 154 .264 0.709 0.167 5.7 1.4 5.7 1.5 A+ 1.033 633536 EC EC 174 .454 .132 .454 .305 .092 .017 .394 .172 .394 .155 .107 0.606 0.166 -0.1 1.0 .0.5 1.0 A+ 1.034 622611 EC EC 174 .661 .075 .109 .121 .661 .035 .548 174 239 145 .548 .0.288 0.181 .1-4 .0.9 .1-6 .0.8 A- 1.036 630659 EC EC 173 .468 .202 .139 .468 .168 .023 .338 .005 221 .338 .078 .0611 0.169 .1-1 0.943 0.166 .1-1 0.9 .0.9 .0.9 .0.9 B+ 1.036 630659 EC EC 173 .410 .249 .410 .162 .168 .012 .407 .186 .407 .0.84 .111 0.943 0.166 .1-1 0.9 .0.9 .0.9 .0.9 B+ 1.036 630392 EC EC .173 .335 .335 .121 .330 .197 .017 .354 .354 .0.90 .132 .004 .1216 0.171 -0.6 .10 -0.5 1.0 A- 1.038 630392 EC EC .171 .655 .140 .140 .655 .029 .035 .503 .277 .227 .503 .119 -0.226 0.181 -1.8 0.9 -1.8 0.8 A+ 1.038 630659 EC EC .2595 .086 .825 .050 .030 .086 .009 .270 .033 .068 .052 .270 .3.214 .0.073 -1.2 0.9 -1.5 0.9 A+ A .040 636061 EC EC .2595 .530 .217 .144 .094 .530 .015 .367 .155 .058 .153 .367 .0.355 .0.047 -4.5 0.9 -5.0 0.8 A- A .044 .044 .044 .044 .044 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .104 .105 .104 .104 .104 .105 .104 .104 .104 .104 .104 .104 .104	1028	630391	EC	EC	173	.734	.127	.734	.058	.046	.035	.490	226	.490	190	132	-0.822	0.196	-1.0	0.9	-1.3	8.0	B+	
1031 639919 EC EC 173 .480 .231 .173 .116 .480 .000 .239 .108 .065 .155 .239 0.688 0.165 1.9 1.1 1.6 1.1 A+ 1032 634349 EC EC 174 .443 .052 .443 .218 .276 .012 .053 .133 .053 .154 .264 0.709 0.167 5.7 1.4 5.7 1.5 A+ 1033 633536 EC EC 174 .454 .132 .454 .305 .092 .017 .394 .172 .394 .155 .107 0.606 0.166 -0.1 1.0 -0.5 1.0 A+ 1034 622611 EC EC 174 .661 .075 .109 .121 .661 .035 .548 .174 .239 .145 .548 -0.288 0.181 -1.4 0.9 -1.6 0.8 A+ 1035 621166 EC EC 173 .468 .202 .139 .468 .168 .023 .338 .005 .221 .338 .078 0.611 0.169 1.6 1.1 1.5 1.1 B+ 1036 630659 EC EC 173 .410 .249 .410 .162 .168 .012 .407 .186 .407 .084 .111 0.943 0.166 -1.1 0.9 -0.9 0.9 B+ 1037 629822 EC EC 173 .335 .335 .121 .330 .197 .017 .354 .354 .090 .132 .044 .1216 0.171 -0.6 1.0 -0.5 1.0 A+ 1038 630392 EC EC EC 171 .655 .400 .655 .029 .035 .503 .227 .227 .503 .119 -0.226 0.181 -1.8 0.9 -1.8 0.9 -1.8 0.8 A+ 1040 636061 EC EC .2595 .086 .825 .050 .030 .086 .009 .270 .033 .068 .052 .270 .3214 .0073 -1.2 0.9 -1.5 0.9 -1.5 0.9 A+ 1041 639964 EC EC .2595 .530 .217 .144 .094 .530 .015 .367 .155 .058 .153 .367 .0.525 .0047 -1.5 0.9 -5.0 0.8 A+ 1044 633537 EC EC .2595 .621 .621 .114 .126 .121 .017 .470	1029	622815	EC	EC	174	.764	.764	.121	.052	.058	.006	.342	.342	085	318	067	-0.713	0.192	0.1	1.0	0.4	1.1	A+	
1032 634349 EC EC 174 .443 .052 .443 .218 .276 .012 .053 133 .053 154 .264 0.709 0.167 5.7 1.4 5.7 1.5 A+ 1033 633536 EC EC 174 .454 .132 .454 .305 .092 .017 .394 155 107 0.606 0.166 -0.1 1.0 -0.5 1.0 A+ 1034 622611 EC EC 174 .661 .075 .109 .121 .661 .035 .548 174 239 145 .548 -0.288 0.181 14 0.9 -1.6 0.8 A- 1035 621166 EC EC 173 .468 .202 .139 .468 .168 .023 .338 .005 221 .338 078 0.611 0.169 1.6 1.1 1.5 1.1 8.9 <td< td=""><td>1030</td><td>639933</td><td>EC</td><td>EC</td><td>173</td><td>.347</td><td>.347</td><td>.173</td><td>.121</td><td>.353</td><td>.006</td><td>.215</td><td>.215</td><td>021</td><td>148</td><td>026</td><td>1.252</td><td>0.171</td><td>1.4</td><td>1.1</td><td>1.2</td><td>1.1</td><td>A+</td><td></td></td<>	1030	639933	EC	EC	173	.347	.347	.173	.121	.353	.006	.215	.215	021	148	026	1.252	0.171	1.4	1.1	1.2	1.1	A+	
1033 633536 EC EC 174 .454 .132 .454 .305 .092 .017 .394 172 .394 155 107 0.606 0.166 .0-1 1.0 .0-5 1.0 A+	1031	639919	EC	EC	173	.480	.231	.173	.116	.480	.000	.239	108	065	155	.239	0.688	0.165	1.9	1.1	1.6	1.1	A+	
1034 622611 EC EC 174 .661 .075 .109 .121 .661 .035 .548 174 239 145 .548 -0.288 0.181 -1.4 0.9 -1.6 0.8 A-	1032	634349	EC	EC	174	.443	.052	.443	.218	.276	.012	.053	133	.053	154	.264	0.709	0.167	5.7	1.4	5.7	1.5	A+	
1035 621166 EC EC 173 .468 .202 .139 .468 .168 .023 .338 .005 221 .338 078 0.611 0.169 1.6 1.1 1.5 1.1 B- 1036 630659 EC EC EC 173 .410 .249 .410 .162 .168 .012 .407 186 .407 084 111 0.943 0.166 -1.1 0.9 -0.9 0.9 B+ 1037 629822 EC EC EC 171 .655 .140 .140 .655 .029 .035 .503 277 227 .503 119 -0.226 0.181 -1.8 0.9 -1.8 0.8 A+ 1038 630392 EC EC EC 171 .655 .140 .140 .655 .029 .035 .503 277 227 .503 119 -0.226 0.181 <	1033	633536	EC	EC	174	.454	.132	.454	.305	.092	.017	.394	172	.394	155	107	0.606	0.166	-0.1	1.0	-0.5	1.0	A+	
1036 630659 EC EC 173 .410 .249 .410 .162 .168 .012 .407 186 .407 084 111 0.943 0.166 -1.1 0.9 -0.9 0.9 B+ 1037 629822 EC EC 173 .335 .335 .121 .330 .197 .017 .354 .354 090 132 044 1.216 0.171 -0.6 1.0 -0.55 1.0 A- 1038 630392 EC EC EC 171 .655 .140 .140 .655 .029 .035 .503 277 227 .503 119 -0.226 0.181 -1.8 0.9 -1.8 0.8 A+ 1039 628028 EC EC EC 2595 .086 .825 .050 .030 .086 .009 .270 033 068 052 .270 3.214 0.073 -1.2	1034	622611	EC	EC	174	.661	.075	.109	.121	.661	.035	.548	174	239	145	.548	-0.288	0.181	-1.4	0.9	-1.6	0.8	A-	
1037 629822 EC EC 173 .335 .335 .121 .330 .197 .017 .354 .354 090 132 044 1.216 0.171 -0.6 1.0 -0.5 1.0 A- 1038 630392 EC EC 171 .655 .140 .140 .655 .029 .035 .503 277 227 .503 119 -0.226 0.181 -1.8 0.9 -1.8 0.8 A+ 1039 628028 EC EC 2595 .086 .825 .050 .030 .086 .009 .270 033 068 052 .270 3.214 0.073 -1.2 0.9 -1.5 0.9 A+ A- 1040 636061 EC EC 2595 .706 .091 .108 .084 .011 .460 .460 200 177 159 -0.535 0.047 -4.5 0.9 -5.0	1035	621166	EC	EC	173	.468	.202	.139	.468	.168	.023	.338	.005	221	.338	078	0.611	0.169	1.6	1.1	1.5	1.1	B-	
1038 630392 EC EC 171 .655 .140 .140 .655 .029 .035 .503 277 227 .503 119 -0.226 0.181 -1.8 0.9 -1.8 0.8 A+ 1039 628028 EC EC 2595 .086 .825 .050 .030 .086 .009 .270 033 068 052 .270 3.214 0.073 -1.2 0.9 -1.5 0.9 A+ A- 1040 636061 EC EC 2595 .706 .706 .091 .108 .084 .011 .460 .460 220 177 159 -0.535 0.047 -4.5 0.9 -5.0 0.8 A- A 1041 639964 EC EC 2595 .530 .217 .144 .094 .530 .015 .367 155 058 153 .367 0.352 0.043 1.3	1036	630659	EC	EC	173	.410	.249	.410	.162	.168	.012	.407	186	.407	084	111	0.943	0.166	-1.1	0.9	-0.9	0.9	B+	
1039 628028 EC EC 2595 .086 .825 .050 .030 .086 .009 .270 033 068 052 .270 3.214 0.073 -1.2 0.9 -1.5 0.9 A+ A+ 1040 636061 EC EC 2595 .706 .706 .091 .108 .084 .011 .460 .460 220 177 159 -0.535 0.047 -4.5 0.9 -5.0 0.8 A- A 1041 639964 EC EC 2595 .530 .217 .144 .094 .530 .015 .367 155 058 153 .367 0.352 0.043 1.3 1.0 1.5 1.0 A+ A 1042 640040 EC EC 2595 .925 .026 .015 .020 .925 .014 .433 160 125 133 .433 -2.531 0.085	1037	629822	EC	EC	173	.335	.335	.121	.330	.197	.017	.354	.354	090	132	044	1.216	0.171	-0.6	1.0	-0.5	1.0	A-	
1040 636061 EC EC 2595 .706 .706 .091 .108 .084 .011 .460 .460 220 177 159 -0.535 0.047 -4.5 0.9 -5.0 0.8 A- A 1041 639964 EC EC 2595 .530 .217 .144 .094 .530 .015 .367 155 058 153 .367 0.352 0.043 1.3 1.0 1.5 1.0 A+ A 1042 640040 EC EC 2595 .925 .026 .015 .020 .925 .014 .433 160 125 133 .433 -2.531 0.085 -0.9 0.9 -4.0 0.6 A+ A 1043 629820 EC EC 2595 .621 .621 .114 .126 .121 .017 .470 .470 196 204 117 -0.105 0.044	1038	630392	EC	EC	171	.655	.140	.140	.655	.029	.035	.503	277	227	.503	119	-0.226	0.181	-1.8	0.9	-1.8	0.8	A+	
1041 639964 EC EC 2595 .530 .217 .144 .094 .530 .015 .367 155 058 153 .367 0.352 0.043 1.3 1.0 1.5 1.0 A+ A+ 1042 640040 EC EC 2595 .925 .026 .015 .020 .925 .014 .433 160 125 133 .433 -2.531 0.085 -0.9 0.9 -4.0 0.6 A+ A 1043 629820 EC EC 2595 .621 .621 .114 .126 .121 .017 .470 .470 196 204 117 -0.105 0.044 -5.2 0.9 -5.2 0.9 A+ C 1044 633537 EC EC 2595 .278 .293 .221 .278 .188 .020 .302 024 088 .302 062 1.620 0.047 0.6 1.0 4.1 1.1 A+ B+	1039	628028	EC	EC	2595	.086	.825	.050	.030	.086	.009	.270	033	068	052	.270	3.214	0.073	-1.2	0.9	-1.5	0.9	A+	A+
1042 640040 EC EC 2595 .925 .026 .015 .020 .925 .014 .433 160 125 133 .433 -2.531 0.085 -0.9 0.9 -4.0 0.6 A+ A+ 1043 629820 EC EC 2595 .621 .621 .114 .126 .121 .017 .470 .470 196 204 117 -0.105 0.044 -5.2 0.9 -5.2 0.9 -5.2 0.9 A+ C 1044 633537 EC EC 2595 .278 .293 .221 .278 .188 .020 .302 024 088 .302 062 1.620 0.047 0.6 1.0 4.1 1.1 A+ B+	1040	636061	EC	EC	2595	.706	.706	.091	.108	.084	.011	.460	.460	220	177	159	-0.535	0.047	-4.5	0.9	-5.0	0.8	A-	A-
1043 629820 EC EC 2595 .621 .621 .114 .126 .121 .017 .470 .470196204117 -0.105 0.044 -5.2 0.9 -5.2 0.9 A+ C 1044 633537 EC EC 2595 .278 .293 .221 .278 .188 .020 .302024088 .302062 1.620 0.047 0.6 1.0 4.1 1.1 A+ B-	1041	639964	EC	EC	2595	.530	.217	.144	.094	.530	.015	.367	155	058	153	.367	0.352	0.043	1.3	1.0	1.5	1.0	A+	A+
1043 629820 EC EC 2595 .621 .621 .114 .126 .121 .017 .470 .470 196 204 117 -0.105 0.044 -5.2 0.9 -5.2 0.9 A+ C 1044 633537 EC EC 2595 .278 .293 .221 .278 .188 .020 .302 024 088 .302 062 1.620 0.047 0.6 1.0 4.1 1.1 A+ B-	1042	640040	EC	EC	2595	.925	.026	.015	.020	.925	.014	.433	160	125	133	.433	-2.531	0.085	-0.9	0.9	-4.0	0.6	A+	A-
1044 633537 EC EC 2595 .278 .293 .221 .278 .188 .020 .302024088 .302062 1.620 0.047 0.6 1.0 4.1 1.1 A+ B-	1043	629820	EC	EC	2595	.621	.621	.114	.126	.121	.017	.470	.470	196		117	-0.105	0.044	-5.2	0.9	-5.2	0.9	A+	C-
	1044	633537	EC	EC				.221			.020	.302	024		.302	062	1.620	0.047		1.0	4.1		A+	B+
1045 639959 EC EC 2595 .662 .115 .662 .115 .085 .023 .481 154 .481 223 149 -0.340 0.046 -5.2 0.9 -4.8 0.9 A- A					2595			.662											-5.2					A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	74	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
1046	635484	EC	EC	2595	.558	.155	.148	.558	.115	.024	.417	147	121	.417	132	0.192	0.043	-1.5	1.0	-1.8	1.0	A+	A+
1047	629833	EC	EC	2595	.289	.174	.289	.278	.229	.030	.168	.023	.168	116	.088	1.534	0.047	8.0	1.2	9.6	1.3	A-	A-
1048	635741	EC	EC	2595	.600	.118	.131	.600	.121	.031	.410	122	182	.410	093	-0.036	0.044	-0.7	1.0	-1.0	1.0	A+	A-
1049	639954	EC	EC	173	.728	.087	.728	.069	.104	.012	.559	246	.559	165	276	-0.894	0.189	-2.3	0.8	-2.5	0.6	A-	
1050	635482	EC	EC	173	.515	.173	.168	.515	.127	.017	.357	111	134	.357	059	0.280	0.169	0.4	1.0	0.3	1.0	A-	1
1051	636019	EC	EC	173	.723	.098	.121	.723	.046	.012	.513	222	191	.513	227	-0.859	0.188	-1.8	0.8	-2.0	0.7	A+	
1052	629825	EC	EC	173	.416	.260	.416	.220	.081	.023	.315	060	.315	059	087	0.705	0.171	2.1	1.1	1.4	1.1	A+	1
1053	640020	EC	EC	173	.422	.150	.364	.422	.035	.029	.453	161	119	.453	066	0.671	0.171	-1.7	0.9	-1.1	0.9	A+	
1054	640105	EC	EC	173	.272	.272	.289	.272	.139	.029	.260	.260	026	061	.059	1.491	0.187	1.4	1.1	2.0	1.3	B-	1
1055	635947	EC	EC	173	.335	.249	.254	.335	.133	.029	.228	.089	126	.228	.016	1.126	0.178	2.7	1.2	2.6	1.3	A-	
1056	636051	EC	EC	173	.121	.133	.121	.150	.567	.029	.171	153	.171	230	.353	2.778	0.258	0.1	1.0	1.3	1.4	A-	
1057	640015	EC	EC	173	.630	.093	.116	.630	.127	.035	.500	167	138	.500	131	-0.369	0.177	-1.4	0.9	-1.7	0.8	A+	
1058	640036	EC	EC	173	.549	.549	.139	.156	.116	.041	.573	.573	205	197	113	0.010	0.172	-2.9	0.8	-2.5	0.8	A+	į
1059	639990	EC	EC	173	.711	.104	.093	.711	.058	.035	.585	169	272	.585	125	-0.874	0.191	-2.4	0.8	-1.9	0.7	A+	
1060	639994	EC	EC	173	.335	.249	.168	.214	.335	.035	.220	053	027	.086	.220	1.123	0.178	2.3	1.2	2.6	1.3	A+	
1061	636018	EC	EC	173	.578	.121	.098	.578	.168	.035	.501	176	162	.501	097	-0.123	0.173	-1.3	0.9	-1.4	0.9	B+	
1062	621160	EC	EC	173	.225	.289	.225	.116	.324	.046	.166	.161	.166	113	.004	1.810	0.200	1.4	1.2	2.7	1.5	A+	
1063	629856	EC	EC	173	.260	.283	.260	.301	.116	.041	.103	008	.103	.096	.067	1.624	0.192	2.4	1.3	2.8	1.5	A-	
1064	639956	EC	EC	171	.275	.146	.275	.328	.234	.018	.194	207	.194	.209	062	1.675	0.186	1.7	1.2	1.3	1.2	A-	į
1065	636060	EC	EC	171	.456	.456	.094	.228	.199	.023	.466	.466	035	206	110	0.692	0.168	-2.3	0.9	-2.1	0.9	A-	
1066	636024	EC	EC	171	.696	.140	.696	.029	.111	.023	.380	088	.380	195	065	-0.491	0.182	0.0	1.0	-0.3	1.0	A-	
1067	639997	EC	EC	171	.637	.035	.064	.637	.240	.023	.432	065	168	.432	148	-0.172	0.175	-1.0	0.9	-1.1	0.9	A+	
1068	639992	EC	EC	171	.556	.368	.053	.556	.000	.023	.240	.049	230	.240	.000	0.211	0.169	2.3	1.1	2.0	1.2	A+	
1069	638834	EC	EC	171	.415	.111	.281	.415	.175	.018	.334	182	.045	.334	111	0.929	0.170	0.8	1.1	0.8	1.1	B+	
1070	630714	EC	EC	171	.532	.059	.532	.135	.257	.018	.384	075	.384	154	083	0.364	0.168	0.1	1.0	0.2	1.0	A+	
1071	636052	EC	EC	171	.444	.117	.199	.444	.222	.018	.321	027	021	.321	137	0.786	0.168	1.1	1.1	1.0	1.1	A-	
1072	640016	EC	EC	171	.737	.164	.041	.041	.737	.018	.415	082	171	166	.415	-0.711	0.189	-0.3	1.0	-0.7	0.9	A-	
1073	640037	EC	EC	171	.801	.053	.029	.094	.801	.023	.468	166	097	134	.468	-1.168	0.211	-0.2	1.0	-0.9	8.0	A+	
1074	639909	EC	EC	171	.866	.035	.866	.018	.059	.023	.434	128	.434	087	080	-1.748	0.252	-0.2	1.0	-0.3	0.9	A+	
1075	639931	EC	EC	171	.175	.175	.304	.263	.234	.023	.146	.146	.053	.005	.029	2.301	0.213	1.0	1.1	1.3	1.3	A+	
1076	635485	EC	EC	171	.281	.234	.211	.281	.246	.029	.255	085	043	.255	.092	1.599	0.184	0.6	1.1	0.9	1.1	A-	
1077	621389	EC	EC	171	.444	.105	.444	.363	.064	.023	.423	062	.423	187	031	0.782	0.168	-1.0	0.9	-0.9	0.9	B-	
1078	630427	EC	EC	171	.339	.269	.175	.193	.339	.023	.331	030	131	.002	.331	1.313	0.176	0.0	1.0	-0.4	1.0	B-	
1079	639940	EC	EC	173	.515	.243	.515	.035	.208	.000	.174	220	.174	067	.049	0.470	0.163	2.7	1.1	3.5	1.3	A-	
1080	635486	EC	EC	173	.486	.121	.486	.243	.139	.012	.366	229	.366	078	103	0.595	0.163	-0.7	1.0	-0.7	1.0	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1001		Grade	Grade		0.1=	. ,			• •								0.000	in	in	out	out	/F	/B
1081	640072	EC	EC	173	.815	.052	.069	.815	.058	.006	.369	086	180	.369	190	-1.155	0.208	-0.2	1.0	-0.4	0.9	B+	
1082	640071	EC	EC	173	.653	.029	.272	.041	.653	.006	.449	204	227	225	.449	-0.189	0.170	-2.0	0.9	-1.3	0.9	A+	
1083	625530	EC	EC	173	.624	.041	.272	.624	.058	.006	.220	086	056	.220	132	-0.046	0.168	1.6	1.1	1.5	1.1	A-	
1084	640085	EC	EC	173	.642	.168	.642	.104	.075	.012	.305	028	.305	244	088	-0.147	0.170	0.8	1.1	0.8	1.1	B+	
1085	640001	EC	EC	173	.405	.439	.041	.098	.405	.017	.273	021	211	131	.273	0.959	0.166	1.0	1.1	0.5	1.0	B+	
1086	640087	EC	EC	173	.347	.046	.405	.347	.191	.012	.191	212	003	.191	.006	1.254	0.171	2.2	1.2	1.6	1.2	A-	
1087	638881	EC	EC	173	.312	.312	.243	.254	.173	.017	.256	.256	128	060	.036	1.459	0.176	0.6	1.0	1.3	1.1	A+	
1088	635583	EC	EC	173	.561	.116	.202	.561	.110	.012	.281	104	103	.281	055	0.243	0.165	1.2	1.1	1.3	1.1	Α+	
1089	630715	EC	EC	173	.434	.104	.214	.434	.237	.012	.185	.043	023	.185	112	0.861	0.165	2.4	1.1	2.2	1.2	A+	
1090	636053	EC	EC	173	.399	.179	.399	.231	.179	.012	.276	121	.276	101	.003	0.998	0.166	1.0	1.1	1.3	1.1	B-	
1091	639969	EC	EC	173	.480	.197	.480	.208	.104	.012	.343	151	.343	077	106	0.618	0.163	0.2	1.0	0.5	1.0	A+	
1092	640018	EC	EC	173	.809	.809	.104	.052	.023	.012	.453	.453	240	221	052	-1.146	0.209	-0.7	0.9	-1.5	0.7	A+	
1093	635877	EC	EC	173	.480	.220	.098	.191	.480	.012	.516	182	140	236	.516	0.618	0.163	-3.4	0.8	-2.8	0.8	C+	
1094	640025	EC	EC	173	.844	.844	.017	.052	.064	.023	.425	.425	133	193	106	-1.497	0.235	-0.3	0.9	-0.8	8.0	A-	
1095	629818	EC	EC	173	.422	.098	.087	.382	.422	.012	.418	170	101	164	.418	0.888	0.165	-1.5	0.9	-0.4	1.0	A-	
1096	639928	EC	EC	173	.358	.358	.214	.225	.191	.012	.274	.274	160	099	.058	1.225	0.170	0.6	1.0	0.6	1.1	A+	
1097	621165	EC	EC	173	.260	.168	.318	.231	.260	.023	.294	135	.047	121	.294	1.709	0.185	0.2	1.0	0.9	1.1	A+	
1098	640092	EC	EC	173	.434	.162	.185	.434	.191	.029	.294	032	168	.294	022	0.832	0.166	0.8	1.0	0.8	1.1	B+	
1099	628027	EC	EC	173	.272	.260	.249	.272	.202	.017	.299	139	034	.299	031	1.642	0.182	0.0	1.0	0.9	1.1	C-	
1100	621157	EC	EC	173	.451	.179	.451	.156	.197	.017	.334	080	.334	123	114	0.734	0.164	0.3	1.0	0.4	1.0	A-	
1101	630428	EC	EC	173	.278	.278	.133	.387	.185	.017	.458	.458	167	165	059	1.642	0.182	-1.8	0.9	-1.8	8.0	A-	
1102	639953	EC	EC	174	.460	.460	.477	.012	.046	.006	.337	.337	202	146	095	0.857	0.165	0.9	1.1	0.5	1.0	A-	
1103	629917	EC	EC	174	.575	.224	.138	.575	.058	.006	.400	199	169	.400	107	0.311	0.166	-0.8	1.0	0.2	1.0	A+	
1104	640078	EC	EC	174	.575	.264	.575	.121	.035	.006	.410	200	.410	119	244	0.311	0.166	-0.3	1.0	-0.9	0.9	A+	
1105	638882	EC	EC	174	.431	.161	.293	.109	.431	.006	.414	273	095	095	.414	0.994	0.166	-0.7	1.0	-0.7	0.9	B+	
1106	636006	EC	EC	174	.615	.052	.293	.035	.615	.006	.242	214	030	138	.242	0.114	0.169	2.0	1.1	2.2	1.2	A-	
1107	639970	EC	EC	174	.828	.828	.103	.040	.017	.012	.402	.402	202	118	287	-1.207	0.218	-0.7	0.9	-0.4	0.9	A-	
1108	640002	EC	EC	174	.489	.069	.098	.333	.489	.012	.518	199	238	233	.518	0.702	0.165	-3.1	0.8	-2.4	0.8	A-	
1109	640096	EC	EC	174	.569	.138	.569	.247	.040	.006	.299	143	.299	138	041	0.338	0.166	1.5	1.1	1.0	1.1	A+	
1110	635988	EC	EC	174	.333	.253	.184	.213	.333	.017	.245	044	128	.021	.245	1.479	0.174	1.9	1.1	1.3	1.1	B-	
1111	635586	EC	EC	174	.845	.023	.086	.845	.040	.006	.340	216	016	.340	278	-1.309	0.224	-0.2	1.0	1.0	1.2	A+	
1112	629851	EC	EC	174	.598	.075	.598	.155	.167	.006	.427	224	.427	217	108	0.199	0.168	-0.7	1.0	-0.9	0.9	A-	
1113	640093	EC	EC	174	.672	.672	.178	.092	.052	.006	.523	.523	235	276	200	-0.181	0.175	-2.4	0.8	-1.9	0.8	A+	
1114	640091	EC	EC	174	.816	.103	.816	.063	.012	.006	.443	263	.443	203	099	-1.075	0.210	-0.8	0.9	-0.6	0.9	A-	
1115	640024	EC	EC	174	.897	.017	.052	.897	.029	.006	.510	130	274	.510	276	-1.839	0.266	-0.9	0.8	-2.0	0.5	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

-	625507 639900	Grade	Grade	N			P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	_		MS-	М	W
-					PVal	P(A)			` .									in	in	out	out	/F	/B
1117 6	620000	EC	EC	174	.379	.132	.328	.155	.379	.006	.447	107	139	232	.447	1.248	0.169	-1.3	0.9	-0.9	0.9	A-	
		EC	EC	174	.276	.126	.333	.276	.241	.023	.316	093	081	.316	049	1.781	0.183	0.2	1.0	0.9	1.1	A+	ļ
1118 6	640043	EC	EC	174	.517	.517	.092	.052	.322	.017	.342	.342	173	228	036	0.570	0.165	0.9	1.1	0.6	1.1	A+	ı———
	629819	EC	EC	174	.328	.161	.328	.247	.247	.017	.203	162	.203	068	.109	1.504	0.175	1.9	1.1	3.0	1.4	A+	
	625533	EC	EC	174	.299	.167	.230	.287	.299	.017	.419	105	071	154	.419	1.661	0.179	-0.9	0.9	-0.7	0.9	B-	
	639929	EC	EC	174	.178	.253	.213	.178	.339	.017	.096	041	.034	.096	.043	2.442	0.211	1.6	1.2	2.3	1.5	A-	
1122 6	635948	EC	EC	174	.276	.126	.253	.276	.328	.017	.284	088	078	.284	023	1.793	0.183	0.6	1.1	1.4	1.2	A-	
1123 6	636025	EC	EC	174	.218	.310	.236	.213	.218	.023	.246	010	.036	153	.246	2.139	0.197	0.7	1.1	1.3	1.2	A-	
1124 6	635739	EC	EC	174	.264	.287	.149	.264	.276	.023	.302	073	083	.302	039	1.852	0.185	0.5	1.0	8.0	1.1	A-	
1125 6	630652	EC	EC	173	.780	.780	.029	.121	.069	.000	.331	.331	067	187	256	-0.964	0.193	0.0	1.0	0.1	1.0	A+	į.
1126 6	639946	EC	EC	173	.254	.694	.254	.017	.035	.000	.168	053	.168	115	185	1.667	0.184	0.9	1.1	0.7	1.1	A-	
1127 6	640090	EC	EC	173	.445	.023	.266	.445	.260	.006	.261	154	140	.261	024	0.708	0.162	1.2	1.1	1.1	1.1	A+	
1128 6	635580	EC	EC	173	.815	.133	.029	.017	.815	.006	.449	256	202	147	.449	-1.202	0.206	-1.1	0.9	-1.8	0.7	A+	
1129 6	629852	EC	EC	173	.254	.254	.121	.185	.428	.012	.249	.249	119	003	026	1.663	0.184	0.3	1.0	8.0	1.1	A-	
1130 6	639972	EC	EC	173	.526	.104	.526	.127	.231	.012	.260	120	.260	066	038	0.332	0.162	1.3	1.1	1.6	1.1	A-	
1131 6	640104	EC	EC	173	.509	.197	.202	.509	.081	.012	.416	133	161	.416	127	0.411	0.162	-1.4	0.9	-1.6	0.9	A-	
1132 6	622423	EC	EC	173	.491	.179	.491	.225	.093	.012	.331	054	.331	197	025	0.490	0.162	0.2	1.0	0.2	1.0	A+	
1133 6	640089	EC	EC	173	.393	.104	.353	.393	.133	.017	.223	180	.093	.223	117	0.934	0.166	1.5	1.1	1.8	1.1	B+	
1134 6	635587	EC	EC	173	.630	.035	.630	.052	.272	.012	.423	169	.423	189	170	-0.155	0.168	-1.1	0.9	-1.2	0.9	A-	
1135 6	640008	EC	EC	173	.497	.225	.173	.497	.093	.012	.279	.105	225	.279	148	0.463	0.162	1.1	1.1	1.3	1.1	A+	
1136 6	630395	EC	EC	173	.688	.173	.087	.035	.688	.017	.457	136	207	221	.457	-0.465	0.176	-1.3	0.9	-1.5	0.8	A+	
1137 6	640102	EC	EC	173	.335	.335	.145	.173	.335	.012	.325	.089	183	200	.325	1.225	0.170	-0.1	1.0	-0.1	1.0	B+	
1138 6	640026	EC	EC	173	.902	.046	.902	.035	.000	.017	.422	160	.422	211	.000	-2.152	0.285	-0.2	0.9	-1.2	0.6	B+	
1139 6	628030	EC	EC	173	.231	.145	.405	.208	.231	.012	.310	133	.067	151	.310	1.802	0.189	-0.3	1.0	-0.1	1.0	A-	
1140 6	639901	EC	EC	173	.243	.243	.162	.370	.214	.012	.239	.239	011	081	009	1.732	0.186	0.2	1.0	1.1	1.2	A+	
1141 6	622418	EC	EC	173	.324	.145	.312	.324	.202	.017	.129	.048	.016	.129	063	1.278	0.172	2.5	1.2	1.9	1.2	A+	
1142 6	629834	EC	EC	173	.214	.208	.353	.214	.214	.012	.332	078	088	016	.332	1.913	0.194	-0.7	0.9	0.1	1.0	B-	
1143 6	639930	EC	EC	173	.335	.358	.335	.156	.127	.023	.156	.027	.156	043	031	1.209	0.171	2.0	1.1	2.2	1.2	A+	
1144 6	630297	EC	EC	173	.353	.116	.231	.353	.283	.017	.121	117	.096	.121	007	1.129	0.169	2.6	1.2	2.9	1.3	A-	
1145 6	622608	EC	EC	173	.543	.543	.127	.179	.133	.017	.451	.451	134	111	233	0.238	0.163	-2.0	0.9	-1.9	0.9	B+	
1146 6	621391	EC	EC	173	.295	.127	.266	.295	.295	.017	.378	.020	163	107	.378	1.428	0.176	-1.0	0.9	-0.5	0.9	A+	
1147 6	635888	EC	EC	173	.278	.289	.278	.306	.098	.029	.237	053	.237	.026	119	1.505	0.180	0.7	1.1	0.8	1.1	A+	
1148 6	639938	EC	EC	173	.763	.763	.052	.058	.121	.006	.391	.391	230	204	105	-0.771	0.192	-0.9	0.9	-1.1	0.8	A+	
1149 6	639947	EC	EC	173	.428	.202	.046	.318	.428	.006	.375	121	234	117	.375	0.854	0.166	-0.9	1.0	-0.6	1.0	A-	
1150 6	640098	EC	EC	173	.659	.220	.052	.659	.064	.006	.342	126	173	.342	155	-0.240	0.174	0.2	1.0	0.0	1.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1151	C2C0E0	Grade	Grade	172	000	000		462	000		004					2.617	0.222	in	in	out	out	/F	/B
1151	636058	EC	EC	173	.069	.069	.387	.462	.069	.012	.094	052	.338	280	.094	3.617	0.333	0.2	1.0	-0.1	0.9	A-	
1152	630381	EC	EC	173	.838	.064	.052	.838	.041	.006	.427	241	228	.427	071	-1.419	0.228	-0.3	1.0	-0.9	0.8	Α-	
1153	639973	EC	EC	173	.688	.093	.688	.093	.116	.012	.465	169	.465	204	215	-0.446	0.181	-1.2	0.9	-1.3	0.9	A-	
1154 1155	640009	EC EC	EC EC	173 173	.451 .353	.214	.185	.451	.145	.006	.462	036	204 .203	.462	291 200	0.771	0.165 0.171	-2.0	0.9	-2.1 2.0	0.9	A-	
	622433	EC				.318		.191		.006		.160		178	_	1.222		1.7	1.1		1.2	Α-	$\vdash \vdash \vdash$
1156	628250	_	EC	173	.538	.093	.208	.538	.150	.012	.285	090	127	.285	074	0.323	0.166	1.5	1.1	1.3	1.1	A+	
1157	635588	EC	EC	173	.734	.116	.734	.098	.041	.012	.380	136	.380	194	123	-0.730	0.190	0.3	1.0	-0.4	0.9	A+	
1158	630394	EC	EC	173	.538	.272	.093	.538	.087	.012	.443	229	045	.443	226	0.342	0.166	-1.5	0.9	-1.7	0.9	B+	
1159	634315	EC	EC	173	.249	.093	.249	.561	.087	.012	.074	095	.074	.105	049	1.816	0.188	2.0	1.2	3.4	1.5	Α-	
1160	640061	EC	EC	173	.584	.064	.173	.584	.168	.012	.284	263	099	.284	.011	0.147	0.168	1.5	1.1	0.9	1.1	Α-	$\vdash \vdash \vdash$
1161	640027	EC	EC	173	.775	.156	.775	.041	.017	.012	.473	314	.473	141	102	-1.001	0.203	-0.7	0.9	-1.1	0.8	Α-	
1162	629821	EC	EC	173	.578	.110	.225	.075	.578	.012	.442	261	159	104	.442	0.147	0.168	-1.1	0.9	-1.0	0.9	A-	$\vdash \vdash$
1163	639910	EC	EC	173	.890	.017	.064	.890	.006	.023	.437	066	248	.437	216	-2.129	0.295	-0.2	1.0	-0.5	0.8	A+	\vdash
1164	628014	EC	EC	173	.162	.104	.665	.162	.052	.017	090	217	.303	090	.008	2.461	0.223	1.2	1.2	3.2	1.8	A-	$\vdash \vdash$
1165	639925	EC	EC	173	.376	.278	.376	.231	.087	.029	.365	006	.365	160	132	1.067	0.170	-0.2	1.0	-0.2	1.0	A+	\vdash
1166	639998	EC	EC	173	.607	.254	.046	.064	.607	.029	.503	167	289	200	.503	-0.045	0.171	-2.4	0.9	-1.8	0.9	A+	\vdash
1167	625548	EC	EC	173	.243	.168	.243	.301	.260	.029	.049	.041	.049	148	.216	1.783	0.189	2.4	1.2	3.3	1.5	B-	
1168	621158	EC	EC	173	.607	.150	.075	.139	.607	.029	.520	197	149	235	.520	-0.045	0.171	-2.9	0.8	-2.7	0.8	Α-	
1169	640062	EC	EC	173	.827	.827	.064	.046	.035	.029	.469	.469	280	208	013	-1.519	0.236	-0.6	0.9	-0.6	0.8	A+	\vdash
1170	636475	EC	EC	173	.116	.116	.162	.428	.260	.035	.007	.007	167	.144	.104	2.828	0.253	0.6	1.1	2.8	1.9	A-	—
1171	639957	EC	EC	171	.661	.193	.088	.047	.661	.012	.175	.064	171	119	.175	-0.154	0.178	2.8	1.2	2.5	1.3	A+	
1172	639948	EC	EC	171	.819	.140	.023	.819	.012	.006	.315	200	078	.315	076	-1.171	0.216	0.4	1.0	0.9	1.2	A-	—
1173	630660	EC	EC	171	.111	.111	.246	.099	.532	.012	.033	.033	181	001	.210	3.049	0.255	1.0	1.2	3.0	2.2	A+	
1174	640099	EC	EC	171	.754	.076	.754	.070	.094	.006	.470	206	.470	219	205	-0.712	0.194	-1.1	0.9	-1.3	0.8	A-	igwdot
1175	636059	EC	EC	171	.614	.228	.614	.070	.070	.018	.532	365	.532	114	119	0.050	0.174	-2.1	0.9	-2.2	0.8	A-	
1176	635886	EC	EC	171	.784	.047	.784	.064	.099	.006	.427	193	.427	206	176	-0.909	0.202	-0.6	0.9	-0.6	0.9	B+	igwdot
1177	627975	EC	EC	171	.637	.053	.637	.222	.082	.006	.208	099	.208	076	052	-0.040	0.175	2.9	1.2	2.0	1.2	A+	
1178	627045	EC	EC	171	.749	.035	.082	.749	.123	.012	.393	048	321	.393	121	-0.704	0.194	-0.2	1.0	0.6	1.1	C+	<u> </u>
1179	622420	EC	EC	171	.474	.152	.263	.474	.099	.012	.548	213	223	.548	217	0.757	0.169	-2.9	0.8	-2.7	0.8	A+	
1180	635589	EC	EC	171	.690	.690	.070	.047	.187	.006	.451	.451	311	238	120	-0.325	0.181	-0.8	0.9	-1.1	0.9	A+	
1181	635950	EC	EC	171	.836	.053	.059	.047	.836	.006	.508	159	271	271	.508	-1.318	0.225	-1.1	0.9	-1.9	0.6	A+	igsquare
1182	639926	EC	EC	171	.784	.053	.064	.094	.784	.006	.451	258	163	193	.451	-0.909	0.202	-0.7	0.9	-1.3	0.8	A+	igsquare
1183	626928	EC	EC	171	.252	.252	.252	.310	.175	.012	.297	.297	131	066	011	1.931	0.190	0.3	1.0	1.0	1.2	A-	
1184	640029	EC	EC	171	.842	.076	.029	.041	.842	.012	.464	306	145	143	.464	-1.421	0.232	-0.8	0.9	-1.2	0.7	B+	
1185	634319	EC	EC	171	.158	.059	.626	.140	.158	.018	.159	111	.130	157	.159	2.635	0.225	0.6	1.1	2.1	1.6	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Pof	ID	FT	PCS	N	DVal	D/A\	D/D\	D(C)	D/D/	D/ \	D+Dic	DT(A)	DT/D)	DT(C)	DT(D)	Mons	MSE	Z-	MS-	Z-	MS-	М	W
Ref	IU	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	IVISE	in	in	out	out	/F	/B
1186	639996	EC	EC	171	.456	.175	.456	.228	.129	.012	.455	202	.455	178	118	0.833	0.169	-0.8	1.0	-0.8	0.9	A-	
1187	630390	EC	EC	171	.240	.345	.275	.240	.123	.018	.096	.047	037	.096	018	1.983	0.193	2.2	1.2	3.7	1.7	A-	
1188	640077	EC	EC	171	.790	.790	.088	.064	.035	.023	.524	.524	275	204	233	-1.068	0.211	-1.5	0.8	-1.4	0.7	A-	
1189	639999	EC	EC	171	.760	.012	.187	.760	.018	.023	.062	085	.142	.062	190	-0.844	0.201	2.7	1.3	4.8	2.1	A+	
1190	639902	EC	EC	171	.544	.544	.099	.146	.193	.018	.450	.450	178	242	112	0.385	0.170	-0.7	1.0	-0.7	0.9	A-	
1191	621394	EC	EC	171	.714	.059	.105	.105	.714	.018	.528	245	297	159	.528	-0.523	0.188	-1.7	0.9	-1.6	0.8	A+	
1192	630407	EC	EC	171	.345	.211	.152	.257	.345	.035	.215	.088	211	037	.215	1.346	0.177	2.7	1.2	2.1	1.2	A-	
1193	640010	EC	EC	171	.450	.181	.450	.181	.152	.035	.272	147	.272	134	.048	0.830	0.171	1.9	1.1	1.7	1.2	A-	
1194	639958	EC	EC	173	.642	.225	.642	.087	.041	.006	.400	212	.400	223	183	-0.117	0.172	-0.4	1.0	-0.5	1.0	A+	
1195	639941	EC	EC	173	.665	.665	.179	.012	.139	.006	.469	.469	348	143	208	-0.233	0.174	-1.4	0.9	-1.7	0.8	A+	
1196	636004	EC	EC	173	.358	.191	.098	.358	.353	.000	.251	191	154	.251	.002	1.275	0.171	0.9	1.1	1.2	1.1	A-	
1197	640100	EC	EC	173	.890	.041	.890	.058	.012	.000	.399	284	.399	219	164	-1.791	0.253	-0.7	0.9	-1.2	0.7	A+	
1198	630662	EC	EC	173	.619	.619	.214	.035	.133	.000	.453	.453	237	270	216	0.027	0.169	-1.4	0.9	-1.5	0.9	A-	
1199	628020	EC	EC	173	.214	.173	.480	.214	.133	.000	.224	419	.113	.224	.031	2.102	0.197	0.6	1.1	1.4	1.2	A+	
1200	640057	EC	EC	173	.711	.121	.093	.711	.058	.017	.336	132	184	.336	139	-0.524	0.183	0.4	1.0	-0.2	1.0	B-	
1201	628011	EC	EC	173	.266	.266	.075	.104	.543	.012	.178	.178	049	165	010	1.735	0.184	1.0	1.1	2.6	1.4	B+	
1202	630661	EC	EC	173	.289	.254	.249	.197	.289	.012	.380	052	167	168	.380	1.603	0.180	-0.1	1.0	0.1	1.0	A-	
1203	640082	EC	EC	173	.474	.474	.150	.075	.295	.006	.459	.459	231	222	172	0.690	0.165	-1.5	0.9	-1.3	0.9	B+	
1204	628475	EC	EC	173	.399	.150	.399	.116	.324	.012	.279	194	.279	099	054	1.033	0.168	1.8	1.1	1.6	1.1	A-	
1205	635949	EC	EC	173	.665	.058	.098	.665	.162	.017	.586	334	274	.586	277	-0.292	0.176	-3.0	0.8	-3.0	0.7	A-	
1206	639903	EC	EC	173	.642	.075	.642	.231	.035	.017	.523	104	.523	424	084	-0.156	0.173	-1.8	0.9	-1.8	8.0	A-	
1207	640033	EC	EC	173	.595	.104	.104	.595	.179	.017	.400	180	221	.400	116	0.078	0.169	-0.1	1.0	-0.1	1.0	A-	
1208	640000	EC	EC	173	.266	.549	.266	.168	.000	.017	.013	.016	.013	.042	.000	1.719	0.183	2.9	1.3	3.8	1.6	B+	
1209	630672	EC	EC	173	.295	.249	.231	.202	.295	.023	.195	.013	063	095	.195	1.542	0.179	1.9	1.2	1.4	1.2	A+	
1210	639927	EC	EC	173	.676	.104	.676	.121	.081	.017	.574	315	.574	208	278	-0.341	0.177	-2.5	0.8	-2.3	8.0	A-	
1211	640022	EC	EC	173	.376	.370	.121	.110	.376	.023	.286	.088	279	193	.286	1.119	0.170	1.3	1.1	1.1	1.1	A-	
1212	627689	EC	EC	173	.335	.214	.110	.335	.324	.017	.068	.071	268	.068	.110	1.339	0.173	3.6	1.3	3.1	1.4	A+	
1213	628064	EC	EC	173	.740	.069	.740	.093	.081	.017	.428	218	.428	216	150	-0.710	0.189	-0.4	1.0	-0.9	0.9	A-	
1214	634318	EC	EC	173	.283	.283	.457	.197	.041	.023	.137	.137	.001	.015	170	1.615	0.180	2.2	1.2	3.0	1.4	A+	
1215	621392	EC	EC	173	.538	.041	.358	.538	.041	.023	.556	132	347	.556	255	0.347	0.167	-2.8	0.9	-2.7	0.8	A+	
1216	640074	EC	EC	173	.480	.179	.087	.225	.480	.029	.508	234	208	169	.508	0.606	0.166	-2.1	0.9	-1.7	0.9	A+	
1217	639960	EC	EC	173	.376	.202	.197	.376	.214	.012	.279	195	149	.279	.090	1.088	0.172	2.0	1.1	2.1	1.2	B+	
1218	639955	EC	EC	173	.821	.029	.821	.127	.017	.006	.366	122	.366	218	140	-1.330	0.213	-0.3	1.0	-0.8	0.8	B-	
1219	640058	EC	EC	173	.468	.468	.341	.139	.046	.006	.189	.189	.028	194	055	0.637	0.167	3.1	1.2	3.4	1.3	A+	
1220	640101	EC	EC	173	.520	.249	.520	.179	.041	.012	.401	210	.401	109	124	0.382	0.167	0.6	1.0	0.2	1.0	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	Grade						• •									in	in	out	out	/F	/B
1221	636057	EC	EC	173	.717	.133	.717	.087	.058	.006	.408	132	.408	226	199	-0.634	0.184	-0.4	1.0	-0.6	0.9	A+	
1222	635461	EC	EC	173	.486	.133	.081	.289	.486	.012	.535	136	176	306	.535	0.542	0.168	-2.4	0.9	-2.1	8.0	B-	
1223	639975	EC	EC	173	.763	.069	.104	.763	.046	.017	.443	157	273	.443	025	-0.951	0.196	-0.7	0.9	-0.8	0.9	B+	
1224	640034	EC	EC	173	.272	.029	.023	.272	.665	.012	.321	271	115	.321	073	1.662	0.185	0.3	1.0	1.4	1.2	A+	
1225	640011	EC	EC	173	.832	.023	.832	.017	.104	.023	.390	171	.390	124	129	-1.528	0.228	0.3	1.0	0.0	1.0	A-	
1226	640064	EC	EC	173	.728	.046	.110	.728	.098	.017	.515	231	243	.515	159	-0.742	0.189	-1.5	0.9	-1.3	0.8	A-	
1227	640075	EC	EC	173	.590	.590	.127	.150	.116	.017	.519	.519	220	222	143	0.022	0.171	-1.9	0.9	-1.9	8.0	A-	
1228	639982	EC	EC	173	.243	.306	.243	.335	.093	.023	.002	.110	.002	.042	021	1.828	0.192	3.6	1.4	4.3	1.9	A+	
1229	639904	EC	EC	173	.890	.041	.890	.046	.000	.023	.507	201	.507	255	.000	-2.169	0.280	-0.5	0.9	-1.5	0.5	A-	
1230	622818	EC	EC	173	.590	.191	.116	.081	.590	.023	.578	195	185	305	.578	0.006	0.172	-2.9	0.8	-2.9	0.7	B+	
1231	630393	EC	EC	173	.786	.121	.046	.023	.786	.023	.525	315	116	150	.525	-1.161	0.207	-1.4	0.8	-0.7	0.9	A-	
1232	630673	EC	EC	173	.214	.272	.214	.208	.278	.029	.126	.019	.126	.080	048	2.015	0.200	1.8	1.2	3.3	1.7	A+	
1233	634303	EC	EC	173	.746	.746	.075	.093	.058	.029	.523	.523	202	216	140	-0.892	0.196	-1.0	0.9	-1.8	0.7	A-	
1234	640042	EC	EC	173	.751	.098	.081	.751	.035	.035	.541	245	167	.541	165	-0.960	0.199	-1.2	0.9	-1.7	0.7	A+	
1235	629828	EC	EC	173	.260	.347	.260	.191	.173	.029	.257	033	.257	008	066	1.715	0.188	1.3	1.1	1.8	1.3	A-	
1236	630434	EC	EC	173	.150	.150	.185	.405	.225	.035	.129	.129	054	.152	057	2.511	0.227	1.2	1.2	2.4	1.7	A+	
1237	634321	EC	EC	173	.214	.214	.364	.243	.150	.029	.235	.235	004	029	036	2.016	0.200	0.6	1.1	2.7	1.6	A-	
1238	628100	EC	EC	173	.653	.121	.069	.127	.653	.029	.557	168	190	279	.557	-0.345	0.179	-2.0	0.9	-2.2	8.0	A-	
1239	639995	EC	EC	173	.567	.098	.168	.567	.127	.041	.388	174	145	.388	.011	0.093	0.172	0.9	1.1	1.0	1.1	A+	
1240	622672	EC	EC	174	.328	.333	.029	.328	.305	.006	.253	226	220	.253	.115	1.291	0.176	1.8	1.1	1.4	1.2	A-	
1241	629919	EC	EC	174	.385	.184	.190	.385	.236	.006	.358	050	145	.358	163	1.022	0.170	-0.4	1.0	-0.5	1.0	A-	
1242	622612	EC	EC	174	.540	.069	.224	.540	.155	.012	.369	145	208	.369	101	0.217	0.167	0.3	1.0	0.7	1.1	A+	
1243	640079	EC	EC	174	.552	.086	.253	.092	.552	.017	.247	132	.031	149	.247	0.168	0.167	2.5	1.2	3.2	1.3	A+	
1244	639968	EC	EC	174	.822	.052	.822	.075	.040	.012	.496	211	.496	210	188	-1.392	0.216	-1.0	0.9	-1.8	0.6	A+	
1245	636064	EC	EC	174	.632	.046	.259	.052	.632	.012	.487	144	242	215	.487	-0.216	0.172	-1.7	0.9	-1.9	0.8	A-	
1246	635740	EC	EC	174	.213	.213	.305	.155	.310	.017	.063	.063	074	113	.223	1.980	0.200	2.5	1.3	3.3	1.7	A-	
1247	636049	EC	EC	174	.644	.075	.644	.098	.172	.012	.360	124	.360	213	069	-0.276	0.173	0.4	1.0	0.2	1.0	A-	
1248	639977	EC	EC	174	.753	.753	.052	.121	.058	.017	.490	.490	142	245	199	-0.925	0.193	-1.3	0.9	-1.6	0.7	A+	
1249	640083	EC	EC	174	.494	.121	.494	.195	.178	.012	.336	033	.336	190	080	0.487	0.166	0.6	1.0	0.5	1.0	A+	
1250	639912	EC	EC	174	.672	.190	.052	.672	.075	.012	.357	085	190	.357	155	-0.428	0.176	0.7	1.1	0.1	1.0	A-	
1251	640066	EC	EC	174	.684	.035	.040	.684	.230	.012	.488	140	172	.488	277	-0.459	0.177	-2.0	0.9	-1.8	0.8	A+	
1252	639905	EC	EC	174	.535	.144	.535	.259	.046	.017	.423	263	.423	105	090	0.254	0.167	-0.8	1.0	-0.6	0.9	B-	
1253	640041	EC	EC	174	.333	.230	.184	.236	.333	.017	.262	.010	061	117	.262	1.254	0.175	1.6	1.1	1.9	1.2	A-	
1254	639914	EC	EC	174	.523	.000	.391	.523	.075	.012	.379	.000	184	.379	185	0.322	0.166	0.3	1.0	0.2	1.0	A-	
1255	640023	EC	EC	174	.540	.540	.144	.190	.103	.023	.441	.441	203	141	112	0.203	0.168	-0.7	1.0	-0.9	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

D-f	-	FT	PCS		D)/al	D/A)	D/D)	D(C)	D/D/	D/ \	DAD:-	DT/A)	DT/D)	DT(C)	DT/D)	N4	NACE	Z-	MS-	Z-	MS-	М	W
Ref	ID	Grade	Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	in	in	out	out	/F	/B
1256	639923	EC	EC	174	.448	.213	.103	.213	.448	.023	.274	074	153	002	.274	0.651	0.168	2.2	1.1	2.3	1.2	B-	
1257	640076	EC	EC	174	.632	.075	.632	.155	.115	.023	.418	052	.418	270	098	-0.260	0.173	-0.2	1.0	-0.5	0.9	A+	
1258	621206	EC	EC	174	.385	.121	.385	.230	.241	.023	.449	170	.449	205	042	0.966	0.171	-1.1	0.9	-1.0	0.9	B+	
1259	638877	EC	EC	174	.535	.046	.264	.535	.132	.023	.465	081	159	.465	254	0.259	0.167	-1.6	0.9	-1.7	0.9	A-	
1260	635841	EC	EC	174	.632	.632	.155	.132	.058	.023	.466	.466	258	151	091	-0.260	0.173	-1.1	0.9	-1.2	0.9	A-	
1261	639888	EC	EC	174	.552	.098	.103	.224	.552	.023	.545	233	265	149	.545	0.147	0.168	-3.0	0.8	-2.6	0.8	A+	
1262	630425	EC	EC	174	.356	.356	.253	.259	.109	.023	.459	.459	132	210	038	1.114	0.173	-1.3	0.9	-1.1	0.9	A-	
1263	639976	EC	EC	174	.477	.132	.477	.144	.224	.023	.466	165	.466	230	090	0.511	0.167	-1.4	0.9	-1.3	0.9	B-	
1264	630649	EC	EC	172	.558	.111	.157	.169	.558	.006	.531	206	270	190	.531	0.216	0.168	-3.0	0.8	-2.9	0.8	A+	
1265	635462	EC	EC	172	.750	.023	.012	.209	.750	.006	.320	317	.008	152	.320	-0.814	0.191	0.9	1.1	0.9	1.1	A-	
1266	639974	EC	EC	172	.616	.262	.076	.616	.041	.006	.520	257	257	.520	212	-0.071	0.171	-2.2	0.9	-2.2	8.0	A+	
1267	640095	EC	EC	172	.436	.076	.297	.436	.186	.006	.266	243	069	.266	016	0.803	0.168	1.8	1.1	1.9	1.2	A+	
1268	625505	EC	EC	172	.622	.035	.169	.169	.622	.006	.396	216	141	185	.396	-0.100	0.172	-0.1	1.0	0.2	1.0	A-	
1269	636065	EC	EC	172	.424	.134	.424	.308	.128	.006	.249	029	.249	069	155	0.888	0.168	1.4	1.1	1.3	1.1	A+	
1270	639979	EC	EC	172	.215	.587	.122	.215	.070	.006	.104	.239	132	.104	342	2.019	0.199	2.0	1.2	2.0	1.4	A-	
1271	630709	EC	EC	172	.814	.070	.814	.064	.047	.006	.501	125	.501	286	299	-1.259	0.212	-1.2	0.9	-1.9	0.7	C+	
1272	628135	EC	EC	172	.384	.384	.297	.128	.186	.006	.194	.194	156	.042	019	1.061	0.171	3.1	1.2	2.9	1.3	A+	
1273	640063	EC	EC	172	.442	.471	.029	.047	.442	.012	.465	243	175	191	.465	0.763	0.168	-1.3	0.9	-1.3	0.9	A-	
1274	640080	EC	EC	172	.535	.140	.535	.192	.122	.012	.515	148	.515	332	106	0.314	0.168	-2.2	0.9	-2.0	8.0	B+	
1275	640067	EC	EC	172	.331	.145	.070	.331	.436	.017	.388	304	246	.388	.070	1.315	0.176	-0.2	1.0	-0.1	1.0	A+	
1276	639906	EC	EC	172	.663	.157	.663	.163	.006	.012	.373	148	.373	215	041	-0.333	0.177	0.5	1.0	-0.1	1.0	A-	
1277	640021	EC	EC	172	.791	.064	.099	.791	.035	.012	.368	109	214	.368	104	-1.120	0.205	0.3	1.0	-0.2	1.0	A+	
1278	639917	EC	EC	172	.727	.070	.093	.727	.099	.012	.475	236	126	.475	251	-0.698	0.187	-1.2	0.9	-1.0	0.9	A-	
1279	640028	EC	EC	172	.593	.593	.302	.035	.052	.017	.461	.461	276	081	168	0.013	0.171	-0.9	0.9	-0.9	0.9	B-	
1280	639934	EC	EC	172	.273	.221	.215	.273	.273	.017	.245	106	071	.025	.245	1.640	0.185	1.2	1.1	2.3	1.3	A-	
1281	640030	EC	EC	172	.890	.029	.890	.052	.012	.017	.537	301	.537	239	162	-2.113	0.279	-0.7	0.8	-1.8	0.5	A+	
1282	625549	EC	EC	172	.645	.151	.645	.081	.099	.023	.337	170	.337	091	078	-0.276	0.177	1.6	1.1	0.3	1.0	C-	
1283	635487	EC	EC	172	.616	.616	.099	.145	.116	.023	.546	.546	269	238	155	-0.122	0.174	-2.4	0.8	-2.3	8.0	A+	
1284	639889	EC	EC	172	.692	.105	.692	.116	.064	.023	.512	261	.512	231	124	-0.536	0.184	-1.3	0.9	-1.8	0.8	A+	
1285	634320	EC	EC	172	.529	.198	.192	.529	.058	.023	.383	091	102	.383	268	0.317	0.169	0.7	1.0	0.2	1.0	A-	
1286	635738	EC	EC	172	.186	.186	.326	.244	.221	.023	.179	.179	.020	109	.048	2.211	0.209	0.8	1.1	3.0	1.7	A-	
1287	633534	EC	EC	172	.488	.488	.285	.116	.076	.035	.265	.265	053	054	152	0.486	0.169	2.7	1.2	2.2	1.2	A-	
1288	639937	EC	EC	174	.810	.810	.069	.040	.081	.000	.254	.254	070	211	147	-1.246	0.204	0.1	1.0	0.5	1.1	A-	
1289	639939	EC	EC	174	.494	.454	.494	.017	.035	.000	.265	141	.265	176	217	0.452	0.164	1.8	1.1	1.4	1.1	A-	
1290	626920	EC	EC	174	.672	.035	.029	.264	.672	.000	.474	132	215	369	.474	-0.412	0.173	-1.6	0.9	-1.6	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1201		Grade	Grade	474	520	. ,		, ,								0.070	0.465	in	in	out	out	/F	/B
1291	626947	EC	EC	174	.529	.270	.132	.529	.058	.012	.365	134	107	.365	244	0.272	0.165	0.3	1.0	0.1	1.0	A-	
1292	639983	EC	EC	174	.299	.437	.299	.115	.144	.006	.211	.052	.211	251	063	1.404	0.177	1.7	1.1	1.5	1.2	A+	
1293	639961	EC	EC	174	.483	.172	.190	.144	.483	.012	.348	084	096	222	.348	0.484	0.165	1.0	1.1	0.9	1.1	A+	
1294	639980	EC	EC	174	.333	.213	.167	.333	.282	.006	.197	.027	176	.197	040	1.221	0.172	1.9	1.1	2.9	1.3	A+	
1295	639984	EC	EC	174	.592	.063	.264	.592	.075	.006	.471	199	266	.471	173	-0.025	0.167	-1.6	0.9	-1.5	0.9	Α+	
1296	630387	EC	EC	174	.615	.615	.218	.092	.069	.006	.461	.461	128	275	281	-0.138	0.169	-1.7	0.9	-0.5	1.0	Α+	
1297	640065	EC	EC	174	.655	.655	.058	.058	.218	.012	.490	.490	342	325	113	-0.365	0.173	-1.6	0.9	-1.1	0.9	A+	
1298	640086	EC	EC	174	.483	.109	.483	.144	.253	.012	.327	040	.327	209	108	0.478	0.165	1.0	1.1	1.0	1.1	A-	
1299	640068	EC	EC	174	.615	.144	.121	.109	.615	.012	.453	276	099	193	.453	-0.159	0.169	-0.9	0.9	-0.8	0.9	A+	
1300	639907	EC	EC	174	.661	.161	.121	.661	.046	.012	.485	171	336	.485	125	-0.395	0.174	-1.0	0.9	-1.3	0.9	A-	
1301	640004	EC	EC	174	.316	.420	.316	.138	.115	.012	.290	.044	.290	231	144	1.300	0.175	0.9	1.1	0.8	1.1	A+	
1302	639918	EC	EC	174	.741	.178	.741	.046	.023	.012	.529	326	.529	236	177	-0.851	0.187	-1.6	0.9	-1.9	0.8	A-	
1303	639899	EC	EC	174	.592	.017	.592	.253	.126	.012	.449	181	.449	225	206	-0.044	0.168	-0.9	0.9	-0.8	0.9	A-	
1304	640012	EC	EC	174	.414	.414	.305	.213	.046	.023	.420	.420	146	264	006	0.776	0.167	-0.7	1.0	-0.3	1.0	A-	
1305	639911	EC	EC	174	.615	.615	.098	.109	.155	.023	.360	.360	173	222	042	-0.197	0.171	0.4	1.0	1.0	1.1	A-	
1306	630416	EC	EC	174	.581	.086	.138	.167	.581	.029	.635	199	272	319	.635	-0.037	0.169	-3.9	0.8	-3.8	0.7	A-	
1307	635478	EC	EC	174	.322	.126	.115	.408	.322	.029	.343	.004	320	029	.343	1.243	0.175	0.5	1.0	0.1	1.0	A-	
1308	639890	EC	EC	174	.351	.218	.201	.351	.201	.029	.151	105	007	.151	.048	1.092	0.172	2.8	1.2	3.6	1.4	A+	
1309	635569	EC	EC	174	.615	.081	.126	.615	.144	.035	.405	113	147	.405	200	-0.231	0.173	0.0	1.0	0.1	1.0	A-	
1310	635751	EC	EC	174	.529	.086	.121	.529	.230	.035	.432	249	.006	.432	239	0.203	0.168	-0.6	1.0	-0.1	1.0	B+	
1311	633535	EC	EC	174	.259	.069	.259	.443	.195	.035	.227	234	.227	.042	035	1.590	0.186	0.9	1.1	2.1	1.3	A+	
1312	639943	EC	EC	173	.468	.035	.468	.353	.133	.012	.154	096	.154	011	.003	0.655	0.166	3.4	1.2	3.7	1.3	A+	
1313	639942	EC	EC	173	.711	.069	.104	.711	.098	.017	.578	176	214	.578	252	-0.609	0.184	-2.6	0.8	-2.6	0.7	A-	
1314	627284	EC	EC	173	.630	.185	.630	.104	.064	.017	.471	179	.471	130	169	-0.166	0.173	-1.5	0.9	-1.4	0.9	A+	
1315	636022	EC	EC	173	.578	.173	.578	.081	.150	.017	.416	112	.416	137	136	0.125	0.168	-0.6	1.0	-0.6	1.0	A-	
1316	639986	EC	EC	173	.769	.069	.098	.046	.769	.017	.442	102	185	133	.442	-0.974	0.198	-0.4	1.0	-0.1	1.0	A+	
1317	639962	EC	EC	173	.642	.150	.642	.127	.064	.017	.540	202	.540	209	163	-0.226	0.174	-2.5	0.8	-2.5	0.8	A-	
1318	639981	EC	EC	173	.723	.035	.069	.723	.150	.023	.383	131	169	.383	068	-0.665	0.187	0.0	1.0	-0.2	1.0	A-	
1319	639989	EC	EC	173	.266	.266	.451	.156	.110	.017	.254	.254	.007	024	095	1.675	0.185	0.6	1.1	2.3	1.3	A-	
1320	640060	EC	EC	173	.549	.087	.549	.156	.185	.023	.365	024	.365	230	024	0.229	0.168	0.2	1.0	0.4	1.0	A+	
1321	628016	EC	EC	173	.405	.306	.052	.405	.214	.023	.197	.009	205	.197	.063	0.929	0.169	2.9	1.2	2.9	1.3	A-	
1322	622421	EC	EC	173	.428	.179	.150	.225	.428	.017	.456	185	115	088	.456	0.822	0.167	-1.8	0.9	-1.7	0.9	A-	
1323	640097	EC	EC	173	.462	.254	.462	.220	.041	.023	.436	153	.436	072	167	0.649	0.167	-1.1	0.9	-1.3	0.9	B+	
1324	640069	EC	EC	173	.642	.642	.162	.064	.110	.023	.496	.496	220	158	095	-0.207	0.174	-2.0	0.9	-1.5	0.8	A-	=
1325	640005	EC	EC	173	.549	.549	.266	.093	.069	.023	.320	.320	019	105	125	0.230	0.168	1.2	1.1	2.6	1.2	A-	=
	0.000	-0	0	1,5	.5 15	.5 .5	50	.000	.000	.525	.520	.520	.515	05		0.200	3.100					• •	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

1326 639922 EC EC 173 .150 .486 .150 .121 .220 .023 .004 .201 .004 .100 .053 2.544 .0.29 1.4 .1.2 .2.8 1.1327 639908 EC EC .173 .902 .902 .903 .012 .017 .035 .526 .347 .064 .178 .2.404 .0.319 .0.3 .0.9 .0.4 .0.1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
1328 639914 EC EC 173 902 902 903 903 901 903 90			Grade	Grade			. ,		, ,						1 1(0)	1 1(5)	IVICUS		in	in	out	out	/F	/B
1328 640014 EC EC 173 .434 .405 .052 .075 .434 .035 .424 .027 .248 161 .424 .0764 .0.168 .0.9 1.0 .0.8 0.1		639922		EC			.486	.150	.121	.220	.023		.201	004	100	.053	2.544		1.4	1.2	2.8	1.8	A-	
1329 639913 EC EC 173 457 139 254 457 116 0.35 2.62 -0.27 -0.38 2.62 -0.17 0.651 0.168 2.4 1.1 2.6 1.1 1330 630417 EC EC 173 3.526 5.26 1.27 1.10 2.02 0.35 3.99 3.99 -0.073 -1.23 -0.903 0.313 0.168 0.0 1.0 0.0 0.1 1.1 1.332 639841 EC EC EC 173 3.12 1.249 0.01 1.61 -0.03 0.04 1.61 0.05 1.417 0.179 2.6 1.2 2.77 1.1 1.332 639891 EC EC 173 462 0.081 3.53 0.64 462 0.04 0.392 -1.13 0.16 3.92 -1.06 -0.428 0.182 0.5 1.0 0.4 1.1 1.333 635773 EC EC 173 2.08 1.04 2.08 3.70 2.78 0.04 1.81 1.79 0.08 -1.24 3.81 0.618 0.168 0.3 1.0 0.2 1.1 1.335 633538 EC EC 173 1.73 3.82 1.10 2.89 1.73 0.06 3.17 0.04 1.14 0.040 3.17 2.280 0.214 -0.3 1.0 0.1 1.1 1.36 6.39949 EC EC 174 1.76 7.76 0.58 0.35 0.56 0.05 1.26 0.06 3.14 3.14 -2.81 -1.96 0.001 0.090 0.198 0.1 1.0 1.1 1.1 1.38 6.39949 EC EC 174 0.76 0.76 0.08 0.035 0.06 3.12 0.04 0.31 1.12 1.15 0.090 0.198 0.1 1.0 1.1 1.1 1.34 6.39991 EC EC 174 0.06 0.090 0.09	L327	639908	EC	EC	173	.902	.902	.035	.012		.035	.526	.526	147	064	178	-2.404	0.319	-0.3	0.9	-1.4	0.5	A-	
1330 630417 EC EC 173 .526 .526 .127 .110 .202 .035 .399 .399 073 123 093 .0.313 .0.168 .0.0 .1.0 .0.0 .1.1 .1313 .635479 EC EC .173 .312 .162 .237 .312 .249 .041 .161 003 .0.04 .1.61 .0.05 .1.417 .0.179 .2.6 .1.2 .2.7 .1.1 .1333 .635479 EC EC .173 .665 .075 .0.64 .665 .105 .0.46 .392 113 .0.16 .0.428 .0.182 .0.5 .1.0 .0.4 .1.1 .1333 .635773 EC EC .173 .462 .081 .333 .0.44 .462 .0.41 .381 .1.79 .0.08 .1.24 .381 .0.168 .0.188 .0.5 .1.0 .0.4 .1.1		640014	EC	EC			.405			.434	.035	.424	027			.424	0.764		-0.9	1.0		0.9	A-	
1331 635479 EC EC 173 312 162 237 312 249 041 1.61 -003 0.43 1.61 0.035 1.417 0.179 2.6 1.2 2.7 1. 1332 635871 EC EC 173 665 0.75 0.64 6.65 1.50 0.46 3.92 -1.13 -0.16 3.92 -1.06 0.428 0.182 0.5 1.0 0.4 1. 1334 635772 EC EC 173 4.62 0.81 3.53 0.64 4.62 0.41 3.81 1.79 0.08 .124 3.81 0.618 0.168 0.3 1.0 0.2 1. 1334 635772 EC EC 173 2.08 1.04 2.08 3.70 2.78 0.41 1.87 -1.23 1.87 0.40 1.10 2.022 0.201 1.0 1.1 2.6 1. 1335 633538 EC EC 173 1.73 3.82 1.10 2.89 1.73 0.46 3.17 0.41 1.142 0.40 3.17 2.280 0.214 0.3 1.0 0.1 1.1 1.1 1. 1336 639944 EC EC 1.74 1.76 7.76 0.58 0.35 1.26 0.06 3.14 3.14 -2.81 1.96 0.01 0.900 0.198 0.1 1.1 1.1 1. 1338 630383 EC EC 1.74 7.76 7.76 0.58 0.35 1.26 0.06 3.14 3.14 -2.81 1.96 0.01 0.900 0.198 0.1 1.0 1.1 1.1 1. 1338 630383 EC EC 1.74 7.07 0.00 7.07 1.55 1.26 0.06 3.14 3.14 -2.81 1.96 0.01 0.900 0.198 0.1 1.0 1.1 1.1 1. 1336 639991 EC EC EC 1.74 3.74 3.10 2.47 3.74 0.58 0.05 0.		639913	EC	_				.254	.457		.035	.262	027	038	.262	017	0.651		2.4	1.1	2.6	1.2	A-	
1332 639891 EC EC 173 .665 .075 .064 .665 .150 .046 .392 .113 .016 .392 .106 .0.428 0.182 0.5 1.0 0.4 1. 1333 635773 EC EC 173 .462 .081 .353 .064 .462 .041 .381 .179 .008 .124 .381 .0.618 0.168 0.3 1.0 0.2 1.1 1336 635378 EC EC EC 173 .208 .104 .208 .370 .278 .041 .138 .179 .008 .124 .381 .0.618 0.168 0.3 1.0 0.2 1.1 1336 635388 EC EC EC 173 .173 .382 .110 .289 .173 .046 .317 .041 .142 .040 .317 .2280 .0.214 .0.3 1.0 0.1 1.1 1337 639944 EC EC EC 174 .776 .776 .058 .035 .126 .006 .112 .049 .031 .112 .156 .2333 .0.206 .1.1 1.1 .1.1 .2.9 1.1 1338 630383 EC EC EC 174 .776 .776 .058 .035 .126 .012 .451 .000 .451 .286 .177 .0.481 .0.184 .0.5 1.0 .0.6 .0.1 1339 640059 EC EC 174 .649 .649 .549 .529 .029 .058 .006 .325 .325 .0.94 .205 .216 .0.145 .0.145 .0.145 .0.141 .1.141 .1.141 .1.141 .0.141 .1.141 .	L330	630417	EC	EC	173	.526	.526	.127	.110	.202	.035	.399	.399	073	123	093	0.313	0.168	0.0	1.0	0.0	1.0	A+	
1333 635773 EC EC 173 .462 .081 .353 .064 .462 .041 .381 .179 .008 .124 .381 .0.618 0.168 0.3 1.0 0.2 1.1344 635772 EC EC 173 .208 .104 .208 .370 .278 .041 .187 .123 .187 .040 .110 .0.022 .0.201 .10 .11 .2.6 1.1335 .36338 EC EC .173 .173 .382 .110 .289 .173 .046 .317 .041 .142 .040 .317 .2280 .0.214 .0.3 .0.0 .0.1 .1.1	L331	635479	EC	EC	173	.312	.162	.237	.312	.249	.041	.161	003	.043	.161	.035	1.417	0.179	2.6	1.2	2.7	1.3	A-	
1334 635772 EC EC 173 .208 .104 .208 .370 .278 .041 .187 .123 .187 .040 .110 .2022 0.201 1.0 1.1 2.6 1.	L332	639891	EC	EC	173	.665	.075	.064	.665	.150	.046	.392	113	016	.392	106	-0.428	0.182	0.5	1.0	0.4	1.1	A+	
1335 633538 EC EC 173 1.73 3.82 1.10 2.89 1.73 0.46 3.17 0.41 -1.42 0.40 0.317 2.280 0.214 -0.3 1.0 0.1 1.1 1.36 639944 EC EC 174 1.84 3.74 3.10 1.84 1.26 0.06 1.12 0.49 0.031 1.12 -1.156 2.333 0.206 1.1 1.1 2.9 1.1 1.37 639949 EC EC 174 7.76 7.76 0.58 0.058 0.058 1.26 0.06 3.14 3.14 -2.81 -1.196 -0.001 -0.900 0.198 0.1 1.1 1.1 1.1 1.338 630383 EC EC 1.74 7.07 0.00 7.07 1.155 1.26 0.12 4.51 0.00 4.51 -2.86 -1.77 -0.481 0.184 -0.5 1.0 0.6 0.6 0.1 1.339 640059 EC EC 1.74 6.49 6.49 2.59 0.29 0.58 0.06 3.25 3.25 -0.94 -2.05 -2.16 -0.145 0.175 0.5 1.0 0.9 1.1 1.34 0.39991 EC EC 1.74 3.74 3.10 2.47 3.74 0.58 0.12 3.64 -1.20 0.055 3.64 -2.13 1.215 0.170 0.4 1.0 0.5 1.1 1.34 0.39995 EC EC 1.74 6.15 0.69 0.69 0.69 0.69 0.15 2.36 0.12 5.51 -2.12 -1.35 5.51 -3.32 -1.425 0.227 -1.3 0.8 -1.4 0.9 -1.8 0.134 0.39987 EC EC 1.74 8.39 0.35 0.35 8.39 0.81 0.12 5.51 -2.12 -1.35 5.51 -3.32 -1.425 0.227 -1.3 0.8 -1.4 0.9 -1.8 0.134 0.344 0.	L333	635773	EC	EC	173	.462	.081	.353	.064	.462	.041	.381	179	008	124	.381	0.618	0.168	0.3	1.0	0.2	1.0	A+	
1336 639944 EC EC 174 1.84 3.74 3.10 1.84 1.26 0.06 1.12 0.49 0.31 1.12 -1.56 2.333 0.206 1.1 1.1 2.9 1. 1337 639949 EC EC 174 7.76 7.76 0.58 0.35 1.26 0.06 3.14 3.14 -2.81 -1.96 0.001 0.900 0.198 0.1 1.0 1.1 1.1 1338 630383 EC EC 174 7.07 0.00 7.07 1.55 1.26 0.01 4.51 0.00 4.51 -2.86 -1.77 -0.481 0.184 0.5 1.0 -0.6 0.1 1339 640059 EC EC 174 6.49 6.49 2.59 0.29 0.58 0.06 3.25 3.25 -0.94 -2.05 -2.16 -0.145 0.175 0.5 1.0 0.6 0.1 1340 639991 EC EC 174 3.74 3.10 2.47 3.74 0.58 0.12 3.64 -1.20 -0.65 3.64 -2.13 1.215 0.170 0.4 1.0 0.5 1.1 1341 639965 EC EC 1.74 6.15 0.69 0.69 6.15 2.36 0.12 5.56 -2.78 -2.33 5.56 -1.60 0.022 0.172 -1.4 0.9 -1.8 0.1 1343 640003 EC EC 1.74 8.39 0.35 0.35 8.39 0.81 0.17 5.90 -2.28 5.90 -3.03 -2.10 -1.213 0.215 -1.8 0.8 -1.4 0.1 1344 622419 EC EC EC 1.74 7.53 0.52 7.53 1.15 0.63 0.17 6.93 0.49 -4.45 -3.25 -1.49 -1.458 0.29 0.99 0.8 0.1 1345 639978 EC EC EC 1.74 8.33 8.33 0.12 0.69 0.63 0.23 4.42 4.63 -2.17 -1.50 0.792 0.196 0.6 0.9 0.8 0.1 1346 630710 EC EC EC 1.74 7.82 0.58 7.82 0.63 0.75 0.23 4.73 -1.80 4.73 -1.70 -1.48 -1.021 0.207 0.4 1.0 0.5 0.1 1347 640103 EC EC EC 1.74 8.10 0.83 8.13 0.12 0.69 0.63 0.23 4.73 -1.10 -1.48 -1.021 0.207 0.4 1.0 0.5 0.1 1348 640073 EC EC EC 1.74 8.13 8.33 0.12 0.69 0.63 0.23 4.73 -1.10 -1.48 -1.021 0.207 0.4 1.0 0.5 0.1 1348 640073 EC EC EC 1.74 8.12 1.67 1.75 1.55 0.29 5.38 -2.65 -1.16 5.38 -1.23 0.490 0.168 -2.7 0.8 0.9 0.7 0.1 1349 640006 EC EC EC 1.	L334	635772	EC	EC	173	.208	.104	.208	.370	.278	.041	.187	123	.187	.040	.110	2.022	0.201	1.0	1.1	2.6	1.5	A+	
1337 639949 EC EC 174 .776 .776 .058 .035 .126 .006 .314 .314 281 196 001 0.900 .0.198 .0.1 1.0 1.1 1.1 1.388 630383 EC EC .174 .707 .000 .707 .155 .126 .012 .451 .000 .451 286 177 0.481 .0.184 0.5 .1.0 .0-6 .0.1 .0-6	L335	633538	EC	EC	173	.173	.382	.110	.289	.173	.046	.317	.041	142	.040	.317	2.280	0.214	-0.3	1.0	0.1	1.0	A-	
1338 630383 EC EC 174 .707 .000 .707 .155 .126 .012 .451 .000 .451 .286 .177 .0481 0.184 .0.5 1.0 .0.6 0.1339 640059 EC EC EC 174 .649 .649 .259 .029 .058 .006 .325 .325 .094 .205 .216 .0.145 0.175 0.5 1.0 0.9 1.1 1.340 639991 EC EC EC 174 .374 .310 .247 .374 .058 .012 .364 .120 .065 .364 .213 1.215 0.170 0.4 1.0 0.5 1.1 1.341 639965 EC EC EC 174 .615 .069 .069 .0615 .236 .012 .506 .278 .233 .506 .160 0.022 0.172 .14 0.9 .1.8 0.1 1.4 0.1 0.	L336	639944	EC	EC	174	.184	.374	.310	.184	.126	.006	.112	.049	.031	.112	156	2.333	0.206	1.1	1.1	2.9	1.7	A+	
1339 640059 EC EC 174 .649 .649 .259 .029 .058 .006 .325 .325 .094 .205 .216 .0.145 0.175 0.5 1.0 0.9 1. 1340 639991 EC EC 174 .374 .310 .247 .374 .058 .012 .364 .120 .065 .364 .213 1.215 0.170 0.4 1.0 0.5 1. 1341 639987 EC EC 174 .839 .035 .035 .839 .081 .012 .506 .278 .233 .506 .160 .002 0.172 .1.4 0.9 .1.8 0. 1343 640003 EC EC 174 .831 .035 .381 .058 .081 .017 .590 .228 .590 .303 .210 .1.213 0.215 .1.8 0.8 .2.3 0. 1344 622419 EC EC 174 .383 .035 .081 .015 .063 .017 .463 .142 .463 .217 .150 -0.792 0.196 -0.6 0.9 -0.8 0. 1345 639978 EC EC 174 .833 .833 .012 .069 .063 .023 .473 .180 .492 .492 .006 .325 .149 .1.458 0.230 -0.8 0.9 -0.7 0. 1346 630710 EC EC 174 .782 .058 .782 .063 .075 .023 .473 .180 .473 .170 .148 .1.021 0.207 -0.4 1.0 -0.5 0. 1348 640073 EC EC 174 .402 .086 .402 .345 .138 .029 .355 .350 .172 .350 .050 .037 1.057 0.169 0.9 1.1 0.8 1. 1349 640006 EC EC 174 .397 .132 .167 .270 .397 .035 .324 .028 .112 .034 .324 1.069 0.170 1.4 1.1 1.6 1. 1350 639924 EC EC 174 .810 .023 .092 .810 .046 .029 .259 .026 .259 .012 .176 1.460 0.176 1.6 1.1 1.6 1. 1353 640038 EC EC 174 .310 .093 .310 .063 .161 .667 .029 .497 .148 .358 .259 .012 .176 .1460 0.176 .16 1.1 1.6 1. 1353 640038 EC EC 174 .310 .093 .310 .040 .046 .589 .447 .358 .259 .012 .176 .1460 0.176 .16 1.1 1.6 1. 1353 640038 EC EC 174 .310 .093 .310 .063 .161 .667 .029 .497 .162 .207 .166 .497 -0.307 0.181 -0.9 0.9 -0.7 0. 1354 635590 EC EC 174 .31	L337	639949	EC	EC	174	.776	.776	.058	.035	.126	.006	.314	.314	281	196	001	-0.900	0.198	0.1	1.0	1.1	1.2	A+	
1340 639991 EC EC 174 374 330 .247 .374 .058 .012 .364 .120 .065 .364 .213 1.215 0.170 0.4 1.0 0.5 1.	L338	630383	EC	EC	174	.707	.000	.707	.155	.126	.012	.451	.000	.451	286	177	-0.481	0.184	-0.5	1.0	-0.6	0.9	A-	
1341 639965 EC EC 174 .615 .069 .069 .615 .236 .012 .506 .278 .233 .506 .160 0.022 0.172 .1.4 0.9 .1.8 0.1342 639987 EC EC 174 .839 .035 .035 .839 .081 .012 .551 .212 .135 .551 .332 .1.425 0.227 .1.3 0.8 .1.4 0.1 0.343 0.344 0.344 0.344 0.344 0.344 0.344 0.345 0.354 0.354 0.355 0.355 .339 .081 .017 .590 .228 .590 .303 .210 .1.213 0.215 .1.8 0.8 .2.3 0.1 0.344	L339	640059	EC	EC	174	.649	.649	.259	.029	.058	.006	.325	.325	094	205	216	-0.145	0.175	0.5	1.0	0.9	1.1	A+	
1342 639987 EC EC 174 .839 .035 .035 .839 .081 .012 .551 212 135 .551 332 1.425 0.227 1.3 0.8 1.4 0.	L340	639991	EC	EC	174	.374	.310	.247	.374	.058	.012	.364	120	065	.364	213	1.215	0.170	0.4	1.0	0.5	1.1	A+	
1343 640003 EC EC 174 .810 .035 .810 .058 .081 .017 .590 .228 .590 .303 .210 .1.213 0.215 .1.8 0.8 .2.3 0. 1344 622419 EC EC 174 .753 .052 .753 .115 .063 .017 .463 .142 .463 .217 .150 .0.792 0.196 .0.6 0.9 .0.8 0. 1345 639978 EC EC 174 .833 .833 .012 .069 .063 .023 .492 .492 .492 .006 .325 .149 .1458 0.230 .0.8 0.9 .0.7 0. 1346 630710 EC EC 174 .782 .058 .782 .063 .075 .023 .473 .180 .473 .170 .148 .1.021 0.207 .0.4 1.0 .0.5 0. 1347 640103 EC EC 174 .402 .086 .402 .345 .138 .029 .538 .265 .116 .538 .123 0.490 0.168 .2.7 0.8 .2.4 0. 1348 640073 EC EC 174 .397 .132 .167 .270 .397 .035 .324 .0.28 .112 .0.34 .324 1.069 0.170 1.4 1.1 1.6 1. 1349 640006 EC EC 174 .810 .023 .092 .810 .040 .0.35 .497 .143 .0.86 .497 .2.87 .1.318 .0.24 .0.4 1.0 .0.5 0. 1351 640032 EC EC 174 .810 .023 .092 .810 .046 .0.29 .0.35 .611 .611 .1.35 .280 .201 .2.16 .2.16 .2.16 .0.8 .0.8 .2.3 0. 1352 640019 EC EC .174 .322 .218 .322 .385 .046 .0.29 .259 .0.26 .259 .0.12 .176 .1.460 .1.76 .1.6 .1.1 1.6 .1.1 .1.5 .	L341	639965	EC	EC	174	.615	.069	.069	.615	.236	.012	.506	278	233	.506	160	0.022	0.172	-1.4	0.9	-1.8	8.0	A+	
1344 622419 EC EC 174 .753 .052 .753 .115 .063 .017 .463 142 .463 217 150 0.792 0.196 -0.6 0.9 -0.8 0.1345 639978 EC EC 174 .833 .833 .012 .069 .063 .023 .492 .492 006 325 149 1.458 0.230 -0.8 0.9 -0.7 0.1346 630710 EC EC 174 .782 .058 .782 .063 .075 .023 .473 180 .473 170 148 1.021 0.207 -0.4 1.0 -0.5 0.1347 640103 EC EC 174 .517 .161 .138 .517 .155 .029 .538 265 116 .538 123 0.490 0.168 -2.7 0.8 -2.4 0.1348 640073 EC EC 174 .397 .132 .167 .270 .397 .035 .324 028 112 034 .324 1.069 0.170 1.4 1.1 1.6 1.1350 639924 EC EC EC 174 .810 .023 .092 .810 .040 .035 .497 143 086 .497 287 -1.318 0.224 -0.4 1.0 -0.5 0.1351 640032 EC EC EC 174 .879 .879 .012 .046 .029 .035 .611 .611 135 280 201 -2.067 0.282 -0.8 0.8 -2.3 0.1352 640019 EC EC EC 174 .3667 .081 .063 .161 .667 .029 .497 162 207 166 .497 -0.307 .0181 -0.9 0.9 -0.7 0.148 .029 .035 .035 .344 .035 .257 .149 .148 .040 .046 .029 .259 .026 .259 .012 176 .460 0.176 1.6 1.1 1.6 1.1 .155 .029 .035 .035 .035 .035 .035 .035 .037 .035 .035 .037 .035 .035 .037 .035 .035 .037 .035	L342	639987	EC	EC	174	.839	.035	.035	.839	.081	.012	.551	212	135	.551	332	-1.425	0.227	-1.3	0.8	-1.4	0.7	A-	
1345 639978 EC EC 174 .833 .833 .012 .069 .063 .023 .492 .492 .006 325 .149 -1.458 0.230 -0.8 0.9 -0.7 0. 1346 630710 EC EC 174 .782 .058 .782 .063 .075 .023 .473 180 .473 170 148 -1.021 0.207 -0.4 1.0 -0.5 0. 1347 640103 EC EC 174 .517 .161 .138 .517 .155 .029 .538 265 116 .538 123 0.490 0.168 -2.7 0.8 -2.4 0. 1348 640073 EC EC 174 .402 .086 .402 .345 .138 .029 .350 050 037 1.057 0.169 0.9 1.1 0.8 1349 640006 EC EC	L343	640003	EC	EC	174	.810	.035	.810	.058	.081	.017	.590	228	.590	303	210	-1.213	0.215	-1.8	0.8	-2.3	0.6	B+	
1346 630710 EC EC 174 .782 .058 .782 .063 .075 .023 .473 180 .473 170 148 -1.021 0.207 -0.4 1.0 -0.5 0. 1347 640103 EC EC 174 .517 .161 .138 .517 .155 .029 .538 265 116 .538 123 0.490 0.168 -2.7 0.8 -2.4 0. 1348 640073 EC EC 174 .402 .086 .402 .345 .138 .029 .350 172 .350 050 037 1.057 0.169 0.9 1.1 0.8 1. 1349 640006 EC EC 174 .397 .132 .167 .270 .397 .035 .324 028 112 034 .324 1.069 0.170 1.4 1.1 1.6 1. 1.1 .1	L344	622419	EC	EC	174	.753	.052	.753	.115	.063	.017	.463	142	.463	217	150	-0.792	0.196	-0.6	0.9	-0.8	0.9	A-	
1347 640103 EC EC 174 .517 .161 .138 .517 .155 .029 .538 265 116 .538 123 0.490 0.168 -2.7 0.8 -2.4 0. 1348 640073 EC EC 174 .402 .086 .402 .345 .138 .029 .350 172 .350 050 037 1.057 0.169 0.9 1.1 0.8 1. 1349 640006 EC EC EC 174 .397 .132 .167 .270 .397 .035 .324 028 112 034 .324 1.069 0.170 1.4 1.1 1.6 1. 1350 639924 EC EC EC 174 .810 .023 .092 .810 .040 .035 .497 143 086 .497 287 -1.318 0.224 -0.4 1.0 -0.5 0.	L345	639978	EC	EC	174	.833	.833	.012	.069	.063	.023	.492	.492	006	325	149	-1.458	0.230	-0.8	0.9	-0.7	8.0	A-	
1348 640073 EC EC 174 .402 .086 .402 .345 .138 .029 .350 172 .350 050 037 1.057 0.169 0.9 1.1 0.8 1. 1349 640006 EC EC 174 .397 .132 .167 .270 .397 .035 .324 028 112 034 .324 1.069 0.170 1.4 1.1 1.6 1. 1350 639924 EC EC 174 .810 .023 .092 .810 .040 .035 .497 143 086 .497 287 -1.318 0.224 -0.4 1.0 -0.5 0.1 1351 640032 EC EC 174 .879 .879 .012 .046 .029 .035 .611 .611 135 280 201 -2.067 0.282 -0.8 0.8 -2.3 0. 1352	L346	630710	EC	EC	174	.782	.058	.782	.063	.075	.023	.473	180	.473	170	148	-1.021	0.207	-0.4	1.0	-0.5	0.9	B+	
1349 640006 EC EC 174 .397 .132 .167 .270 .397 .035 .324 028 112 034 .324 1.069 0.170 1.4 1.1 1.6 1. 1350 639924 EC EC 174 .810 .023 .092 .810 .040 .035 .497 143 086 .497 287 -1.318 0.224 -0.4 1.0 -0.5 0. 1351 640032 EC EC 174 .879 .879 .012 .046 .029 .035 .611 .611 135 280 201 -2.067 0.282 -0.8 0.8 -2.3 0. 1352 640019 EC EC 174 .322 .218 .322 .385 .046 .029 .259 .012 176 1.460 0.176 1.6 1.1 1.6 1. 1353 640038 EC <	L347	640103	EC	EC	174	.517	.161	.138	.517	.155	.029	.538	265	116	.538	123	0.490	0.168	-2.7	0.8	-2.4	0.8	A+	
1350 639924 EC EC 174 .810 .023 .092 .810 .040 .035 .497 143 086 .497 287 -1.318 0.224 -0.4 1.0 -0.5 0.2 1351 640032 EC EC 174 .879 .012 .046 .029 .035 .611 .611 135 280 201 -2.067 0.282 -0.8 0.8 -2.3 0. 1352 640019 EC EC 174 .322 .218 .322 .385 .046 .029 .259 026 .259 .012 176 1.460 0.176 1.6 1.1 1.6 1. 1353 640038 EC EC 174 .667 .081 .063 .161 .667 .029 .497 162 207 166 .497 -0.307 0.181 -0.9 .99 -0.7 0.0 1354 635590	L348	640073	EC	EC	174	.402	.086	.402	.345	.138	.029	.350	172	.350	050	037	1.057	0.169	0.9	1.1	0.8	1.1	A-	
1351 640032 EC EC 174 .879 .879 .012 .046 .029 .035 .611 135 280 201 -2.067 0.282 -0.8 0.8 -2.3 0.2 1352 640019 EC EC 174 .322 .218 .322 .385 .046 .029 .259 026 .259 .012 176 1.460 0.176 1.6 1.1 1.6 1. 1353 640038 EC EC 174 .667 .081 .063 .161 .667 .029 .497 162 207 166 .497 -0.307 0.181 -0.9 0.9 -0.7 0.9 1354 635590 EC EC 174 .718 .075 .121 .718 .040 .046 .589 145 353 .589 071 -0.695 0.195 -1.8 0.8 -1.6 0. 1355 635480	L349	640006	EC	EC	174	.397	.132	.167	.270	.397	.035	.324	028	112	034	.324	1.069	0.170	1.4	1.1	1.6	1.2	A-	
1352 640019 EC EC 174 .322 .218 .322 .385 .046 .029 .259 026 .259 .012 176 1.460 0.176 1.6 1.1 1.6 1. 1353 640038 EC EC 174 .667 .081 .063 .161 .667 .029 .497 162 207 166 .497 -0.307 0.181 -0.9 0.9 -0.7 0.5 1354 635590 EC EC 174 .718 .075 .121 .718 .040 .046 .589 145 353 .589 071 -0.695 0.195 -1.8 0.8 -1.6 0. 1355 635480 EC EC 174 .310 .190 .310 .270 .190 .040 .221 007 .221 117 .094 1.503 0.178 2.3 1.2 2.1 1. 1356	L350	639924	EC	EC	174	.810	.023	.092	.810	.040	.035	.497	143	086	.497	287	-1.318	0.224	-0.4	1.0	-0.5	0.9	C+	
1353 640038 EC EC 174 .667 .081 .063 .161 .667 .029 .497 162 207 166 .497 -0.307 0.181 -0.9 0.9 -0.7 0.0 1354 635590 EC EC 174 .718 .075 .121 .718 .040 .046 .589 145 353 .589 071 -0.695 0.195 -1.8 0.8 -1.6 0. 1355 635480 EC EC 174 .310 .190 .310 .270 .190 .040 .221 007 .221 117 .094 1.503 0.178 2.3 1.2 2.1 1. 1356 635667 EC EC 174 .287 .081 .241 .345 .287 .046 .241 051 021 .025 .241 1.629 0.181 1.4 1.1 2.2 1. 1357 636476 EC EC 174 .287 .046 .287 .431 .195	L351	640032	EC	EC	174	.879	.879	.012	.046	.029	.035	.611	.611	135	280	201	-2.067	0.282	-0.8	0.8	-2.3	0.4	A+	
1354 635590 EC EC 174 .718 .075 .121 .718 .040 .046 .589 145 353 .589 071 -0.695 0.195 -1.8 0.8 -1.6 0.8 1355 635480 EC EC 174 .310 .190 .310 .270 .190 .040 .221 007 .221 117 .094 1.503 0.178 2.3 1.2 2.1 1. 1356 635667 EC EC 174 .287 .081 .241 .345 .287 .046 .241 051 021 .025 .241 1.629 0.181 1.4 1.1 2.2 1. 1357 636476 EC EC 174 .287 .046 .287 .431 .195 .040 .128 113 .128 .097 .006 1.632 0.181 2.7 1.2 4.1 1.	1352	640019	EC	EC	174	.322	.218	.322	.385	.046	.029	.259	026	.259	.012	176	1.460	0.176	1.6	1.1	1.6	1.2	A-	
1355 635480 EC EC 174 .310 .190 .310 .270 .190 .040 .221 007 .221 117 .094 1.503 0.178 2.3 1.2 2.1 1. 1356 635667 EC EC 174 .287 .081 .241 .345 .287 .046 .241 051 021 .025 .241 1.629 0.181 1.4 1.1 2.2 1. 1357 636476 EC EC 174 .287 .046 .287 .431 .195 .040 .128 113 .128 .097 .006 1.632 0.181 2.7 1.2 4.1 1.	L353	640038	EC	EC	174	.667	.081	.063	.161	.667	.029	.497	162	207	166	.497	-0.307	0.181	-0.9	0.9	-0.7	0.9	A-	
1355 635480 EC EC 174 .310 .190 .310 .270 .190 .040 .221 007 .221 117 .094 1.503 0.178 2.3 1.2 2.1 1. 1356 635667 EC EC 174 .287 .081 .241 .345 .287 .046 .241 051 021 .025 .241 1.629 0.181 1.4 1.1 2.2 1. 1357 636476 EC EC 174 .287 .046 .287 .431 .195 .040 .128 113 .128 .097 .006 1.632 0.181 2.7 1.2 4.1 1.	L354	635590	EC	EC	174	.718	.075	.121	.718	.040	.046	.589	145	353	.589	071	-0.695	0.195	-1.8	0.8	-1.6	0.8	A+	
1357 636476 EC EC 174 .287 .046 .287 .431 .195 .040 .128113 .128 .097 .006 1.632 0.181 2.7 1.2 4.1 1.	L355	635480	EC	EC	174	.310	.190	.310	.270	.190	.040	.221	007	.221	117	.094	1.503	0.178	2.3	1.2	2.1	1.3	A+	
	L356	635667	EC	EC	174	.287	.081	.241	.345	.287	.046	.241	051	021	.025	.241	1.629	0.181	1.4	1.1	2.2	1.3	A+	
1358 621302 FC FC 174 563 562 058 052 282 046 512 512 080 207 161 0.201 0.172 1.2 0.0 1.4 0.0	L357	636476	EC	EC	174	.287	.046	.287	.431	.195	.040	.128	113	.128	.097	.006	1.632	0.181	2.7	1.2	4.1	1.7	A+	
"ע ו 1.4- ו פ.ע ו 1.5- ו 1.7- ו 1.00- ו 101- ו 1.2- ו 1.00- ו 215- ו 200- 200	L358	621393	EC	EC	174	.563	.563	.058	.052	.282	.046	.513	.513	080	297	161	0.201	0.173	-1.3	0.9	-1.4	0.9	B-	
1359 633539 EC EC 174 .506 .259 .063 .132 .506 .040 .427064159183 .427 0.503 0.170 0.0 1.0 0.2 1.0	1359	633539	EC	EC	174	.506	.259	.063	.132	.506	.040	.427	064	159	183	.427	0.503	0.170	0.0	1.0	0.2	1.0	A+	
1360 639945 EC EC 174 .603 .603 .218 .092 .075 .012 .373 .373095155160 -0.014 0.166 -1.0 0.9 -0.9 0.9	L360	639945	EC	EC	174	.603	.603	.218	.092	.075	.012	.373	.373	095	155	160	-0.014	0.166	-1.0	0.9	-0.9	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

1366 640056 EC EC 174 .218 .661 .218 .086 .017 .017 .358 .021 .358 .128 .185 .190 .0.194 .0.6 .0.9 .0.6 .1362 .360667 EC EC .174 .448 .035 .448 .397 .103 .017 .256 .076 .256 .076 .026 .0.685 .0.685 .0.64 .2.0 .1.1 .1.6 .1.		ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
1362 630667 EC EC 174 .448 .035 .448 .397 .103 .017 .256 .076 .256 .090 .028 0.685 0.164 .20 1.1 1.6 1363 636023 EC EC 174 .851 .063 .046 .851 .023 .017 .482 .113 .210 .482 .149 .1.592 .0233 .0-6 .0.9 .1.1 1.6 1364 .03993 EC EC EC 174 .201 .207 .241 .201 .333 .017 .108 .154 .023 .108 .0.37 .2019 .0200 1.0 .11 .20 .1355 .39967 EC EC .174 .603 .138 .603 .075 .161 .023 .246 .030 .246 .176 .008 .0.055 .0.168 .1.9 .1.1 .1.5 .12 .1366 .639988 EC EC .174 .603 .488 .187 .167 .017 .265 .017 .265 .008 .0.055 .0.168 .1.9 .1.1 .1.5			Grade	Grade																		out	/F	/B
1363 636023 EC EC 174 .851 .063 .046 .851 .023 .017 .482 .113 .210 .482 .149 .1.592 .0.23 .0.6 .0.9 .1.1 .1364 .639987 EC EC .174 .201 .207 .241 .201 .333 .017 .108 .154 .023 .018 .037 .2019 .0.200 .1.0 .1.1 .2.0 .1365 .639988 EC EC .174 .448 .190 .448 .176 .003 .075 .161 .023 .246 .030 .246 .176 .0.08 .0.055 .0.168 .19 .1.1 .1.5 .1.2 .1366 .639988 EC EC .174 .448 .190 .448 .178 .167 .017 .265 .017 .265 .018 .017 .0.685 .0.164 .1.9 .1.1 .1.5 .1.	_																			0.9	-0.6	0.9	A+	
1364 639993 EC EC 174 .201 .207 .241 .201 .333 .017 .108 .154 .023 .216 .037 .2.019 .0.20 .1.0 .1.1 .2.0 .1365 .639988 EC EC .174 .484 .190 .484 .178 .167 .017 .025 .036 .026 .036 .0277 .0.685 .0.164 .1.9 .1.1 .1.2 .1.1 .1.2 .1.367 .640088 EC EC .174 .484 .190 .484 .178 .167 .017 .205 .0.17 .265 .0.17 .265 .0.33 .0.077 .0.685 .0.164 .1.9 .1.1 .1.5 .1.5 .1.367 .640088 EC EC .174 .632 .213 .046 .632 .086 .0.23 .3.24 .0.64 .2.62 .3.24 .0.55 .0.200 .0.170 .0.8 .1.1 .0.8 .1.1 .1	_						.035															1.1	A+	
1365 639967 EC EC 174 .603 .138 .603 .075 .161 .023 .246 .030 .246 .176 .008 .0.055 0.168 1.9 1.1 1.2 1366 639988 EC EC 174 .448 .190 .448 .178 .167 .017 .265 .017 .265 .083 .077 .0.85 0.164 1.9 1.1 1.5 1.2 1367 640088 EC EC .174 .632 .213 .046 .632 .086 .023 .324 .064 .262 .324 .055 .0.200 .0.170 .0.8 1.1 0.88 1368 64081 EC EC .174 .172 .132 .500 .167 .172 .029 .065 .036 .129 .036 .065 .2.217 .0.211 .1.5 .1.2 1.9 1369 635581 EC EC .174 .644 .121 .144 .069 .644 .023 .499 .134 .115 .2.29 .499 .0.259 .0.172 .2.4 .0.9 .2.2 .2.4 .1371 .40094 EC EC .174 .358 .236 .201 .328 .213 .023 .498 .1.15 .122 .198 .0.413 .0.644 .0.1 .1.0 .0.2 .1372 .40084 EC EC .174 .358 .224 .155 .356 .241 .023 .212 .0.40 .0.87 .212 .0.88 .1.119 .0.170 .1.5 .1.1 .3.6 .1373 .639921 EC EC .174 .538 .218 .598 .081 .075 .0.29 .245 .0.73 .245 .1.12 .1.12 .0.88 .1.119 .0.170 .1.5 .1.1 .3.6 .1.1373 .0.138 .0.18 .0.14 .224 .201 .299 .241 .0.35 .206 .0.40 .0.52 .1.10 .2.06 .1.738 .0.188 .0.8 .1.1 .2.6 .1.376 .3.64 .	_					.851	.063	.046			.017	.482	113		.482		-1.592		-0.6	0.9		8.0	A+	
1366 639988 EC EC 174 .448 .190 .448 .178 .167 .017 .265 .017 .265 .083 .077 .0.685 .0.164 .1.9 1.1 1.5 1367 640081 EC EC .174 .632 .213 .046 .632 .086 .023 .324 .064 .262 .324 .055 .0.200 .0.170 .0.8 1.1 .0.8 1368 640081 EC EC .174 .172 .132 .500 .167 .172 .029 .065 .0.36 .065 .0.36 .065 .0.200 .0.170 .0.8 1.1 .0.8 1369 635581 EC EC .174 .644 .121 .144 .069 .644 .023 .499 .1.54 .115 .229 .499 .0.259 .0.172 .2.4 .0.9 .2.2 1370 636885 EC EC .174 .328 .236 .201 .328 .213 .023 .148 .011 .020 .148 .021 .1.265 .0.173 .2.6 .1.2 .2.4 1371 640094 EC EC .174 .356 .224 .155 .356 .241 .023 .212 .0.40 .0.87 .212 .0.88 .1.119 .0.170 .1.5 .1.1 .3.6 1373 639921 EC EC .174 .598 .218 .598 .081 .075 .0.29 .425 .0.73 .425 .1.27 .1.59 .0.038 .0.168 .1.2 .0.9 .0.5 1376 640031 EC EC .174 .512 .328 .017 .115 .512 .0.29 .3.79 .0.43 .1.18 .1.65 .379 .0.374 .0.164 .0.2 .1.0 .0.2 1376 640031 EC EC .174 .512 .328 .017 .115 .512 .0.29 .3.79 .0.43 .1.18 .1.65 .3.79 .0.374 .0.164 .0.2 .1.0 .0.2 .0.2 .1.3 .1.1 .1.5 .1.1 .3.6 .3.79 .3.74 .1.6 .0.16 .0.2 .0.		639993		_			.207	.241		.333	.017	.108	.154	023		037	2.019		1.0	1.1		1.4	B-	
1367 640088 EC EC 174 .632 .213 .046 .632 .086 .023 .324 .064 .262 .324 .055 .0.200 0.170 0.8 1.1 0.8 1368 640081 EC EC 174 .172 .132 .500 .167 .172 .029 .065 .036 .129 .036 .065 .2.217 0.211 1.5 1.2 1.9 1.9 1.0	63	639967	EC	EC	174	.603	.138	.603		.161	.023		.030			008	-0.055		1.9	1.1		1.1	A+	
1368 640081 EC EC 174 .172 .132 .500 .167 .172 .029 .065 .036 .129 .036 .065 .2.217 .0.211 .1.5 .1.2 .1.9 1369 635581 EC EC 174 .644 .121 .144 .069 .644 .023 .499 .154 .115 .2.29 .499 .0.259 0.172 .2.4 .0.9 .2.2 1370 636885 EC EC 174 .328 .236 .201 .328 .213 .023 .148 .011 .020 .148 .021 .1.265 .0.173 .2.6 .1.2 .2.4 1371 640094 EC EC 174 .500 .086 .184 .201 .500 .029 .351 .1.04 .1.91 .047 .351 .0.413 0.164 .0.1 .0.0 1372 640084 EC EC 174 .356 .224 .155 .356 .241 .023 .212 .040 .087 .212 .088 .1.119 0.170 .1.5 1.1 3.6 1373 639921 EC EC 174 .598 .218 .598 .081 .075 .029 .425 .073 .425 .127 .159 .0.038 0.168 .1.2 0.9 .0.5 1374 621156 EC EC 174 .512 .328 .017 .115 .512 .029 .379 .043 .118 .165 .379 .0.374 0.164 .0.2 .1.0 .0.2 1376 640031 EC EC 174 .695 .695 .695 .075 .155 .046 .029 .459 .459 .150 .139 .0.97 .0.549 0.180 .1.0 0.9 .0.9 1377 628314 EC EC 174 .483 .103 .483 .218 .155 .046 .029 .459 .459 .150 .139 .0.97 .0.549 0.180 .1.0 0.9 .0.9 .137 635481 EC EC 174 .483 .103 .483 .13 .155 .046 .0.40 .412 .159 .412 .0.72 .0.65 .0.473 .0.165 .0.9 .1.2	63	639988	EC	EC	174	.448	.190	.448	.178	.167	.017	.265	.017	.265	083	077	0.685	0.164	1.9	1.1	1.5	1.1	A+	
1369 635581 EC EC 174 .644 .121 .144 .069 .644 .023 .499 .154 .115 .229 .499 .0.259 0.172 .2.4 0.9 .2.2 1370 636885 EC EC 174 .328 .236 .201 .328 .213 .023 .148 .011 .020 .148 .021 .1.265 .0.173 .2.6 .1.2 2.4 .1.2 .	64	640088	EC	EC	174	.632	.213	.046	.632	.086	.023	.324	064	262	.324	.055	-0.200	0.170	0.8	1.1	0.8	1.1	A-	
1370 636885 EC EC 174 .328 .236 .201 .328 .213 .023 .148 .011 .020 .148 .021 1.265 0.173 2.6 1.2 2.4 1371 640094 EC EC 174 .500 .086 .184 .201 .500 .029 .351 .104 .191 .047 .351 .0.413 0.164 .0.1 1.0 0.2 1372 640084 EC EC 174 .598 .218 .598 .081 .075 .029 .425 .073 .425 .127 .159 .0.038 .0.168 .1.2 0.9 .0.5 .1373 639921 EC EC 174 .598 .218 .598 .081 .075 .029 .425 .073 .425 .127 .159 .0.038 .0.168 .1.2 0.9 .0.5 .1374 621156 EC EC 174 .241 .224 .201 .299 .241 .035 .206 .040 .052 .110 .206 .1.738 0.188 0.8 1.1 2.6 .1375 640031 EC EC 174 .512 .328 .017 .115 .512 .029 .379 .0.43 .118 .165 .379 0.374 0.164 .0.2 1.0 .0.2 .1376 640035 EC EC .174 .695 .695 .075 .155 .046 .029 .459 .459 .150 .139 .097 .0.549 0.180 .1.0 0.9 .0.9 .0.9 .1377 628314 EC EC .174 .695 .695 .121 .695 .121 .023 .040 .489 .155 .489 .166 .108 .0.604 .0.18 .1.3 .0.9 .1.4 .1378 .035841 EC EC .174 .483 .103 .483 .218 .155 .040 .412 .159 .412 .0.72 .065 .0.473 0.165 .0.9 .1.0 .1.2 .1379 .035841 EC EC .174 .408 .247 .259 .138 .040 .401 .401 .0.74 .0.32 .105 .1.25 0.175 .1.1 .0.9 .1.2 .1380 .021159 EC EC .174 .316 .316 .247 .259 .318 .040 .401 .401 .0.74 .0.32 .105 .1.25 .0.473 .0.165 .0.9 .0.7 .1.3 .0.9 .1.2 .1.3 .1.3 .1.3 .1.3 .1.3 .1.3 .3.6 .4.4 .2.99 .3.56 .1.6 .0.40 .4.01 .0.74 .0.32 .1.05 .0.48 .1.3 .1	64	640081	EC	EC	174	.172	.132	.500	.167	.172	.029	.065	036	.129	.036	.065	2.217	0.211	1.5	1.2	1.9	1.4	A-	
1371 640094 EC EC 174 .500 .086 .184 .201 .500 .029 .351 .104 .191 .047 .351 0.413 0.164 0.1 1.0 0.2 1372 640084 EC EC EC 174 .356 .224 .155 .356 .241 .023 .212 .040 .087 .212 .088 1.119 0.170 1.5 1.1 3.6 1373 639921 EC EC EC 174 .598 .218 .598 .081 .075 .029 .425 .073 .425 .127 .159 .0038 0.168 -1.2 0.9 .0.5 1374 621156 EC EC EC 174 .224 .224 .201 .299 .241 .035 .206 .040 .052 .110 .206 1.738 0.188 0.18 1.1 2.6 1375 640031 EC EC EC 174 .512 .328 .017 .115 .512 .029 .379 .043 .118 .165 .379 0.374 0.164 -0.2 1.0 -0.2 1376 640035 EC EC EC 174 .695 .695 .075 .155 .046 .029 .459 .459 .150 .139 .097 -0.549 0.180 -1.0 0.9 -0.9 1377 628314 EC EC EC 174 .483 .103 .483 .121 .023 .040 .489 .155 .489 .166 .108 -0.604 0.183 -1.3 0.9 -1.4 1378 635591 EC EC EC 174 .483 .103 .483 .185 .155 .046 .040 .412 .159 .412 .072 .065 0.473 0.165 -0.9 1.0 -1.2 1380 621159 EC EC EC 174 .408 .247 .178 .408 .126 .040 .407 -1.01 -1.03 .407 -0.39 0.830 0.167 -1.3 0.9 -0.7 1381 635946 EC EC EC EC 174 .316 .316 .247 .236 .046 .334 -0.99 .334 .021 .048 .131 0.176 -0.3 1.0 0.4 1383 633541 EC EC EC 174 .310 .161 .310 .247 .236 .046 .334 -0.99 .334 .021 .048 .131 0.176 -0.3 1.0 0.4 1383 633541 EC EC EC EC 174 .330 .316 .040 .315 -1.05 .049 .315 .034 1.086 0.170 0.4 1.0 0.5 1386 684304 K K 139 .863 .086 .036 .007 .029 .046 .269 .269 .050 .014 .142 .1474 .0181 .05 1.0 0.8 1.3 1386 684304 K K 139 .863 .086 .035 .007 .029 .014 .468 .309 .485 .222 .218 .3.697	63	635581	EC	EC	174	.644	.121	.144	.069	.644	.023	.499	154	115	229	.499	-0.259	0.172	-2.4	0.9	-2.2	0.8	A+	
1372 640084 EC EC 174 .356 .224 .155 .356 .241 .023 .212 .040 .087 .212 .088 1.119 0.170 1.5 1.1 3.6 1373 639921 EC EC 174 .598 .218 .598 .081 .075 .029 .425 .073 .425 .127 .159 .0.038 0.168 .1.2 0.9 .0.5 1374 621156 EC EC 174 .241 .224 .201 .299 .241 .035 .206 .040 .052 .110 .206 1.738 0.188 0.8 1.1 2.6 1.375 640031 EC EC 174 .512 .328 .017 .115 .512 .029 .379 .043 .118 .165 .379 0.374 0.164 .0.2 1.0 .0.2 1.376 640035 EC EC 174 .695 .695 .075 .155 .046 .029 .459 .459 .150 .139 .097 -0.549 0.180 -1.0 0.9 -0.9 1.377 628314 EC EC 174 .695 .121 .695 .121 .023 .040 .489 .155 .489 .166 .108 -0.604 0.183 -1.3 0.9 -1.4 1.378 635591 EC EC 174 .483 .103 .483 .218 .155 .040 .412 .159 .412 .072 .065 0.473 0.165 -0.9 1.0 -1.2 1.379 635481 EC EC 174 .408 .247 .259 .138 .040 .401 .401 .074 .032 .039 0.830 0.167 -1.3 0.9 -0.7 1.381 635946 EC EC 174 .336 .144 .299 .356 .161 .040 .315 .105 .049 .315 .034 1.086 0.170 0.4 1.0 0.5 1.382 628062 EC EC 174 .310 .161 .310 .247 .236 .046 .334 .059 .334 .021 .048 1.314 0.176 -0.3 1.0 0.4 1.384 684126 K K 139 .386 .086 .036 .007 .036 .007 .422 .324 .297 .017 .422 .3298 0.267 .03 1.0 0.4 1.388 685029 K K 139 .468 .072 .410 .048 .488 .007 .22 .495 .495 .381 .324 .245 .369 .046 .339 .483 .324 .225 .218 .3697 .0301 .10 0.8 .13 .388 .381 .339 .386 .366 .007 .883 .007 .422 .324 .297 .017 .422 .3298 .0267 .03 .10 0.8 .13 .388 .381 .388 .381 .388 .381 .388 .381 .388 .381 .389 .389 .389 .389 .389 .389 .389 .389 .3	63	636885	EC	EC	174	.328	.236	.201	.328	.213	.023	.148	.011	.020	.148	.021	1.265	0.173	2.6	1.2	2.4	1.3	A+	
1373 639921 EC EC 174 .598 .218 .598 .081 .075 .029 .425 .073 .425 .127 .159 .0.038 0.168 .1.2 0.9 .0.5 1374 621156 EC EC 174 .241 .224 .201 .299 .241 .035 .206 .040 .052 .110 .206 1.738 0.188 0.8 1.1 2.6 1375 640031 EC EC 174 .512 .328 .017 .115 .512 .029 .379 .043 .118 .165 .379 0.374 0.164 .0.2 1.0 .0.2 1376 640035 EC EC 174 .695 .695 .695 .075 .155 .046 .029 .459 .459 .150 .139 .097 .0.549 0.180 -1.0 .0.9 -0.9 1377 628314 EC EC 174 .695 .121 .695 .121 .695 .121 .023 .040 .489 .155 .489 .166 .108 .0.604 0.183 -1.3 0.9 1.4 1378 635591 EC EC 174 .483 .103 .483 .218 .155 .046 .412 .159 .412 .072 .065 0.473 0.165 .0.9 1.0 -1.2 1379 635481 EC EC EC 174 .408 .247 .259 .138 .040 .401 .401 .074 .032 .105 1.295 0.175 -1.1 0.9 -1.2 1380 621159 EC EC EC 174 .408 .247 .178 .408 .126 .040 .407 .101 .103 .407 .039 0.830 0.167 -1.3 0.9 0.7 1381 635946 EC EC EC 174 .356 .144 .299 .356 .161 .040 .315 .105 .0.49 .315 .034 1.086 0.170 0.4 1.0 0.5 1382 628062 EC EC EC 174 .322 .328 .132 .448 .092 .046 .269 .269 .050 .014 .142 1.474 0.181 0.5 0.4 1383 63541 EC EC EC 174 .386 .086 .036 .007 .863 .007 .422 .324 .297 .017 .422 .3.298 0.267 -0.3 1.0 -0.8 1384 684126 K K 139 .863 .086 .036 .007 .029 .014 .468 .309 .468 .091 .212 .2.802 0.234 -0.7 0.9 -0.8 1385 685000 K K 139 .863 .086 .036 .007 .029 .014 .468 .309 .468 .091 .212 .2.802 0.234 -0.7 0.9 -0.8 1386 684933 K K 141 .816 .121 .816 .035 .021 .007 .007 .483 .325 .483 .231	64	640094	EC	EC	174	.500	.086	.184	.201	.500	.029	.351	104	191	.047	.351	0.413	0.164	0.1	1.0	0.2	1.0	A-	
1374 621156 EC EC 174 .241 .224 .201 .299 .241 .035 .206 .040 .052 .110 .206 1.738 0.188 0.8 1.1 2.6 1.375 640031 EC EC 174 .512 .328 .017 .115 .512 .029 .379 .043 .118 .165 .379 0.374 0.164 -0.2 1.0 -0.2 1.376 640035 EC EC 174 .695 .695 .075 .155 .046 .029 .459 .459 .150 .139 .097 -0.549 0.180 -1.0 0.9 -0.9 1.377 628314 EC EC 174 .695 .121 .695 .121 .023 .040 .489 .155 .489 .166 .108 -0.604 0.183 -1.3 0.9 -1.4 1.378 635591 EC EC EC 174 .483 .103 .483 .218 .155 .040 .412 .159 .412 .072 .065 0.473 0.165 -0.9 1.0 -1.2 1.379 635481 EC EC 174 .316 .316 .247 .259 .138 .040 .401 .401 .074 .032 .105 1.295 0.175 -1.1 0.9 -1.2 1.380 621159 EC EC 174 .336 .144 .299 .356 .161 .040 .315 .105 .049 .315 .034 1.086 0.170 0.4 1.0 0.5 1.383 633541 EC EC EC 174 .330 .161 .310 .247 .236 .046 .334 -0.59 .334 -0.21 .048 1.314 0.176 -0.3 1.0 0.4 1.383 633541 EC EC EC 174 .282 .282 .132 .448 .092 .046 .269 .269 .050 .014 .142 1.474 0.181 0.5 1.0 1.3 1.384 684126 K K 139 .863 .086 .036 .007 .863 .007 .422 .324 .297 .017 .422 .3.298 0.267 -0.3 1.0 0.8 1.386 684304 K K 139 .866 .072 .078 .035 .035 .077 .029 .014 .468 .309 .468 .091 .212 .2.802 .2.281 .0.31 .0.34 .0.34 .0.35 .0.34 .0.35 .0.30 .0.	64	640084	EC	EC	174	.356	.224	.155	.356	.241	.023	.212	040	087	.212	.088	1.119	0.170	1.5	1.1	3.6	1.4	A-	
1375 640031 EC EC 174 .512 .328 .017 .115 .512 .029 .379 043 118 165 .379 0.374 0.164 -0.2 1.0 -0.2 1376 640035 EC EC 174 .695 .695 .075 .155 .046 .029 .459 .459 150 139 097 -0.549 0.180 -1.0 0.9 -0.9 1377 628314 EC EC 174 .695 .121 .695 .121 .023 .040 .489 155 .489 166 108 -0.604 0.183 -1.3 0.9 -1.4 1378 635591 EC EC 174 .483 .103 .483 .218 .155 .040 .412 105 .1295 .0175 -1.1 .09 -1.2 1378 .635481 EC EC 174 .316 .247 .259 .138 </td <td>63</td> <td>639921</td> <td>EC</td> <td>EC</td> <td>174</td> <td>.598</td> <td>.218</td> <td>.598</td> <td>.081</td> <td>.075</td> <td>.029</td> <td>.425</td> <td>073</td> <td>.425</td> <td>127</td> <td>159</td> <td>-0.038</td> <td>0.168</td> <td>-1.2</td> <td>0.9</td> <td>-0.5</td> <td>1.0</td> <td>A-</td> <td></td>	63	639921	EC	EC	174	.598	.218	.598	.081	.075	.029	.425	073	.425	127	159	-0.038	0.168	-1.2	0.9	-0.5	1.0	A-	
1376 640035 EC EC 174 .695 .695 .075 .155 .046 .029 .459 .459 .459 .150 .139 .097 .0549 0.180 .1.0 0.9 .0	62	621156	EC	EC	174	.241	.224	.201	.299	.241	.035	.206	040	052	.110	.206	1.738	0.188	0.8	1.1	2.6	1.4	A+	
1377 628314 EC EC 174 .695 .121 .023 .040 .489 155 .489 166 108 0604 0.183 -1.3 0.9 -1.4 1378 635591 EC EC 174 .483 .103 .483 .218 .155 .040 .412 159 .412 072 065 0.473 0.165 -0.9 1.0 -1.2 1379 635481 EC EC 174 .316 .316 .247 .259 .138 .040 .401 .401 074 032 105 1.295 0.175 -1.1 0.9 -1.2 1380 621159 EC EC 174 .408 .247 .178 .408 .126 .040 .407 101 103 .407 039 0.830 0.167 -1.3 0.9 -0.7 1381 635946 EC EC 174 .310 .161	64	640031	EC	EC	174	.512	.328	.017	.115	.512	.029	.379	043	118	165	.379	0.374	0.164	-0.2	1.0	-0.2	1.0	A+	
1378 635591 EC EC 174 .483 .103 .483 .218 .155 .040 .412 159 .412 072 065 0.473 0.165 0.9 1.0 1.2	64	640035	EC	EC	174	.695	.695	.075	.155	.046	.029	.459	.459	150	139	097	-0.549	0.180	-1.0	0.9	-0.9	0.9	A+	
1379 635481 EC EC 174 .316 .247 .259 .138 .040 .401 .401 074 032 105 1.295 0.175 -1.1 0.9 -1.2 1380 621159 EC EC 174 .408 .247 .178 .408 .126 .040 .407 101 103 .407 039 0.830 0.167 -1.3 0.9 -0.7 1381 635946 EC EC 174 .356 .144 .299 .356 .161 .040 .315 049 .315 .034 1.086 0.170 0.4 1.0 0.5 1382 628062 EC EC 174 .310 .161 .310 .247 .236 .046 .334 059 .334 021 048 1.314 0.176 -0.3 1.0 0.4 1383 633541 EC EC 174 .282 .282	62	628314	EC	EC	174	.695	.121	.695	.121	.023	.040	.489	155	.489	166	108	-0.604	0.183	-1.3	0.9	-1.4	8.0	A+	
1380 621159 EC EC 174 .408 .247 .178 .408 .126 .040 .407 101 103 .407 039 0.830 0.167 -1.3 0.9 -0.7 1381 635946 EC EC 174 .356 .144 .299 .356 .161 .040 .315 105 049 .315 .034 1.086 0.170 0.4 1.0 0.5 1382 628062 EC EC EC 174 .310 .161 .310 .247 .236 .046 .334 059 .334 021 048 1.314 0.176 -0.3 1.0 0.4 1383 633541 EC EC 174 .282 .282 .132 .448 .092 .046 .269 .269 .050 .014 142 1.474 0.181 0.5 1.0 1.3 1384 684126 K K <td< td=""><td>63</td><td>635591</td><td>EC</td><td>EC</td><td>174</td><td>.483</td><td>.103</td><td>.483</td><td>.218</td><td>.155</td><td>.040</td><td>.412</td><td>159</td><td>.412</td><td>072</td><td>065</td><td>0.473</td><td>0.165</td><td>-0.9</td><td>1.0</td><td>-1.2</td><td>0.9</td><td>B+</td><td></td></td<>	63	635591	EC	EC	174	.483	.103	.483	.218	.155	.040	.412	159	.412	072	065	0.473	0.165	-0.9	1.0	-1.2	0.9	B+	
1381 635946 EC EC 174 .356 .144 .299 .356 .161 .040 .315 049 .315 .034 1.086 0.170 0.4 1.0 0.5 1382 628062 EC EC 174 .310 .161 .310 .247 .236 .046 .334 059 .334 021 048 1.314 0.176 -0.3 1.0 0.4 1383 633541 EC EC 174 .282 .282 .132 .448 .092 .046 .269 .269 .050 .014 142 1.474 0.181 0.5 1.0 1.3 1384 684126 K K 139 .863 .086 .036 .007 .029 .014 .468 091 212 2802 0.234 -0.7 0.9 -0.8 1385 685000 K K 139 .899 .899 .050 .	63	635481	EC	EC	174	.316	.316	.247	.259	.138	.040	.401	.401	074	032	105	1.295	0.175	-1.1	0.9	-1.2	0.9	A+	
1382 628062 EC EC 174 .310 .161 .310 .247 .236 .046 .334 059 .334 021 048 1.314 0.176 -0.3 1.0 0.4 1383 633541 EC EC 174 .282 .282 .132 .448 .092 .046 .269 .269 .050 .014 142 1.474 0.181 0.5 1.0 1.3 1384 684126 K K 139 .863 .086 .036 .007 .863 .007 .422 324 297 .017 .422 -3.298 0.267 -0.3 1.0 -0.8 1385 685000 K K 139 .899 .899 .050 .022 .007 .022 .495 .495 281 222 218 -3.697 0.301 -1.0 0.8 -1.3 1387 684993 K K 139 <t< td=""><td>62</td><td>621159</td><td>EC</td><td>EC</td><td>174</td><td>.408</td><td>.247</td><td>.178</td><td>.408</td><td>.126</td><td>.040</td><td>.407</td><td>101</td><td>103</td><td>.407</td><td>039</td><td>0.830</td><td>0.167</td><td>-1.3</td><td>0.9</td><td>-0.7</td><td>0.9</td><td>A-</td><td></td></t<>	62	621159	EC	EC	174	.408	.247	.178	.408	.126	.040	.407	101	103	.407	039	0.830	0.167	-1.3	0.9	-0.7	0.9	A-	
1383 633541 EC EC 174 .282 .282 .132 .448 .092 .046 .269 .269 .050 .014 142 1.474 0.181 0.5 1.0 1.3 1384 684126 K K 139 .863 .086 .036 .007 .863 .007 .422 324 297 .017 .422 -3.298 0.267 -0.3 1.0 -0.8 1385 685000 K K 139 .806 .144 .806 .007 .029 .014 .468 309 .468 .091 212 -2.802 0.234 -0.7 0.9 -0.8 1386 684304 K K 139 .899 .899 .050 .022 .007 .022 .495 281 222 218 -3.697 0.301 -1.0 0.8 -1.3 1387 684993 K K 139 .468 <th< td=""><td>63</td><td>635946</td><td>EC</td><td>EC</td><td>174</td><td>.356</td><td>.144</td><td>.299</td><td>.356</td><td>.161</td><td>.040</td><td>.315</td><td>105</td><td>049</td><td>.315</td><td>.034</td><td>1.086</td><td>0.170</td><td>0.4</td><td>1.0</td><td>0.5</td><td>1.0</td><td>A+</td><td></td></th<>	63	635946	EC	EC	174	.356	.144	.299	.356	.161	.040	.315	105	049	.315	.034	1.086	0.170	0.4	1.0	0.5	1.0	A+	
1384 684126 K K 139 .863 .086 .036 .007 .863 .007 .422 324 297 .017 .422 -3.298 0.267 -0.3 1.0 -0.8 1385 685000 K K 139 .806 .144 .806 .007 .029 .014 .468 309 .468 091 212 -2.802 0.234 -0.7 0.9 -0.8 1386 684304 K K 139 .899 .899 .050 .022 .007 .022 .495 .495 281 222 218 -3.697 0.301 -1.0 0.8 -1.3 1387 684993 K K 139 .468 .072 .410 .043 .468 .007 .274 363 .004 137 .274 -0.896 0.190 2.6 1.2 2.0 1388 685029 K K K	62	628062	EC	EC	174	.310	.161	.310	.247	.236	.046	.334	059	.334	021	048	1.314	0.176	-0.3	1.0	0.4	1.0	A+	
1385 685000 K K 139 .806 .144 .806 .007 .029 .014 .468 309 .468 091 212 -2.802 0.234 -0.7 0.9 -0.8 1386 684304 K K 139 .899 .899 .050 .022 .007 .022 .495 .495 281 222 218 -3.697 0.301 -1.0 0.8 -1.3 1387 684993 K K 139 .468 .072 .410 .043 .468 .007 .274 363 .004 137 .274 -0.896 0.190 2.6 1.2 2.0 1388 685029 K K 141 .872 .078 .035 .872 .007 .007 .499 300 397 .499 075 -3.186 0.269 -0.8 0.9 -1.3 1389 684123 K K 141 <	63	633541	EC	EC	174	.282	.282	.132	.448	.092	.046	.269	.269	.050	.014	142	1.474	0.181	0.5	1.0	1.3	1.2	A+	
1386 684304 K K 139 .899 .899 .050 .022 .007 .022 .495 281 222 218 -3.697 0.301 -1.0 0.8 -1.3 1387 684993 K K 139 .468 .072 .410 .043 .468 .007 .274 363 .004 137 .274 -0.896 0.190 2.6 1.2 2.0 1388 685029 K K 141 .872 .078 .035 .872 .007 .007 .499 300 397 .499 075 -3.186 0.269 -0.8 0.9 -1.3 1389 684123 K K 141 .943 .943 .028 .007 .021 .000 .483 327 229 265 -4.175 0.379 -0.7 0.8 -1.5 1390 683778 K K 141 .816 .021 <	68	684126	K	K	139	.863	.086	.036	.007	.863	.007	.422	324	297	.017	.422	-3.298	0.267	-0.3	1.0	-0.8	0.7	A-	
1387 684993 K K 139 .468 .072 .410 .043 .468 .007 .274 363 .004 137 .274 -0.896 0.190 2.6 1.2 2.0 1388 685029 K K 141 .872 .078 .035 .872 .007 .007 .499 300 397 .499 075 -3.186 0.269 -0.8 0.9 -1.3 1389 684123 K K 141 .943 .943 .028 .007 .021 .000 .483 .483 327 229 265 -4.175 0.379 -0.7 0.8 -1.5 1390 683778 K K 141 .816 .121 .816 .035 .021 .007 .483 362 .483 231 164 -2.684 0.235 -0.7 0.9 -1.2	68	685000	K	K	139	.806	.144	.806	.007	.029	.014	.468	309	.468	091	212	-2.802	0.234	-0.7	0.9	-0.8	0.8	A-	
1388 685029 K K 141 .872 .078 .035 .872 .007 .007 .499 300 397 .499 075 -3.186 0.269 -0.8 0.9 -1.3 1389 684123 K K 141 .943 .943 .028 .007 .021 .000 .483 .483 327 229 265 -4.175 0.379 -0.7 0.8 -1.5 1390 683778 K K 141 .816 .121 .816 .035 .021 .007 .483 362 .483 231 164 -2.684 0.235 -0.7 0.9 -1.2	68	684304	K	K	139	.899	.899	.050	.022	.007	.022	.495	.495	281	222	218	-3.697	0.301	-1.0	0.8	-1.3	0.5	A+	
1389 684123 K K 141 .943 .943 .028 .007 .021 .000 .483 327 229 265 -4.175 0.379 -0.7 0.8 -1.5 1390 683778 K K 141 .816 .121 .816 .035 .021 .007 .483 362 .483 231 164 -2.684 0.235 -0.7 0.9 -1.2	68	684993	K	K	139	.468	.072	.410	.043	.468	.007	.274	363	.004	137	.274	-0.896	0.190	2.6	1.2	2.0	1.2	A-	
1390 683778 K K 141 .816 .121 .816 .035 .021 .007 .483362 .483231164 -2.684 0.235 -0.7 0.9 -1.2	68	685029	K	K	141	.872	.078	.035	.872	.007	.007	.499	300	397	.499	075	-3.186	0.269	-0.8	0.9	-1.3	0.6	A+	
	68	684123	K	K	141	.943	.943	.028	.007	.021	.000	.483	.483	327	229	265	-4.175	0.379	-0.7	0.8	-1.5	0.3	A+	
	68	683778	K	K	141	.816	.121	.816	.035	.021	.007	.483	362	.483	231	164	-2.684	0.235	-0.7	0.9	-1.2	0.7	B+	
1391 683781 K K 140 .829 .829 .014 .064 .086 .007 .532 .532 138 341 333 -2.688 0.244 -0.9 0.9 -1.4	68	683781	K	K	140	.829	.829	.014	.064	.086	.007	.532	.532	138	341	333	-2.688	0.244	-0.9	0.9	-1.4	0.7	A-	
1392 684129 K K 140 .957 .014 .957 .007 .021 .000 .416345 .416191188 -4.410 0.432 -0.4 0.8 -0.7	68	684129	K	K	140	.957	.014	.957	.007	.021	.000	.416	345	.416	191	188	-4.410	0.432	-0.4	0.8	-0.7	0.6	A-	
1393 683779 K K 140 .836 .050 .836 .014 .093 .007 .413348 .413301147 -2.748 0.247 -0.1 1.0 -0.5	68	683779	K	K	140	.836	.050	.836	.014	.093	.007	.413	348	.413	301	147	-2.748	0.247	-0.1	1.0	-0.5	0.9	A-	
1394 684990 K K 143 .958 .021 .958 .007 .014 .000 .320321 .320132061 -4.669 0.432 -0.1 0.9 -0.7	68	684990	K	K	143	.958	.021	.958	.007	.014	.000	.320	321	.320	132	061	-4.669	0.432	-0.1	0.9	-0.7	0.6	A+	
1395 685030 K K 143 .923 .923 .021 .014 .035 .007 .434 .434184103325 -3.968 0.331 -0.4 0.9 -1.2	68	685030	K	K	143	.923	.923	.021	.014	.035	.007	.434	.434	184	103	325	-3.968	0.331	-0.4	0.9	-1.2	0.5	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	10	Grade	Grade	14	rvai	F(A)	r(D)	r(c)	F(D)	F (-)	FtDI3	r i(A)	FI(D)	r i(c)	r I(D)	IVICas	IVISE	in	in	out	out	/F	/B
1396	684987	K	K	143	.532	.049	.531	.203	.210	.007	.433	280	.433	079	261	-1.201	0.184	-0.3	1.0	-0.5	1.0	A-	
1397	683788	K	K	145	.766	.048	.041	.145	.766	.000	.596	360	240	363	.596	-2.352	0.221	-1.4	0.8	-1.8	0.6	A+	
1398	684988	K	K	145	.848	.048	.034	.069	.848	.000	.568	367	293	283	.568	-3.021	0.256	-1.3	0.8	-1.3	0.6	A+	
1399	684306	K	K	145	.890	.055	.890	.021	.034	.000	.568	467	.568	209	229	-3.461	0.288	-1.3	0.8	-1.6	0.4	A+	
1400	683785	K	K	145	.828	.021	.828	.055	.097	.000	.398	192	.398	222	244	-3.217	0.245	0.5	1.1	-0.1	0.9	A-	
1401	685048	K	K	145	.924	.021	.924	.041	.014	.000	.541	270	.541	371	265	-4.334	0.336	-1.1	0.7	-1.7	0.3	A-	
1402	684986	K	K	145	.938	.021	.938	.007	.028	.007	.314	259	.314	168	203	-4.579	0.365	0.0	1.0	0.8	1.4	A-	
1403	684127	K	K	148	.831	.074	.054	.831	.041	.000	.415	321	218	.415	112	-3.006	0.236	-0.2	1.0	-1.0	0.7	A-	
1404	684125	K	K	148	.878	.088	.878	.014	.020	.000	.423	291	.423	157	268	-3.443	0.266	-0.6	0.9	-0.8	0.7	A+	
1405	683783	K	K	148	.730	.101	.730	.135	.034	.000	.569	302	.569	363	208	-2.298	0.203	-1.8	0.8	-1.7	0.7	A+	
1406	685022	K	K	142	.817	.014	.007	.162	.817	.000	.267	234	.046	216	.267	-2.816	0.235	1.0	1.1	0.1	1.0	A+	
1407	683787	K	K	142	.782	.782	.049	.120	.049	.000	.460	.460	396	208	171	-2.556	0.222	-0.4	0.9	-1.1	0.8	A-	
1408	685023	K	K	142	.789	.028	.162	.021	.789	.000	.595	253	449	247	.595	-2.605	0.224	-1.9	0.8	-1.9	0.6	A+	
1409	685001	K	K	142	.866	.077	.866	.028	.028	.000	.482	413	.482	084	240	-3.380	0.266	-0.8	0.9	-1.2	0.6	A+	
1410	683782	K	K	142	.866	.056	.063	.014	.866	.000	.544	350	385	091	.544	-3.380	0.266	-1.1	0.8	-1.6	0.5	A-	
1411	684985	K	K	142	.894	.049	.035	.021	.894	.000	.548	376	293	228	.548	-3.689	0.291	-1.2	0.8	-1.6	0.4	A-	
1412	684992	K	K	142	.838	.049	.838	.056	.056	.000	.574	188	.574	344	396	-3.117	0.248	-1.7	0.8	-1.1	0.7	A-	
1413	684305	K	K	141	.922	.043	.035	.922	.000	.000	.396	335	209	.396	.000	-4.436	0.340	-0.6	0.9	0.0	0.9	A+	
1414	683784	K	K	141	.709	.099	.149	.043	.709	.000	.450	250	297	120	.450	-2.450	0.214	0.7	1.1	0.1	1.0	A+	
1415	685028	K	K	141	.830	.085	.830	.043	.043	.000	.551	272	.551	289	361	-3.354	0.252	-1.1	0.8	-1.3	0.6	A-	
1416	683786	K	K	144	.847	.007	.118	.021	.847	.007	.449	179	326	249	.449	-3.265	0.253	-0.5	0.9	-0.6	0.8	A+	
1417	683780	K	K	144	.750	.014	.201	.750	.035	.000	.429	138	278	.429	316	-2.519	0.213	-0.1	1.0	0.1	1.0	A+	
1418	685013	K	K	144	.813	.014	.063	.111	.813	.000	.465	151	304	287	.465	-2.968	0.235	-0.3	1.0	-0.9	8.0	B+	
1419	685027	K	K	142	.979	.979	.014	.007	.000	.000	.232	.232	220	089	.000	-5.685	0.595	0.1	1.0	-0.6	0.4	A+	
1420	684128	K	K	142	.747	.746	.056	.169	.028	.000	.326	.326	361	060	218	-2.562	0.216	1.2	1.1	1.1	1.2	A+	
1421	685049	K	K	142	.817	.049	.063	.063	.817	.007	.591	299	321	301	.591	-3.076	0.239	-1.5	0.8	-1.9	0.6	A-	
1422	684991	K	K	142	.768	.162	.768	.035	.021	.014	.450	262	.450	203	232	-2.706	0.222	-0.2	1.0	0.1	1.0	A-	
1423	685024	K	K	143	.916	.916	.049	.014	.021	.000	.480	.480	389	157	216	-4.106	0.322	-0.7	0.9	-1.6	0.4	A+	
1424	684124	K	K	143	.301	.301	.161	.294	.238	.007	.365	.365	369	101	.065	0.047	0.206	0.9	1.1	1.0	1.2	A-	
1425	684994	K	K	143	.846	.070	.014	.063	.846	.007	.568	313	191	366	.568	-3.297	0.256	-1.6	0.8	-1.3	0.6	A+	
1426	684130	K	K	137	.898	.036	.898	.022	.044	.000	.465	301	.465	218	257	-3.862	0.306	-0.3	0.9	-1.1	0.6	A-	
1427	684989	K	K	137	.905	.044	.007	.905	.036	.007	.587	453	220	.587	266	-3.959	0.315	-1.3	0.7	-1.8	0.4	A-	
1428	684858	1	1	139	.856	.856	.043	.022	.079	.000	.317	.317	152	086	252	-3.229	0.261	0.8	1.1	-0.4	0.9	A+	
1429	685015	1	1	139	.453	.065	.453	.446	.036	.000	.306	269	.306	108	174	-0.823	0.190	2.0	1.2	1.4	1.2	A+	
1430	684835	1	1	139	.576	.576	.129	.108	.187	.000	.531	.531	181	230	334	-1.436	0.191	-1.4	0.9	-1.4	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1 10 1		Grade	Grade	100														in	in	out	out	/F	/B
1431	684782	1	1	139	.612	.144	.612	.137	.101	.007	.553	283	.553	248	227	-1.621	0.194	-1.6	0.9	-2.0	0.8	Α-	
1432	684980	1	1	139	.662	.029	.043	.259	.662	.007	.433	212	272	222	.433	-1.890	0.199	0.0	1.0	0.2	1.0	A+	—
1433	684972	1	1	139	.684	.683	.014	.259	.036	.007	.365	.365	193	198	231	-2.011	0.202	0.8	1.1	0.3	1.0	A+	
1434	684969	1	1	139	.734	.115	.072	.734	.065	.014	.572	386	428	.572	015	-2.310	0.212	-1.8	0.8	-1.6	0.7	A-	—
1435	684854	1	1	139	.863	.065	.863	.022	.043	.007	.537	251	.537	285	318	-3.298	0.267	-1.3	0.8	-1.4	0.6	A+	
1436	683757	1	1	141	.546	.248	.142	.064	.546	.000	.380	272	123	118	.380	-1.122	0.187	0.7	1.0	0.0	1.0	A+	
1437	685018	1	1	141	.716	.035	.716	.142	.092	.014	.330	100	.330	100	310	-2.020	0.205	0.8	1.1	0.3	1.0	A-	—
1438	684850	1	1	141	.617	.199	.617	.078	.099	.007	.434	294	.434	137	164	-1.477	0.191	-0.1	1.0	-0.7	0.9	A+	
1439	685014	1	1	141	.731	.730	.057	.085	.128	.000	.249	.249	224	212	.001	-2.105	0.208	1.5	1.2	1.2	1.2	A-	
1440	685025	1	1	141	.752	.142	.752	.057	.050	.000	.407	281	.407	147	202	-2.238	0.213	-0.2	1.0	1.4	1.3	B-	
1441	684843	1	1	141	.723	.723	.092	.092	.092	.000	.428	.428	108	243	310	-2.063	0.206	-0.1	1.0	-0.7	0.9	A-	
1442	684545	1	1	141	.837	.837	.078	.071	.007	.007	.478	.478	288	295	171	-2.857	0.245	-0.5	0.9	-1.3	0.7	A-	
1443	684771	1	1	141	.823	.057	.085	.021	.823	.014	.623	336	444	187	.623	-2.740	0.238	-1.8	0.8	-2.2	0.5	A+	
1444	684840	1	1	141	.617	.135	.149	.617	.092	.007	.517	416	152	.517	159	-1.477	0.191	-1.4	0.9	-1.3	0.9	A+	
1445	685037	1	1	140	.886	.036	.014	.886	.057	.007	.606	386	257	.606	358	-3.237	0.285	-1.3	8.0	-2.0	0.5	A+	
1446	684976	1	1	140	.771	.086	.086	.057	.771	.000	.321	139	195	177	.321	-2.261	0.220	0.8	1.1	0.3	1.0	A+	
1447	684857	1	1	140	.771	.107	.036	.086	.771	.000	.500	327	311	183	.500	-2.261	0.220	-0.8	0.9	-0.3	0.9	A+	
1448	685039	1	1	140	.807	.807	.121	.036	.036	.000	.453	.453	232	245	311	-2.517	0.233	-0.4	0.9	-0.7	0.9	A+	
1449	685026	1	1	140	.857	.057	.064	.857	.014	.007	.504	328	283	.504	271	-2.941	0.261	-0.8	0.9	-1.0	0.7	A-	
1450	685148	1	1	140	.671	.079	.064	.186	.671	.000	.401	137	369	157	.401	-1.658	0.198	0.2	1.0	-0.4	0.9	A+	
1451	684770	1	1	140	.479	.386	.064	.479	.071	.000	.349	015	326	.349	339	-0.698	0.185	0.5	1.0	0.5	1.0	A+	
1452	683758	1	1	140	.864	.864	.071	.036	.029	.000	.499	.499	319	283	218	-3.010	0.266	-0.6	0.9	-1.3	0.7	A-	
1453	684116	1	1	140	.879	.071	.879	.029	.021	.000	.446	319	.446	250	152	-3.158	0.278	-0.4	0.9	-1.0	0.7	A-	
1454	685057	1	1	140	.864	.864	.029	.021	.079	.007	.535	.535	187	321	326	-3.010	0.266	-1.0	0.8	-1.3	0.7	A+	
1455	685040	1	1	143	.664	.084	.664	.070	.182	.000	.248	144	.248	302	001	-1.874	0.194	2.0	1.2	1.3	1.2	A-	
1456	684546	1	1	143	.762	.762	.042	.182	.014	.000	.099	.099	002	107	006	-2.451	0.214	2.4	1.3	2.2	1.4	A+	
1457	685041	1	1	143	.755	.112	.063	.063	.755	.007	.523	313	184	265	.523	-2.406	0.212	-1.3	0.9	-1.2	0.8	A-	
1458	684296	1	1	143	.238	.238	.175	.266	.315	.007	.082	.082	084	.168	129	0.330	0.211	1.8	1.2	2.8	1.6	A-	
1459	684542	1	1	143	.636	.084	.636	.105	.168	.007	.379	368	.379	243	.032	-1.726	0.191	0.5	1.0	0.0	1.0	A+	
1460	684110	1	1	143	.643	.189	.112	.049	.643	.007	.665	426	204	325	.665	-1.762	0.192	-3.5	0.7	-3.2	0.7	A+	
1461	683810	1	1	143	.734	.175	.734	.049	.035	.007	.491	317	.491	143	263	-2.274	0.207	-0.8	0.9	-1.0	0.8	A-	
1462	684547	1	1	143	.476	.392	.105	.014	.476	.014	.264	105	184	131	.264	-0.931	0.184	2.2	1.2	2.2	1.2	A+	
1463	684295	1	1	145	.352	.469	.145	.352	.034	.000	.214	035	130	.214	213	-0.031	0.197	2.5	1.2	3.8	1.7	A+	
1464	685021	1	1	145	.766	.152	.766	.062	.021	.000	.496	389	.496	230	106	-2.352	0.221	-0.3	1.0	-0.7	0.8	Α+	
1465	685056	1	1	145	.835	.083	.041	.034	.834	.007	.573	347	350	285	.573	-2.895	0.248	-1.4	0.8	-1.1	0.7	A+	
	55555	-		1.0	.555	.555		.00 .	.55	.557	.5,5	.5 1,	.550	05	.5,5	055	5.2.10		5.0		٥.,		

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	טו	Grade	Grade	74	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
1466	684772	1	1	145	.972	.972	.007	.000	.021	.000	.299	.299	214	.000	219	-5.107	0.522	0.0	1.0	-0.8	0.3	A+	
1467	684970	1	1	145	.841	.062	.841	.062	.034	.000	.398	248	.398	157	261	-2.957	0.251	0.2	1.0	0.3	1.1	A-	
1468	685059	1	1	145	.890	.028	.028	.055	.890	.000	.596	317	361	332	.596	-3.461	0.288	-1.6	0.7	-1.7	0.4	A-	
1469	684549	1	1	145	.841	.841	.041	.117	.000	.000	.306	.306	218	213	.000	-2.957	0.251	1.1	1.2	0.3	1.1	A+	
1470	685055	1	1	145	.772	.069	.014	.138	.772	.007	.581	301	166	442	.581	-2.401	0.223	-1.4	0.8	-1.5	0.7	A+	
1471	684841	1	1	145	.635	.090	.634	.145	.131	.000	.533	289	.533	313	191	-1.540	0.197	-0.8	0.9	-1.2	0.8	A+	
1472	685044	1	1	145	.862	.862	.083	.028	.028	.000	.575	.575	369	329	262	-3.543	0.266	-1.4	0.8	-1.5	0.6	A-	
1473	685053	1	1	145	.903	.034	.041	.903	.014	.007	.298	.002	363	.298	197	-4.027	0.305	0.2	1.0	1.3	1.6	A-	
1474	684975	1	1	145	.676	.676	.048	.028	.248	.000	.339	.339	246	136	194	-2.156	0.202	1.8	1.2	1.3	1.2	A+	
1475	685034	1	1	145	.828	.828	.021	.069	.083	.000	.515	.515	226	316	299	-3.217	0.245	-0.7	0.9	-1.0	0.7	A-	
1476	684995	1	1	145	.931	.028	.021	.931	.021	.000	.554	388	270	.554	270	-4.451	0.349	-1.2	0.7	-1.8	0.3	A-	
1477	684844	1	1	145	.566	.076	.566	.145	.214	.000	.509	073	.509	292	318	-1.547	0.190	-0.6	1.0	-1.0	0.9	A-	
1478	685032	1	1	145	.883	.883	.055	.041	.021	.000	.571	.571	361	315	270	-3.768	0.283	-1.2	0.8	-1.7	0.4	A+	
1479	684977	1	1	145	.572	.097	.124	.207	.572	.000	.344	142	397	.007	.344	-1.583	0.191	1.8	1.2	1.8	1.2	B+	
1480	683763	1	1	145	.841	.055	.028	.841	.076	.000	.613	368	242	.613	379	-3.341	0.252	-1.6	0.8	-2.0	0.5	A+	
1481	683761	1	1	148	.710	.209	.020	.709	.054	.007	.391	388	301	.391	.133	-2.176	0.199	0.0	1.0	1.2	1.2	A-	
1482	683748	1	1	148	.885	.885	.061	.020	.034	.000	.410	.410	244	279	182	-3.515	0.273	-0.6	0.9	-0.6	0.7	A+	
1483	684112	1	1	148	.777	.101	.054	.068	.777	.000	.334	236	103	177	.334	-2.602	0.215	0.4	1.1	0.3	1.1	A+	
1484	685052	1	1	148	.966	.966	.007	.020	.007	.000	.267	.267	017	312	036	-4.925	0.464	-0.1	0.9	-0.5	0.6	A+	
1485	684548	1	1	148	.520	.291	.041	.520	.142	.007	.379	246	314	.379	066	-1.175	0.184	1.1	1.1	0.6	1.1	A+	
1486	684308	1	1	148	.493	.493	.189	.291	.027	.000	.209	.209	314	.057	044	-1.040	0.184	3.0	1.2	3.7	1.4	A+	
1487	684114	1	1	148	.926	.926	.034	.034	.007	.000	.367	.367	259	199	166	-4.043	0.326	-0.4	0.9	-0.8	0.6	A+	
1488	683816	1	1	142	.909	.028	.908	.021	.042	.000	.375	314	.375	130	186	-3.733	0.308	-0.2	0.9	-0.8	0.7	A+	
1489	684783	1	1	142	.697	.190	.697	.042	.070	.000	.566	490	.566	228	086	-2.025	0.201	-1.8	0.8	-1.6	8.0	A+	
1490	685051	1	1	142	.901	.901	.042	.035	.021	.000	.451	.451	345	160	247	-3.641	0.299	-0.6	0.9	-1.3	0.5	A-	
1491	684773	1	1	142	.930	.056	.930	.007	.007	.000	.310	246	.310	095	175	-4.051	0.345	0.1	1.0	-0.5	0.7	A-	
1492	684298	1	1	142	.662	.120	.127	.070	.662	.021	.548	358	287	126	.548	-1.828	0.196	-1.6	0.9	-1.4	0.8	A+	
1493	685054	1	1	142	.627	.077	.627	.225	.070	.000	.235	200	.235	132	021	-1.639	0.192	2.6	1.2	2.6	1.4	A+	
1494	684134	1	1	142	.782	.162	.782	.021	.035	.000	.546	367	.546	282	270	-2.556	0.222	-1.4	0.8	-1.4	0.7	A+	
1495	684774	1	1	142	.909	.908	.028	.028	.035	.000	.491	.491	242	202	370	-3.733	0.308	-0.8	0.8	-1.5	0.5	A-	
1496	684563	1	1	142	.585	.197	.585	.014	.204	.000	.338	283	.338	077	111	-1.421	0.189	1.4	1.1	0.5	1.1	A+	
1497	685017	1	1	142	.451	.183	.345	.451	.021	.000	.138	279	.149	.138	217	-0.814	0.192	4.9	1.4	5.1	1.8	A+	
1498	684855	1	1	142	.838	.838	.035	.028	.092	.007	.446	.446	203	212	295	-3.117	0.248	-0.4	0.9	-0.8	0.7	A-	
1499	684851	1	1	142	.655	.655	.092	.141	.113	.000	.564	.564	342	170	349	-1.889	0.198	-1.6	0.9	-1.6	0.8	A+	
1500	684543	1	1	142	.866	.049	.866	.063	.014	.007	.340	195	.340	236	130	-3.380	0.266	0.2	1.0	0.1	1.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

1501 684849 1	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1502 685088 1			Grade	Grade																in	out	out	/F	/B
1503 685035 1			1	_																1.3			l	
1504 684979	_		1																				B-	
1505 684544 1	1503	685035	1	1			.183	.754	.042	.021	.000	.545	354	.545	326	228	-2.482		-1.3	0.9			A-	igwdot
1506 685036		684979	1	1			.077	.838			.000		340						-0.6	0.9	-0.9		A+	<u> </u>
1507 684852 1	1505	684544	1	1	141	.879	.879	.064	.021	.035	.000	.493	.493	256	257	330	-3.857	0.286	-0.8	0.9	-1.0	0.6	A+	
1508 685020	1506	685036	1	1	141	.745	.213	.028	.014	.745	.000	.607	443	343	224	.607	-2.688	0.222	-1.6	8.0	-1.6	0.7	A+	
1509 683760 1	1507	684852	1	1	141	.645	.106	.645	.135	.113	.000	.536	324	.536	274	199	-2.055	0.205	-0.3	1.0	-0.6	0.9	A-	
1510 684561 1	1508	685020	1	1	141	.553	.035	.326	.085	.553	.000	.375	287	215	117	.375	-1.527	0.199	2.4	1.2	3.5	1.6	A+	
1511 684973 1	1509	683760	1	1	141	.674	.674	.043	.184	.099	.000	.516	.516	237	256	316	-2.227	0.209	-0.1	1.0	-0.5	0.9	A+	
1512 683764 1	1510	684561	1	1	141	.738	.149	.064	.738	.043	.007	.617	359	321	.617	283	-2.639	0.220	-1.8	0.8	-1.2	0.7	A+	
1513 685033 1	1511	684973	1	1	141	.667	.667	.092	.085	.149	.007	.491	.491	140	244	304	-2.183	0.208	0.3	1.0	-0.1	1.0	A-	<u> </u>
1514 684847	1512	683764	1	1	141	.688	.688	.106	.064	.142	.000	.578	.578	465	358	106	-2.315	0.211	-1.2	0.9	0.5	1.1	A+	
1515 683815 1	1513	685033	1	1	141	.603	.135	.603	.064	.199	.000	.471	336	.471	326	091	-1.808	0.201	0.8	1.1	0.4	1.1	A+	
1516 685031 1	1514	684847	1	1	141	.518	.092	.170	.220	.518	.000	.566	199	523	069	.566	-1.330	0.198	-0.9	0.9	-0.7	0.9	A+	
1517 684115 1	1515	683815	1	1	144	.764	.139	.035	.063	.764	.000	.523	289	308	273	.523	-2.612	0.217	-0.8	0.9	-1.4	0.7	B-	
1518 684786 1	1516	685031	1	1	144	.507	.021	.076	.507	.396	.000	.284	302	185	.284	102	-1.187	0.186	2.4	1.2	2.3	1.3	A-	
1519 684117 1	1517	684115	1	1	144	.569	.188	.076	.569	.167	.000	.532	322	349	.532	120	-1.501	0.188	-1.5	0.9	-1.4	0.9	A-	
1520 684996 1	1518	684786	1	1	144	.618	.021	.618	.000	.361	.000	.293	239	.293	.000	226	-1.753	0.192	2.1	1.2	1.1	1.1	A+	
1521 685038 1	1519	684117	1	1	144	.889	.889	.042	.049	.021	.000	.566	.566	326	365	239	-3.696	0.286	-1.3	0.8	-1.7	0.5	B+	
1522 685043 1 1 144 .799 .799 .076 .104 .021 .000 .504 .504 .179 .375 .281 -2.861 0.229 -0.7 0.9 -1.1 0.8 A+ 1523 685016 1 1 142 .894 .035 .894 .014 .042 .014 .313 296 .313 180 044 -3.836 0.293 0.1 1.0 0.5 1.2 A+ 1524 684113 1 1 142 .901 .063 .021 .014 .901 .000 .477 359 178 246 .477 -3.924 0.301 -0.8 0.8 -1.3 0.5 A- 1525 683811 1 1 142 .958 .007 .021 .958 .014 .000 .378 145 254 .378 233 -4.930 .0432 -0.3 .09 -1.0	1520	684996	1	1	144	.826	.063	.056	.826	.056	.000	.584	354	342	.584	250	-3.082	0.241	-1.5	0.8	-1.5	0.6	A-	
1523 685016 1 1 142 .894 .035 .894 .014 .042 .014 .313 296 .313 180 044 -3.836 0.293 0.1 1.0 0.5 1.2 A+ 1524 684113 1 1 142 .991 .063 .021 .014 .901 .000 .477 359 178 246 .477 -3.924 0.301 -0.8 0.8 -1.3 0.5 A- 1525 683811 1 1 142 .958 .007 .021 .958 .014 .000 .378 145 254 .378 233 -4.930 0.432 -0.3 0.9 -1.2 0.3 A+ 1526 6845108 1 1 142 .845 .056 .845 .049 .042 .007 .454 184 .454 234 308 -3.319 0.254 -0.3 0.9 -1.0	1521	685038	1	1	144	.722	.194	.722	.069	.007	.007	.315	058	.315	342	234	-2.342	0.207	1.2	1.1	1.1	1.2	A-	
1524 684113 1 1 142 .901 .063 .021 .014 .901 .000 .477 359 178 246 .477 -3.924 0.301 -0.8 0.8 -1.3 0.5 A- 1525 683811 1 1 142 .958 .007 .021 .958 .014 .000 .378 145 254 .378 233 -4.930 0.432 -0.3 0.9 -1.2 0.3 A+ 1526 684108 1 1 142 .845 .056 .845 .049 .042 .007 .454 184 .454 234 308 -3.319 0.254 -0.3 0.9 -1.0 0.7 A+ 1527 684560 1 1 142 .528 .359 .070 .028 .528 .014 .444 395 004 133 .444 -1.324 0.191 0.6 1.0 -0.1	1522	685043	1	1	144	.799	.799	.076	.104	.021	.000	.504	.504	179	375	281	-2.861	0.229	-0.7	0.9	-1.1	0.8	A+	
1525 683811 1 1 142 .958 .007 .021 .958 .014 .000 .378 145 254 .378 233 4930 0.432 -0.3 0.9 -1.2 0.3 A+ 1526 684108 1 1 142 .845 .056 .845 .049 .042 .007 .454 184 .454 234 308 -3.319 0.254 -0.3 0.9 -1.0 0.7 A+ 1527 684560 1 1 142 .528 .359 .070 .028 .528 .014 .444 395 004 133 .444 -1.324 0.191 0.6 1.0 -0.1 1.0 A+ 1528 684307 1 1 142 .183 .500 .268 .183 .049 .000 .190 152 .106 .190 205 0.693 0.239 1.0 1.1 2.2	1523	685016	1	1	142	.894	.035	.894	.014	.042	.014	.313	296	.313	180	044	-3.836	0.293	0.1	1.0	0.5	1.2	A+	
1526 684108 1 1 142 .845 .056 .845 .049 .042 .007 .454 184 .454 234 308 -3.319 0.254 -0.3 0.9 -1.0 0.7 A+ 1527 684560 1 1 142 .528 .359 .070 .028 .528 .014 .444 395 004 133 .444 -1.324 0.191 0.6 1.0 -0.1 1.0 A+ 1528 684307 1 1 142 .183 .500 .268 .183 .049 .000 .190 152 .106 .190 205 0.693 0.239 1.0 1.1 2.2 1.8 A+ 1529 684974 1 1 142 .817 .070 .817 .049 .056 .007 .538 347 169 188 .538 -0.997 0.191 -1.4 0.9 -0.7	1524	684113	1	1	142	.901	.063	.021	.014	.901	.000	.477	359	178	246	.477	-3.924	0.301	-0.8	0.8	-1.3	0.5	A-	
1527 684560 1 1 142 .528 .359 .070 .028 .528 .014 .444 395 004 133 .444 -1.324 0.191 0.6 1.0 -0.1 1.0 A+ 1528 684307 1 1 142 .183 .500 .268 .183 .049 .000 .190 152 .106 .190 205 0.693 0.239 1.0 1.1 2.2 1.8 A+ 1529 684974 1 1 142 .817 .070 .817 .049 .056 .007 .615 316 .615 278 374 -3.076 0.239 -2.0 0.8 -2.0 0.5 A- 1530 683756 1 1 142 .465 .127 .162 .239 .465 .007 .538 347 169 188 .538 -0.997 0.191 -1.4 0.9 -0.7	1525	683811	1	1	142	.958	.007	.021	.958	.014	.000	.378	145	254	.378	233	-4.930	0.432	-0.3	0.9	-1.2	0.3	A+	
1528 684307 1 1 142 .183 .500 .268 .183 .049 .000 .190 152 .106 .190 205 0.693 0.239 1.0 1.1 2.2 1.8 A+ 1529 684974 1 1 142 .817 .070 .817 .049 .056 .007 .615 316 .615 278 374 -3.076 0.239 -2.0 0.8 -2.0 0.5 A- 1530 683756 1 1 142 .465 .127 .162 .239 .465 .007 .538 347 169 188 .538 -0.997 0.191 -1.4 0.9 -0.7 0.9 A+ 1531 685019 1 1 143 .755 .133 .755 .070 .042 .000 .437 398 .437 160 061 -2.568 0.222 0.4 1.1 0.0 1	1526	684108	1	1	142	.845	.056	.845	.049	.042	.007	.454	184	.454	234	308	-3.319	0.254	-0.3	0.9	-1.0	0.7	A+	
1529 684974 1 1 142 .817 .070 .817 .049 .056 .007 .615 316 .615 278 374 -3.076 0.239 -2.0 0.8 -2.0 0.5 A- 1530 683756 1 1 142 .465 .127 .162 .239 .465 .007 .538 347 169 188 .538 -0.997 0.191 -1.4 0.9 -0.7 0.9 A+ 1531 685019 1 1 143 .755 .133 .755 .070 .042 .000 .437 398 .437 160 061 -2.568 0.222 0.4 1.1 0.0 1.0 A+ 1532 685157 1 1 143 .825 .825 .063 .056 .056 .000 .483 483 279 115 -3.108 0.246 -0.6 0.9 -0.4 0.9 <t< td=""><td>1527</td><td>684560</td><td>1</td><td>1</td><td>142</td><td>.528</td><td>.359</td><td>.070</td><td>.028</td><td>.528</td><td>.014</td><td>.444</td><td>395</td><td>004</td><td>133</td><td>.444</td><td>-1.324</td><td>0.191</td><td>0.6</td><td>1.0</td><td>-0.1</td><td>1.0</td><td>A+</td><td> </td></t<>	1527	684560	1	1	142	.528	.359	.070	.028	.528	.014	.444	395	004	133	.444	-1.324	0.191	0.6	1.0	-0.1	1.0	A+	
1530 683756 1 1 142 .465 .127 .162 .239 .465 .007 .538 347 169 188 .538 -0.997 0.191 -1.4 0.9 -0.7 0.9 A+ 1531 685019 1 1 143 .755 .133 .755 .070 .042 .000 .437 398 .437 160 061 -2.568 0.222 0.4 1.1 0.0 1.0 A+ 1532 685157 1 1 143 .825 .825 .063 .056 .056 .000 .483 .483 382 279 115 -3.108 0.246 -0.6 0.9 -0.4 0.9 A- 1533 684562 1 1 143 .699 .091 .112 .699 .098 .000 .529 399 194 .529 225 -2.196 0.210 -0.3 1.0 -1.1 0.8 A- 1534 684971 1 1 143 .839 <t< td=""><td>1528</td><td>684307</td><td>1</td><td>1</td><td>142</td><td>.183</td><td>.500</td><td>.268</td><td>.183</td><td>.049</td><td>.000</td><td>.190</td><td>152</td><td>.106</td><td>.190</td><td>205</td><td>0.693</td><td>0.239</td><td>1.0</td><td>1.1</td><td>2.2</td><td>1.8</td><td>A+</td><td></td></t<>	1528	684307	1	1	142	.183	.500	.268	.183	.049	.000	.190	152	.106	.190	205	0.693	0.239	1.0	1.1	2.2	1.8	A+	
1531 685019 1 1 143 .755 .133 .755 .070 .042 .000 .437 398 .437 160 061 -2.568 0.222 0.4 1.1 0.0 1.0 A+ 1532 685157 1 1 143 .825 .825 .063 .056 .056 .000 .483 .483 382 279 115 -3.108 0.246 -0.6 0.9 -0.4 0.9 A- 1533 684562 1 1 143 .699 .091 .112 .699 .098 .000 .529 399 194 .529 225 -2.196 0.210 -0.3 1.0 -1.1 0.8 A- 1534 684971 1 1 143 .839 .063 .839 .035 .063 .000 .574 316 .574 225 382 -3.233 0.253 -1.4 0.8 -1.8 0.5 A+	1529	684974	1	1	142	.817	.070	.817	.049	.056	.007	.615	316	.615	278	374	-3.076	0.239	-2.0	0.8	-2.0	0.5	A-	
1532 685157 1 1 143 .825 .825 .063 .056 .056 .000 .483 .483 382 279 115 -3.108 0.246 -0.6 0.9 -0.4 0.9 A- 1533 684562 1 1 143 .699 .091 .112 .699 .098 .000 .529 399 194 .529 225 -2.196 0.210 -0.3 1.0 -1.1 0.8 A- 1534 684971 1 1 143 .839 .063 .839 .035 .063 .000 .574 316 .574 225 382 -3.233 0.253 -1.4 0.8 -1.8 0.5 A+	1530	683756	1	1	142	.465	.127	.162	.239	.465	.007	.538	347	169	188	.538	-0.997	0.191	-1.4	0.9	-0.7	0.9	A+	
1532 685157 1 1 143 .825 .825 .063 .056 .056 .000 .483 .483 382 279 115 -3.108 0.246 -0.6 0.9 -0.4 0.9 A- 1533 684562 1 1 143 .699 .091 .112 .699 .098 .000 .529 399 194 .529 225 -2.196 0.210 -0.3 1.0 -1.1 0.8 A- 1534 684971 1 1 143 .839 .063 .839 .035 .063 .000 .574 316 .574 225 382 -3.233 0.253 -1.4 0.8 -1.8 0.5 A+	1531	685019	1	1	143	.755	.133	.755	.070	.042	.000	.437	398	.437	160	061	-2.568	0.222	0.4	1.1	0.0	1.0	A+	
1534 684971 1 1 143 .839 .063 .839 .035 .063 .000 .574316 .574225382 -3.233 0.253 -1.4 0.8 -1.8 0.5 A+	1532	685157	1	1	143	.825	.825	.063	.056	.056	.000	.483	.483	382	279	115	-3.108	0.246	-0.6	0.9	-0.4	0.9	A-	
1534 684971 1 1 143 .839 .063 .839 .035 .063 .000 .574316 .574225382 -3.233 0.253 -1.4 0.8 -1.8 0.5 A+	1533	684562	1	1	143	.699	.091	.112	.699	.098	.000	.529	399	194	.529	225	-2.196	0.210	-0.3	1.0	-1.1	0.8	A-	
	1534	684971	1	1	143	.839		.839			.000	.574	316			382		0.253	-1.4	0.8	-1.8	0.5	A+	
				1						.797				_									1	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID.	Grade	Grade		ı vai	1 (4)		' (C)	1 (5)	· (-)	i tbis	11(//)	11(0)	1 1(0)	11(0)			in	in	out	out	/F	/B
1536	684856	1	1	143	.790	.049	.790	.049	.105	.007	.453	364	.453	233	136	-2.824	0.232	0.0	1.0	0.1	1.0	A+	
1537	685050	1	1	137	.898	.898	.044	.036	.022	.000	.481	.481	501	094	174	-3.862	0.306	-0.8	0.8	-0.1	0.9	A+	
1538	684111	1	1	137	.723	.029	.073	.723	.175	.000	.323	071	229	.323	192	-2.358	0.216	1.4	1.2	1.7	1.3	A-	
1539	684978	1	1	137	.898	.015	.898	.015	.073	.000	.539	177	.539	298	409	-3.862	0.306	-1.1	8.0	-1.4	0.5	A-	
1540	683755	1	1	137	.818	.818	.058	.058	.066	.000	.559	.559	466	136	302	-3.043	0.247	-1.2	8.0	-0.9	0.8	A-	
1541	683759	1	1	137	.759	.066	.044	.759	.131	.000	.444	081	343	.444	295	-2.601	0.225	0.1	1.0	0.4	1.1	A+	
1542	684848	1	1	137	.438	.139	.438	.153	.270	.000	.390	389	.390	150	011	-0.824	0.192	-0.2	1.0	2.3	1.3	A+	
1543	683762	1	1	137	.876	.876	.058	.051	.015	.000	.636	.636	459	360	191	-3.601	0.284	-1.7	0.7	-2.1	0.4	A+	
1544	684109	1	1	137	.788	.095	.044	.788	.073	.000	.680	488	335	.680	254	-2.812	0.235	-2.3	0.7	-2.5	0.5	A-	
1545	685155	1	1	137	.642	.109	.080	.168	.642	.000	.566	392	288	189	.566	-1.882	0.202	-1.4	0.9	-0.7	0.9	A-	
1546	684899	2	2	139	.669	.173	.669	.079	.079	.000	.442	316	.442	246	082	-1.930	0.200	0.0	1.0	-0.4	0.9	A+	
1547	684902	2	2	139	.770	.770	.043	.101	.086	.000	.499	.499	130	298	335	-2.544	0.221	-1.0	0.9	0.1	1.0	A-	
1548	684914	2	2	139	.309	.180	.252	.259	.309	.000	.280	156	055	104	.280	-0.064	0.203	0.9	1.1	2.6	1.5	A-	
1549	684896	2	2	139	.676	.676	.079	.151	.086	.007	.496	.496	393	183	155	-1.970	0.201	-0.7	0.9	-1.2	8.0	A+	
1550	684879	2	3	139	.338	.129	.165	.338	.353	.014	.031	200	005	.031	.136	-0.225	0.199	4.4	1.4	3.7	1.7	A-	
1551	684920	2	2	139	.518	.223	.518	.158	.094	.007	.450	211	.450	314	019	-1.147	0.189	-0.3	1.0	-0.1	1.0	A+	
1552	683777	2	2	139	.655	.094	.165	.079	.655	.007	.560	339	177	314	.560	-1.851	0.198	-1.7	0.9	-1.7	8.0	A+	
1553	684892	2	2	139	.504	.245	.122	.504	.108	.022	.505	191	274	.505	200	-1.075	0.189	-1.3	0.9	-0.1	1.0	A+	
1554	684845	2	2	141	.603	.106	.092	.199	.603	.000	.599	416	159	298	.599	-1.405	0.190	-2.6	0.8	-2.3	0.8	A+	
1555	683771	2	2	141	.809	.809	.035	.064	.092	.000	.447	.447	327	198	232	-2.630	0.232	-0.5	0.9	-0.7	8.0	A-	
1556	683776	2	2	141	.560	.348	.057	.560	.028	.007	006	.263	259	006	356	-1.192	0.187	5.7	1.5	4.9	1.6	B-	
1557	684917	2	2	141	.787	.085	.007	.113	.787	.007	.523	444	056	281	.523	-2.475	0.223	-1.1	0.9	-0.8	0.8	A-	
1558	684982	2	2	141	.752	.135	.752	.078	.035	.000	.501	221	.501	306	319	-2.238	0.213	-1.0	0.9	-0.7	0.9	A-	
1559	684120	2	2	141	.688	.156	.064	.688	.092	.000	.529	166	350	.529	344	-1.857	0.200	-1.3	0.9	-1.3	0.8	A+	
1560	684928	2	2	141	.674	.241	.028	.043	.674	.014	.412	215	307	251	.412	-1.778	0.197	0.1	1.0	0.0	1.0	A-	
1561	684886	2	2	141	.731	.142	.730	.078	.043	.007	.417	276	.417	318	002	-2.105	0.208	-0.1	1.0	-0.3	1.0	A+	
1562	684135	2	2	140	.586	.129	.071	.586	.214	.000	.476	415	258	.476	071	-1.215	0.188	-1.0	0.9	-0.7	0.9	A+	
1563	684900	2	2	140	.686	.107	.686	.093	.114	.000	.306	072	.306	329	077	-1.737	0.200	1.1	1.1	2.0	1.3	A+	
1564	684912	2	2	140	.836	.093	.836	.029	.043	.000	.517	341	.517	271	235	-2.748	0.247	-0.8	0.9	-1.5	0.7	B-	
1565	684302	2	2	140	.686	.686	.086	.057	.171	.000	.310	.310	070	192	211	-1.737	0.200	1.1	1.1	0.9	1.1	A+	
1566	684877	2	2	140	.493	.121	.300	.079	.493	.007	.400	333	068	228	.400	-0.766	0.185	-0.1	1.0	0.2	1.0	A+	
1567	684890	2	2	140	.500	.179	.500	.293	.029	.000	.245	337	.245	.044	081	-0.800	0.185	2.3	1.2	2.1	1.2	A+	
1568	685153	2	2	140	.550	.300	.057	.093	.550	.000	.404	221	238	153	.404	-1.040	0.186	0.0	1.0	-0.1	1.0	B-	
1569	683775	2	2	143	.525	.119	.266	.091	.524	.000	.346	106	187	194	.346	-1.168	0.184	0.9	1.1	1.1	1.1	A-	
1570	684779	2	2	143	.916	.042	.035	.916	.007	.000	.233	271	.022	.233	171	-3.863	0.318	0.1	1.0	0.8	1.3	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei		Grade	Grade	,,		. ,	1 (5)	' (0)	• •	1 (-)					11(0)	IVICUS		in	in	out	out	/F	/B
1571	684118	2	2	143	.839	.084	.839	.042	.028	.007	.562	386	.562	271	167	-3.023	0.245	-1.4	0.8	-1.8	0.6	A+	
1572	684299	2	2	143	.643	.252	.049	.049	.643	.007	.518	291	242	242	.518	-1.762	0.192	-1.3	0.9	-1.5	0.8	A+	
1573	684787	2	2	143	.713	.084	.042	.713	.154	.007	.422	174	287	.422	188	-2.149	0.202	-0.2	1.0	0.1	1.0	A-	
1574	683767	2	2	143	.629	.175	.056	.629	.126	.014	.492	317	339	.492	067	-1.689	0.190	-1.1	0.9	-0.5	0.9	B+	
1575	684911	2	2	143	.818	.818	.070	.042	.056	.014	.412	.412	289	.015	318	-2.851	0.235	-0.1	1.0	-0.7	0.8	A+	
1576	683814	2	2	143	.490	.273	.168	.063	.490	.007	.544	247	284	157	.544	-0.999	0.184	-2.5	0.8	-1.3	0.9	A-	
1577	684776	2	2	143	.678	.210	.678	.091	.014	.007	.575	434	.575	200	145	-1.950	0.196	-1.9	0.8	-2.0	0.8	A+	
1578	684309	2	2	145	.683	.186	.683	.055	.069	.007	.370	225	.370	255	058	-1.819	0.203	1.4	1.1	0.9	1.2	A-	
1579	685151	2	2	145	.731	.731	.076	.131	.062	.000	.439	.439	255	317	085	-2.119	0.212	0.3	1.0	1.0	1.2	A+	
1580	685046	2	2	145	.828	.034	.110	.828	.021	.007	.615	333	456	.615	116	-2.834	0.244	-1.6	0.8	-1.9	0.5	A-	
1581	684930	2	2	145	.414	.172	.414	.090	.324	.000	.282	126	.282	074	150	-0.369	0.192	1.9	1.2	3.7	1.6	A-	
1582	684916	2	2	145	.793	.793	.097	.083	.028	.000	.351	.351	220	288	.014	-2.555	0.230	1.1	1.1	-0.1	0.9	A-	
1583	684842	2	2	145	.648	.110	.124	.648	.117	.000	.513	316	306	.513	140	-1.618	0.198	-0.5	1.0	-0.8	0.9	A+	
1584	684904	2	2	145	.607	.069	.138	.607	.186	.000	.539	312	319	.539	191	-1.388	0.194	-0.8	0.9	-0.8	0.9	A+	
1585	683769	2	2	145	.635	.634	.159	.103	.103	.000	.394	.394	350	166	036	-1.540	0.197	1.2	1.1	1.2	1.2	A+	
1586	684132	2	2	145	.710	.124	.097	.710	.069	.000	.470	243	277	.470	203	-2.365	0.208	0.0	1.0	1.1	1.2	A+	
1587	684923	2	2	145	.462	.152	.179	.207	.462	.000	.462	139	246	213	.462	-1.013	0.188	0.0	1.0	-0.5	0.9	A-	
1588	684983	2	2	145	.862	.069	.862	.048	.021	.000	.432	191	.432	276	293	-3.543	0.266	-0.1	1.0	-0.3	0.9	A-	
1589	684121	2	2	145	.910	.910	.028	.028	.034	.000	.587	.587	291	320	372	-4.123	0.314	-1.5	0.7	-1.9	0.3	A-	
1590	684981	2	2	145	.807	.131	.034	.028	.807	.000	.498	321	233	281	.498	-3.044	0.236	-0.5	0.9	0.2	1.0	A-	
1591	684903	2	2	145	.497	.179	.200	.497	.124	.000	.433	316	260	.433	.027	-1.190	0.188	0.6	1.0	0.4	1.0	A-	
1592	684929	2	2	145	.407	.234	.200	.152	.407	.007	.262	065	165	081	.262	-0.727	0.190	2.3	1.2	2.8	1.4	B+	
1593	684303	2	2	145	.455	.455	.083	.414	.048	.000	.382	.382	317	183	061	-0.978	0.188	1.1	1.1	1.4	1.2	A+	
1594	684564	2	2	148	.466	.142	.466	.101	.291	.000	.426	360	.426	191	065	-0.905	0.184	0.1	1.0	0.6	1.1	A-	
1595	684552	2	2	148	.703	.115	.128	.047	.703	.007	.432	386	015	291	.432	-2.137	0.198	-0.2	1.0	1.0	1.2	A-	
1596	684887	2	2	148	.743	.081	.743	.122	.054	.000	.534	218	.534	343	272	-2.381	0.206	-1.3	0.9	-1.4	0.7	A+	
1597	684895	2	2	148	.426	.203	.074	.297	.426	.000	.348	127	344	067	.348	-0.700	0.186	1.4	1.1	1.6	1.2	A-	
1598	684556	2	2	148	.770	.162	.770	.041	.027	.000	.342	215	.342	244	100	-2.557	0.213	0.5	1.1	0.2	1.0	A-	
1599	683812	2	2	148	.696	.696	.216	.027	.061	.000	.319	.319	168	251	155	-2.098	0.197	1.1	1.1	1.0	1.2	A-	
1600	684891	2	2	148	.662	.176	.662	.061	.101	.000	.584	421	.584	193	231	-1.908	0.192	-2.2	0.8	-1.9	0.7	A-	
1601	683773	2	2	148	.777	.122	.047	.054	.777	.000	.503	306	161	333	.503	-2.602	0.215	-1.3	0.9	-0.6	0.9	A-	
1602	684781	2	2	148	.473	.095	.054	.473	.378	.000	.251	281	252	.251	.028	-0.939	0.184	2.8	1.2	3.3	1.4	A-	
1603	684878	2	2	148	.453	.284	.128	.135	.453	.000	.350	127	148	198	.350	-0.837	0.185	1.5	1.1	1.0	1.1	A-	
1604	683774	2	2	142	.655	.655	.070	.099	.176	.000	.212	.212	053	355	.050	-1.789	0.195	2.6	1.2	3.0	1.5	A+	
1605	684889	2	2	142	.627	.028	.077	.627	.268	.000	.256	.002	169	.256	179	-1.639	0.192	2.3	1.2	2.7	1.4	Α-	=

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

1606 684300 2 2 142 394 296 148 394 162 0.00 211 1.62 0.00 2.11 0.079 0.466 0.191 2.5 12 3.01 14 A+	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1607 683768 2			Grade	Grade			. ,			` ,										in	out	out	/F	/B
1609 684888 2 2 142 514 155 113 514 197 021 475 -431 -156 475 -055 -1068 0.187 -0.5 1.0 0.8 0.9 A																							A+	
1610 684888 2 2 142 725 725 741 740 750	_																			0.9	-		A+	
1510 683813 2 2 142 .838 .070 .056 .035 .838 .000 .486 .362 .180 .242 .486 .2989 .0.246 .0.8 .0.9 .1.2 .0.7 A+ .1611 .685047 2 2 .142 .549 .289 .848 .063 .070 .000 .426 .426 .174 .261 .263 .2049 .0.202 .0.4 .1.0 .0.1 .1.0 A+ .1611 .685455 2 .2 .142 .549 .289 .549 .077 .085 .000 .363 .180 .363 .318 .341 .1.326 .0.191 1.6 1.1 .1.2 .1.2 A+ .1613 .685149 2 .2 .142 .548 .289 .549 .077 .085 .000 .486 .249 .162 .282 .468 .1850 .0.197 .0.2 .1.0 0.3 .1.0 A+ .1613 .685149 2 .2 .142 .549 .383 .077 .000 .484 .364 .344 .154 .125 .2.436 .0.214 .0.1 .0.1 .0.0 .0.1 .0.4 .1614 .68483 .2 .2 .142 .547 .318 .075 .000 .000 .484 .346 .344 .154 .125 .2.436 .0.214 .0.1 .0.1 .0.0 .0.1 .0.4 .1615 .684554 .2 .2 .142 .549 .500 .085 .310 .005 .000 .488 .313 .149 .238 .458 .1.071 .0.11 .0.1 .0.1 .0.0 .0.1 .0.4 .1616 .685042 .2 .2 .142 .648 .141 .063 .648 .148 .000 .408 .366 .112 .408 .114 .1.850 .0.197 .0.7 .1.1 .0.8 .1.1 .1.4 .1.6 .1.1 .1.4 .	1608	684881						.113		.197	.021				.475	1 1			-0.5	1.0			A-	<u> </u>
1611 685047 2 2 142 .683 .683 .183 .063 .070 .000 .426 .426 .174 .261 .263 .2.049 0.202 0.4 1.0 .0.1 1.0 A+ .1612 .684555 2 2 .142 .549 .289 .549 .077 .000 .486 .426 .180 .018 .341 .1.26 .0.191 1.6 1.1 1.2 1.2 A+ .1613 685149 2 2 .142 .549 .685 .000 .458 .424 .162 .282 .468 .1.850 0.197 .0.2 1.0 .0.3 1.0 A- .1614 .684883 2 2 .142 .747 .141 .746 .035 .077 .000 .488 .436 .144 .125 .2.436 .0.214 .0.0 1.0 .0.5 0.9 A+ .1615 .684554 2 .2 .142 .500 .508 .508 .310 .0.5 .000 .000 .458 .438 .154 .125 .2.436 .0.214 .0.0 1.0 .0.5 .0.9 A+ .1616 .685042 2 .2 .142 .500 .508 .508 .063 .007 .459 .459 .276 .243 .236 .2.940 .0.237 .0.4 .0.9 .0.9 .0.7 A- .1617 .684557 2 .2 .142 .501 .381 .042 .754 .021 .000 .493 .287 .273 .493 .322 .2.482 .0.216 .0.6 .0.9 .0.7 A- .1618 .684918 2 .2 .142 .754 .183 .042 .754 .021 .000 .493 .287 .733 .933 .322 .2.482 .0.216 .0.6 .0.9 .0.4 .0.7 A- .1620 .684921 2 .2 .141 .731 .191 .057 .730 .021 .000 .449 .323 .202 .449 .175 .2.591 .0.219 .0.7 .1.1 .0.1 .1.0 A- .1621 .68431 .2 .2 .141 .362 .922 .035 .014 .028 .000 .455 .355 .355 .2.255 .145 .4.436 .0.340 .0.7 .0.9 .0.4 .0.7 A- .1622 .684594 .2 .2 .141 .362 .922 .055 .014 .028 .000 .455 .357 .327 .0.14 .306 .516 .2.207 .0.219 .0.7 .1.1 .0.1 .0.8 .1.0	1609	684888					.725	.141			.000		.523	349	169	334			-1.2	0.9			A-	<u> </u>
1612 684555 2 2 142 5.49 2.89 5.49 0.77 0.85 0.00 3.63 -1.80 3.63 -0.18 -3.41 -1.326 0.191 1.6 1.1 1.2 1.2 A+ 1.613 685149 2 2 142 5.643 1.20 1.13 1.12 0.648 0.00 4.868 -2.49 -1.62 -2.82 4.668 -1.850 0.197 -0.2 1.0 0.3 1.0 A- 1.614 684883 2 2 142 7.47 1.41 7.46 0.35 0.07 0.00 4.34 -3.64 -1.25 -2.436 0.214 0.0 1.0 0.10 -0.5 0.9 A+ 1.615 684554 2 2 142 5.00 0.85 3.10 1.06 5.00 0.00 4.58 -3.61 -1.25 -2.436 0.214 0.10 0.10 0.0 1.0 A- 1.616 685042 2 2 142 5.00 0.85 3.10 1.06 5.00 0.00 4.58 -3.61 -1.25 -2.436 0.214 0.10 0.0 0.0 1.0 A- 1.616 685054 2 2 142 5.648 1.41 0.63 6.48 1.48 0.00 4.86 -3.66 1.12 4.08 -1.14 -1.850 0.197 0.7 1.1 0.8 1.1 A+ 1.618 684918 2 2 142 7.54 1.83 0.42 7.54 0.01 0.00 4.94 -3.65 -1.12 4.08 -1.14 -1.850 0.197 0.7 1.1 0.8 1.1 A+ 1.618 684918 2 2 141 5.15 5.15 0.28 0.35 0.21 0.00 4.49 -3.23 -2.20 4.49 -1.75 -2.591 0.219 0.7 1.1 0.1 1.0 A- 1.620 684921 2 2 141 5.15 5.15 0.28 0.35 0.21 0.00 4.49 -3.23 -2.20 4.49 -1.75 -2.591 0.219 0.7 1.1 0.1 1.0 A- 1.621 684131 2 2 141 5.85 5.25 5.014 0.08 0.08 0.35 0.31 0.01 0.01 4.49 -3.23 -2.20 4.49 -1.75 -2.591 0.219 0.7 1.1 0.1 1.0 A- 1.622 684994 2 2 141 5.85 5.85 6.00 0.00 4.49 -3.23 -3.25 -1.45 -4.436 0.340 -0.7 0.8 -0.1 0.9 A+ 1.622 684931 2 2 141 5.85 5.85 6.00 0.00 0.496 -3.19 3.44 4.96 -0.71 1.094 0.199 0.3 1.0 0.2 1.0 A+ 1.623 684901 2 2 141 5.85 1.35 5.82 6.00 0.00 6.496 -3.19 3.34 4.96 -0.71 1.094 0.199 0.3 1.0 0.2 1.0 A+ 1.623 684931 2 2 141 5.85 5.85 6.00 6	1610	683813	2		142		.070	.056			.000	.486	362	180		.486			-0.8	0.9	-1.2	0.7	A+	
1614 688488 2 2 142 6.68 1.20 1.13 1.20 6.68 0.00 0.468 -2.49 -1.62 -2.82 4.68 -1.850 0.197 -0.2 1.0 0.3 1.0 A. 1.614 684888 2 2 142 5.00 0.085 3.10 1.06 5.00 0.00 4.58 -3.66 4.34 -1.54 -1.25 -2.436 0.214 0.0 1.0 0.0 0.5 0.9 A. 1.615 684554 2 2 142 5.00 0.085 3.10 1.06 5.00 0.00 4.58 -3.13 1.49 -2.238 4.58 1.071 0.191 0.1 1.0 0.0 1.0 0.4 1.66 685042 2 2 142 5.00 6.085 0.085 0.08 0.07 4.59 4.59 4.59 -2.76 -2.43 -2.36 -2.940 0.237 -0.4 0.9 0.9 0.7 A. 1.616 685557 2 2 142 5.04 6.68 1.41 0.03 6.68 1.48 0.00 4.08 -3.66 1.12 4.08 1.14 -1.850 0.197 0.7 1.1 0.8 1.1 A. 1.616 68557 2 2 142 5.04 1.08 1.14 0.03 6.68 1.48 0.00 4.08 -2.47 4.324 4.324 0.328 0.66 0.9 0.9 0.7 A. 1.618 684918 2 2 141 7.54 1.83 0.42 7.54 0.21 0.00 4.49 -2.27 4.33 -2.22 4.42 0.328 0.66 0.9 0.4 0.7 A. 1.620 684901 2 2 141 7.31 1.91 0.57 7.30 0.21 0.00 4.49 -3.23 -2.02 4.49 -1.75 -2.591 0.219 0.7 1.1 0.1 0.4 1.620 684901 2 2 141 6.68 1.28 0.92 6.68 0.85 0.07 6.01 6.25 0.25 0.25 0.25 0.21 0.00 0.49 0.3 0.25 0.	1611	685047	2	2	142	.683	.683	.183	.063	.070	.000	.426	.426	174	261	263	-2.049	0.202	0.4	1.0	-0.1	1.0	A+	
1614 684883 2 2 142 7.47 7.41 7.46 0.35 0.77 0.00 0.434 -3.66 4.34 -1.54 -1.25 -2.436 0.214 0.0 1.0 -0.5 0.9 A+ 1615 684554 2 2 142 8.07 8.085 0.85 310 0.06 500 0.00 0.458 -313 -1.49 -2.28 4.58 -1.071 0.191 0.1 0.0 0	1612	684555	2	2	142	.549	.289	.549	.077	.085	.000	.363	180	.363	018	341	-1.326	0.191	1.6	1.1	1.2	1.2	A+	
1615 684554 2	1613	685149	2	2	142	.648	.120	.113	.120	.648	.000	.468	249	162	282	.468	-1.850	0.197	-0.2	1.0	0.3	1.0	A-	
1616 685042 2 2 142 .817 .817 .028 .085 .063 .007 .459 .459 .459 .276 .243 .236 .2.940 .0.237 .0.4 .0.9 .0.9 .0.7 A .0.64 .0.64 .141 .0.63 .648 .148 .000 .408 .366 .112 .408 .114 .1.850 .0.170 .0.7 .1.1 .0.8 .1.1 A .0.64 .141 .0.64 .0.64 .141 .0.65 .648 .148 .0.00 .408 .366 .112 .408 .114 .1.850 .0.167 .0.7 .1.1 .0.8 .1.1 A .0.64 .1.65 .1.65 .1.65	1614	684883	2	2	142	.747	.141	.746	.035	.077	.000	.434	366	.434	154	125	-2.436	0.214	0.0	1.0	-0.5	0.9	A+	
1617 684557 2 2 142 648 .141 .063 .648 .148 .000 .408 .366 .112 .408 .114 .1.850 0.197 0.7 1.1 0.8 1.1 A+ .1618 684918 2 2 .142 .754 .183 .042 .754 .021 .000 .493 .287 .273 .493 .322 .2.482 0.216 .0.6 0.9 .1.2 0.8 A+ .1618 684880 2 .2 .141 .915 .915 .028 .035 .021 .000 .404 .404 .4.145 .230 .321 .324 .0.328 .0.6 .0.9 -0.4 0.7 A+ .1621 684921 2 .2 .141 .915 .915 .028 .035 .021 .000 .449 .323 .202 .449 .175 .2.591 0.219 0.7 .1.1 0.1 1.0 A- .1621 684131 2 .2 .141 .922 .922 .035 .014 .028 .000 .435 .435 .351 .235 .145 .4.436 0.340 0.7 0.8 .1.1 0.9 A+ .1622 684894 2 .2 .141 .688 .128 .092 .688 .085 .007 .601 .257 .3237 .601 .296 .2.315 0.211 .1.6 0.8 .1.0 0.8 C+ .1623 684901 2 .2 .141 .674 .071 .170 .071 .674 .014 .516 .367 .3124 .306 .516 .2.227 .0.209 .0.1 1.0 .0.1 1.0 A+ .1624 684553 .2 .2 .141 .578 .325 .090 .000 .564 .344 .566 .2.215 .2.216 .0.209 .0.9 .0.9 .0.7 .0.9 A- .1626 684559 .2 .144 .488 .488 .138 .069 .056 .785 .090 .000 .489 .336 .157 .498 .2.91 .2.758 .0.224 .0.6 .0.9 .0.9 .0.7 .0.9 A- .1626 68478 .2 .2 .144 .483 .438 .439 .160 .264 .000 .285 .285 .084 .135 .133 .341 .0.841 .0.87 .1.3 .1.1 .3.9 .1.5 A+ .1629 .68478 .2 .2 .144 .474 .375 .313 .111 .375 .001 .000 .566 .233 .566 .386 .273 .2.474 .0.12 .1.5 .0.8 .1.5 .0.6 A+ .1629 .68478 .2 .2 .144 .474 .479 .479 .188 .090 .0.00 .566 .233 .566 .386 .273 .2.474 .0.12 .1.5 .0.8 .1.2 .0.8 .1.5 .0.6 .4 .1.629 .0.8441 .0.844 .0.844 .3.44 .3.44 .3.44 .3.44 .3.44 .3.44 .3.44 .3.44 .3.44	1615	684554	2	2	142	.500	.085	.310	.106	.500	.000	.458	313	149	238	.458	-1.071	0.191	0.1	1.0	0.0	1.0	A+	<u> </u>
1618 684918 2 2 142 7.754 1.83 0.42 7.754 0.21 0.00 0.493 -2.87 -2.73 0.493 -3.22 -2.482 0.216 -0.6 0.9 -1.2 0.8 A+ 1619 684880 2 2 141 915 915 0.28 0.35 0.21 0.00 0.404 0.404 -1.45 -2.30 -3.21 -4.324 0.328 -0.6 0.9 -0.4 0.7 A+ 1620 684921 2 2 141 7.731 1.91 0.57 7.30 0.21 0.000 0.449 -3.23 -2.02 0.449 -1.75 -2.591 0.219 0.7 1.1 0.1 1.0 A+ 1621 684131 2 2 141 9.92 9.92 0.35 0.14 0.28 0.00 0.435 -3.51 -2.35 -1.45 -4.436 0.340 -0.7 0.8 -0.1 0.9 A+ 1622 684894 2 2 141 6.88 1.28 0.92 6.88 0.85 0.07 6.01 -2.57 -3.27 6.01 -2.96 -2.315 0.211 1.6 0.8 -1.0 0.8 C+ 1623 684901 2 2 141 0.475 1.21 1.21 1.475 2.284 0.00 0.496 -3.319 -3.44 4.966 -0.071 -1.094 0.199 0.3 1.0 0.2 1.0 0.4 1.0 A+ 1625 684553 2 2 141 5.582 1.35 5.82 2.06 0.78 0.00 5.64 -3.44 5.64 -2.14 -2.78 -1.687 0.200 -0.9 0.9 -0.7 0.9 A- 1626 684559 2 2 144 7.85 0.69 0.56 7.85 0.90 0.00 4.98 -3.36 -1.57 4.98 -2.91 -2.758 0.224 0.6 0.9 -1.2 0.8 A- 1628 684893 2 2 144 4.383 3.076 6.83 3.09 0.00 0.285 2.85 -0.84 -1.35 -1.43 -0.841 0.187 1.3 1.1 3.9 1.5 A+ 1629 684778 2 2 144 3.75 3.13 1.11 3.75 2.01 0.00 3.38 -1.23 -1.81 3.38 -1.24 -0.522 0.190 0.9 1.1 0.9 1.1 A+ 1630 684853 2 2 144 4.781 0.84 0.90 0.90 0.90 0.95 0.95 0.90 0.95	1616	685042	2	2	142	.817	.817	.028	.085	.063	.007	.459	.459	276	243	236	-2.940	0.237	-0.4	0.9	-0.9	0.7	A-	<u> </u>
1619 684880 2 2 141 915 915 028 0.35 0.21 0.00 0.40 4.04 0.145 -2.30 -3.21 -4.324 0.328 -0.6 0.9 -0.4 0.7 A+ 1620 684921 2 2 141 7.31 1.91 0.57 7.30 0.21 0.00 0.49 -3.23 -2.02 0.449 -1.75 -2.591 0.219 0.7 1.1 0.1 1.0 A- 1.0 1.0 A- 1.0 1.0 1.0 A- 1.0 1.0 1.0 1.0 1.0 A- 1.0 1	1617	684557	2	2	142	.648	.141	.063	.648	.148	.000	.408	366	112	.408	114	-1.850	0.197	0.7	1.1	8.0	1.1	A+	
1620 684921 2 2 141 .731 .191 .057 .730 .021 .000 .449 .323 .202 .449 .175 .2.591 0.219 0.7 1.1 0.1 1.0 A .1621 684131 2 2 141 .922 .922 .925 .035 .014 .028 .000 .435 .435 .435 .335 .145 .4.436 0.340 .0.7 0.8 .0.1 0.9 A .1622 684894 2 2 141 .688 .128 .092 .688 .085 .007 .601 .2.57 .327 .601 .2.96 .2.315 0.211 .16 0.8 .1.0 0.8 .1.0 0.8 C .1623 6848901 2 2 141 .475 .121 .121 .475 .284 .000 .496 .3.19 .3.44 .496 .0.071 .1.094 0.199 0.3 1.0 0.2 1.0 A .1624 684553 2 2 141 .674 .071 .1.70 .071 .674 .014 .516 .3.67 .1.24 .3.06 .516 .2.227 0.209 .0.1 1.0 .0.1 1.0 A .1625 684551 2 2 144 .785 .369 .056 .785 .090 .000 .564 .3.44 .564 .2.14 .2.78 .1.687 0.200 .0.9 0.9 0.7 0.9 A .1626 684559 2 2 144 .438 .438 .139 .160 .264 .000 .285 .285 .084 .135 .143 .0.841 0.187 1.3 1.1 3.9 1.5 A .1628 684893 2 2 144 .375 .313 .111 .375 .201 .000 .566 .223 .565 .386 .223 .2.474 .2.244	1618	684918	2	2	142	.754	.183	.042	.754	.021	.000	.493	287	273	.493	322	-2.482	0.216	-0.6	0.9	-1.2	0.8	A+	
1621 684131 2 2 141 922 922 0.35 0.14 0.28 0.00 0.435 0.435 0.35 0.14 0.28 0.00 0.435 0.35 0.14 0.28 0.00 0.435 0.35 0.14 0.28 0.00 0.455 0.35 0.25 0.296 0.2315 0.211 0.6 0.8 0.0 0.8 0.7 0.8 0.1 0.9 0.4 0.28 0.00 0.496 0.319 0.34 0.496 0.71 0.70 0.74 0.14 0.16 0.8 0.1 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8	1619	684880	2	2	141	.915	.915	.028	.035	.021	.000	.404	.404	145	230	321	-4.324	0.328	-0.6	0.9	-0.4	0.7	A+	
1622 684894 2 2 141 .688 .128 .092 .688 .085 .007 .601 .257 .327 .601 .296 .2.315 0.211 -1.6 0.8 -1.0 0.8 C+ 1623 684901 2 2 141 .475 .121 .121 .475 .284 .000 .496 .319 .344 .496 .071 .1.094 0.199 0.3 1.0 0.2 1.0 A+ 1624 684553 2 2 141 .574 .707 .707 .707 .674 .014 .516 .367 .124 .306 .516 -2.227 0.209 -0.1 1.0 -0.1 1.0 A+ 1625 684551 2 2 141 .582 .135 .582 .206 .078 .000 .564 .344 .564 .214 .278 .1.687 0.200 .0.9 0.9 0.7 0.9 A- 1626 684559 2 2 144 .785 .069 .056 .785 .090 .000 .498 .336 .157 .498 .291 -2.758 .0224 -0.6 0.9 -1.2 0.8 A- 1627 684931 2 2 144 .438 .438 .139 .160 .264 .000 .285 .285 .084 .135 .143 -0.841 0.187 1.3 1.1 3.9 1.5 A+ 1628 68478 2 2 144 .375 .313 .111 .375 .201 .000 .578 .298 .578 .323 .334 -3.141 .0.245 -1.5 0.8 -1.5 0.6 A+ 1630 684122 2 2 144 .479 .479 .188 .090 .243 .000 .295 .295 .322 .043 .022 .1049 0.186 2.3 1.2 1.7 1.2 B+ 1631 684853 2 2 144 .813 .111 .035 .035 .813 .007 .569 .268 .374 .341 .569 .2.968 .0.235 .1.3 0.8 .1.7 0.6 A+ 1634 684297 2 2 144 .813 .111 .035 .035 .813 .000 .449 .182 .398 .449 .053 -1.470 0.192 0.4 1.0 0.3 1.0 A- 1636 684897 2 2 142 .776 .776 .056 .155 .028 .000 .426 .328 .577 .2.275 .283 -2.167 0.209 -0.1 1.0 .0.1 1.0 A- 1636 684910 2 2 142 .776 .776 .056 .155 .028 .000 .426 .344 .378 .338 .414 .2.38 .2.37 .2.37 .2.37 .2.474 .0.192 .0.4 .0.0 .3 1.0 A- 1636 684927 2 2 142 .776 .776 .775 .085 .750 .000 .426 .325 .338 .338 .338 .338 .349 .338 .338	1620	684921	2	2	141	.731	.191	.057	.730	.021	.000	.449	323	202	.449	175	-2.591	0.219	0.7	1.1	0.1	1.0	A-	
1623 684901 2 2 141 .475 .121 .121 .475 .284 .000 .496 .319 .344 .496 071 -1.094 0.199 0.3 1.0 0.2 1.0 A+ 1624 684553 2 2 141 .674 .071 .170 .071 .674 .014 .516 -367 -124 -306 .516 -2.227 0.209 -0.1 1.0 -0.1 1.0 A+ 1626 684551 2 2 141 .582 .285 .206 .078 .000 .564 -344 .564 -214 -278 .020 -0.9 -0.7 0.9 A- 1626 684559 2 2 144 .438 .393 160 .000 .488 336 157 .498 .291 .2758 .0224 -0.6 0.9 -1.2 0.8 A- 1627 684931 2	1621	684131	2	2	141	.922	.922	.035	.014	.028	.000	.435	.435	351	235	145	-4.436	0.340	-0.7	8.0	-0.1	0.9	A+	
1624 684553 2 2 141 .674 .071 .170 .071 .674 .014 .516 367 124 306 .516 -2.227 0.209 -0.1 1.0 -0.1 1.0 A+ 1625 684551 2 2 141 .582 .135 .582 .206 .078 .000 .564 344 .564 214 278 -1.687 0.200 -0.9 0.9 -0.7 0.9 A- 1626 684559 2 2 144 .785 .669 .056 .785 .090 .000 .498 .336 157 .498 291 -2.758 .0224 -0.6 .09 -1.2 0.8 A- 1628 684893 2 2 144 .438 .036 .049 .042 .000 .578 323 334 -3.141 0.245 -1.5 0.8 -1.5 0.6 A+ 162	1622	684894	2	2	141	.688	.128	.092	.688	.085	.007	.601	257	327	.601	296	-2.315	0.211	-1.6	0.8	-1.0	8.0	C+	
1625 684551 2 2 141 .582 .135 .582 .206 .078 .000 .564 344 .564 214 278 -1.687 0.200 -0.9 0.9 -0.7 0.9 A- 1626 684559 2 2 144 .785 .069 .056 .785 .090 .000 .498 336 157 .498 .291 -2.758 0.224 -0.6 0.9 -1.2 0.8 A- 1627 684931 2 2 144 .438 .139 .160 .264 .000 .285 .285 084 135 143 -0.841 0.187 1.3 1.1 3.9 1.5 A+ 1628 6849893 2 2 144 .373 .313 .111 .375 .201 .000 .338 .123 .314 .024 .000 .338 .124 -0.522 0.190 .0.9 .1.1 <td< td=""><td>1623</td><td>684901</td><td>2</td><td>2</td><td>141</td><td>.475</td><td>.121</td><td>.121</td><td>.475</td><td>.284</td><td>.000</td><td>.496</td><td>319</td><td>344</td><td>.496</td><td>071</td><td>-1.094</td><td>0.199</td><td>0.3</td><td>1.0</td><td>0.2</td><td>1.0</td><td>A+</td><td> </td></td<>	1623	684901	2	2	141	.475	.121	.121	.475	.284	.000	.496	319	344	.496	071	-1.094	0.199	0.3	1.0	0.2	1.0	A+	
1626 684559 2 2 144 .785 .069 .056 .785 .090 .000 .498 336 157 .498 291 -2.758 0.224 -0.6 0.9 -1.2 0.8 A- 1627 684931 2 2 144 .438 .438 .139 .160 .264 .000 .285 .285 084 135 143 -0.841 0.187 1.3 1.1 3.9 1.5 A+ 1628 684893 2 2 144 .833 .076 .833 .049 .042 .000 .578 298 .578 323 334 -3.141 0.245 -1.5 0.6 A+ 1629 684778 2 2 144 .373 .313 .111 .375 .201 .000 .338 123 .384 314 -0.522 0.190 0.9 1.1 A+ 1.630 684192 2	1624	684553	2	2	141	.674	.071	.170	.071	.674	.014	.516	367	124	306	.516	-2.227	0.209	-0.1	1.0	-0.1	1.0	A+	
1627 684931 2 2 144 .438 .438 .139 .160 .264 .000 .285 .285 .084 .135 .143 -0.841 0.187 1.3 1.1 3.9 1.5 A+ 1628 684893 2 2 144 .833 .076 .833 .049 .042 .000 .578 298 .578 323 334 -3.141 0.245 -1.5 0.6 A+ 1629 684778 2 2 144 .375 .313 .111 .375 .201 .000 .338 123 181 .338 124 -0.522 0.190 0.9 1.1 A+ 1630 684122 2 2 144 .479 .479 .188 .090 .243 .000 .295 .322 .043 .022 -1.049 0.186 2.3 1.2 1.7 1.2 B+ 1631 6848193 2	1625	684551	2	2	141	.582	.135	.582	.206	.078	.000	.564	344	.564	214	278	-1.687	0.200	-0.9	0.9	-0.7	0.9	A-	
1628 684893 2 2 144 .833 .076 .833 .049 .042 .000 .578 298 .578 323 344 -3.141 0.245 -1.5 0.6 A+ 1629 684778 2 2 144 .375 .313 .111 .375 .201 .000 .338 123 181 .338 124 -0.522 0.190 0.9 1.1 0.9 1.1 A+ 1630 684122 2 2 144 .743 .056 .743 .160 .042 .000 .566 223 .566 386 273 -2.474 0.212 -1.5 0.8 -1.2 0.8 A+ 1631 684853 2 2 144 .479 .479 .188 .090 .243 .000 .295 .295 322 043 022 -1.049 0.186 2.3 1.2 1.7 1.2 B+ 1632 684119 2 2 144 .813 .111 .035 <td< td=""><td>1626</td><td>684559</td><td>2</td><td>2</td><td>144</td><td>.785</td><td>.069</td><td>.056</td><td>.785</td><td>.090</td><td>.000</td><td>.498</td><td>336</td><td>157</td><td>.498</td><td>291</td><td>-2.758</td><td>0.224</td><td>-0.6</td><td>0.9</td><td>-1.2</td><td>0.8</td><td>A-</td><td></td></td<>	1626	684559	2	2	144	.785	.069	.056	.785	.090	.000	.498	336	157	.498	291	-2.758	0.224	-0.6	0.9	-1.2	0.8	A-	
1629 684778 2 2 144 .375 .313 .111 .375 .201 .000 .338 123 181 .338 124 -0.522 0.190 0.9 1.1 0.9 1.1 A+ 1630 684122 2 2 144 .743 .056 .743 .160 .042 .000 .566 233 .566 386 273 -2.474 0.212 -1.5 0.8 -1.2 0.8 A+ 1631 684853 2 2 144 .479 .479 .188 .090 .243 .000 .295 .295 .322 043 022 -1.049 0.186 2.3 1.2 1.7 1.2 B+ 1632 684119 2 2 144 .604 .250 .090 .604 .056 .000 .454 241 301 .454 138 -1.680 0.190 -0.1 1.0 .4	1627	684931	2	2	144	.438	.438	.139	.160	.264	.000	.285	.285	084	135	143	-0.841	0.187	1.3	1.1	3.9	1.5	A+	
1630 684122 2 144 .743 .056 .743 .160 .042 .000 .566 223 .566 386 273 -2.474 0.212 -1.5 0.8 -1.2 0.8 A+ 1631 684853 2 2 144 .479 .478 .090 .243 .000 .295 .295 322 043 022 -1.049 0.186 2.3 1.2 1.7 1.2 B+ 1632 684119 2 2 144 .604 .250 .090 .604 .056 .000 .454 241 301 .454 138 -1.680 0.190 -0.1 1.0 -0.4 1.0 A- 1633 684910 2 2 144 .813 .111 .035 .035 .813 .007 .569 268 374 341 .569 -2.968 0.235 -1.3 0.8 -1.7 0.6 A+ 1634 684297 2 2 144 .778 .132 .778	1628	684893	2	2	144	.833	.076	.833	.049	.042	.000	.578	298	.578	323	334	-3.141	0.245	-1.5	0.8	-1.5	0.6	A+	
1631 684853 2 2 144 .479 .479 .188 .090 .243 .000 .295 .295 322 043 022 -1.049 0.186 2.3 1.2 1.7 1.2 B+ 1632 684119 2 2 144 .604 .250 .090 .604 .056 .000 .454 241 301 .454 138 -1.680 0.190 -0.1 1.0 -0.4 1.0 A- 1633 684910 2 2 144 .813 .111 .035 .035 .813 .007 .569 268 374 341 .569 -2.968 0.235 -1.3 0.8 -1.7 0.6 A+ 1634 684297 2 2 144 .778 .132 .778 .049 .042 .000 .583 381 .583 232 318 -2.708 0.222 -1.4 0.8 -1.7 0.7 A- 1635 684884 2 2 142 .751 <t< td=""><td>1629</td><td>684778</td><td>2</td><td>2</td><td>144</td><td>.375</td><td>.313</td><td>.111</td><td>.375</td><td>.201</td><td>.000</td><td>.338</td><td>123</td><td>181</td><td>.338</td><td>124</td><td>-0.522</td><td>0.190</td><td>0.9</td><td>1.1</td><td>0.9</td><td>1.1</td><td>A+</td><td></td></t<>	1629	684778	2	2	144	.375	.313	.111	.375	.201	.000	.338	123	181	.338	124	-0.522	0.190	0.9	1.1	0.9	1.1	A+	
1632 684119 2 2 144 .604 .250 .090 .604 .056 .000 .454 241 301 .454 138 -1.680 0.190 -0.1 1.0 -0.4 1.0 A- 1633 684910 2 2 144 .813 .111 .035 .035 .813 .007 .569 268 374 341 .569 -2.968 0.235 -1.3 0.8 -1.7 0.6 A+ 1634 684297 2 2 144 .778 .132 .778 .049 .042 .000 .583 381 .583 232 318 -2.708 0.222 -1.4 0.8 -1.7 0.7 A- 1635 684884 2 2 142 .556 .176 .134 .556 .134 .000 .449 182 398 .449 053 -1.470 0.192 0.4 1.0 0.3 1.0 A- 1636 684927 2 2 142 .761 <t< td=""><td>1630</td><td>684122</td><td>2</td><td>2</td><td>144</td><td>.743</td><td>.056</td><td>.743</td><td>.160</td><td>.042</td><td>.000</td><td>.566</td><td>223</td><td>.566</td><td>386</td><td>273</td><td>-2.474</td><td>0.212</td><td>-1.5</td><td>0.8</td><td>-1.2</td><td>0.8</td><td>A+</td><td></td></t<>	1630	684122	2	2	144	.743	.056	.743	.160	.042	.000	.566	223	.566	386	273	-2.474	0.212	-1.5	0.8	-1.2	0.8	A+	
1633 684910 2 2 144 .813 .111 .035 .035 .813 .007 .569 268 374 341 .569 -2.968 0.235 -1.3 0.8 -1.7 0.6 A+ 1634 684297 2 2 144 .778 .132 .778 .049 .042 .000 .583 381 .583 232 318 -2.708 0.222 -1.4 0.8 -1.7 0.7 A- 1635 684884 2 2 142 .556 .176 .134 .556 .134 .000 .449 182 398 .449 053 -1.470 0.192 0.4 1.0 0.3 1.0 A- 1636 684927 2 2 142 .711 .099 .711 .127 .063 .000 .475 251 .475 253 231 -2.337 0.209 -0.1 1.0 -0.6 0.9 A- 1637 684897 2 2 142 .761 <t< td=""><td>1631</td><td>684853</td><td>2</td><td>2</td><td>144</td><td>.479</td><td>.479</td><td>.188</td><td>.090</td><td>.243</td><td>.000</td><td>.295</td><td>.295</td><td>322</td><td>043</td><td>022</td><td>-1.049</td><td>0.186</td><td>2.3</td><td>1.2</td><td>1.7</td><td>1.2</td><td>B+</td><td></td></t<>	1631	684853	2	2	144	.479	.479	.188	.090	.243	.000	.295	.295	322	043	022	-1.049	0.186	2.3	1.2	1.7	1.2	B+	
1634 684297 2 2 144 .778 .132 .778 .049 .042 .000 .583 381 .583 232 318 -2.708 0.222 -1.4 0.8 -1.7 0.7 A- 1635 684884 2 2 142 .556 .176 .134 .556 .134 .000 .449 182 398 .449 053 -1.470 0.192 0.4 1.0 0.3 1.0 A- 1636 684927 2 2 142 .711 .099 .711 .127 .063 .000 .475 251 .475 233 -2.337 0.209 -0.1 1.0 -0.6 0.9 A- 1637 684897 2 2 142 .761 .761 .056 .155 .028 .000 .426 .426 313 238 143 -2.657 0.220 0.1 1.0 0.1 1.0 A+ 1638 685152 2 2 142 .570 .275 .	1632	684119	2	2	144	.604	.250	.090	.604	.056	.000	.454	241	301	.454	138	-1.680	0.190	-0.1	1.0	-0.4	1.0	A-	
1635 684884 2 2 142 .556 .176 .134 .556 .134 .000 .449 182 398 .449 053 -1.470 0.192 0.4 1.0 0.3 1.0 A- 1636 684927 2 2 142 .711 .099 .711 .127 .063 .000 .475 251 .475 253 231 -2.337 0.209 -0.1 1.0 -0.6 0.9 A- 1637 684897 2 2 142 .761 .056 .155 .028 .000 .426 .426 313 238 143 -2.657 0.220 0.1 1.0 0.1 1.0 A+ 1638 685152 2 2 142 .570 .275 .085 .570 .070 .000 .547 214 378 .547 273 -1.544 0.193 -1.3 0.9 -0.4 1.0 A- 1639 684913 2 2 142 .683 .113	1633	684910	2	2	144	.813	.111	.035	.035	.813	.007	.569	268	374	341	.569	-2.968	0.235	-1.3	0.8	-1.7	0.6	A+	
1636 684927 2 2 142 .711 .099 .711 .127 .063 .000 .475 251 .475 253 231 -2.337 0.209 -0.1 1.0 -0.6 0.9 A- 1637 684897 2 2 142 .761 .761 .056 .155 .028 .000 .426 .426 313 238 143 -2.657 0.220 0.1 1.0 0.1 1.0 A+ 1638 685152 2 2 142 .570 .275 .085 .570 .070 .000 .547 214 378 .547 273 -1.544 0.193 -1.3 0.9 -0.4 1.0 A- 1639 684913 2 2 142 .683 .113 .085 .683 .106 .014 .597 318 288 .597 283 -2.167 0.204 -1.8 0.8 -1.5 0.8 B+	1634	684297	2	2	144	.778	.132	.778	.049	.042	.000	.583	381	.583	232	318	-2.708	0.222	-1.4	0.8	-1.7	0.7	A-	
1637 684897 2 2 142 .761 .056 .155 .028 .000 .426 .426 313 238 143 -2.657 0.220 0.1 1.0 0.1 1.0 A+ 1638 685152 2 2 142 .570 .275 .085 .570 .070 .000 .547 214 378 .547 273 -1.544 0.193 -1.3 0.9 -0.4 1.0 A- 1639 684913 2 2 142 .683 .113 .085 .683 .106 .014 .597 318 288 .597 283 -2.167 0.204 -1.8 0.8 -1.5 0.8 B+	1635	684884	2	2	142	.556	.176	.134	.556	.134	.000	.449	182	398	.449	053	-1.470	0.192	0.4	1.0	0.3	1.0	A-	
1637 684897 2 2 142 .761 .056 .155 .028 .000 .426 .426 313 238 143 -2.657 0.220 0.1 1.0 0.1 1.0 A+ 1638 685152 2 2 142 .570 .275 .085 .570 .070 .000 .547 214 378 .547 273 -1.544 0.193 -1.3 0.9 -0.4 1.0 A- 1639 684913 2 2 142 .683 .113 .085 .683 .106 .014 .597 318 288 .597 283 -2.167 0.204 -1.8 0.8 -1.5 0.8 B+	1636	684927	2	2	142	.711	.099	.711		.063	.000	.475	251	.475	253	231	-2.337	0.209	-0.1	1.0	-0.6	0.9	A-	
1638 685152 2 2 142 .570 .275 .085 .570 .070 .000 .547 214 378 .547 273 -1.544 0.193 -1.3 0.9 -0.4 1.0 A- 1639 684913 2 142 .683 .113 .085 .683 .106 .014 .597 318 288 .597 283 -2.167 0.204 -1.8 0.8 -1.5 0.8 B+	1637	684897	2	2	142	.761		.056			.000					143	-2.657		0.1	1.0	0.1			
1639 684913 2 2 142 .683 .113 .085 .683 .106 .014 .597318288 .597283 -2.167 0.204 -1.8 0.8 -1.5 0.8 B+	1638	685152	2	2	142	.570	.275	.085			.000	.547	214	378		273	-1.544	0.193	-1.3	0.9	-0.4	1.0	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
1641	684898	2	2	142	.352	.225	.141	.352	.268	.014	.274	321	105	.274	.137	-0.401	0.197	1.6	1.1	3.5	1.6	A-	
1642	684785	2	2	142	.648	.042	.190	.648	.113	.007	.532	199	366	.532	190	-1.964	0.199	-1.0	0.9	-0.1	1.0	A+	
1643	684558	2	2	143	.692	.070	.112	.692	.119	.007	.611	176	398	.611	323	-2.152	0.209	-1.5	0.9	-1.8	0.7	A+	
1644	684919	2	2	143	.322	.175	.077	.322	.427	.000	.367	210	256	.367	048	-0.078	0.203	0.8	1.1	1.4	1.3	A-	
1645	684780	2	2	143	.839	.056	.042	.063	.839	.000	.508	238	275	316	.508	-3.233	0.253	-0.5	0.9	-1.4	0.6	B-	
1646	684550	2	2	143	.657	.657	.091	.126	.126	.000	.506	.506	254	252	252	-1.939	0.204	0.0	1.0	-0.1	1.0	A+	
1647	684133	2	2	143	.699	.091	.077	.133	.699	.000	.661	273	372	370	.661	-2.196	0.210	-2.4	0.8	-2.5	0.6	A+	
1648	684777	2	2	143	.559	.140	.175	.559	.119	.007	.464	290	189	.464	136	-1.383	0.196	0.6	1.1	0.7	1.1	A+	
1649	684925	2	2	143	.525	.147	.315	.524	.007	.007	.673	300	472	.673	.043	-1.193	0.194	-3.0	0.8	-2.7	0.7	B+	
1650	684846	2	2	143	.392	.399	.119	.392	.084	.007	.447	250	123	.447	151	-0.475	0.196	-0.1	1.0	1.2	1.2	A+	
1651	683770	2	2	143	.476	.203	.112	.476	.203	.007	.528	250	326	.528	116	-0.930	0.194	-0.5	1.0	-0.7	0.9	A+	
1652	684915	2	2	143	.713	.084	.070	.126	.713	.007	.657	165	292	491	.657	-2.285	0.213	-2.2	0.8	-2.4	0.6	A+	
1653	684775	2	2	143	.650	.650	.070	.126	.147	.007	.465	.465	313	130	240	-1.898	0.203	0.4	1.0	1.1	1.2	B-	
1654	684984	2	2	137	.839	.839	.058	.007	.095	.000	.352	.352	267	182	175	-3.235	0.258	0.6	1.1	0.5	1.1	A+	
1655	684924	2	2	137	.526	.095	.124	.255	.526	.000	.509	246	265	218	.509	-1.266	0.193	-1.4	0.9	-0.7	0.9	A-	
1656	683766	2	2	137	.803	.102	.036	.803	.058	.000	.568	348	275	.568	294	-2.925	0.240	-1.0	0.9	-1.3	0.7	A-	
1657	684882	2	2	137	.832	.832	.044	.102	.022	.000	.589	.589	327	390	240	-3.169	0.254	-1.3	0.8	-1.6	0.6	A+	
1658	683772	2	2	137	.730	.109	.088	.730	.066	.007	.512	475	172	.512	081	-2.405	0.217	-0.6	0.9	0.0	1.0	A-	
1659	685150	2	2	137	.657	.131	.117	.095	.657	.000	.330	247	053	191	.330	-1.964	0.204	1.7	1.2	1.2	1.2	A-	
1660	685045	2	2	137	.708	.058	.708	.153	.080	.000	.475	294	.475	083	430	-2.267	0.212	-0.1	1.0	0.1	1.0	A-	
1661	683817	2	2	137	.380	.380	.380	.073	.168	.000	.166	027	.166	099	111	-0.525	0.195	3.5	1.3	3.7	1.6	B+	
1662	684565	2	2	137	.562	.066	.117	.255	.562	.000	.337	276	123	137	.337	-1.453	0.194	1.5	1.1	1.7	1.2	A+	
1663	684610	3	3	574	.401	.303	.275	.021	.401	.000	.429	341	074	143	.429	-0.013	0.093	-1.4	1.0	-0.4	1.0	A+	B-
1664	684949	3	3	574	.401	.401	.040	.380	.179	.000	.239	.239	118	067	160	-0.013	0.093	4.2	1.2	4.5	1.3	A-	A+
1665	686605	3	3	574	.352	.232	.352	.214	.200	.002	.180	024	.180	101	081	0.236	0.095	5.5	1.2	6.0	1.4	A+	B+
1666	684637	3	3	574	.524	.098	.064	.524	.312	.002	.231	249	311	.231	.080	-0.620	0.092	6.1	1.2	5.5	1.3	A-	A-
1667	684938	3	3	574	.807	.118	.807	.031	.044	.000	.425	247	.425	183	276	-2.228	0.115	-0.5	1.0	-0.6	0.9	A-	A+
1668	684946	3	3	574	.666	.094	.106	.132	.666	.002	.478	259	134	309	.478	-1.340	0.098	-1.1	1.0	-1.6	0.9	A+	A-
1669	686604	3	3	574	.591	.223	.108	.591	.075	.003	.445	183	250	.445	222	-0.948	0.094	-0.1	1.0	-0.5	1.0	A+	B-
1670	684614	3	3	574	.768	.768	.052	.098	.078	.003	.616	.616	362	357	248	-1.956	0.108	-4.2	0.8	-4.4	0.6	A+	A-
1671	684633	3	3	574	.854	.092	.854	.024	.026	.003	.424	194	.424	246	304	-2.618	0.127	-1.0	0.9	-1.5	0.8	A+	B+
1672	684631	3	3	574	.744	.091	.075	.744	.084	.007	.489	193	291	.489	248	-1.798	0.105	-1.5	0.9	-1.6	0.9	A-	A+
1673	684623	3	3	574	.484	.066	.249	.195	.484	.005	.323	253	143	069	.323	-0.425	0.092	2.9	1.1	2.8	1.1	A-	A-
1674	684936	3	3	574	.653	.066	.220	.653	.056	.005	.420	308	150	.420	226	-1.274	0.097	0.4	1.0	-0.4	1.0	A-	A+
1675	684961	3	3	574	.746	.051	.746	.111	.087	.005	.516	266	.516	291	233	-1.809	0.105	-2.2	0.9	-1.0	0.9	A+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
		Grade	Grade			. (, ,	. (5)	. (0)	. (=)	٠,,	1 (13.13	(, .,	(5)	(0)	(5)	Wicus		in	in	out	out	/F	/B
1676	684958	3	3	574	.488	.300	.139	.068	.488	.005	.241	135	020	167	.241	-0.442	0.092	5.4	1.2	5.5	1.3	A+	A+
1677	684627	3	3	574	.779	.077	.080	.779	.057	.007	.585	350	290	.585	268	-2.027	0.110	-3.4	0.8	-3.7	0.7	A-	B-
1678	684960	3	3	574	.740	.740	.061	.085	.108	.005	.535	.535	369	229	234	-1.776	0.104	-2.7	0.9	-2.5	0.8	A+	B+
1679	684943	3	3	574	.828	.071	.040	.054	.828	.007	.552	364	237	259	.552	-2.392	0.119	-2.5	8.0	-3.3	0.6	A+	A-
1680	684613	3	3	574	.436	.436	.139	.172	.244	.009	.340	.340	309	114	019	-0.186	0.093	1.4	1.1	2.5	1.1	A+	A+
1681	684942	3	3	574	.706	.228	.042	.706	.019	.005	.473	272	339	.473	178	-1.566	0.101	-0.9	1.0	-1.7	0.9	A+	A-
1682	684939	3	3	574	.686	.059	.127	.118	.686	.009	.518	334	236	214	.518	-1.456	0.099	-2.3	0.9	-2.3	0.8	A-	A-
1683	684636	3	3	592	.588	.179	.204	.027	.588	.002	.459	217	291	144	.459	-1.053	0.093	-0.6	1.0	-0.8	1.0	A-	B-
1684	684625	3	3	592	.487	.390	.095	.486	.029	.000	.419	319	067	.419	204	-0.543	0.092	0.7	1.0	1.1	1.1	A-	A+
1685	686602	3	3	592	.780	.066	.780	.035	.118	.000	.392	144	.392	265	240	-2.162	0.108	0.0	1.0	-0.7	0.9	A+	B-
1686	684953	3	3	592	.975	.008	.010	.007	.975	.000	.314	204	149	192	.314	-4.814	0.269	-0.6	0.9	-2.2	0.4	A+	A-
1687	684940	3	3	592	.640	.047	.306	.640	.007	.000	.293	263	162	.293	121	-1.326	0.095	3.9	1.2	4.1	1.3	B-	B-
1688	684950	3	3	592	.716	.057	.716	.057	.166	.003	.388	251	.388	274	151	-1.752	0.100	0.4	1.0	0.6	1.1	A-	A-
1689	684615	3	3	592	.860	.860	.042	.076	.022	.000	.467	.467	264	329	148	-2.798	0.127	-1.7	0.9	-1.6	8.0	A+	A-
1690	684628	3	3	592	.753	.118	.753	.035	.091	.002	.525	356	.525	204	242	-1.981	0.104	-2.5	0.9	-2.6	0.8	B+	A+
1691	684935	3	3	592	.694	.194	.044	.064	.694	.003	.487	296	266	196	.487	-1.624	0.098	-1.6	0.9	-1.2	0.9	A+	A+
1692	684941	3	3	592	.460	.032	.481	.459	.024	.003	.300	283	139	.300	177	-0.407	0.092	4.9	1.2	4.0	1.2	A-	A-
1693	684618	3	3	592	.684	.160	.684	.095	.059	.002	.293	103	.293	189	169	-1.566	0.098	3.0	1.1	2.8	1.2	A+	A-
1694	684934	3	3	592	.495	.495	.383	.063	.057	.002	.302	.302	133	169	179	-0.585	0.092	4.6	1.2	6.9	1.4	A+	B+
1695	684957	3	3	592	.431	.111	.316	.431	.137	.005	.461	258	162	.461	193	-0.261	0.093	-1.0	1.0	-0.2	1.0	A-	A-
1696	684620	3	3	592	.655	.655	.204	.091	.046	.003	.456	.456	195	328	187	-1.408	0.096	-0.5	1.0	-0.4	1.0	A+	A-
1697	684944	3	3	592	.883	.042	.883	.025	.042	.007	.482	303	.482	207	252	-3.039	0.136	-1.9	0.8	-2.5	0.6	B+	A-
1698	684621	3	3	592	.775	.088	.088	.042	.775	.007	.520	342	221	264	.520	-2.127	0.107	-2.6	0.9	-1.7	0.8	A+	B-
1699	684611	3	3	592	.564	.564	.130	.176	.122	.008	.397	.397	130	346	044	-0.933	0.092	1.7	1.1	1.3	1.1	A+	A-
1700	686603	3	3	592	.382	.341	.149	.120	.382	.008	.403	022	336	187	.403	-0.006	0.095	1.3	1.1	0.7	1.1	A+	A+
1701	684624	3	3	592	.287	.255	.204	.247	.287	.007	.479	313	261	.071	.479	0.528	0.101	-2.1	0.9	-0.7	0.9	A+	A+
1702	684945	3	3	592	.758	.093	.088	.758	.052	.008	.573	331	346	.573	195	-2.014	0.105	-3.7	0.8	-3.8	0.7	A+	A-
1703	684963	3	3	571	.862	.026	.862	.086	.025	.002	.329	189	.329	163	227	-2.904	0.129	0.3	1.0	-0.4	0.9	A-	
1704	684959	3	3	571	.485	.201	.254	.485	.058	.002	.278	074	115	.278	236	-0.655	0.092	3.9	1.1	3.5	1.2	A+	
1705	684619	3	3	571	.769	.769	.117	.049	.063	.002	.479	.479	276	224	255	-2.175	0.108	-1.7	0.9	-2.1	0.8	A+	
1706	684626	3	3	571	.632	.201	.053	.632	.110	.004	.318	055	287	.318	211	-1.385	0.095	2.7	1.1	3.9	1.3	A+	
1707	684956	3	3	571	.445	.445	.128	.236	.186	.005	.340	.340	131	160	153	-0.458	0.093	2.4	1.1	2.0	1.1	A+	
1708	684634	3	3	571	.870	.040	.870	.032	.056	.002	.383	310	.383	194	146	-2.990	0.133	-0.9	0.9	-1.0	0.8	A-	
1709	684954	3	3	571	.478	.193	.158	.478	.168	.004	.404	156	192	.404	189	-0.621	0.092	0.6	1.0	0.5	1.0	A-	
1710	686607	3	3	571	.184	.184	.271	.299	.243	.002	.110	.110	036	.019	083	1.040	0.116	2.2	1.2	5.1	1.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID.	Grade	Grade	14	ı vai	1 (4)	1 (5)	1 (0)	1 (0)	· (-)	i (Dis	11(A)	1 1(5)	1 1(0)	11(0)	IVICAS	IVISE	in	in	out	out	/F	/B
1711	684937	3	3	571	.804	.028	.804	.119	.046	.004	.491	256	.491	302	242	-2.421	0.114	-1.9	0.9	-2.3	8.0	A+	
1712	684632	3	3	571	.532	.165	.140	.532	.161	.002	.412	216	133	.412	210	-0.885	0.092	-0.2	1.0	1.0	1.1	A-	
1713	684622	3	3	571	.648	.145	.114	.084	.648	.009	.578	359	190	293	.578	-1.468	0.096	-4.2	0.8	-3.7	8.0	A+	
1714	684933	3	3	571	.550	.296	.550	.112	.033	.009	.327	144	.327	160	200	-0.971	0.093	2.6	1.1	2.5	1.1	A-	
1715	684635	3	3	571	.827	.053	.072	.039	.827	.011	.548	275	303	287	.548	-2.597	0.119	-2.9	0.8	-3.6	0.6	A+	
1716	684616	3	3	571	.159	.096	.193	.159	.543	.009	.051	227	169	.051	.257	1.237	0.122	2.7	1.2	5.6	2.0	A-	
1717	684630	3	3	571	.473	.145	.473	.236	.137	.009	.418	219	.418	083	242	-0.595	0.092	0.0	1.0	0.3	1.0	A-	
1718	684932	3	3	571	.716	.046	.173	.054	.716	.011	.475	174	286	243	.475	-1.848	0.101	-1.6	0.9	-1.5	0.9	B+	
1719	684951	3	3	571	.680	.110	.680	.075	.126	.009	.574	271	.574	343	240	-1.638	0.098	-4.2	0.8	-3.7	0.8	A+	
1720	684617	3	3	571	.536	.124	.149	.179	.536	.012	.508	264	273	136	.508	-0.902	0.092	-2.8	0.9	-2.3	0.9	A-	
1721	684612	3	3	571	.692	.692	.096	.112	.086	.014	.552	.552	316	283	200	-1.707	0.099	-3.3	0.9	-3.4	8.0	C-	
1722	686601	3	3	571	.692	.198	.070	.025	.692	.016	.451	225	257	205	.451	-1.707	0.099	-1.1	1.0	-0.7	1.0	A+	
1723	682232	4	4	1137	.675	.185	.075	.066	.675	.000	.426	186	225	275	.426	-0.970	0.070	0.3	1.0	0.2	1.0	A+	
1724	682087	4	4	1137	.790	.790	.101	.051	.058	.000	.389	.389	266	154	191	-1.696	0.080	0.6	1.0	-0.4	1.0	A-	
1725	686597	4	4	1137	.423	.285	.142	.423	.149	.002	.365	164	118	.365	181	0.330	0.067	2.2	1.1	2.9	1.1	A-	
1726	682152	4	4	1137	.955	.026	.955	.015	.003	.001	.309	179	.309	262	061	-3.683	0.149	-0.6	0.9	-0.7	0.9	A-	
1727	682085	4	4	1137	.694	.694	.107	.073	.126	.000	.423	.423	237	152	248	-1.080	0.071	0.4	1.0	-0.4	1.0	B+	
1728	682248	4	4	1137	.829	.055	.828	.075	.038	.004	.451	257	.451	248	201	-1.997	0.086	-1.3	0.9	-2.0	0.8	A-	
1729	682144	4	4	1137	.738	.105	.122	.034	.738	.001	.432	236	239	200	.432	-1.346	0.074	-0.3	1.0	-0.6	1.0	A-	
1730	682095	4	4	1137	.164	.233	.164	.416	.185	.003	.006	076	.006	.081	017	1.955	0.088	5.8	1.3	9.6	2.4	A-	
1731	682099	4	4	1137	.858	.047	.059	.858	.034	.001	.468	274	291	.468	186	-2.265	0.092	-1.9	0.9	-2.4	0.8	A-	
1732	682146	4	4	1137	.873	.085	.027	.872	.013	.002	.447	280	296	.447	159	-2.406	0.096	-1.8	0.9	-1.7	0.8	C+	
1733	682135	4	4	1137	.531	.026	.309	.531	.130	.004	.336	178	278	.336	011	-0.216	0.067	4.8	1.1	3.1	1.1	A-	
1734	682214	4	4	1137	.953	.019	.953	.008	.017	.004	.301	160	.301	161	161	-3.618	0.145	-0.6	0.9	1.4	1.3	A-	
1735	682142	4	4	1137	.502	.183	.138	.172	.502	.004	.464	214	202	189	.464	-0.070	0.066	-1.9	1.0	0.1	1.0	A+	
1736	682094	4	4	1137	.726	.726	.201	.033	.033	.007	.358	.358	116	288	272	-1.269	0.074	1.7	1.1	4.3	1.3	A-	
1737	682223	4	4	1137	.849	.073	.849	.033	.038	.007	.502	315	.502	149	304	-2.174	0.090	-2.5	0.9	-3.2	0.7	A+	
1738	682224	4	4	1137	.530	.195	.099	.168	.529	.009	.465	224	250	152	.465	-0.207	0.067	-1.4	1.0	-0.7	1.0	A-	
1739	682213	4	4	1137	.376	.062	.471	.084	.376	.007	.401	268	197	071	.401	0.573	0.068	0.1	1.0	3.0	1.2	B-	
1740	682086	4	4	1137	.842	.119	.027	.842	.005	.007	.327	162	282	.327	129	-2.111	0.088	0.8	1.0	0.9	1.1	A+	
1741	682083	4	4	1137	.643	.103	.643	.060	.182	.012	.443	235	.443	277	162	-0.795	0.069	-0.1	1.0	0.3	1.0	A+	
1742	682148	4	4	1137	.742	.064	.049	.136	.742	.008	.511	280	213	281	.511	-1.374	0.075	-2.7	0.9	-2.8	0.8	A-	
1743	682078	4	4	1134	.526	.153	.145	.526	.175	.001	.472	261	202	.472	184	-0.040	0.066	-1.6	1.0	-1.9	0.9	A-	A+
1744	682150	4	4	1134	.739	.150	.015	.096	.739	.000	.353	267	166	134	.353	-1.195	0.074	1.5	1.1	1.7	1.1	A-	A-
1745	686600	4	4	1134	.601	.601	.144	.054	.199	.003	.423	.423	234	250	166	-0.420	0.068	0.7	1.0	0.6	1.0	A+	B-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1746	682079	Grade	Grade	1134	F02		.583	.129	140		.501	251	F01	220	233	-0.330	0.067	-2.6	in	-2.9	out	/F	/B
1746		4	4	1134	.583 .572	.138	.296		.149	.001		251	.501 324	228			0.067		0.9		0.9	A+	Α-
1747 1748	682096 682145	4	4	1134	.779	.116	.779	.572	.044	.001	.444	166 352	.496	.444 192	111 219	-0.276 -1.455	0.067	-0.2 -2.5	1.0 0.9	-0.2 -3.2	1.0 0.8	Α-	Α+
1748	682137	4	4	1134	.883	.050	.024	.030	.883		.496	352	258	192	219 .475	-2.335	0.078	-2.5	0.9	-3.2	0.8	A+ C+	A+
1749	682081	4	4	1134	.752	.752	.024	.041	.135	.002	.475	289 .464	258	235	242	-2.335	0.098	-2.7	0.8	-2.3	0.7	_	A- B-
1751	682143	4	4	1134	.830	.732	.083	.830	.044	.003	.532	259	342	.532	242	-1.279	0.075	-3.6	0.9	-2.5 -4.1	0.9	A- A+	A-
1751	686594	4	4	1134	.486	.153	.486	.122	.235	.004	.315	266	.315	197	.026	0.158	0.066	5.4		5.2			B-
1752	682227	4	4	1134	.665	.049	.486	.665	.164	.004	.416	268	305	.416	089	-0.763	0.066	0.5	1.1	1.1	1.2	A+	В- А+
1754	682216	4	4	1134	.726	.049	.726	.120	.074	.003	.404	248	.404	176	187	-0.763	0.070	0.5		-0.9	0.9	A+	
	686593	4	4	1134						.004						-0.005			1.0			A+	Α-
1755 1756	682140	4	4	1134	.519 .711	.519	.278 .094	.078 .711	.119	.007	.269 .484	.269 248	079 277	179 .484	131 198	-0.005	0.066 0.072	6.9 -2.0	0.9	6.7 -2.4	1.3 0.9	A- B+	A+ B-
1757	682092	4	4	1134	.477	.082	.207	.227	.477		.478	354	200		.478	0.202	0.072		1.0	-1.8	0.9		
1758		4	4	1134	.667	.667		.213	.057	.007	.349	.349		120 201	171	-0.772	0.000	-1.8 2.8		2.1		A+	A+
1759	682136 684480	4	4	1134	.435	.466	.058	.435	.057	.005	.243	058	144 250	.243	171	0.416	0.070	8.3	1.1	7.8	1.1	A+	A- A+
1760	682089	4	4	1134	.658	.229	.658	.045	.059	.007	.465	290	.465	200	117	-0.724	0.067	-1.2		-1.7	0.9	A+	
1761	682133	4	4	1134	.609	.058	.058	.103	.609	.009	.452	260	184	233	.452	-0.724	0.069	-0.6	1.0	-0.2	1.0	Α-	Α+
1761	682093	4	4	1134	.455	.455	.185	.103	.171	.007	.432	.432	183	233	171	0.313	0.067	0.1	1.0	0.4	1.0	A+ ^	Α+
1762	682151	4	4	1134	.912	.433	.103	.038	.009	.007	.335	252	.335	179	171	-2.721	0.067	-0.5	1.0	-0.6	0.9	Α-	A+ A+
1764	682090	4	4	1141	.696	.040	.039	.209	.696	.001	.335	252	173	171	.414	-0.966	0.110	0.1	1.0	-0.6	1.0	A+ ^	A+ A-
1765	682226	4	4	1141	.507	.180	.507	.065	.090	.001	.334	074	.334	233	205	0.014	0.066	4.1	1.1	3.5	1.1	A-	_
1766	682211	4	4	1141	.821	.025	.057	.821	.096	.002	.334	184	244	.467	317	-1.793	0.083	-2.3	0.9	-2.0	0.8	A- A+	A+ A-
1767	682088	4	4	1141	.186	.195	.237	.186	.376	.001	.042	044	.009	.042	.009	1.825	0.083	5.3	1.3	8.8	2.0		A+
1767	682149	4	4	1141	.864	.864	.036	.039	.058	.004	.375	.375	256	138	204	-2.168	0.082	-0.7	1.0	-1.5	0.8	A+ A+	A+
1769	682139	4	4	1141	.699	.699	.052	.032	.216	.004	.420	.420	230	138	321	-0.981	0.032	-0.7	1.0	-0.8	1.0	A+	A-
1770	682134	4	4	1141	.248	.152	.491	.248	.104	.002	.199	.072	023	.199	300	1.392	0.071	3.1	1.1	6.4	1.5	A-	A-
1771	682215	4	4	1141	.422	.122	.422	.232	.221	.003	.391	235	.391	190	066	0.434	0.066	0.3	1.0	2.4	1.1	A-	A+
1772	682221	4	4	1141	.833	.034	.053	.833	.074	.004	.457	228	287	.457	202	-1.885	0.085	-1.9	0.9	-2.6	0.8	A-	A-
1773	686595	4	4	1141	.477	.193	.477	.165	.161	.004	.246	161	.246	120	019	0.160	0.066	7.4	1.2	6.0	1.2	A+	A+
1774	682098	4	4	1141	.482	.204	.135	.174	.482	.004	.516	240	231	190	.516	0.134	0.066	-4.2	0.9	-4.1	0.9	A-	A-
1775	682228	4	4	1141	.517	.517	.161	.236	.081	.005	.444	.444	223	174	209	-0.038	0.066	-0.8	1.0	-0.9	1.0	A-	A+
1776	682141	4	4	1141	.775	.084	.775	.078	.056	.003	.526	276	.526	268	253	-1.453	0.000	-3.4	0.9	-4.4	0.7	B+	B-
1777	682225	4	4	1141	.816	.045	.046	.086	.816	.007	.551	269	252	321	.551	-1.751	0.077	-3.8	0.9	-5.4	0.7	Δ+	A-
1778	682138	4	4	1141	.357	.043	.048	.539	.357	.007	.255	241	252	049	.255	0.767	0.068	5.2	1.2	6.1	1.3	A+ A-	A- A-
1779	682220	4	4	1141	.850	.850	.018	.067	.008	.008	.391	.391	183	266	146	-2.037	0.089	-0.8	1.0	-1.3	0.9	B+	
1779	682082	4	4	1141	.536	.220	.135	.100	.535	.008	.488	270	183	200	.488	-2.037	0.066	-0.8	0.9	-3.0	0.9		A+ A+
1/80	082082	4	4	1141	.530	.220	.135	.100	.555	.010	.400	270	21/	154	.488	-0.129	0.000	-2.7	0.9	-3.0	0.9	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
1781	682217	4	4	1141	.784	.128	.784	.061	.018	.009	.462	254	.462	286	183	-1.514	0.078	-1.8	0.9	-2.6	0.8	A-	B-
1782	682091	4	4	1141	.376	.286	.189	.376	.139	.010	.277	038	121	.277	166	0.666	0.067	4.3	1.1	5.2	1.3	A+	A+
1783	682080	5	5	170	.582	.241	.065	.582	.112	.000	.435	202	238	.435	221	-0.755	0.174	-0.3	1.0	-0.9	0.9	A+	
1784	682101	5	5	158	.532	.234	.532	.127	.108	.000	.256	.040	.256	230	219	-0.527	0.174	1.7	1.1	1.6	1.1	A+	
1785	682102	5	5	134	.224	.179	.231	.224	.366	.000	.095	221	021	.095	.112	1.072	0.224	1.7	1.2	3.5	2.1	A+	<u> </u>
1786	682103	5	5	164	.360	.463	.122	.360	.055	.000	.240	.078	367	.240	149	0.461	0.175	1.1	1.1	1.6	1.2	A+	<u> </u>
1787	682104	5	5	141	.674	.149	.135	.674	.043	.000	.496	246	227	.496	334	-1.084	0.200	-0.8	0.9	-1.4	0.8	A+	
1788	682105	5	5	150	.593	.247	.593	.087	.073	.000	.364	095	.364	290	215	-0.906	0.183	0.4	1.0	0.0	1.0	B+	
1789	682106	5	5	153	.634	.634	.072	.203	.092	.000	.550	.550	298	292	244	-0.998	0.186	-2.1	0.8	-1.9	0.8	A+	
1790	682107	5	5	141	.156	.248	.489	.106	.156	.000	.150	115	.197	335	.150	1.683	0.247	0.4	1.1	3.4	2.6	A+	<u> </u>
1791	682108	5	5	159	.283	.440	.132	.283	.145	.000	.130	.105	229	.130	094	0.739	0.191	2.0	1.2	3.1	1.6	A-	
1792	682109	5	5	166	.163	.108	.181	.548	.163	.000	.013	238	020	.155	.013	1.508	0.223	1.2	1.2	4.2	2.5	A+	
1793	682110	5	5	161	.584	.584	.161	.149	.106	.000	.305	.305	166	141	127	-0.910	0.177	1.3	1.1	1.2	1.1	A-	
1794	682111	5	5	155	.729	.097	.729	.071	.103	.000	.283	127	.283	246	083	-1.505	0.197	0.7	1.1	1.0	1.1	A+	
1795	682113	5	5	160	.256	.263	.256	.244	.238	.000	.246	097	.246	230	.080	0.849	0.194	0.5	1.0	1.4	1.2	A-	
1796	682114	5	5	129	.256	.202	.256	.279	.264	.000	.051	088	.051	030	.059	0.959	0.214	1.8	1.2	2.5	1.5	A-	
1797	682115	5	5	142	.282	.268	.282	.232	.218	.000	015	029	015	040	.088	0.790	0.199	2.7	1.3	4.4	1.9	A+	
1798	682117	5	5	170	.653	.100	.218	.653	.029	.000	.405	247	235	.405	129	-1.123	0.178	-0.1	1.0	-0.1	1.0	A+	
1799	682118	5	5	132	.409	.409	.167	.205	.220	.000	.297	.297	126	200	044	0.168	0.193	0.4	1.0	2.0	1.2	A+	
1800	682119	5	5	157	.554	.191	.204	.051	.554	.000	.593	287	276	320	.593	-0.647	0.176	-3.6	0.8	-3.5	0.7	A-	
1801	682120	5	5	169	.249	.361	.249	.249	.142	.000	.076	.040	030	.076	112	0.897	0.189	1.6	1.2	3.0	1.6	B-	
1802	682121	5	5	162	.457	.179	.136	.457	.228	.000	.289	017	225	.289	144	-0.160	0.174	1.5	1.1	1.6	1.2	A-	
1803	682122	5	5	161	.603	.137	.124	.602	.137	.000	.392	214	106	.392	243	-0.754	0.178	0.1	1.0	-0.4	1.0	C+	
1804	682123	5	5	154	.630	.065	.630	.188	.117	.000	.331	046	.331	120	316	-0.960	0.184	0.7	1.1	0.6	1.1	A+	
1805	682124	5	5	154	.500	.188	.195	.500	.117	.000	.332	259	174	.332	.013	-0.368	0.177	0.7	1.0	0.7	1.1	A+	
1806	682126	5	5	159	.767	.767	.075	.132	.025	.000	.443	.443	252	291	142	-1.875	0.206	-0.5	0.9	-1.1	0.8	A+	
1807	682127	5	5	160	.613	.131	.613	.138	.119	.000	.434	246	.434	257	123	-1.082	0.181	-0.3	1.0	-0.9	0.9	A-	
1808	682128	5	5	154	.494	.201	.494	.084	.221	.000	.439	254	.439	321	068	-0.329	0.180	-0.6	1.0	-0.4	1.0	A+	
1809	682129	5	5	172	.448	.448	.343	.116	.093	.000	.124	.124	.154	211	231	-0.190	0.168	3.8	1.3	3.6	1.4	A+	
1810	682130	5	5	160	.231	.175	.294	.300	.231	.000	.169	169	.006	020	.169	1.042	0.200	0.8	1.1	2.2	1.4	A+	
1811	682131	5	5	184	.261	.212	.196	.332	.261	.000	.116	.074	163	035	.116	0.889	0.179	1.9	1.2	2.3	1.4	A+	
1812	682154	5	5	151	.729	.132	.093	.728	.046	.000	.502	280	276	.502	230	-1.805	0.208	-0.4	1.0	-1.2	0.8	A+	
1813	682155	5	5	163	.503	.196	.503	.202	.098	.000	.560	235	.560	333	178	-0.411	0.177	-2.0	0.9	-2.1	0.8	B+	$\overline{}$
1814	682156	5	5	147	.517	.102	.170	.211	.517	.000	.260	181	.020	203	.260	-0.334	0.178	1.0	1.1	1.5	1.1	Α-	
1815	682157	5	5	145	.152	.152	.110	.503	.234	.000	.063	.063	318	.083	.085	1.660	0.242	0.7	1.1	2.4	1.8	B+	
1013	302137	,	,	1-3	.132	.132	.110	.505	.254	.000	.003	.003	.510	.003	.003	1.000	0.272	0.7	1.1	۲.٦	1.0	<u>.</u>	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	D(A)	D/R\	D(C)	D/D/	D/ \	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Moas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	טו	Grade	Grade	//	PVai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PI(B)	PT(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
1816	682158	5	5	161	.311	.460	.106	.124	.311	.000	.095	.141	203	158	.095	0.701	0.184	2.7	1.2	3.9	1.7	A+	
1817	682159	5	5	155	.555	.116	.219	.555	.110	.000	.397	102	234	.397	217	-0.709	0.180	0.0	1.0	0.6	1.1	A+	
1818	682160	5	5	147	.626	.170	.054	.150	.626	.000	.238	005	172	208	.238	-1.098	0.187	1.7	1.1	1.5	1.2	A+	
1819	682161	5	5	159	.786	.101	.786	.088	.025	.000	.385	273	.385	160	193	-1.836	0.212	0.2	1.0	-0.7	0.9	A+	
1820	682162	5	5	158	.703	.703	.139	.108	.051	.000	.525	.525	232	345	241	-1.516	0.195	-1.1	0.9	-1.6	8.0	A-	
1821	682163	5	5	186	.559	.253	.559	.081	.108	.000	.278	116	.278	289	029	-0.756	0.163	1.8	1.1	1.2	1.1	A+	
1822	682164	5	5	134	.739	.060	.164	.739	.037	.000	.440	115	328	.440	236	-1.604	0.216	-0.5	0.9	-1.0	0.8	A-	
1823	682165	5	5	148	.899	.899	.041	.020	.041	.000	.389	.389	228	155	257	-2.904	0.290	-0.3	0.9	-1.2	0.6	A-	
1824	682166	5	5	146	.856	.068	.021	.856	.055	.000	.385	391	078	.385	110	-2.657	0.254	-0.3	0.9	-0.6	0.8	A+	
1825	682167	5	5	167	.677	.228	.054	.677	.042	.000	.440	220	330	.440	194	-1.202	0.185	-0.1	1.0	-0.5	0.9	B+	
1826	682168	5	5	168	.542	.542	.363	.060	.036	.000	.362	.362	183	292	126	-0.607	0.170	0.3	1.0	0.1	1.0	A-	
1827	682169	5	5	142	.704	.134	.704	.120	.042	.000	.366	203	.366	094	334	-1.486	0.203	0.1	1.0	1.0	1.1	A-	
1828	682170	5	5	137	.372	.526	.073	.029	.372	.000	.181	.112	377	268	.181	0.380	0.192	1.7	1.1	3.3	1.4	A-	
1829	682171	5	5	148	.770	.122	.770	.054	.054	.000	.420	316	.420	173	150	-1.781	0.214	-0.5	0.9	-0.7	0.9	A+	
1830	682172	5	5	156	.654	.256	.077	.654	.013	.000	.429	249	349	.429	020	-1.121	0.187	-0.3	1.0	-0.6	0.9	A+	
1831	682173	5	5	142	.739	.070	.077	.113	.739	.000	.309	125	227	136	.309	-1.597	0.211	0.9	1.1	0.6	1.1	A-	
1832	682212	5	5	151	.536	.536	.338	.079	.046	.000	.196	.196	.043	237	257	-0.633	0.181	2.7	1.2	3.8	1.4	B-	
1833	682218	5	5	155	.761	.761	.129	.065	.045	.000	.549	.549	395	317	115	-1.842	0.205	-1.9	0.8	-2.2	0.6	A+	
1834	682219	5	5	146	.877	.068	.877	.034	.021	.000	.432	283	.432	240	190	-2.707	0.267	-0.7	0.9	-1.3	0.6	A+	
1835	682230	5	5	142	.655	.655	.169	.063	.113	.000	.338	.338	146	189	191	-1.286	0.195	0.9	1.1	0.2	1.0	A+	
1836	682231	5	5	127	.677	.110	.102	.677	.110	.000	.496	408	277	.496	066	-1.113	0.205	-1.5	0.9	-1.9	8.0	A-	
1837	682233	5	5	140	.279	.314	.279	.286	.121	.000	.160	014	.160	162	.025	0.768	0.201	1.0	1.1	2.1	1.3	A-	
1838	682234	5	5	140	.471	.093	.193	.243	.471	.000	.324	201	212	046	.324	-0.142	0.187	1.1	1.1	0.7	1.1	A-	
1839	682235	5	5	156	.609	.609	.109	.045	.237	.000	.166	.166	314	265	.168	-1.072	0.183	3.1	1.3	3.4	1.4	B+	
1840	682236	5	5	145	.607	.607	.117	.193	.083	.000	.386	.386	276	214	055	-0.992	0.190	0.2	1.0	0.7	1.1	A+	
1841	682237	5	5	156	.750	.090	.083	.750	.077	.000	.373	240	242	.373	098	-1.767	0.201	-0.3	1.0	0.1	1.0	A-	
1842	682238	5	5	161	.248	.248	.255	.329	.168	.000	.064	.064	164	.027	.084	0.913	0.194	1.9	1.2	2.6	1.5	B-	
1843	682239	5	5	148	.608	.608	.209	.135	.047	.000	.344	.344	084	281	179	-1.043	0.185	0.4	1.0	0.5	1.1	A+	
1844	682240	5	5	172	.529	.529	.314	.064	.093	.000	.491	.491	255	143	317	-0.424	0.166	-2.2	0.9	-2.2	0.8	A-	
1845	682241	5	5	163	.552	.552	.104	.110	.233	.000	.041	.041	154	.067	.014	-0.627	0.175	5.0	1.4	4.7	1.5	A-	
1846	682242	5	5	160	.200	.250	.481	.200	.069	.000	.042	183	.165	.042	079	1.255	0.209	1.5	1.2	3.2	1.8	A+	
1847	682243	5	5	153	.641	.085	.170	.641	.105	.000	.563	258	324	.563	250	-1.031	0.188	-2.1	0.8	-2.3	0.8	A+	
1848	682244	5	5	140	.786	.043	.786	.107	.064	.000	.484	250	.484	241	298	-1.978	0.224	-1.3	0.9	-1.1	0.8	A+	
1849	682245	5	5	147	.762	.762	.116	.054	.068	.000	.514	.514	303	268	244	-1.755	0.212	-1.5	0.8	-1.3	0.8	A+	
1850	682249	5	5	155	.852	.852	.084	.032	.032	.000	.413	.413	352	086	193	-2.569	0.242	-0.6	0.9	-0.5	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade						` '									in	in	out	out	/F	/B
1851	682250	5	5	159	.635	.132	.138	.094	.635	.000	.666	429	271	280	.666	-1.113	0.187	-3.8	0.7	-3.3	0.6	A+	\vdash
1852	684475	5	5	184	.717	.103	.114	.717	.065	.000	.535	376	174	.535	290	-1.558	0.182	-1.6	0.9	-1.8	0.8	A+	—
1853	686598	5	5	163	.761	.110	.761	.074	.055	.000	.485	229	.485	306	242	-1.790	0.201	-1.1	0.9	-1.4	0.8	A+	
1854	724205	6	6	655	.712	.144	.076	.711	.069	.000	.339	107	333	.339	109	-1.318	0.098	2.5	1.1	1.5	1.1	A+	
1855	724206	6	6	683	.792	.098	.792	.060	.050	.000	.540	358	.540	215	282	-1.831	0.106	-2.5	0.9	-3.2	0.7	A+	A+
1856	724207	6	6	652	.499	.199	.498	.155	.147	.000	.307	180	.307	107	122	-0.081	0.088	3.5	1.1	4.4	1.3	A+	A-
1857	724209	6	6	668	.734	.734	.117	.103	.046	.000	.475	.475	215	299	239	-1.421	0.100	-0.6	1.0	-1.3	0.9	A+	A-
1858	724210	6	6	708	.315	.274	.153	.258	.315	.000	.245	046	189	058	.245	0.805	0.088	1.9	1.1	4.3	1.4	A+	A-
1859	724211	6	6	619	.792	.074	.792	.078	.057	.000	.528	308	.528	262	275	-1.767	0.111	-1.8	0.9	-3.0	0.7	A-	
1860	724212	6	6	663	.502	.502	.113	.184	.201	.000	.349	.349	193	176	112	-0.132	0.087	1.5	1.1	3.2	1.2	A-	A-
1861	724213	6	6	742	.247	.247	.341	.217	.195	.000	007	007	.135	073	078	1.214	0.091	6.0	1.3	9.4	2.2	A-	A+
1862	724214	6	6	649	.439	.186	.214	.439	.160	.000	.264	109	132	.264	093	0.211	0.087	3.7	1.1	5.3	1.3	A-	A+
1863	724215	6	6	682	.584	.182	.584	.101	.133	.000	.270	111	.270	141	141	-0.576	0.088	5.3	1.2	5.0	1.3	A+	
1864	724216	6	6	701	.234	.234	.111	.127	.528	.000	.003	.003	220	224	.286	1.375	0.096	5.3	1.3	9.0	2.3	A-	A-
1865	725543	6	6	699	.469	.469	.212	.120	.199	.000	.222	.222	178	098	015	0.086	0.084	5.7	1.2	5.7	1.3	A-	
1866	725545	6	6	652	.410	.169	.225	.196	.410	.000	.296	198	083	093	.296	0.349	0.088	1.7	1.1	5.5	1.4	A-	B-
1867	725548	6	6	670	.600	.600	.179	.151	.070	.000	.396	.396	282	154	120	-0.557	0.088	0.8	1.0	0.8	1.0	A+	A+
1868	725550	6	6	665	.394	.394	.328	.177	.101	.000	.307	.307	085	173	144	0.470	0.087	1.8	1.1	3.6	1.2	A+	A-
1869	725553	6	6	708	.708	.708	.076	.061	.155	.000	.257	.257	273	172	010	-1.193	0.092	3.2	1.2	3.9	1.3	A-	A-
1870	725555	6	6	701	.351	.127	.184	.338	.351	.000	.298	176	101	093	.298	0.626	0.087	1.2	1.0	5.1	1.4	A+	
1871	725556	6	6	672	.415	.415	.147	.103	.335	.000	.112	.112	110	233	.115	0.323	0.086	8.1	1.3	9.1	1.6	A+	A+
1872	729929	6	6	674	.549	.197	.144	.110	.549	.000	.389	133	210	214	.389	-0.328	0.086	0.2	1.0	0.6	1.0	A+	
1873	729930	6	6	666	.668	.140	.140	.668	.053	.000	.444	230	215	.444	246	-1.030	0.093	0.1	1.0	-0.6	1.0	A+	
1874	729931	6	6	672	.350	.376	.350	.106	.168	.000	.209	014	.209	234	056	0.641	0.089	4.3	1.2	6.5	1.6	A+	
1875	729932	6	6	639	.521	.355	.521	.083	.041	.000	.176	.015	.176	188	219	-0.194	0.089	7.6	1.3	6.8	1.4	A-	A-
1876	729933	6	6	642	.291	.590	.291	.033	.086	.000	.077	.129	.077	281	173	0.994	0.094	4.7	1.2	8.3	1.9	A+	A+
1877	729934	6	6	687	.831	.047	.068	.831	.054	.000	.486	246	296	.486	246	-2.136	0.113	-1.4	0.9	-2.4	0.7	A-	A+
1878	729994	6	6	692	.736	.736	.077	.069	.118	.000	.500	.500	247	304	240	-1.443	0.098	-1.0	1.0	-2.2	0.8	A+	A+
1879	729995	6	6	684	.380	.380	.181	.091	.348	.000	.330	.330	267	263	.038	0.540	0.086	-0.2	1.0	4.1	1.3	A-	B-
1880	729996	6	6	734	.514	.090	.249	.514	.147	.000	.346	284	145	.346	083	-0.159	0.083	2.1	1.1	5.0	1.3	A-	A-
1881	729997	6	6	681	.423	.304	.156	.117	.423	.000	.285	042	218	133	.285	0.264	0.086	3.5	1.1	4.3	1.3	A+	
1882	729998	6	6	659	.736	.097	.067	.100	.736	.000	.569	296	281	309	.569	-1.408	0.100	-3.1	0.8	-3.8	0.7	A+	B-
1883	729999	6	6	659	.640	.147	.152	.640	.061	.000	.368	225	192	.368	117	-0.805	0.092	2.0	1.1	1.5	1.1	A-	$\overline{}$
1884	730000	6	6	696	.468	.105	.075	.468	.352	.000	.321	209	233	.321	074	0.068	0.084	1.3	1.0	4.2	1.2	A-	A-
1885	730001	6	6	625	.573	.138	.176	.114	.573	.000	.465	233	239	185	.465	-0.608	0.092	-0.9	1.0	-0.3	1.0	A+	A-
1003	, 30001			023	.5,5	.130	.170	.117	.5,5	.000	.403	.233	.233	.103	.403	0.000	0.032	0.5	1.0	0.5	1.0	/ \ '	/ \

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
1886	730002	6	6	693	.551	.128	.170	.150	.551	.000	.388	187	179	176	.388	-0.305	0.085	0.4	1.0	2.3	1.1	A+	
1887	730003	6	6	656	.706	.706	.104	.127	.064	.000	.298	.298	187	136	137	-1.111	0.096	2.9	1.2	3.1	1.2	A+	B-
1888	730004	6	6	675	.747	.061	.074	.119	.747	.000	.433	335	227	151	.433	-1.403	0.098	-0.8	1.0	-0.4	1.0	A+	A+
1889	730005	6	6	673	.765	.097	.086	.765	.052	.000	.511	313	297	.511	183	-1.600	0.103	-1.7	0.9	-2.2	0.8	A+	
1890	730006	6	6	677	.378	.419	.378	.137	.065	.000	.345	071	.345	217	235	0.506	0.087	-1.0	1.0	5.1	1.4	A-	A-
1891	730007	6	6	687	.361	.100	.361	.182	.357	.000	.193	188	.193	250	.125	0.594	0.087	4.4	1.2	5.3	1.4	A+	B-
1892	730008	6	6	643	.635	.109	.107	.635	.149	.000	.393	249	301	.393	052	-0.759	0.093	1.3	1.1	1.1	1.1	A+	B-
1893	730009	6	6	678	.435	.245	.130	.190	.435	.000	.294	024	264	118	.294	0.182	0.086	3.6	1.1	4.3	1.3	A+	B-
1894	730010	6	6	650	.465	.280	.145	.465	.111	.000	.210	003	202	.210	103	0.103	0.088	6.4	1.2	6.0	1.4	A+	
1895	730011	6	6	680	.471	.093	.171	.266	.471	.000	.395	209	189	148	.395	0.057	0.085	-0.6	1.0	2.1	1.1	A+	A-
1896	730012	6	6	664	.467	.294	.117	.467	.122	.000	.342	144	103	.342	219	0.147	0.086	0.9	1.0	2.4	1.1	A-	A-
1897	730013	6	6	706	.724	.034	.048	.724	.194	.000	.256	331	197	.256	031	-1.264	0.096	4.2	1.2	4.0	1.3	A-	
1898	730016	6	6	710	.607	.185	.607	.123	.086	.000	.468	181	.468	288	229	-0.610	0.086	-1.3	1.0	-1.5	0.9	A-	B+
1899	730017	6	6	679	.563	.150	.169	.118	.563	.000	.449	115	258	263	.449	-0.441	0.087	-1.1	1.0	-0.5	1.0	A-	A-
1900	730018	6	6	697	.836	.055	.042	.836	.067	.000	.434	235	283	.434	203	-2.201	0.115	-0.1	1.0	-1.4	8.0	A-	B-
1901	730019	6	6	666	.803	.068	.803	.084	.045	.000	.395	259	.395	133	266	-1.897	0.110	0.2	1.0	1.9	1.2	A+	B-
1902	730020	6	6	659	.461	.077	.414	.047	.461	.000	.290	147	100	264	.290	0.148	0.086	2.9	1.1	4.3	1.3	A+	A+
1903	730021	6	6	639	.603	.122	.172	.603	.103	.000	.463	263	256	.463	144	-0.565	0.091	-1.2	1.0	-0.8	1.0	B-	
1904	730022	6	6	653	.401	.234	.401	.208	.156	.000	.276	113	.276	145	079	0.388	0.088	1.9	1.1	6.1	1.4	A+	A-
1905	730023	6	6	653	.539	.170	.130	.161	.539	.000	.424	208	276	110	.424	-0.235	0.088	-0.3	1.0	0.6	1.0	B-	A+
1906	730024	6	6	694	.523	.192	.523	.171	.114	.000	.320	236	.320	068	131	-0.209	0.085	2.9	1.1	3.4	1.2	A+	A+
1907	730025	6	6	701	.605	.130	.077	.188	.605	.000	.384	200	212	165	.384	-0.644	0.088	1.5	1.1	2.1	1.1	A+	A-
1908	730026	6	6	662	.431	.071	.177	.322	.431	.000	.370	316	203	052	.370	0.239	0.087	0.4	1.0	1.9	1.1	A+	
1909	730027	6	6	624	.466	.155	.466	.250	.128	.000	.342	145	.342	234	051	0.061	0.090	2.1	1.1	3.1	1.2	A-	A-
1910	730028	6	6	667	.661	.154	.661	.118	.066	.000	.539	291	.539	281	238	-0.934	0.092	-2.8	0.9	-3.4	0.8	A+	B-
1911	730029	6	6	689	.521	.165	.215	.099	.521	.000	.551	184	324	248	.551	-0.220	0.086	-4.9	0.8	-3.7	0.8	A-	A+
1912	730036	6	6	653	.438	.438	.124	.309	.129	.000	.242	.242	175	041	130	0.123	0.088	4.9	1.2	6.1	1.4	A-	
1913	730037	6	6	646	.403	.096	.313	.402	.189	.000	.187	122	099	.187	026	0.375	0.089	5.6	1.2	7.0	1.5	A+	A+
1914	730038	6	6	693	.470	.470	.173	.160	.196	.000	.162	.162	022	093	097	0.043	0.084	7.2	1.2	8.0	1.5	A-	B-
1915	730039	6	6	634	.145	.145	.140	.409	.306	.000	.045	.045	111	.039	.008	2.000	0.118	1.8	1.1	4.6	1.9	A-	A+
1916	730040	6	6	655	.638	.101	.638	.105	.156	.000	.288	174	.288	145	115	-0.831	0.091	3.7	1.2	3.3	1.2	A-	
1917	730215	6	6	693	.427	.167	.232	.173	.427	.000	.171	009	076	131	.171	0.292	0.085	6.9	1.2	7.5	1.5	A+	A+
1918	730216	6	6	649	.550	.125	.550	.185	.140	.000	.383	202	.383	207	125	-0.351	0.088	0.7	1.0	2.4	1.1	A+	A-
1919	730218	6	6	725	.483	.214	.215	.483	.088	.000	.265	143	042	.265	199	0.077	0.082	4.0	1.1	4.6	1.2	A+	A-
1920	730228	6	6	717	.538	.158	.121	.183	.538	.000	.385	207	145	179	.385	-0.285	0.084	0.3	1.0	2.3	1.1	A+	A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

1921 730229 6 6 676 559 1.60 1.69 559 1.12 .000 .296 .142 .114 .296 .1.66 .0.382 .0.086 3.4 1.1 3.1 1.2 A+ A+ .297 .29	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
1922 730220 6			Grade							. ,										in			/F	/B
1922 734926 6 6 640 708				_																		1.2	A+	Α-
1924 735376 6 6 696 6.83 .098 .101 .682 .119 .000 .516 .346 .255 .516 .187 .1.090 0.093 .1.9 0.9 .2.1 0.9 A .1.925 .735377 6 6 623 .787 .083 .787 .083 .045 .000 .570 .325 .570 .325 .750 .322 .258 .1.809 .0.111 .2.8 0.8 .3.2 .0.7 A A .1.925 .7.93378 A 6 6 6 6 6 6 6 6 6	_			_																1.1			A+	A+
1925 735377 6 6 6 623 787 083 787 085 045 000 570 -325 570 -323 -258 -1.809 0.111 -2.8 0.8 -3.2 0.7 A+ A+ 1926 735378 6 6 641 701 700 .115 .092 .092 .000 .509 .253 -341 .186 -1.179 .0.098 .1.6 0.9 .1.7 0.9 A- A+ 1928 735380 6 6 651 .485 .200 .146 .169 .485 .000 .385 .181 .169 .162 .385 .0.083 .0.086 .0.3 1.0 .0.6 1.0 A+ A+ 1928 735380 6 6 640 .536 .102 .366 .281 .134 .100 .303 .181 .165 .165 .0.860 .0.090 .1.5 0.9 .1.2 0.9 A- A+ 1930 .735380 6 6 640 .536 .102 .366 .281 .134 .000 .303 .183 .303 .0.92 .107 .0.218 .0.088 .2.7 1.1 .38 1.2 A+ .1930 .735380 6 6 663 .332 .223 .323 .155 .299 .000 .0.76 .0.35 .0.76 .187 .1.03 .0.821 .0.092 .6.4 .1.3 .7.7 .7.7 A- A- .1932 .735380 6 6 6663 .359 .428 .1.24 .359 .0.090 .0.00 .0.76 .0.35 .0.76 .1.87 .1.03 .0.821 .0.092 .6.4 .1.3 .7.7 .1.7 A- A- .1.333 .3.33							.708	.064			.000				284		-1.168			1.0			A+	A-
1926 735378 6				_			.098				.000		346			-	-1.090			0.9	-		A-	
1927 735380 6 6 651 .485 .200 .146 .169 .485 .000 .385 181 .169 .162 .385 .0.83 .0.86 .0.3 .1.0 .0.6 .1.0 .A+ A- .1928 735384 6 6 669 .645 .645 .104 .134 .117 .000 .479 .479 .479 .479 .376 .181 .165 .0.860 .0.99 .1.5 .0.9 .1.2 .0.9 A- A- .1930 .735385 6 6 6640 .536 .0.2 .536 .228 .134 .000 .303 .183 .303 .0.92 .167 .0.218 .0.88 .27 .1.1 .38 .1.2 A- .1930 .735386 6 6 663 .353 .478 .712 .366 .116 .347 .000 .076 .0.35 .076 .187 .103 .0.821 .0.92 .64 .1.3 .7.7 .1.7 A- A- .1931 .735387 6 6 675 .347 .172 .366 .116 .347 .000 .346 .2.34 .067 .341 .346 .0.644 .0.089 .0.6 .1.0 .1.5 .1.1 A- A- .1931 .735388 6 6 .6663 .359 .428 .124 .359 .089 .000 .106 .141 230 .106 .159 .0.596 .0.88 .6.5 .1.2 8.2 .1.6 A- A- .1933 .738288 6 6 .6662 .311 .311 .322 .239 .128 .000 .039 .039 .041 .0.02 .139 .0.848 .0.91 .7.9 .1.3 .8.4 1.9 A- .1934 .738289 6 6 .6675 .310 .229 .209 .310 .251 .000 .0.07 .0.29 .1.64 .0.07 .1.33 .0.873 .0.092 .8.3 .1.3 .8.8 1.9 A- .1936 .7.9 .7.4	1925	735377	6	-		.787	.083				.000						-1.809		-2.8	0.8	-3.2		A+	A+
1928 735384 6 6 6 693 .645 .645 .104 .134 .117 .100 .479 .479 .376 .181 .165 .0.860 .0.90 .1.5 .0.9 .1.2 .0.9 A. A+ .1929 735385 6 6 640 .536 .102 .536 .28 .134 .000 .0.76 .0.35 .0.76 .181 .165 .0.860 .0.90 .1.5 .0.9 .1.2 .0.9 A. A+ .1931 .735386 6 6 638 .323 .223 .323 .155 .299 .000 .0.76 .0.35 .0.76 .187 .103 .0.821 .0.992 6.4 1.3 7.7 1.7 A. A- .1931 .735387 6 6 6.675 .347 .172 .366 .116 .347 .0.00 .346 .234 .0.67 .341 .346 .0.644 .0.89 .0.6 .1.0 .1.5 .1.1 A- A+ .1931 .735388 6 6 6662 .311 .311 .322 .339 .128 .0.00 .0.35 .0.36 .1.2 .1.39 .0.88 .0.98 .0.5 .0.5 .1.2 .8.2 .1.6 A+ A+ .1934 .738289 6 6 6662 .311 .311 .322 .339 .128 .0.00 .0.39 .0.39 .0.41 .0.22 .1.39 .0.848 .0.91 .7.9 .1.3 .8.4 1.9 A+ .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.9 .1.2 .1.9 .1.1 .1.9 .1.9 .1.9 .1.1 .1.9 .1.9 .1.9 .1.1 .1.9 .1.9 .1.1 .1.9 .1.9 .1.1 .1.9 .1.9 .1.1 .1.9 .1.1 .1.9 .1.9 .1.1 .1.9 .1.9 .1.9 .1.1	1926	735378	6	6	641	.701	.700	.115	.092	.092	.000	.509	.509	253	341	186	-1.179	0.098	-1.6	0.9	-1.7	0.9	A-	A+
1929 735385 6 6 640 5.36 .102 .536 .228 .134 .000 .303 .185 .303 .092 .167 .0.218 0.088 2.7 1.1 3.8 1.2 A+ 1930 735386 6 6 638 .323 .223 .323 .155 .299 .000 .076 .035 .076 .187 .103 .0.821 .0.99 .64 1.3 7.7 1.7 A- A- 1931 735387 6 6 675 .347 .172 .366 .116 .347 .000 .346 .234 .067 .341 .346 .0.644 .0.089 .0.6 .10 .15 .11 A- A- 1932 735388 6 6 663 .359 .428 .124 .359 .089 .000 .106 .141 .230 .106 .159 .0.596 .0.088 .6.5 .12 .8.2 .1.6 A+ A+ 1933 738288 6 6 6662 .311 .311 .322 .339 .128 .000 .0.09 .0.39 .0.39 .0.01 .0.16 .159 .0.596 .0.88 .6.5 .12 .8.2 .1.6 A+ A+ 1934 738289 6 6 6698 .0.66 .0.55 .203 .0.80 .0.62 .0.00 .1.65 .4.34 .2.28 .2.58 .1.85 .3.006 .0.161 .1.2 .1.2 .8.6 .4.7 B- 1935 738290 6 6 645 .310 .229 .209 .310 .251 .000 .007 .029 .1.64 .0.07 .133 .0.873 .0.992 .8.3 .1.3 .8.8 .1.9 A+ 1937 738292 6 6 6677 .747 .747 .0.38 .055 .160 .000 .459 .456 .251 .489 .258 .1.61 .0.101 .0.6 .1.0 .0.2 .1.0 .4. .1.9 .1. 1938 738293 6 6 6698 .573 .078 .168 .573 .180 .000 .485 .426 .251 .489 .258 .1.61 .0.101 .0.6 .1.0 .0.2 .1.0 .4. .1. .4. .4. .1. .4. .4. .1. .4. .4. .1. .4. .4. .4. .1. .4	1927	735380	6	6		.485	.200	.146	.169	.485	.000	.385	181	169	162	.385	0.083	0.086	-0.3	1.0	0.6	1.0	A+	A-
1930 735386 6 6 6 638 .323 .223 .323 .155 .299 .000 .076 .035 .076 .187 .103 .0.821 .0.092 6.4 1.3 7.7 1.7 A A 1931 735387 6 6 675 .347 .172 .366 .116 .347 .000 .346 .224 .067 .341 .346 .0.644 .0.089 .0.6 1.0 1.5 1.1 A A 1932 735388 6 6 6663 .359 .428 124 .359 .089 .000 .0.16 .141 .230 .106 .159 .0.596 .0.088 .65 .12 .82 .1.6 A A 1933 738288 6 6 6662 .311 .311 .322 .239 .128 .000 .0.39 .0.39 .0.41 .0.22 .1.39 .0.848 .0.091 .7.9 .1.3 .8.4 .1.9 A 1934 738289 6 6 698 .0.62 .6.65 .203 .0.80 .0.62 .0.00 .1.85 .4.34 .2.28 .2.58 .1.85 .3.006 .0.161 .1.2 .1.2 .8.6 A.7 1935 738291 6 6 6.657 .7.47 .7.47 .0.038 .0.55 .1.60 .0.00 .4.59 .4.59 .3.00 .3.64 .1.61 .1.506 .0.101 .0.6 .1.0 .0.2 .1.0 A 1937 738292 6 6 6.577 .7.77 .7.74 .0.38 .0.55 .1.60 .0.00 .4.89 .2.66 .2.51 .4.89 .2.58 .1.641 .0.104 .1.2 .0.9 .1.0 .0.9 A A 1938 738293 6 6 6.589 .5.73 .0.78 .0.88 .0.00 .4.89 .2.66 .2.51 .4.89 .2.58 .1.641 .0.104 .1.2 .0.9 .1.0 .0.9 A A 1939 738294 6 6 6.591 .7.48 .0.58 .7.48 .0.98 .0.96 .0.00 .5.19 .3.80 .5.19 .2.72 .1.89 .1.469 .0.09 .1.9 .0.9 .2.2 .0.8 B A 1940 738295 6 6 714 .4.61 .4.61 .1.60 .7.07 .0.92 .0.00 .2.75 .2.75 .1.19 .0.96 .1.70 .0.154 .0.033 .5. .1. 6.2 1.4 A A 1941 741712 6 6 6.580 .3.39 .3.39 .3.39 .3.38 .0.00 .2.20 .3.30 .3.30 .2.77 .4.87 .3.4 .0.52 .3.30	1928	735384	6	6	693	.645	.645	.104	.134	.117	.000	.479	.479	376	181	165	-0.860	0.090	-1.5	0.9	-1.2	0.9	A-	A+
1931 735387 6 6 675 .347 .172 .366 .116 .347 .000 .346 .234 .067 .341 .346 0.644 0.089 0.6 1.0 1.5 1.1 A A A 1932 735388 6 6 663 .359 .428 .124 .359 .089 .000 .106 .141 .230 .106 .159 0.596 0.088 6.5 1.2 8.2 1.6 A A A 1932 735388 6 6 6662 .311 .311 .312 .329 .128 .000 .007 .039 .039 .041 .022 .139 0.384 .0091 .79 1.3 8.4 1.9 A A 1934 738289 6 6 6698 .062 .655 .203 .080 .062 .000 .185 .434 .228 .258 .185 3.006 0.161 1.2 1.2 8.6 4.7 B .1935 738290 6 6 645 .310 .229 .209 .310 .251 .000 .007 .029 .164 .007 .133 0.873 0.092 8.3 1.3 8.8 1.9 A A .1938	1929	735385	6	6	640	.536	.102	.536	.228	.134	.000	.303	185	.303	092	167	-0.218	0.088	2.7	1.1	3.8	1.2	A+	
1932 735388 6 6 663 3.59 4.28 1.24 3.59 0.08 0.00 1.06 1.41 -2.30 1.06 -1.59 0.596 0.088 6.5 1.2 8.2 1.6 A+ A+ 1933 738288 6 6 662 3.11 3.11 3.22 2.39 1.28 0.00 0.39 0.39 0.41 0.02 -1.39 0.848 0.091 7.9 1.3 8.4 1.9 A+ 1.938 738290 6 6 698 0.06 655 3.00 0.062 0.00 -1.85 4.34 -2.28 -2.28 -1.85 3.006 0.161 1.2 1.2 8.6 4.7 8- 1.9 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	1930	735386	6	6	638	.323	.223	.323	.155	.299	.000	.076	035	.076	187	.103	0.821	0.092	6.4	1.3	7.7	1.7	A-	A-
1933 738288 6 6 6662 311 311 322 239 128 000 0.39 0.39 0.41 0.22 0.139 0.848 0.091 7.9 1.3 8.4 1.9 A+ 1934 738289 6 6 698 0.62 0.655 0.20 0.80 0.62 0.00 0.185 0.344 0.228 0.25 0.185 0.300 0.161 1.2 1.2 8.6 4.7 B- 1935 738290 6 6 645 310 0.229 0.29 310 0.251 0.00 0.007 0.029 0.164 0.007 0.133 0.873 0.092 8.3 1.3 8.8 1.9 A+ 1936 738291 6 6 677 7.47 7.47 0.38 0.55 1.60 0.00 0.459 4.59 -3.00 3.64 -1.61 -1.506 0.101 0.6 1.0 0.2 1.0 A- 1937 738292 6 6 657 7.67 0.68 0.76 7.67 0.088 0.00 0.489 -2.66 -2.51 4.89 -2.58 -1.641 0.104 -1.2 0.9 -1.0 0.9 A+ 1938 738293 6 6 689 5.73 0.78 1.68 5.73 1.80 0.000 0.488 -2.85 -1.97 0.488 -1.44 0.124 0.99 1.9 0.9 -1.2 0.9 1.0 0.9 A+ 1938 738294 6 6 691 7.748 0.58 7.748 0.98 0.096 0.00 0.519 -380 5.19 -2.72 -1.89 -1.469 0.009 1.9 0.9 2.2 0.8 B+ 1940 738295 6 6 714 4.61 4.61 1.76 2.70 0.092 0.00 2.75 2.75 -1.19 -0.96 -1.70 0.154 0.083 3.5 1.1 6.2 1.4 A- 1941 741712 6 6 630 3.398 2.59 1.46 1.97 3.39 0.00 2.63 0.10 -1.83 -1.73 2.63 0.398 0.089 2.6 1.1 5.6 1.4 A+ 1944 741700 6 6 661 7.63 1.40 0.58 0.39 7.63 0.00 0.487 -2.39 -3.03 -2.77 4.87 -1.569 0.106 -1.2 0.9 -2.2 0.8 B+ 1944 741704 6 6 668 3.46 0.087 4.09 0.00 2.61 0.007 3.99 -2.22 3.55 2.92 0.599 0.088 2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 668 3.46 0.058 0.39 7.63 0.000 2.47 0.03 0.09 0.145 2.247 0.040 0.068 3.99 1.49 2.239 3.44 0.008 3.39 0.008 2.84 1.34 0.62 0.10 0.10 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	1931	735387	6	6	675	.347	.172	.366	.116	.347	.000	.346	234	.067	341	.346	0.644	0.089	0.6	1.0	1.5	1.1	A-	A+
1934 738289 6 6 698 .062 .655 .203 .080 .062 .000 .185 .434 .228 .258 .185 3.006 0.161 1.2 1.2 8.6 4.7 B- 1935 738290 6 6 645 .310 .229 .209 .310 .251 .000 .007 .029 .164 .007 .133 0.873 0.092 8.3 1.3 8.8 1.9 A+ 1936 738291 6 6 677 .747 .747 .038 .055 .160 .000 .459 .459 .300 .364 .161 .1.506 .0101 -0.6 1.0 0.0 1.0 0.2 1.0 A- 1937 738292 6 6 657 .767 .068 .076 .767 .088 .000 .489 .266 .251 .489 .258 -1.641 .0.104 -1.2 0.9 -1.0 0.9 A+ 1938 738293 6 6 689 .573 .078 .168 .573 .80 .000 .408 .285 .197 .408 .134 -0.528 0.087 0.8 1.0 1.4 1.1 A+ 1939 738294 6 6 691 .748 .058 .748 .098 .096 .000 .275 .275 .119 .096 .170 .0154 0.083 3.5 1.1 6.2 1.4 A+ 1941 741711 6 6 686 .637 .637 .112 .207 .044 .000 .361 .361 .203 .165 .208 -0.842 0.090 2.4 1.1 2.0 1.1 A- 1942 741712 6 6 668 .637 .637 .112 .207 .044 .000 .361 .361 .203 .165 .208 -0.842 0.090 2.4 1.1 2.0 1.1 A- 1943 741740 6 6 6621 .763 .140 .058 .039 .763 .000 .275 .275 .275 .275 .275 .292 .0509 0.088 2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 668 .446 .058 .446 .087 .409 .000 .247 .063 .090 .247 .166 .270 .024 .0121 .087 4.2 1.1 .56 1.4 A+ 1947 730217 7 7 470 .636 .074 .198 .991 .636 .000 .488 .272 .204 .225 .2468 .0502 .0108 .08 .11 .47 .13 A+ 1948 730219 7 7 446 .651 .075 .175 .099 .651 .000 .488 .272 .204 .225 .468 .0502 .0108 .08 .11 .47 .13 A+ 1949 730227 7 7 470 .636 .074 .198 .991 .636 .000 .488 .272 .204 .225 .468 .0502 .0100 .25 .11 .50 .14 A-	1932	735388	6	6	663	.359	.428	.124	.359	.089	.000	.106	.141	230	.106	159	0.596	0.088	6.5	1.2	8.2	1.6	A+	A+
1935 738290 6	1933	738288	6	6	662	.311	.311	.322	.239	.128	.000	.039	.039	.041	.022	139	0.848	0.091	7.9	1.3	8.4	1.9	A+	
1936 738291 6	1934	738289	6	6	698	.062	.655	.203	.080	.062	.000	185	.434	228	258	185	3.006	0.161	1.2	1.2	8.6	4.7	B-	
1937 738292 6 6 657 .767 .068 .076 .767 .088 .000 .489 .266 .251 .489 .258 .1.641 0.104 -1.2 0.9 -1.0 0.9 A+ A+ 1938 738293 6 6 689 .573 .078 .168 .573 .180 .000 .408 .285 .197 .408 .134 .0.528 0.087 0.8 1.0 1.4 1.1 A+ A+ 1939 738294 6 6 691 .748 .058 .748 .098 .096 .000 .519 .380 .519 .272 .189 -1.469 0.099 -1.9 .0.9 .2.2 0.8 B+ 1940 738295 6 6 714 .461 .461 .176 .270 .092 .000 .275 .275 .119 .0.96 .170 .165 0.083 .35 1.1 .62 1.4 .4 .4 .4 .4 .4 .4 .	1935	738290	6	6	645	.310	.229	.209	.310	.251	.000	007	.029	164	007	.133	0.873	0.092	8.3	1.3	8.8	1.9	A+	A-
1938 738293 6 6 6 689 .573 .078 .168 .573 .180 .000 .408 .285 .197 .408134 .0.528 0.087 0.8 1.0 1.4 1.1 A+ A+ 1939 738294 6 6 6 691 .748 .058 .748 .098 .096 .000 .519 .380 .519272 .189 .1.469 0.099 .1.9 0.9 .2.2 0.8 B+ 1940 738295 6 6 714 .461 .461 .176 .270 .092 .000 .275 .275 .119 .0.96170 0.154 0.083 3.5 1.1 6.2 1.4 A- A+ 1941 741711 6 6 6 .686 .637 .637 .112 .207 .044 .000 .361 .361 .203 .1.65 .208 .0.842 0.090 .2.4 1.1 2.0 1.1 A- A- 1942 741712 6 6 6 .630 .398 .259 .146 .197 .398 .000 .263 .010 .183 .173 .263 0.398 0.089 .2.6 1.1 5.6 1.4 A- 1944 741760 6 6 6 .621 .763 .140 .058 .039 .763 .000 .487 .239 .303277 .487 .1.569 0.106 .1.2 0.9 .2.2 0.8 B+ B+ 1944 741760 6 6 6 .668 .446 .058 .446 .058 .440 .000 .221 .000 .221 .039 .222 .355 .292 0.509 0.088 2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 .668 .446 .058 .446 .087 .409 .000 .261 .279 .261 .270 .024 0.121 0.087 4.2 1.1 5.6 1.4 B- A+ 1946 742048 6 6 .668 .399 .149 .212 .239 .399 .000 .247 .063 .090 .145 .247 0.403 0.086 3.9 1.1 4.7 1.3 A+ 1947 730217 7 7 7 470 .536 .074 .198 .091 .636 .000 .488 .340 .089 .284 .438 .0.632 0.110 .0.1 1.0 0.2 1.0 A- 1949 730227 7 7 7 474 .656 .074 .18 .091 .091 .000 .438 .340 .089 .284 .438 .0.632 0.110 .0.1 1.0 0.2 1.0 A- 1949 730227 7 7 448 .675 .675 .148 .086 .091 .000 .438 .340 .089 .284 .438 .0.632 0.110 .0.1 1.0 0.2 1.0 A- 1950 735366 7 7 4498 .544 .544 .162 .181 .113 .000 .319 .319 .233 .073 .142 .0.149 0.103 2.3 1.1 1.7 1.1 A- 1951 735368 7 7 7 4496 .595 .595 .081 .087 .238 .000 .241 .342 .245 .351 .024 .0.420 0.102 4.9 1.2 8.4 1.8 A- 1954 735370 7 7 486 .595 .595 .081 .087 .238 .000 .241 .245 .351 .000 .201 .0.08 1.1 A+ A- 1954 735370 7 7 481 .441 .189 .239 .441 .131 .000 .201 .0.58 .1.08 .201 .0.02 0.000 .0.00 .0.00 .0.000	1936	738291	6	6	677	.747	.747	.038	.055	.160	.000	.459	.459	300	364	161	-1.506	0.101	-0.6	1.0	0.2	1.0	A-	
1939 738294 6 6 6 691 .748 .058 .748 .098 .096 .000 .519 .380 .519 .272 .189 .1.469 .0.99 .1.9 0.9 .2.2 0.8 B+ 1940 738295 6 6 6 .714 .461 .461 .176 .270 .092 .000 .275 .275 .119 .096 .7170 .0.154 .0.83 .3.5 1.1 6.2 1.4 A- A+ 1941 741711 6 6 6 .686 .637 .637 .112 .207 .044 .000 .361 .361 .203 .165 .208 .0.842 .0.090 .2.4 1.1 2.0 1.1 A- A- 1942 741712 6 6 6 .630 .398 .259 .146 .197 .398 .000 .263 .010 .183 .173 .263 .0.398 .0.89 .2.6 1.1 5.6 1.4 A+ 1943 741740 6 6 6 .621 .763 .140 .058 .039 .763 .000 .487 .239 .303 .277 .487 .1.569 .0.106 .1.2 0.9 .2.2 0.8 B+ B+ 1944 741760 6 6 6 .677 .369 .437 .133 .061 .369 .000 .292 .039 .222 .3355 .292 .0.509 .0.88 .2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 .668 .446 .058 .446 .087 .409 .000 .261 .279 .261 .270 .024 .0.121 .0.87 4.2 1.1 5.6 1.4 B- A+ 1946 742048 6 6 6 .689 .399 .149 .212 .239 .399 .000 .247 .063 .090 .145 .247 .0.403 .0.86 .3.9 1.1 4.7 1.3 A+ 1947 730217 7 7 464 .551 .075 .175 .099 .651 .000 .438 .340 .089 .284 .438 .0.632 .0.110 .0.1 1.0 .0.6 1.0 A- 1949 730227 7 7 447 .675 .675 .148 .086 .091 .000 .438 .340 .089 .284 .438 .0.632 .0.110 .0.1 1.0 .0.6 1.0 A+ 1950 735366 7 7 7 .498 .430 .245 .189 .430 .137 .000 .283 .071 .073 .073 .073 .142 .0.149 .0.100 .2.5 1.1 5.0 1.4 A- 1951 735367 7 7 498 .340 .245 .189 .430 .137 .000 .283 .071 .077 .283 .232 .0.479 .0.100 .2.5 1.1 5.0 1.4 A- 1953 735369 7 7 7 486 .595 .595 .081 .087 .238 .000 .421 .421 .250 .373 .078 .0.36 .0.100 .0.10 .4.9 1.2 8.4 1.8 A-	1937	738292	6	6	657	.767	.068	.076	.767	.088	.000	.489	266	251	.489	258	-1.641	0.104	-1.2	0.9	-1.0	0.9	A+	A+
1940 738295 6 6 714 .461 .176 .270 .992 .000 .275 .275 119 .096 170 0.154 0.083 3.5 1.1 6.2 1.4 A- A+ 1941 741711 6 6 686 .637 .617 .112 .207 .044 .000 .361 .361 203 165 208 -0.842 0.090 2.4 1.1 2.0 1.1 A- 1942 741712 6 6 630 .398 .259 .146 .197 .398 .000 .263 .010 183 173 .263 .0398 .0.69 .2.6 1.1 5.6 1.4 A+ 1943 741740 6 6 621 .763 .140 .058 .039 .763 .000 .292 .039 222 .355 .292 .0509 .0.088 2.4 1.1 4.5 1.4	1938	738293	6	6	689	.573	.078	.168	.573	.180	.000	.408	285	197	.408	134	-0.528	0.087	0.8	1.0	1.4	1.1	A+	A+
1941 741711 6 6 686 .637 .112 .207 .044 .000 .361 .361 .203 165 208 -0.842 0.090 2.4 1.1 2.0 1.1 A- 1942 741712 6 6 630 .398 .259 .146 .197 .398 .000 .263 .010 183 173 .263 0.398 0.089 2.6 1.1 5.6 1.4 A+ 1943 741740 6 6 621 .763 .140 .058 .039 .763 .000 .487 239 303 277 .487 -1.569 0.106 -1.2 0.99 -2.2 0.8 B+ B+ 1944 741760 6 6 677 .369 .437 .133 .061 .369 .000 .222 .355 .292 0.509 .088 2.4 1.1 4.5 1.4 A+	1939	738294	6	6	691	.748	.058	.748	.098	.096	.000	.519	380	.519	272	189	-1.469	0.099	-1.9	0.9	-2.2	0.8	B+	
1942 741712 6 6 630 .398 .259 .146 .197 .398 .000 .263 .010 183 173 .263 0.398 0.089 2.6 1.1 5.6 1.4 A+ 1943 741740 6 6 621 .763 .140 .058 .039 .763 .000 .487 239 303 277 .487 -1.569 0.106 -1.2 0.9 -2.2 0.8 B+ B+ 1944 741760 6 6 677 .369 .437 .133 .061 .369 .000 .292 .039 222 .355 .292 .0509 .088 2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 668 .446 .087 .409 .000 .247 .063 .090 .145 .247 .0403 .086 3.9 1.1 4.7 1.3 A+ <td>1940</td> <td>738295</td> <td>6</td> <td>6</td> <td>714</td> <td>.461</td> <td>.461</td> <td>.176</td> <td>.270</td> <td>.092</td> <td>.000</td> <td>.275</td> <td>.275</td> <td>119</td> <td>096</td> <td>170</td> <td>0.154</td> <td>0.083</td> <td>3.5</td> <td>1.1</td> <td>6.2</td> <td>1.4</td> <td>A-</td> <td>A+</td>	1940	738295	6	6	714	.461	.461	.176	.270	.092	.000	.275	.275	119	096	170	0.154	0.083	3.5	1.1	6.2	1.4	A-	A+
1943 741740 6 6 621 .763 .140 .058 .039 .763 .000 .487 239 303 277 .487 -1.569 0.106 -1.2 0.9 -2.2 0.8 B+ B+ 1944 741760 6 6 677 .369 .437 .133 .061 .369 .000 .292 .039 222 .355 .292 0.509 0.088 2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 668 .446 .058 .446 .087 .409 .000 .261 279 .261 270 .024 0.121 0.087 4.2 1.1 5.6 1.4 B+ A+ 1946 742048 6 6 689 .399 .149 .212 .239 .399 .000 .247 063 090 145 .247 0.403 0.086 3.9 1.1	1941	741711	6	6	686	.637	.637	.112	.207	.044	.000	.361	.361	203	165	208	-0.842	0.090	2.4	1.1	2.0	1.1	A-	A-
1944 741760 6 6 677 .369 .437 .133 .061 .369 .000 .292 .039 222 355 .292 0.509 0.088 2.4 1.1 4.5 1.4 A+ 1945 742046 6 6 668 .446 .058 .446 .087 .409 .000 .261 279 .261 270 .024 0.121 0.087 4.2 1.1 5.6 1.4 B- A+ 1946 742048 6 6 689 .399 .149 .212 .239 .399 .000 .247 063 090 145 .247 0.403 0.086 3.9 1.1 4.7 1.3 A+ 1947 730217 7 7 470 .636 .074 .198 .091 .636 .000 .488 272 .204 252 .468 -0.502 0.108 -0.8 1.0 -0.9	1942	741712	6	6	630	.398	.259	.146	.197	.398	.000	.263	.010	183	173	.263	0.398	0.089	2.6	1.1	5.6	1.4	A+	
1945 742046 6 6 668 .446 .058 .446 .087 .409 .000 .261 279 .261 270 .024 0.121 0.087 4.2 1.1 5.6 1.4 B- A+ 1946 742048 6 6 689 .399 .149 .212 .239 .399 .000 .247 063 090 145 .247 0.403 0.086 3.9 1.1 4.7 1.3 A+ 1947 730217 7 7 470 .636 .074 .198 .091 .636 .000 .468 272 204 252 .468 -0.502 0.108 -0.8 1.0 -0.9 0.9 A+ 1948 730219 7 7 464 .651 .075 .175 .099 .651 .000 .438 340 089 284 .438 -0.632 0.110 -0.1 1.0 0.2<	1943	741740	6	6	621	.763	.140	.058	.039	.763	.000	.487	239	303	277	.487	-1.569	0.106	-1.2	0.9	-2.2	0.8	B+	B+
1946 742048 6 6 689 .399 .149 .212 .239 .399 .000 .247 063 090 145 .247 0.403 0.086 3.9 1.1 4.7 1.3 A+ 1947 730217 7 7 470 .636 .074 .198 .091 .636 .000 .468 272 204 252 .468 -0.502 0.108 -0.8 1.0 -0.9 0.9 A+ 1948 730219 7 7 464 .651 .075 .175 .099 .651 .000 .438 340 089 284 .438 -0.632 0.110 -0.1 1.0 0.2 1.0 A+ 1949 730227 7 7 474 .675 .675 .148 .086 .091 .000 .434 .434 257 202 192 -0.818 0.110 0.1 1.0 0.6 1	1944	741760	6	6	677	.369	.437	.133	.061	.369	.000	.292	.039	222	355	.292	0.509	0.088	2.4	1.1	4.5	1.4	A+	
1947 730217 7 470 .636 .074 .198 .091 .636 .000 .468 272 204 252 .468 -0.502 0.108 -0.8 1.0 -0.9 0.9 A+ 1948 730219 7 7 464 .651 .075 .175 .099 .651 .000 .438 340 089 284 .438 -0.632 0.110 -0.1 1.0 0.2 1.0 A- 1949 730227 7 7 474 .675 .675 .148 .086 .091 .000 .434 .434 257 202 192 -0.818 0.110 0.1 1.0 -0.6 1.0 A+ 1950 735366 7 7 469 .544 .162 .181 .113 .000 .283 071 077 .283 232 0.479 0.103 2.3 1.1 1.7 1.1 A-	1945	742046	6	6	668	.446	.058	.446	.087	.409	.000	.261	279	.261	270	.024	0.121	0.087	4.2	1.1	5.6	1.4	B-	A+
1948 730219 7 7 464 .651 .075 .175 .099 .651 .000 .438 340 089 284 .438 -0.632 0.110 -0.1 1.0 0.2 1.0 A- 1949 730227 7 7 474 .675 .675 .148 .086 .091 .000 .434 .434 257 202 192 -0.818 0.110 0.1 1.0 -0.6 1.0 A+ 1950 735366 7 7 469 .544 .162 .181 .113 .000 .319 .319 233 073 142 -0.149 0.103 2.3 1.1 1.7 1.1 A- 1951 735367 7 498 .430 .245 .189 .430 .137 .000 .283 071 077 .283 232 0.479 0.100 2.5 1.1 5.0 1.4 A-	1946	742048	6	6	689	.399	.149	.212	.239	.399	.000	.247	063	090	145	.247	0.403	0.086	3.9	1.1	4.7	1.3	A+	
1949 730227 7 474 .675 .675 .148 .086 .091 .000 .434 .434 257 202 192 -0.818 0.110 0.1 1.0 -0.6 1.0 A+ 1950 735366 7 7 469 .544 .544 .162 .181 .113 .000 .319 .319 233 073 142 -0.149 0.103 2.3 1.1 1.7 1.1 A- 1951 735367 7 498 .430 .245 .189 .430 .137 .000 .283 071 077 .283 232 0.479 0.100 2.5 1.1 5.0 1.4 A- A- 1952 735368 7 7 547 .686 .124 .686 .143 .048 .000 .351 245 .351 024 346 -0.915 0.105 2.2 1.1 1.9 1.2	1947	730217	7	7	470	.636	.074	.198	.091	.636	.000	.468	272	204	252	.468	-0.502	0.108	-0.8	1.0	-0.9	0.9	A+	
1950 735366 7 7 469 .544 .162 .181 .113 .000 .319 .319 233 073 142 -0.149 0.103 2.3 1.1 1.7 1.1 A- 1951 735367 7 7 498 .430 .245 .189 .430 .137 .000 .283 071 077 .283 232 0.479 0.100 2.5 1.1 5.0 1.4 A- A- 1952 735368 7 7 547 .686 .124 .686 .143 .048 .000 .351 245 .351 024 346 -0.915 0.105 2.2 1.1 1.9 1.2 A+ 1953 735369 7 7 496 .595 .595 .081 .087 .238 .000 .421 .421 250 373 078 -0.362 0.103 -0.2 1.0 0.8 1.1 A+ 1954 735370 7 481 .441 .189 .23	1948	730219	7	7	464	.651	.075	.175	.099	.651	.000	.438	340	089	284	.438	-0.632	0.110	-0.1	1.0	0.2	1.0	A-	
1951 735367 7 498 .430 .245 .189 .430 .137 .000 .283 071 077 .283 232 0.479 0.100 2.5 1.1 5.0 1.4 A- A- 1952 735368 7 7 496 .595 .595 .081 .087 .238 .000 .421 .421 250 373 078 -0.362 0.103 -0.2 1.0 0.8 1.1 A+ 1954 735370 7 481 .441 .189 .239 .441 .131 .000 .201 058 108 .201 092 0.420 0.102 4.9 1.2 8.4 1.8 A-	1949	730227	7	7	474	.675	.675	.148	.086	.091	.000	.434	.434	257	202	192	-0.818	0.110	0.1	1.0	-0.6	1.0	A+	
1952 735368 7 7 547 .686 .124 .686 .143 .048 .000 .351 245 .351 024 346 -0.915 0.105 2.2 1.1 1.9 1.2 A+ 1953 735369 7 496 .595 .595 .081 .087 .238 .000 .421 .421 250 373 078 -0.362 0.103 -0.2 1.0 0.8 1.1 A+ 1954 735370 7 481 .441 .189 .239 .441 .131 .000 .201 058 108 .201 092 0.420 0.102 4.9 1.2 8.4 1.8 A-	1950	735366	7	7	469	.544	.544	.162	.181	.113	.000	.319	.319	233	073	142	-0.149	0.103	2.3	1.1	1.7	1.1	A-	
1952 735368 7 7 547 .686 .124 .686 .143 .048 .000 .351 245 .351 024 346 -0.915 0.105 2.2 1.1 1.9 1.2 A+ 1953 735369 7 7 496 .595 .595 .081 .087 .238 .000 .421 .421 250 373 078 -0.362 0.103 -0.2 1.0 0.8 1.1 A+ A- 1954 735370 7 481 .441 .189 .239 .441 .131 .000 .201 058 108 .201 092 0.420 0.102 4.9 1.2 8.4 1.8 A-	1951	735367	7	7	498	.430	.245	.189	.430	.137	.000	.283	071	077	.283	232	0.479	0.100	2.5	1.1	5.0	1.4	A-	A-
1954 735370 7 7 481 .441 .189 .239 .441 .131 .000 .201058108 .201092 0.420 0.102 4.9 1.2 8.4 1.8 A-	1952	735368	7	7				.686			.000			.351			-0.915			1.1				\Box
1954 735370 7 7 481 .441 .189 .239 .441 .131 .000 .201058108 .201092 0.420 0.102 4.9 1.2 8.4 1.8 A-	1953	735369	7	7	496	.595	.595	.081	.087	.238	.000	.421	.421	250	373	078	-0.362	0.103	-0.2	1.0	0.8	1.1	A+	A-
	1954	735370	7	7	481			.239			.000	.201				092	0.420	0.102	4.9	1.2	8.4	1.8	A-	
			7	7																		1.3		

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref		FT	PCS	N	PVal	D/A)	D/D)	D(C)	D(D)	D/ \	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Mass	MSE	Z-	MS-	Z-	MS-	M	W
	ID	Grade	Grade	N	Pvai	P(A)	P(B)	P(C)	P(D)	P(-)	PLDIS	PI(A)	PI(B)	PI(C)	PI(D)	Meas	IVISE	in	in	out	out	/F	/B
1956	735372	7	7	439	.779	.071	.084	.779	.066	.000	.567	331	328	.567	239	-1.461	0.129	-2.3	0.8	-2.9	0.7	A+	A+
1957	735373	7	7	463	.568	.110	.210	.112	.568	.000	.411	237	145	224	.411	-0.219	0.105	-0.2	1.0	1.3	1.1	C+	
1958	735382	7	7	504	.466	.466	.200	.127	.206	.000	.258	.258	207	203	.053	0.217	0.100	4.3	1.2	6.3	1.5	A+	A-
1959	735383	7	7	461	.321	.137	.358	.321	.184	.000	.126	143	.002	.126	027	1.023	0.108	4.5	1.2	6.1	1.7	A-	
1960	735389	7	7	447	.172	.208	.268	.351	.172	.000	.037	093	031	.078	.037	2.007	0.132	1.9	1.2	7.8	3.1	A-	
1961	735390	7	7	533	.261	.259	.261	.171	.310	.000	114	.024	114	127	.188	1.313	0.106	7.3	1.4	9.9	2.9	A-	A-
1962	735391	7	7	485	.363	.202	.235	.200	.363	.000	.277	116	104	106	.277	0.855	0.104	1.9	1.1	3.9	1.4	A-	
1963	735392	7	7	465	.581	.138	.144	.581	.138	.000	.433	274	257	.433	085	-0.346	0.106	0.2	1.0	-0.1	1.0	A+	A+
1964	735393	7	7	521	.466	.466	.296	.163	.075	.000	.266	.266	.015	231	207	0.270	0.098	3.5	1.1	5.9	1.4	A-	
1965	735430	7	7	470	.543	.111	.126	.543	.221	.000	.288	141	208	.288	074	-0.079	0.104	3.4	1.2	4.6	1.3	A-	
1966	735431	7	7	473	.408	.125	.123	.345	.408	.000	.320	182	310	.009	.320	0.568	0.102	0.4	1.0	3.7	1.3	A-	
1967	735432	7	7	456	.678	.678	.145	.112	.066	.000	.466	.466	266	210	233	-0.755	0.113	-0.9	1.0	-0.7	1.0	B-	
1968	735433	7	7	477	.484	.212	.180	.124	.484	.000	.313	123	105	199	.313	0.213	0.102	2.0	1.1	4.9	1.4	A-	B-
1969	735437	7	7	433	.346	.143	.346	.132	.379	.000	.187	151	.187	203	.067	0.959	0.109	2.3	1.1	5.9	1.6	A-	
1970	735438	7	7	471	.760	.760	.066	.062	.113	.000	.327	.327	176	319	061	-1.229	0.121	1.3	1.1	1.7	1.2	A-	
1971	735439	7	7	448	.319	.319	.217	.308	.156	.000	.291	.291	055	177	087	0.977	0.110	0.0	1.0	5.5	1.7	A+	
1972	735469	7	7	493	.572	.572	.217	.079	.132	.000	.247	.247	147	192	029	-0.232	0.102	4.7	1.2	4.2	1.3	A+	
1973	735470	7	7	446	.518	.518	.242	.090	.150	.000	.333	.333	184	265	034	0.061	0.106	2.3	1.1	2.0	1.1	A+	
1974	735471	7	7	490	.259	.145	.239	.357	.259	.000	.227	340	082	.115	.227	1.342	0.111	1.2	1.1	4.5	1.7	A-	
1975	735472	7	7	482	.625	.112	.191	.624	.073	.000	.465	329	158	.465	229	-0.472	0.106	-1.1	1.0	-0.8	1.0	A+	
1976	735577	7	7	486	.428	.428	.179	.243	.150	.000	.345	.345	319	043	085	0.486	0.102	1.0	1.0	3.1	1.2	A-	A-
1977	735578	7	7	427	.461	.070	.176	.293	.461	.000	.399	281	160	145	.399	0.262	0.107	-0.5	1.0	0.6	1.0	A+	A-
1978	735579	7	7	522	.567	.172	.111	.567	.149	.000	.395	245	185	.395	125	-0.242	0.100	0.8	1.0	1.9	1.1	A+	
1979	735596	7	7	490	.649	.114	.649	.122	.114	.000	.367	228	.367	234	081	-0.695	0.106	1.2	1.1	1.4	1.1	A+	
1980	735597	7	7	494	.496	.136	.158	.211	.496	.000	.322	129	165	139	.322	0.163	0.101	2.3	1.1	3.8	1.3	A+	
1981	735598	7	7	484	.320	.246	.320	.192	.242	.000	.132	116	.132	093	.059	1.072	0.106	3.8	1.2	8.1	1.9	A-	
1982	735599	7	7	472	.377	.377	.208	.225	.191	.000	.151	.151	014	129	035	0.800	0.103	4.5	1.2	6.7	1.6	A+	
1983	735601	7	7	454	.427	.427	.205	.183	.185	.000	.262	.262	115	104	110	0.497	0.104	2.6	1.1	4.1	1.3	A+	
1984	735603	7	7	481	.776	.110	.089	.775	.025	.000	.434	257	225	.434	236	-1.533	0.124	0.5	1.0	-1.1	0.9	A+	
1985	735604	7	7	493	.239	.245	.373	.239	.142	.000	054	.009	.214	054	241	1.501	0.112	4.5	1.3	9.9	3.0	A-	
1986	735605	7	7	473	.552	.093	.180	.175	.552	.000	.368	194	141	191	.368	-0.098	0.103	0.7	1.0	1.7	1.1	A-	
1987	735606	7	7	481	.495	.495	.077	.341	.087	.000	.184	.184	230	.019	142	0.159	0.101	5.5	1.2	6.9	1.5	A+	
1988	735607	7	7	519	.254	.299	.164	.283	.254	.000	048	.220	213	002	048	1.414	0.108	5.8	1.3	9.9	2.9	A-	
1989	735608	7	7	473	.501	.049	.501	.070	.381	.000	.245	288	.245	280	.022	0.101	0.103	4.5	1.2	5.0	1.4	A+	
1990	735609	7	7	525	.577	.171	.577	.152	.099	.000	.362	090	.362	262	171	-0.221	0.099	1.5	1.1	1.6	1.1	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Kei	ID	Grade	Grade	74	rvai	F(A)	F(D)	r(c)	F(D)	F (-)	FtDIS	r i(A)	FI(D)	r i(c)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
1991	735610	7	7	487	.801	.801	.082	.045	.072	.000	.402	.402	324	261	068	-1.660	0.128	0.6	1.0	-0.1	1.0	A-	
1992	735611	7	7	444	.590	.050	.286	.590	.074	.000	.372	202	225	.372	142	-0.275	0.109	1.3	1.1	2.6	1.2	A+	
1993	735612	7	7	475	.587	.166	.074	.587	.173	.000	.362	228	140	.362	150	-0.436	0.107	2.6	1.1	3.2	1.2	A+	
1994	735613	7	7	480	.492	.129	.233	.492	.146	.000	.175	057	130	.175	038	0.206	0.101	5.6	1.2	7.1	1.5	A-	
1995	735615	7	7	506	.514	.075	.283	.514	.128	.000	.354	254	089	.354	209	0.023	0.099	1.4	1.1	3.0	1.2	A-	
1996	735616	7	7	429	.664	.105	.152	.079	.664	.000	.618	339	303	293	.618	-0.869	0.118	-3.5	0.8	-3.5	0.7	A+	
1997	735617	7	7	517	.327	.108	.344	.221	.327	.000	.222	208	072	013	.222	0.926	0.103	2.1	1.1	7.7	1.9	A-	
1998	735668	7	7	481	.432	.432	.164	.191	.212	.000	.302	.302	192	172	027	0.468	0.101	2.2	1.1	2.6	1.2	A+	
1999	736149	7	7	452	.785	.077	.785	.071	.066	.000	.535	300	.535	278	274	-1.580	0.130	-1.5	0.9	-2.5	0.7	B+	
2000	736150	7	7	494	.733	.091	.105	.733	.071	.000	.492	341	299	.492	108	-1.231	0.116	-0.7	1.0	-1.5	0.9	A-	A-
2001	736156	7	7	505	.596	.182	.139	.083	.596	.000	.536	157	321	331	.536	-0.384	0.102	-3.4	0.9	-1.9	0.9	A+	
2002	737278	7	7	441	.574	.093	.136	.197	.574	.000	.396	125	194	234	.396	-0.258	0.108	0.1	1.0	1.7	1.1	A+	
2003	737279	7	7	467	.443	.141	.443	.152	.263	.000	.333	179	.333	231	046	0.455	0.103	0.9	1.0	3.5	1.3	B+	
2004	737280	7	7	483	.634	.133	.168	.634	.066	.000	.368	256	144	.368	146	-0.503	0.106	1.1	1.1	1.0	1.1	A-	
2005	737281	7	7	519	.609	.247	.094	.609	.050	.000	.247	009	190	.247	278	-0.465	0.102	4.9	1.2	5.9	1.4	A-	
2006	737282	7	7	465	.654	.127	.088	.654	.131	.000	.447	234	329	.447	123	-0.713	0.111	0.0	1.0	0.2	1.0	A+	A-
2007	737283	7	7	457	.525	.171	.239	.525	.066	.000	.303	186	060	.303	225	-0.071	0.106	3.2	1.1	4.5	1.3	A-	
2008	737284	7	7	499	.597	.182	.148	.597	.072	.000	.456	117	291	.456	289	-0.428	0.103	-0.3	1.0	-0.8	1.0	A+	
2009	737285	7	7	493	.556	.154	.110	.181	.556	.000	.360	180	152	173	.360	-0.188	0.103	2.0	1.1	2.8	1.2	A+	A+
2010	737286	7	7	501	.723	.723	.102	.074	.102	.000	.432	.432	232	278	168	-1.116	0.114	0.4	1.0	0.0	1.0	A+	
2011	737287	7	7	476	.366	.149	.074	.412	.366	.000	.224	301	266	.141	.224	0.781	0.103	3.1	1.1	3.5	1.3	A-	
2012	737288	7	7	466	.577	.058	.112	.577	.253	.000	.448	305	354	.448	089	-0.253	0.106	-0.3	1.0	0.2	1.0	A+	A-
2013	737292	7	7	475	.333	.164	.128	.333	.375	.000	.127	154	272	.127	.182	0.954	0.106	4.1	1.2	7.2	1.8	A-	
2014	737298	7	7	498	.265	.265	.299	.137	.299	.000	.050	.050	.081	116	043	1.351	0.110	4.5	1.2	8.7	2.4	A+	A+
2015	737299	7	7	498	.396	.343	.102	.159	.396	.000	.295	.038	321	178	.295	0.613	0.100	1.2	1.0	3.5	1.3	A-	
2016	737766	7	7	486	.609	.111	.142	.138	.609	.000	.468	267	083	334	.468	-0.312	0.104	-1.2	0.9	-1.2	0.9	A+	A-
2017	737767	7	7	509	.328	.132	.320	.220	.328	.000	.309	293	005	107	.309	1.020	0.103	0.1	1.0	4.6	1.5	A+	
2018	737772	7	7	453	.342	.247	.342	.190	.221	.000	.154	133	.154	132	.087	0.847	0.109	5.1	1.2	5.2	1.6	A-	B+
2019	737774	7	7	484	.585	.093	.105	.585	.217	.000	.331	144	259	.331	102	-0.303	0.104	2.3	1.1	3.1	1.2	A+	A-
2020	737775	7	7	495	.499	.499	.218	.176	.107	.000	.344	.344	145	173	149	0.156	0.100	1.1	1.0	3.9	1.3	A+	B-
2021	737776	7	7	474	.456	.181	.456	.169	.194	.000	.212	116	.212	196	.032	0.309	0.102	5.1	1.2	4.5	1.3	A+	
2022	737778	7	7	463	.475	.251	.475	.127	.147	.000	.344	127	.344	225	119	0.192	0.104	1.4	1.1	3.5	1.3	A-	
2023	738277	7	7	502	.406	.406	.191	.120	.283	.000	.090	.090	213	090	.153	0.581	0.100	7.4	1.3	8.0	1.7	A+	
2024	738278	7	7	463	.577	.577	.108	.123	.192	.000	.350	.350	182	399	.037	-0.343	0.106	1.6	1.1	3.0	1.2	A+	
2025	738279	7	7	474	.553	.553	.190	.099	.158	.000	.352	.352	112	192	202	-0.134	0.104	2.1	1.1	3.0	1.2	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

2026 738280 7	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
2027 738281 7	itei		Grade	Grade		ı vai	1 (4)		' (C)		1 (-)		11(A)	11(5)	1 1(0)				in	in	out	out	/F	/B
2028 738282 7 7 478 555 159 556 159 126 000 282 -170 282 -163 -056 -0122 0.103 35 12 3.6 12 A+	2026	738280	7	7		.504	.226		.504		.000			244	.243		0.053	0.100	4.9	1.2	6.3	1.5	B-	A-
2029 738284 7	2027	738281	7		459	.540	.100	.540	.148	.211	.000	.393	342	.393	214	042	-0.160	0.106	1.1	1.1	1.9	1.1	A+	
2030 738285 7 7 508 7.15 7.15 7.15 7.10 0.94 0.81 0.00 4.28 4.28 4.28 -1.34 -2.54 -2.82 -1.089 0.112 0.8 1.1 0.4 1.0 B 0.031 738286 7 7 4.54 5.75 0.75 2.75 0.75 0.75 0.00 0.45 -2.08 -1.46 -3.29 4.52 -0.277 -0.08 0.3 1.1 0.4 1.0 B 0.032 738287 7 7 5.05 4.89 1.60 4.89 2.26 1.25 0.00 0.241 -1.03 -2.41 -1.03 -1.20 0.219 0.088 4.1 1.2 5.1 1.3 A 0.233 739626 7 7 4.95 5.28 5.28 5.28 5.28 1.33 1.47 0.91 0.00 4.63 4.63 -2.38 -2.54 -1.83 0.581 0.106 0.0 1.0 0.5 1.0 C A 0.241 -1.03 0.581 0.581 0.581 0.581 0.581 0.05	2028	738282	7	7	478	.557	.159	.556	.159	.126	.000	.282	170	.282	163	056	-0.122	0.103	3.5	1.2	3.6	1.2	A+	
2031 738286 7		738284	7	7			.092	.526			.000		203			_	-0.065		2.7	1.1	4.5	1.3	A+	
2032 738287 7	2030	738285	7	7	508	.715	.715	.110	.094	.081	.000	.428	.428	134	254	282	-1.089	0.112	8.0	1.1	-0.4	1.0	B-	
2033 739526 7 7 495 6.62 6.28 6.28 1.33 1.47 0.91 0.00 4.63 4.63 4.23 -2.54 1.33 -0.581 0.106 0.0 1.0 -0.5 1.0 C+ A+ 2034 739536 7 7 487 6.61 1.50 6.61 0.80 1.09 0.00 4.69 -2.75 4.69 -3.37 -1.04 -0.695 0.107 -1.0 1.0 -1.8 0.9 A+ 2036 739934 7 7 514 4.55 1.34 1.89 2.22 4.55 0.00 4.62 -2.70 -1.67 -2.26 4.62 0.369 0.098 -2.7 0.9 0.0 1.0 A+ 2036 739952 7 7 505 6.87 0.81 1.72 6.87 0.59 0.00 3.79 -2.34 -1.66 3.79 -2.07 -0.941 0.109 1.7 1.1 1.3 1.1 A+ -1.2037 741772 7 7 7479 5.597 1.94 5.597 1.23 0.06 0.00 4.91 -2.291 -2.37 -0.441 0.106 -1.1 1.0 -0.9 0.9 0.9 A- B+ 2.2038 741773 7 7 4479 5.597 1.94 5.597 1.23 0.06 0.00 4.91 -2.291 -2.37 -0.441 0.106 -1.1 1.0 -0.9 0.9 A- B+ 2.2038 741775 7 7 4479 5.597 1.94 5.597 1.23 0.06 0.00 4.91 -2.291 -2.37 -0.441 0.106 -1.1 1.0 -0.9 0.9 0.9 A- B+ 2.204 -2.240	2031	738286	7	7	454	.575	.075	.229	.121	.575	.000	.452	208	146	329	.452	-0.277	0.108	-0.3	1.0	0.3	1.0	A-	A-
2034 739366 7	2032	738287	7	7	505	.489	.160	.489	.226	.125	.000	.241	103	.241	103	120	0.219	0.098	4.1	1.2	5.1	1.3	A-	
2035 739934 7	2033	739626	7	7	495	.628	.628	.133	.147	.091	.000	.463	.463	238	254	183	-0.581	0.106	0.0	1.0	-0.5	1.0	C+	A+
2036 739952 7	2034	739636	7	7	487	.661	.150	.661	.080	.109	.000	.469	275	.469	337	104	-0.695	0.107	-1.0	1.0	-1.8	0.9	A+	<u> </u>
2037 741772 7 7 479 597 194 597 123 1086 100 491 -201 -223 -0.441 0.106 -1.1 1.0 -0.9 0.9 A B 2038 741773 7 7 470 428 428 309 119 145 0.00 2.46 2.46 -0.50 -1.89 -1.06 0.510 0.103 3.5 1.1 4.5 1.4 A A A A 2040 774208 8 8 535 424 0.71 424 318 187 0.00 2.12 -3.38 2.12 -0.03 -0.42 0.659 0.096 4.1 1.1 6.4 1.5 A A A 2041 72920 8 8 505 275 123 358 275 2.44 0.00 0.54 -1.56 0.34 0.054 0.06 0.13 1.5 1.1 0.4 1.0 A A 2041 729921 8 8 556 836 0.081 0.05 836 0.081 0.00 0.054 -1.56 0.034 0.054 0.06 0.103	2035	739934	7	7	514	.455	.134	.189	.222	.455	.000	.462	207	167	226	.462	0.369	0.098	-2.7	0.9	0.0	1.0	A+	
2038 741773 7 7 470 428 428 309 319 145 300 246 246 -050 -189 -106 0.510 0.103 3.5 1.1 4.5 1.4 A+	2036	739952	7	7	505	.687	.081	.172	.687	.059	.000	.379	234	166	.379	207	-0.941	0.109	1.7	1.1	1.3	1.1	A+	
2039 741775 7	2037	741772	7	7	479	.597	.194	.597	.123	.086	.000	.491	200	.491	291	237	-0.441	0.106	-1.1	1.0	-0.9	0.9	A-	B-
2040 724208 8	2038	741773	7	7	470	.428	.428	.309	.119	.145	.000	.246	.246	050	189	106	0.510	0.103	3.5	1.1	4.5	1.4	A+	A+
2041 729920 8	2039	741775	7	7	489	.701	.196	.701	.055	.047	.000	.391	202	.391	187	266	-0.990	0.113	1.5	1.1	0.4	1.0	A-	
2042 729921 8	2040	724208	8	8	535	.424	.071	.424	.318	.187	.000	.212	338	.212	003	042	0.659	0.096	4.1	1.1	6.4	1.5	A+	
2043 729922 8 8 560 .204 .466 .163 .168 .204 .000 .178 .120 .096 258 .178 1.964 0.112 1.1 1.1 5.5 2.0 A- 2044 729924 8 8 533 .687 .099 .687 .092 .152 .000 .514 -317 .514 296 201 -0.695 0.108 -1.2 0.9 -1.0 0.9 A- 2045 729925 8 8 569 .631 .151 .631 .097 .121 .000 .260 092 .260 240 .067 -0.357 .098 4.0 1.2 5.3 1.4 A+ 2047 729927 8 8 561 .392 .391 .198 .000 .300 .056 .201 106 .300 1.028 .099 .13 1.1 .38 1.4 A+	2041	729920	8	8	505	.275	.123	.358	.275	.244	.000	.054	156	.034	.054	.026	1.492	0.107	4.5	1.2	7.9	2.3	A+	
2044 729924 8 8 533 .687 .069 .687 .092 .152 .000 .514 296 201 -0.695 0.108 -1.2 0.9 -1.0 0.9 A- 2045 729925 8 8 569 .631 .151 .631 .097 .121 .000 .260 240 067 -0.357 0.098 4.0 1.2 5.3 1.4 A+ 2046 729926 8 8 561 .392 .091 .392 .319 .198 .000 .187 123 .187 .036 181 0.914 0.095 4.3 1.2 9.2 1.9 A- 2048 729927 8 8 532 .359 .246 .165 .229 .359 .000 .362 151 264 .362 .095 .0005 0.097 1.4 1.1 1.9 1.1 A- 2048 729988	2042	729921	8	8	556	.836	.081	.045	.836	.038	.000	.404	171	245	.404	274	-1.708	0.128	0.0	1.0	-0.4	1.0	B+	
2045 729925 8 8 569 6.31 .151 6.31 .097 .121 .000 .260 240 067 0357 0.098 4.0 1.2 5.3 1.4 A+ 2046 729926 8 8 561 .392 .091 .392 .319 .198 .000 .187 123 .187 .036 181 0.914 0.095 4.3 1.2 9.2 1.9 A- 2047 729927 8 8 532 .359 .246 .165 .229 .359 .000 .362 151 264 .362 .095 0.005 0.097 1.4 1.1 1.9 1.1 A- 2049 729986 8 8 532 .303 .144 .417 .000 .312 050 .312 .005 .0097 1.4 1.1 1.9 1.1 A- 2050 729987 8 8	2043	729922	8	8	560	.204	.466	.163	.168	.204	.000	.178	.120	096	258	.178	1.964	0.112	1.1	1.1	5.5	2.0	A-	
2046 729926 8 8 561 .392 .091 .392 .319 .198 .000 .187 123 .187 .036 181 0.914 0.095 4.3 1.2 9.2 1.9 A- 2047 729927 8 8 532 .359 .246 .165 .229 .359 .000 .300 056 201 106 .300 1.028 0.099 1.3 1.1 3.8 1.4 A+ 2048 729928 8 8 543 .567 .193 .140 .567 .099 .000 .362 151 264 .362 095 0.005 0.097 1.4 1.1 1.9 1.1 A- 2050 729987 8 8 532 .303 .141 .303 .470 .086 .000 .060 .147 137 1.327 0.103 6.0 1.3 .99 2.5 A-	2044	729924	8	8	533	.687	.069	.687	.092	.152	.000	.514	317	.514	296	201	-0.695	0.108	-1.2	0.9	-1.0	0.9	A-	
2047 729927 8 8 532 .359 .246 .165 .229 .359 .000 .300 056 201 106 .300 1.028 0.099 1.3 1.1 3.8 1.4 A+ 2048 729928 8 8 543 .567 .193 .140 .567 .099 .000 .362 151 264 .362 095 0.005 0.097 1.4 1.1 1.9 1.1 A- 2049 729986 8 8 530 .513 .206 .513 .164 .117 .000 .312 200 193 0.199 0.098 3.1 1.1 3.3 1.2 A- 2050 729987 8 8 532 .303 .141 .303 .470 .086 .000 .060 .147 137 1.327 0.103 6.0 1.3 9.9 2.5 A- 2051 729988	2045	729925	8	8	569	.631	.151	.631	.097	.121	.000	.260	092	.260	240	067	-0.357	0.098	4.0	1.2	5.3	1.4	A+	
2048 729928 8 8 543 .567 .193 .140 .567 .099 .000 .362 151 264 .362 095 0.005 0.097 1.4 1.1 1.9 1.1 A- 2049 729986 8 8 530 .513 .206 .513 .164 .117 .000 .312 050 .312 200 193 0.199 0.098 3.1 1.1 3.3 1.2 A- 2050 729987 8 8 532 .303 .141 .303 .470 .086 .000 .060 .147 137 1.327 0.103 6.0 1.3 9.9 2.5 A- 2051 729988 8 8 541 .728 .091 .728 .115 .067 .000 .510 237 .510 260 304 -0.914 0.110 -1.7 0.9 -2.0 0.8 A-	2046	729926	8	8	561	.392	.091	.392	.319	.198	.000	.187	123	.187	.036	181	0.914	0.095	4.3	1.2	9.2	1.9	A-	
2049 729986 8 8 530 .513 .206 .513 .164 .117 .000 .312 205 .193 0.199 0.098 3.1 1.1 3.3 1.2 A- 2050 729987 8 8 532 .303 .141 .303 .470 .086 .000 .060 .147 137 1.327 0.103 6.0 1.3 9.9 2.5 A- 2051 729988 8 8 541 .728 .091 .728 .115 .067 .000 .510 237 .510 260 304 -0.914 0.110 -1.7 0.9 -2.0 0.8 A- 2052 729989 8 8 539 .607 .152 .161 .607 .080 .000 .380 230 260 304 -0.914 0.110 -1.7 0.9 -2.0 0.8 A- 2053 729989 8	2047	729927	8	8	532	.359	.246	.165	.229	.359	.000	.300	056	201	106	.300	1.028	0.099	1.3	1.1	3.8	1.4	A+	
2050 729987 8 8 532 .303 .141 .303 .470 .086 .000 .060 .180 .060 .147 137 1.327 0.103 6.0 1.3 9.9 2.5 A- 2051 729988 8 8 541 .728 .091 .728 .115 .067 .000 .510 237 .510 260 304 -0.914 0.110 -1.7 0.9 -2.0 0.8 A- 2052 729989 8 8 539 .607 .152 .161 .607 .080 .000 .380 244 116 .380 203 -0.267 0.100 1.6 1.1 1.9 1.1 A+ 2053 729990 8 8 553 .494 .128 .141 .237 .494 .000 .368 230 293 012 .368 0.373 0.095 1.3 1.0 2.9 1.2 </td <td>2048</td> <td>729928</td> <td>8</td> <td>8</td> <td>543</td> <td>.567</td> <td>.193</td> <td>.140</td> <td>.567</td> <td>.099</td> <td>.000</td> <td>.362</td> <td>151</td> <td>264</td> <td>.362</td> <td>095</td> <td>0.005</td> <td>0.097</td> <td>1.4</td> <td>1.1</td> <td>1.9</td> <td>1.1</td> <td>A-</td> <td></td>	2048	729928	8	8	543	.567	.193	.140	.567	.099	.000	.362	151	264	.362	095	0.005	0.097	1.4	1.1	1.9	1.1	A-	
2051 729988 8 8 541 .728 .091 .728 .115 .067 .000 .510 237 .510 260 304 -0.914 0.110 -1.7 0.9 -2.0 0.8 A- 2052 729989 8 8 539 .607 .152 .161 .607 .080 .000 .380 244 116 .380 203 -0.267 0.100 1.6 1.1 1.9 1.1 A+ 2053 729990 8 8 553 .494 .128 .141 .237 .494 .000 .368 230 293 012 .368 0.373 0.095 1.3 1.0 2.9 1.2 A- 2054 729991 8 8 549 .388 .388 .197 .153 .262 .000 .018 .018 036 181 .161 0.878 0.096 9.7 1.4 9.5 1.9<	2049	729986	8	8	530	.513	.206	.513	.164	.117	.000	.312	050	.312	200	193	0.199	0.098	3.1	1.1	3.3	1.2	A-	
2052 729989 8 8 539 .607 .152 .161 .607 .080 .000 .380 244 116 .380 203 -0.267 0.100 1.6 1.1 1.9 1.1 A+ 2053 729990 8 8 553 .494 .128 .141 .237 .494 .000 .368 230 293 012 .368 0.373 0.095 1.3 1.0 2.9 1.2 A- 2054 729991 8 8 549 .388 .388 .197 .153 .262 .000 .018 .018 036 181 .161 0.878 0.096 9.7 1.4 9.5 1.9 A- 2055 729992 8 8 578 .696 .144 .078 .696 .083 .000 .395 215 266 .395 127 -0.728 0.103 1.4 1.1 0.9 1.1 <td>2050</td> <td>729987</td> <td>8</td> <td>8</td> <td>532</td> <td>.303</td> <td>.141</td> <td>.303</td> <td>.470</td> <td>.086</td> <td>.000</td> <td>.060</td> <td>180</td> <td>.060</td> <td>.147</td> <td>137</td> <td>1.327</td> <td>0.103</td> <td>6.0</td> <td>1.3</td> <td>9.9</td> <td>2.5</td> <td>A-</td> <td> </td>	2050	729987	8	8	532	.303	.141	.303	.470	.086	.000	.060	180	.060	.147	137	1.327	0.103	6.0	1.3	9.9	2.5	A-	
2053 729990 8 8 553 .494 .128 .141 .237 .494 .000 .368 230 293 012 .368 0.373 0.095 1.3 1.0 2.9 1.2 A- 2054 729991 8 8 549 .388 .388 .197 .153 .262 .000 .018 .018 036 181 .161 0.878 0.096 9.7 1.4 9.5 1.9 A- 2055 729992 8 8 578 .696 .144 .078 .696 .083 .000 .395 215 266 .395 127 -0.728 0.103 1.4 1.1 0.9 1.1 A+ 2056 729993 8 8 535 .652 .080 .140 .127 .652 .000 .497 207 203 331 .497 -0.499 0.104 -1.1 0.9 -1.4 0.9<	2051	729988	8	8	541	.728	.091	.728	.115	.067	.000	.510	237	.510	260	304	-0.914	0.110	-1.7	0.9	-2.0	0.8	A-	
2054 729991 8 8 549 .388 .197 .153 .262 .000 .018 .018 036 181 .161 0.878 0.096 9.7 1.4 9.5 1.9 A- 2055 729992 8 8 578 .696 .144 .078 .696 .083 .000 .395 215 266 .395 127 -0.728 0.103 1.4 1.1 0.9 1.1 A+ 2056 729993 8 8 535 .652 .080 .140 .127 .652 .000 .497 207 203 331 .497 -0.499 0.104 -1.1 0.9 -1.4 0.9 A- 2057 730220 8 8 598 .249 .291 .253 .207 .000 .146 .146 .042 091 104 1.583 0.102 2.2 1.1 8.0 2.2 A-	2052	729989	8	8	539	.607	.152	.161	.607	.080	.000	.380	244	116	.380	203	-0.267	0.100	1.6	1.1	1.9	1.1	A+	
2055 729992 8 8 578 .696 .144 .078 .696 .083 .000 .395 215 266 .395 127 -0.728 0.103 1.4 1.1 0.9 1.1 A+ 2056 729993 8 8 535 .652 .080 .140 .127 .652 .000 .497 207 203 331 .497 -0.499 0.104 -1.1 0.9 -1.4 0.9 A- 2057 730220 8 8 598 .249 .291 .253 .207 .000 .146 .146 .042 091 104 1.583 0.102 2.2 1.1 8.0 2.2 A- 2058 730221 8 8 518 .481 .120 .224 .481 .176 .000 .399 192 288 .399 045 0.390 0.098 0.1 1.0 1.7 1.1 A- 2059 730222 8 8 547 .335 .265 .196<	2053	729990	8	8	553	.494	.128	.141	.237	.494	.000	.368	230	293	012	.368	0.373	0.095	1.3	1.0	2.9	1.2	A-	
2056 729993 8 8 535 .652 .080 .140 .127 .652 .000 .497 207 203 331 .497 -0.499 0.104 -1.1 0.9 -1.4 0.9 A- 2057 730220 8 8 598 .249 .249 .291 .253 .207 .000 .146 .146 .042 091 104 1.583 0.102 2.2 1.1 8.0 2.2 A- 2058 730221 8 8 518 .481 .120 .224 .481 .176 .000 .399 192 288 .399 045 0.390 0.098 0.1 1.0 1.7 1.1 A- 2059 730222 8 8 547 .335 .265 .196 .335 .205 .000 .132 .077 165 .132 076 1.200 0.099 5.4 1.2 7.3 1.8 A+	2054	729991	8	8	549	.388	.388	.197	.153	.262	.000	.018	.018	036	181	.161	0.878	0.096	9.7	1.4	9.5	1.9	A-	
2057 730220 8 8 598 .249 .291 .253 .207 .000 .146 .146 .042 091 104 1.583 0.102 2.2 1.1 8.0 2.2 A- 2058 730221 8 8 518 .481 .120 .224 .481 .176 .000 .399 192 288 .399 045 0.390 0.098 0.1 1.0 1.7 1.1 A- 2059 730222 8 8 547 .335 .265 .196 .335 .205 .000 .132 .077 165 .132 076 1.200 0.099 5.4 1.2 7.3 1.8 A+	2055	729992	8	8	578	.696	.144	.078	.696	.083	.000	.395	215	266	.395	127	-0.728	0.103	1.4	1.1	0.9	1.1	A+	
2057 730220 8 8 598 .249 .291 .253 .207 .000 .146 .146 .042 091 104 1.583 0.102 2.2 1.1 8.0 2.2 A- 2058 730221 8 8 518 .481 .120 .224 .481 .176 .000 .399 192 288 .399 045 0.390 0.098 0.1 1.0 1.7 1.1 A- 2059 730222 8 8 547 .335 .265 .196 .335 .205 .000 .132 .077 165 .132 076 1.200 0.099 5.4 1.2 7.3 1.8 A+	2056	729993	8	8	535	.652	.080	.140	.127	.652	.000	.497	207	203	331	.497	-0.499	0.104	-1.1	0.9	-1.4	0.9	A-	
2059 730222 8 8 8 547 .335 .265 .196 .335 .205 .000 .132 .077165 .132076 1.200 0.099 5.4 1.2 7.3 1.8 A+	2057	730220	8	8							.000	.146				104	1.583	0.102	2.2	1.1	8.0			
2059 730222 8 8 547 .335 .265 .196 .335 .205 .000 .132 .077165 .132076 1.200 0.099 5.4 1.2 7.3 1.8 A+	2058	730221	8	8	518	.481	.120	.224	.481	.176	.000	.399	192	288	.399	045	0.390	0.098	0.1	1.0	1.7	1.1	A-	
	2059	730222	8	8	547	.335				.205	.000		.077			076	1.200		5.4	1.2	7.3	1.8	A+	
				8			.263															1.3		A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
itei	ıb	Grade	Grade	/4	rvai	F(A)	r(b)	r(c)	F(D)	F (-)	FtDIS	r i(A)	FI(D)	r i(c)	FI(D)	ivicas	IVISE	in	in	out	out	/F	/B
2061	730224	8	8	546	.317	.134	.317	.363	.187	.000	.137	193	.137	.040	044	1.190	0.100	4.8	1.2	6.1	1.7	A-	
2062	730225	8	8	546	.421	.222	.200	.421	.158	.000	.280	058	126	.280	175	0.752	0.096	2.3	1.1	5.6	1.4	A-	B-
2063	730226	8	8	544	.590	.590	.151	.136	.123	.000	.441	.441	298	207	118	-0.129	0.098	-0.8	1.0	0.4	1.0	A+	
2064	735172	8	8	534	.406	.406	.221	.251	.122	.000	.260	.260	060	039	263	0.789	0.097	2.4	1.1	6.2	1.5	A-	
2065	735402	8	8	492	.425	.154	.266	.425	.154	.000	.186	122	093	.186	018	0.632	0.101	5.0	1.2	8.5	1.8	A+	
2066	735403	8	8	546	.247	.247	.339	.233	.181	.000	.039	.039	008	080	.054	1.647	0.107	4.1	1.2	9.7	2.5	A+	
2067	735405	8	8	552	.259	.259	.335	.264	.141	.000	.149	.149	013	099	044	1.535	0.105	3.6	1.2	6.3	1.9	A+	
2068	735406	8	8	536	.584	.179	.147	.584	.090	.000	.439	227	244	.439	150	-0.159	0.099	-0.1	1.0	0.2	1.0	A+	<u> </u>
2069	735407	8	8	529	.473	.112	.242	.473	.174	.000	.295	271	075	.295	080	0.515	0.097	2.6	1.1	6.9	1.5	A+	l
2070	735408	8	8	540	.402	.089	.248	.261	.402	.000	.349	192	215	054	.349	0.852	0.098	0.9	1.0	3.6	1.3	A+	
2071	735410	8	8	522	.529	.107	.230	.529	.134	.000	.315	204	176	.315	059	0.165	0.099	3.0	1.1	4.5	1.3	A+	
2072	735411	8	8	523	.430	.191	.218	.430	.161	.000	.153	012	128	.153	049	0.689	0.097	6.3	1.2	5.9	1.4	A+	A-
2073	735412	8	8	554	.590	.590	.146	.108	.155	.000	.365	.365	193	243	098	-0.227	0.098	2.3	1.1	2.4	1.2	A+	
2074	735413	8	8	544	.647	.647	.153	.112	.088	.000	.516	.516	351	249	147	-0.482	0.101	-2.2	0.9	-3.0	8.0	A+	
2075	735434	8	8	545	.468	.160	.204	.468	.169	.000	.290	148	144	.290	087	0.452	0.095	2.5	1.1	5.9	1.4	A+	
2076	735435	8	8	546	.639	.159	.101	.639	.101	.000	.443	249	234	.443	170	-0.428	0.101	-0.1	1.0	-0.3	1.0	A+	
2077	735436	8	8	514	.436	.181	.292	.436	.091	.000	.086	082	.002	.086	042	0.581	0.099	9.0	1.4	9.2	1.9	A+	A-
2078	735580	8	8	524	.508	.135	.239	.508	.118	.000	.271	318	.016	.271	104	0.199	0.099	4.5	1.2	5.7	1.4	A+	
2079	735581	8	8	552	.435	.241	.187	.138	.435	.000	.322	.021	198	266	.322	0.648	0.095	1.6	1.1	3.1	1.2	A-	
2080	735582	8	8	521	.466	.466	.161	.186	.186	.000	.247	.247	176	159	.009	0.472	0.097	4.0	1.2	5.7	1.4	A+	
2081	735583	8	8	522	.726	.726	.115	.092	.067	.000	.527	.527	294	237	290	-0.944	0.110	-2.0	0.9	-2.8	0.8	A+	
2082	735584	8	8	521	.708	.065	.708	.138	.088	.000	.372	267	.372	077	269	-0.778	0.109	1.4	1.1	0.4	1.0	A+	
2083	735585	8	8	584	.760	.060	.065	.760	.115	.000	.456	278	326	.456	151	-1.110	0.110	-0.1	1.0	-1.4	0.9	A-	
2084	735586	8	8	584	.565	.146	.151	.565	.139	.000	.324	219	135	.324	102	0.013	0.094	2.6	1.1	3.6	1.2	A+	
2085	735587	8	8	566	.742	.095	.742	.097	.065	.000	.491	283	.491	274	204	-1.170	0.110	-0.7	1.0	-1.5	0.9	A+	
2086	735638	8	8	585	.494	.156	.494	.178	.173	.000	.342	138	.342	192	125	0.331	0.093	1.9	1.1	3.6	1.2	A+	A-
2087	735639	8	8	543	.464	.057	.464	.204	.274	.000	.300	253	.300	203	020	0.428	0.096	2.4	1.1	4.5	1.3	A-	
2088	735641	8	8	559	.374	.197	.340	.089	.374	.000	.164	147	.106	249	.164	0.952	0.095	4.3	1.2	7.7	1.7	A+	
2089	735642	8	8	535	.344	.215	.110	.331	.344	.000	.128	067	262	.104	.128	1.150	0.099	5.0	1.2	7.9	1.8	A-	
2090	735643	8	8	548	.374	.151	.199	.276	.374	.000	.192	140	298	.170	.192	0.995	0.098	5.4	1.2	5.9	1.6	A+	
2091	735644	8	8	565	.411	.127	.255	.207	.411	.000	.349	227	065	167	.349	0.728	0.095	0.6	1.0	3.2	1.3	A-	
2092	736151	8	8	497	.638	.052	.638	.249	.060	.000	.356	273	.356	097	286	-0.386	0.106	2.2	1.1	2.2	1.2	A-	
2093	736152	8	8	551	.545	.098	.187	.544	.171	.000	.423	207	240	.423	147	0.043	0.096	-0.3	1.0	0.5	1.0	C+	
2094	736154	8	8	526	.629	.629	.101	.118	.152	.000	.464	.464	249	227	211	-0.411	0.103	-0.4	1.0	-0.6	1.0	A-	
2095	736155	8	8	529	.603	.096	.603	.125	.176	.000	.390	236	.390	203	143	-0.187	0.100	0.7	1.0	1.0	1.1	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Grade															in	in	out	out	/F	/B
2096	737293	8	8	537	.700	.048	.106	.700	.145	.000	.415	232	211	.415	214	-0.713	0.107	0.6	1.0	0.2	1.0	A+	—
2097	737294	8	8	535	.280	.142	.174	.404	.280	.000	.120	140	045	.025	.120	1.444	0.104	4.0	1.2	7.0	2.0	A-	
2098	737295	8	8	569	.209	.408	.209	.241	.142	.000	.059	.095	.059	124	050	1.940	0.111	3.5	1.2	7.7	2.5	A+	
2099	737296	8	8	573	.543	.169	.543	.206	.082	.000	.288	247	.288	055	105	0.078	0.094	3.6	1.1	5.0	1.3	A+	
2100	737297	8	8	500	.136	.056	.142	.666	.136	.000	019	264	145	.249	019	2.472	0.138	2.2	1.2	8.5	3.9	A+	
2101	737301	8	8	554	.527	.527	.139	.141	.193	.000	.377	.377	220	223	089	0.125	0.095	0.6	1.0	2.4	1.1	A+	
2102	737302	8	8	586	.367	.324	.072	.237	.367	.000	.261	018	255	121	.261	0.966	0.094	2.9	1.1	4.7	1.4	A+	
2103	737303	8	8	530	.570	.091	.172	.168	.570	.000	.391	228	143	200	.391	-0.102	0.099	1.3	1.1	1.7	1.1	A-	
2104	737304	8	8	560	.741	.741	.107	.084	.068	.000	.427	.427	240	234	190	-1.061	0.110	0.4	1.0	0.6	1.1	A+	A-
2105	737305	8	8	539	.425	.215	.425	.128	.232	.000	.226	086	.226	321	.073	0.675	0.097	4.9	1.2	5.9	1.5	A+	l
2106	737306	8	8	576	.655	.056	.240	.655	.050	.000	.367	252	156	.367	229	-0.499	0.099	1.4	1.1	2.9	1.2	A+	l
2107	737307	8	8	586	.531	.099	.166	.205	.531	.000	.485	231	298	154	.485	0.113	0.093	-2.4	0.9	0.1	1.0	A-	B-
2108	737308	8	8	568	.604	.088	.153	.155	.604	.000	.383	216	196	153	.383	-0.208	0.097	1.3	1.1	2.2	1.1	A-	
2109	737309	8	8	571	.657	.657	.173	.123	.047	.000	.438	.438	207	290	164	-0.478	0.100	-0.4	1.0	1.2	1.1	A+	A+
2110	737310	8	8	535	.527	.090	.234	.527	.150	.000	.304	258	111	.304	087	0.127	0.097	3.2	1.1	4.6	1.3	A+	A+
2111	737311	8	8	567	.399	.169	.171	.261	.399	.000	.193	069	161	018	.193	0.751	0.095	5.1	1.2	7.9	1.7	A-	A+
2112	737768	8	8	551	.354	.211	.241	.354	.194	.000	.207	117	179	.207	.064	1.049	0.098	4.1	1.2	6.8	1.7	A+	
2113	737769	8	8	590	.568	.337	.568	.069	.025	.000	.265	070	.265	246	228	-0.062	0.093	4.2	1.2	5.1	1.3	A+	
2114	737770	8	8	560	.409	.409	.341	.136	.114	.000	.339	.339	096	267	094	0.814	0.095	0.8	1.0	3.5	1.3	B-	A-
2115	737777	8	8	546	.383	.207	.114	.383	.297	.000	.090	037	317	.090	.157	0.912	0.097	8.0	1.3	8.3	1.8	A+	
2116	737782	8	8	539	.245	.199	.371	.186	.245	.000	.092	120	.159	175	.092	1.611	0.108	3.7	1.2	7.1	2.2	A-	
2117	737787	8	8	502	.339	.219	.339	.267	.175	.000	.005	080	.005	.084	017	1.132	0.103	7.6	1.3	9.1	2.0	A-	
2118	738242	8	8	594	.609	.138	.609	.113	.140	.000	.349	158	.349	280	078	-0.223	0.094	1.8	1.1	2.6	1.2	A+	
2119	738243	8	8	563	.568	.185	.568	.124	.123	.000	.419	228	.419	204	157	-0.046	0.097	1.0	1.0	1.1	1.1	B+	
2120	738244	8	8	565	.696	.696	.182	.065	.057	.000	.306	.306	105	259	158	-0.816	0.104	3.3	1.2	2.4	1.2	A+	
2121	738245	8	8	555	.589	.589	.108	.173	.130	.000	.462	.462	196	220	247	-0.192	0.097	-1.1	1.0	-0.2	1.0	A-	
2122	738247	8	8	586	.567	.109	.160	.567	.164	.000	.357	181	145	.357	183	0.031	0.093	1.5	1.1	2.8	1.2	A+	
2123	738248	8	8	535	.523	.112	.168	.196	.523	.000	.471	161	266	213	.471	0.151	0.098	-1.6	0.9	-0.7	1.0	A+	
2124	738249	8	8	572	.642	.079	.642	.191	.089	.000	.307	186	.307	099	205	-0.469	0.100	3.8	1.2	3.3	1.2	A+	
2125	738250	8	8	557	.510	.086	.214	.190	.510	.000	.474	349	180	166	.474	0.265	0.095	-2.2	0.9	-0.6	1.0	A+	
2126	738251	8	8	510	.443	.443	.212	.149	.196	.000	.244	.244	146	175	.003	0.641	0.099	4.3	1.2	4.5	1.4	A+	
2127	738252	8	8	528	.318	.125	.405	.318	.152	.000	.243	220	097	.243	.019	1.224	0.102	1.1	1.0	7.7	1.9	A-	
2128	739628	8	8	532	.603	.071	.071	.254	.603	.000	.501	369	256	193	.501	-0.204	0.100	-1.8	0.9	-1.8	0.9	A+	
2129	739629	8	8	575	.583	.583	.148	.167	.103	.000	.398	.398	214	255	083	-0.064	0.095	1.1	1.0	1.2	1.1	A+	
2130	739630	8	8	537	.557	.106	.557	.168	.169	.000	.299	101	.299	162	152	-0.003	0.097	3.2	1.1	4.0	1.3	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

2132 7 2133 7	739935 739936 739937	Grade 8 8	Grade 8	500		P(A)		P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE			_			,_
2132 7 2133 7	739936 739937	_	8				P(B)											in	in	out	out	/F	/B
2133 7	739937	8	_	588	.502	.156	.158	.184	.502	.000	.415	136	220	201	.415	0.184	0.093	0.2	1.0	1.4	1.1	A-	
 		_	8	542	.734	.057	.116	.092	.734	.000	.540	281	231	342	.540	-1.082	0.111	-2.0	0.9	-1.6	0.9	A-	
2134 7		8	8	537	.581	.581	.119	.173	.127	.000	.332	.332	149	173	150	-0.012	0.098	2.3	1.1	3.2	1.2	A+	
+	739941	8	8	533	.788	.045	.058	.109	.788	.000	.494	304	273	240	.494	-1.313	0.118	-1.3	0.9	-2.4	0.8	A+	
2135 7	739944	8	8	542	.526	.122	.186	.166	.526	.000	.389	259	085	205	.389	0.196	0.097	1.1	1.0	2.1	1.1	A+	
2136 7	739945	8	8	520	.346	.163	.333	.158	.346	.000	.329	181	018	223	.329	0.965	0.102	0.8	1.0	2.9	1.3	A-	
2137 7	739947	8	8	526	.413	.262	.413	.203	.122	.000	.330	103	.330	189	126	0.692	0.098	1.3	1.1	3.2	1.2	A+	
2138 7	739948	8	8	539	.675	.063	.675	.139	.122	.000	.383	330	.383	172	122	-0.677	0.105	1.9	1.1	1.4	1.1	A+	
2139 7	739950	8	8	576	.651	.069	.130	.149	.651	.000	.472	174	236	284	.472	-0.491	0.100	-0.5	1.0	-0.8	1.0	A+	
2140 7	739951	8	8	501	.547	.547	.204	.118	.132	.000	.346	.346	135	306	058	0.072	0.101	1.9	1.1	2.9	1.2	A+	
2141 7	739953	8	8	543	.610	.610	.120	.155	.116	.000	.511	.511	266	279	195	-0.319	0.100	-1.8	0.9	-0.9	0.9	A-	
2142 7	739954	8	8	584	.514	.514	.199	.214	.074	.000	.330	.330	170	172	100	0.267	0.093	2.2	1.1	5.9	1.4	A+	
2143 7	739955	8	8	540	.474	.172	.474	.174	.180	.000	.256	089	.256	216	032	0.482	0.097	4.7	1.2	6.1	1.5	A +	
2144 7	739956	8	8	556	.495	.112	.219	.495	.174	.000	.374	196	187	.374	126	0.283	0.095	1.0	1.0	1.5	1.1	A+	
2145 7	739958	8	8	562	.605	.071	.125	.605	.199	.000	.348	254	325	.348	.006	-0.249	0.098	2.5	1.1	2.1	1.1	A-	
2146 7	739959	8	8	546	.407	.176	.249	.407	.168	.000	.140	095	063	.140	015	0.831	0.096	5.9	1.2	8.9	1.8	A-	
2147 7	741776	8	8	537	.218	.264	.218	.438	.080	.000	021	031	021	.191	267	1.876	0.112	4.4	1.3	8.0	2.5	A+	
2148 7	741787	8	8	570	.497	.195	.496	.221	.088	.000	.232	124	.232	151	015	0.316	0.092	4.3	1.1	5.4	1.3	B+	
2149 7	741821	8	8	585	.511	.084	.511	.309	.096	.000	.255	175	.255	097	117	0.242	0.092	4.5	1.2	6.5	1.4	C-	
2150 7	730179	EC	EC	215	.321	.321	.195	.219	.265	.000	.130	.130	219	.099	033	1.310	0.157	2.0	1.1	6.0	2.1	A-	
2151 7	735168	EC	EC	221	.421	.339	.100	.421	.140	.000	.178	.013	213	.178	086	0.898	0.152	4.0	1.2	4.4	1.6	A+	
2152 7	735169	EC	EC	196	.464	.327	.107	.464	.102	.000	.262	.037	328	.262	153	0.732	0.158	2.3	1.1	1.9	1.2	A+	
2153 7	735170	EC	EC	207	.314	.242	.290	.314	.155	.000	.258	.051	220	.258	116	1.485	0.164	0.9	1.1	3.1	1.6	A-	
2154 7	735171	EC	EC	227	.749	.110	.097	.749	.044	.000	.382	218	193	.382	196	-0.661	0.173	0.9	1.1	0.2	1.0	A-	
2155 7	735173	EC	EC	212	.665	.099	.123	.113	.665	.000	.494	246	322	171	.494	-0.356	0.166	-0.6	1.0	-0.8	0.9	A+	
2156 7	735174	EC	EC	233	.678	.137	.155	.678	.030	.000	.221	168	071	.221	115	-0.323	0.157	2.9	1.2	2.7	1.3	A-	
2157 7	735175	EC	EC	196	.587	.587	.046	.276	.092	.000	.411	.411	069	192	354	0.149	0.161	0.0	1.0	-0.6	0.9	A+	
2158 7	735176	EC	EC	214	.416	.322	.079	.182	.416	.000	.196	.135	197	276	.196	1.104	0.153	3.3	1.2	4.2	1.7	A+	
2159 7	735177	EC	EC	215	.740	.116	.102	.042	.740	.000	.495	174	348	279	.495	-0.576	0.174	-0.9	0.9	-1.5	0.8	A+	
2160 7	735178	EC	EC	192	.500	.219	.130	.500	.151	.000	.159	002	145	.159	083	0.464	0.161	3.9	1.3	5.8	1.8	A+	
2161 7	735179	EC	EC	206	.597	.146	.597	.117	.141	.000	.352	221	.352	277	017	0.002	0.162	1.8	1.1	2.0	1.2	A-	
—	736160	EC	EC	205	.605	.078	.078	.239	.605	.000	.406	176	084	302	.406	0.071	0.159	-0.2	1.0	1.0	1.1	A-	
	736161	EC	EC	201	.508	.179	.129	.507	.184	.000	.429	211	208	.429	165	0.501	0.157	-0.9	1.0	0.1	1.0	B+	
—	736163	EC	EC	216	.412	.412	.222	.278	.088	.000	.118	.118	.036	.017	283	1.028	0.155	5.4	1.3	5.0	1.8	A-	
	737189	EC	EC	223	.821	.821	.058	.108	.013	.000	.458	.458	406	196	171	-1.469	0.204	0.6	1.1	-0.1	1.0	B-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
Rei	ID	Grade	Grade	74	rvai	P(A)	P(D)	P(C)	P(D)	P(-)	PLDIS	FI(A)	FI(D)	FI(C)	FI(D)	IVICAS	IVISE	in	in	out	out	/F	/B
2166	737190	EC	EC	208	.423	.173	.240	.423	.163	.000	.237	.011	165	.237	137	1.023	0.154	2.2	1.1	3.5	1.4	A-	
2167	737191	EC	EC	236	.504	.076	.318	.102	.504	.000	.304	457	.102	259	.304	0.579	0.144	1.9	1.1	1.8	1.2	A+	
2168	737192	EC	EC	230	.530	.174	.183	.530	.113	.000	.351	037	329	.351	107	0.365	0.149	1.1	1.1	2.5	1.3	A+	
2169	737193	EC	EC	230	.591	.083	.157	.170	.591	.000	.471	264	126	301	.471	0.071	0.152	-0.5	1.0	-0.7	0.9	A+	
2170	737194	EC	EC	217	.484	.138	.484	.143	.235	.000	.193	105	.193	142	025	0.723	0.150	3.8	1.2	3.0	1.3	A+	
2171	737195	EC	EC	203	.389	.276	.153	.182	.389	.000	.088	.084	126	092	.088	1.038	0.157	3.7	1.2	6.6	2.1	A-	
2172	737196	EC	EC	222	.306	.306	.144	.212	.338	.000	.264	.264	232	080	015	1.568	0.158	0.9	1.1	1.2	1.2	B+	
2173	737197	EC	EC	206	.515	.136	.165	.184	.515	.000	.232	.077	215	161	.232	0.609	0.154	2.8	1.2	3.8	1.4	A+	
2174	737198	EC	EC	212	.599	.142	.599	.175	.085	.000	.242	183	.242	123	030	-0.016	0.158	2.8	1.2	3.7	1.4	A-	
2175	737199	EC	EC	230	.444	.443	.226	.239	.091	.000	.525	.525	250	260	157	0.924	0.149	-2.8	0.9	-1.8	0.8	A+	
2176	737200	EC	EC	205	.517	.517	.117	.210	.156	.000	.453	.453	226	289	100	0.361	0.160	-0.2	1.0	0.8	1.1	A-	
2177	737201	EC	EC	211	.645	.118	.109	.128	.645	.000	.452	240	148	277	.452	-0.298	0.163	0.0	1.0	-0.4	1.0	A+	
2178	738254	EC	EC	195	.456	.169	.456	.200	.174	.000	.267	078	.267	284	.026	0.635	0.163	2.5	1.2	4.8	1.7	A-	
2179	738257	EC	EC	216	.454	.310	.454	.153	.083	.000	.142	008	.142	166	026	0.909	0.150	4.1	1.2	5.4	1.6	A+	
2180	738258	EC	EC	200	.655	.655	.110	.110	.125	.000	.478	.478	289	351	083	-0.422	0.170	-0.4	1.0	-0.1	1.0	A+	
2181	738259	EC	EC	226	.314	.186	.314	.288	.212	.000	.048	193	.048	.108	.010	1.351	0.157	4.4	1.3	7.0	2.5	A-	
2182	738260	EC	EC	223	.278	.278	.202	.251	.269	.000	.311	.311	307	071	.032	1.752	0.161	-0.6	1.0	2.2	1.4	A+	
2183	738261	EC	EC	209	.617	.124	.617	.191	.067	.000	.495	346	.495	238	131	-0.098	0.164	-0.6	1.0	0.5	1.1	A-	
2184	739631	EC	EC	229	.555	.183	.140	.555	.122	.000	.337	126	188	.337	163	0.387	0.147	0.7	1.0	1.3	1.1	A+	
2185	739632	EC	EC	216	.500	.120	.500	.102	.278	.000	.201	199	.201	161	.029	0.644	0.150	2.8	1.2	6.5	1.7	A+	
2186	739633	EC	EC	212	.637	.080	.146	.137	.637	.000	.526	355	200	250	.526	-0.169	0.162	-1.5	0.9	-1.1	0.9	A-	
2187	739635	EC	EC	226	.354	.354	.181	.288	.177	.000	.266	.266	.034	119	227	1.357	0.151	0.4	1.0	5.1	1.8	A+	
2188	739938	EC	EC	221	.575	.575	.154	.072	.199	.000	.423	.423	172	294	177	0.220	0.152	-0.5	1.0	0.9	1.1	A-	
2189	739939	EC	EC	232	.276	.276	.237	.224	.263	.000	.206	.206	068	119	031	1.740	0.158	1.0	1.1	4.0	1.8	B+	
2190	739940	EC	EC	219	.534	.110	.219	.534	.137	.000	.183	096	.038	.183	224	0.363	0.152	4.2	1.3	5.0	1.6	A-	
2191	739960	EC	EC	197	.655	.112	.056	.655	.178	.000	.267	194	281	.267	004	-0.020	0.165	1.6	1.1	2.2	1.3	A-	
2192	739962	EC	EC	223	.610	.099	.610	.175	.117	.000	.187	.057	.187	260	028	0.091	0.153	3.6	1.3	3.4	1.3	A+	
2193	739963	EC	EC	210	.362	.081	.362	.452	.105	.000	.193	259	.193	014	049	1.342	0.155	1.8	1.1	2.8	1.4	A+	
2194	739964	EC	EC	207	.217	.130	.382	.271	.217	.000	.035	079	.002	.025	.035	2.165	0.180	2.1	1.2	5.4	2.7	A-	
2195	739966	EC	EC	226	.336	.226	.155	.283	.336	.000	.078	017	133	.041	.078	1.403	0.153	3.2	1.2	6.8	2.5	A+	
2196	739967	EC	EC	209	.397	.397	.244	.196	.163	.000	.310	.310	259	108	.007	0.925	0.157	0.8	1.1	2.9	1.4	A+	
2197	739968	EC	EC	201	.413	.104	.413	.134	.348	.000	.214	295	.214	112	.049	1.003	0.158	3.6	1.2	2.2	1.3	A+	
2198	739977	EC	EC	236	.297	.203	.250	.250	.297	.000	.257	030	065	178	.257	1.558	0.155	0.1	1.0	5.5	2.3	A+	
2199	739978	EC	EC	196	.536	.536	.194	.184	.087	.000	.364	.364	248	025	262	0.327	0.161	1.0	1.1	1.0	1.1	A-	
2200	739979	EC	EC	236	.360	.191	.199	.360	.250	.000	.290	045	211	.290	085	1.218	0.149	0.9	1.1	2.9	1.4	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Table Tabl	Ref	ID	FT	PCS	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z-	MS-	Z-	MS-	М	W
2202 739981 EC EC 220 431 231 235 23			Grade	Grade			. ,		, ,	• •													/F	/B
203 739982 EC EC 213 226 226 236 0.75 469 1.69 0.00 3.25 3.25 -1.55 -0.29 2.45 1.722 0.163 -0.4 1.0 1.4 1.2																-							A-	
2204 739984 EC EC 230 370 170 265 196 370 .000 .530 .123 .268 .230 .530 1.195 0.150 .3.6 0.8 2.5 0.7	_																						B+	
2205 739984 EC EC 194 3.97 1.44 2.42 3.97 2.16 0.00 1.68 0.73 -1.89 1.68 0.59 0.973 0.159 1.8 1.1 5.7 1.7							.286	.075			.000		.325		029	245	1.722						A+	
2206 739985 EC EC 229 .445 .157 .445 .140 .258 .000 .326 110 .326 278 .059 0.796 0.146 1.1 1.1 1.1 1.1 .1.7 .1.7 .207 .739986 EC EC .222 .464 .342 .108 .464 .086 .000 .293 .089 .163 .293 .189 .0771 .0152 .2.2 .11 .4.7 .1.6 .1.7 .1.8 .1.8 .220 .739887 EC EC .211 .611 .1.3 .156 .100 .611 .000 .469 .005 .311 .326 .469 .0.020 .0.161 .0.6 .1.0 .0.2 .1.0 .2210 .739988 EC EC .250 .656 .240 .052 .256 .656 .000 .494 .211 .307 .344 .494 .0.315 .0.151 .1.2 .0.9 .0.7 .0.9 .2.1 .2.			_	_			.170				.000					-	1.195		-3.6	0.8			A+	
2207 739986 EC EC 222 .464 .342 .108 .464 .086 .000 .293 .089 .163 .293 .189 0.771 0.152 .2.2 .11 4.7 1.6 .208 739988 EC EC .155 .636 .144 .636 .169 .051 .000 .458 .200 .458 .226 .298 .0.004 .0.165 .0.9 .0.9 .1.0 0.9 .2210 .739988 EC EC .250 .656 .240 .052 .052 .656 .000 .494 .211 .307 .344 .494 .0.315 .0.151 .1.2 .0.9 .0.7 .0.5 .2211 .739990 EC EC .250 .656 .204 .622 .286 .230 .000 .218 .166 .218 .148 .042 .1.222 .0.158 .2.2 .1.1 .3.4 .1.6 .218 .739991 EC EC .218 .624 .180 .624 .132 .063 .000 .337 .018 .337 .303 .219 .0.070 0.170 .1.5 .1.1 .1.8 .1.2 .2213 .739992 EC EC .224 .509 .509 .080 .143 .268 .000 .293 .293 .174 .224 .047 .0.591 .0.150 .2.4 .1.1 .2.5 .1.3 .214 .739993 EC EC .228 .710 .155 .113 .710 .021 .000 .397 .220 .2.293 .397 .0.53 .0.704 .0.164 .1.3 .1.1 .0.2 .1.0 .2.15 .739994 EC EC .200 .255 .235 .295 .215 .255 .000 .280 .074 .133 .073 .280 .1700 .0.174 .0.2 .0.1 .3.1 .3.2 .2.2 .3.3 .3.3 .3.3 .0.3 .0.704 .1.8 .3.4			EC	EC	194	.397	.144	.242			.000		073			.059	0.973			1.1	5.7		A+	
2208 739987 EC EC 195 6.36 1.44 6.36 1.69 0.51 0.00 0.458 200 0.458 226 298 0.004 0.165 0.99 0.99 -1.0 0.9 0.9 0.9 0.09	2206	739985	EC	EC	229	.445	.157	.445	.140	.258	.000	.326	110	.326	278	059	0.796	0.146	1.1	1.1	1.1	1.1	A+	
2209 739988 EC EC 211 6.61 .133 .156 .100 .611 .000 .469 .053 .311 .326 .469 .0.020 0.161 .0.6 1.0 0.2 1.0	2207	739986	EC	EC	222	.464	.342	.108	.464	.086	.000	.293	089	163	.293	189	0.771	0.152	2.2	1.1	4.7	1.6	A+	
2210 739989 EC EC 250 .656 .240 .052 .052 .656 .000 .494 .211 .307 .344 .494 .0.315 0.151 .1.2 0.9 .0.7 0.9 .0.7 0.9 .211 739990 EC EC .213 .352 .131 .352 .286 .230 .000 .218 .162 .218 .148 .042 .1.22 .0.158 .2.2 .1.1 .3.4 .1.6 .2.2 .2	2208	739987	EC	EC	195	.636	.144	.636	.169	.051	.000	.458	200	.458	226	298	-0.004	0.165	-0.9	0.9	-1.0	0.9	A-	
2211 739990 EC EC 213 352 131 352 2.86 2.30 0.00 2.18 -1.62 2.18 -1.48 0.04 1.222 0.158 2.2 1.1 3.4 1.6	2209	739988	EC	EC	211	.611	.133	.156	.100	.611	.000	.469	053	311	326	.469	-0.020	0.161	-0.6	1.0	0.2	1.0	A+	
2212 739991 EC EC 189 .624 .180 .624 .132 .063 .000 .337 .018 .337 .303 .219 .0.070 0.170 1.5 1.1 1.8 1.2	2210	739989	EC	EC	250	.656	.240	.052	.052	.656	.000	.494	211	307	344	.494	-0.315	0.151	-1.2	0.9	-0.7	0.9	B+	
2213 739992 EC EC 224 5.09 5.09 5.09 0.80 1.43 2.68 0.00 2.93 2.93 -1.74 -2.24 -0.47 0.591 0.150 2.4 1.1 2.5 1.3	2211	739990	EC	EC	213	.352	.131	.352	.286	.230	.000	.218	162	.218	148	.042	1.222	0.158	2.2	1.1	3.4	1.6	A+	
2214 739993 EC EC 238 .710 .155 .113 .710 .021 .000 .397 .220 .293 .397 .053 .0.704 0.164 1.3 1.1 0.2 1.0 2215 739994 EC EC 200 .255 .235 .295 .215 .255 .000 .280 .0704 .133 .073 .280 1.700 0.174 0.2 1.0 1.3 1.3 1.3 2216 739995 EC EC .202 .446 .139 .257 .446 .158 .000 .214 .069 .139 .214 .060 0.856 .0.158 3.4 1.2 4.1 1.5 .2217 739996 EC EC .223 .247 .152 .247 .345 .256 .000 .029 .016 .029 .058 .079 .094 .0167 .27 1.2 .65 .52 .28 .2218 .239997 EC EC .217 .765 .055 .058 .092 .765 .000 .519 .237 .250 .329 .519 .1.042 0.190 .0.1 1.0 -0.3 0.9 .2219 .2219 .2220 .24037 EC EC .223 .260 .143 .179 .260 .417 .000 .041 .025 .244 .041 .136 .1781 0.165 .2.7 1.2 .6.5 .2.8 .2220 .24037 .2221 .24038 EC EC .223 .383 .383 .560 .068 .029 .000 .191 .022 .191 .265 .233 .282 .0.156 .3.5 .1.2 .4.0 1.4 .2221 .240038 EC EC .235 .383 .383 .174 .230 .213 .000 .382 .382 .329 .499 .0.550 .0.161 .1.9 .0.9 4.3 1.7 .2222 .2224 .24041 EC EC .247 .547 .182 .186 .085 .547 .000 .470 .140 .249 .296 .470 .0.255 .0.146 .0.9 1.0 0.6 1.1 .2224 .240041 EC EC .224 .746 .746 .103 .036 .116 .000 .467 .467 .228 .184 .3.31 .0.889 .0.174 .0.2 .0.9 .0.9 .0.9 .2225 .740094 EC EC .226 .301 .301 .177 .332 .078 .280 .000 .099 .0.99 .0.44 .1.76 .0.54 .1.798 .0.165 .2.3 1.2 .3.1 .3.3 .2.222 .2227 .2228 .2229 .2226 .2226 .22	2212	739991	EC	EC	189	.624	.180	.624	.132	.063	.000	.337	018	.337	303	219	-0.070	0.170	1.5	1.1	1.8	1.2	A-	
2215 739994 EC EC 200 .255 .235 .295 .215 .255 .000 .280 074 133 073 .280 1.700 0.174 0.2 1.0 1.3 1.3 2216 739995 EC EC 202 .446 .139 .257 .446 .158 .000 .214 069 139 .214 060 .0856 .0158 3.4 1.2 4.1 1.5 2217 739996 EC EC EC 223 .247 .152 .247 .345 .256 .000 .029 .016 .029 .058 .079 1.948 0.167 2.7 1.2 6.5 2.9 2219 740036 EC EC 227 .765 .055 .088 .092 .060 .041 .025 .244 .041 .136 1.781 0.165 2.7 1.2 6.5 2.9 2220 74003	2213	739992	EC	EC	224	.509	.509	.080	.143	.268	.000	.293	.293	174	224	047	0.591	0.150	2.4	1.1	2.5	1.3	A-	1
Color	2214	739993	EC	EC	238	.710	.155	.113	.710	.021	.000	.397	220	293	.397	053	-0.704	0.164	1.3	1.1	0.2	1.0	A-	
2217 739996 EC EC 223 .247 .152 .247 .345 .256 .000 .029 .016 .029 .058 .079 1.948 0.167 2.7 1.2 6.5 2.9 2218 739997 EC EC 217 .765 .055 .088 .092 .765 .000 .519 237 250 329 .519 -1.042 0.190 -0.1 1.0 -0.3 0.9 2219 740036 EC EC 223 .260 .143 .179 .260 .417 .000 .041 .025 .244 .041 .136 1.781 0.165 2.7 1.2 6.5 2.8 2220 740037 EC EC 207 .560 .343 .560 .068 .029 .000 .191 .022 .191 .265 .233 .0.282 0.156 3.5 1.2 4.0 1.4 2221 74	2215	739994	EC	EC	200	.255	.235	.295	.215	.255	.000	.280	074	133	073	.280	1.700	0.174	0.2	1.0	1.3	1.3	A-	
2218 739997 EC EC 217 .765 .055 .088 .092 .765 .000 .519 237 250 .329 .519 -1.042 0.190 -0.1 1.0 -0.3 0.9 2219 740036 EC EC 223 .260 .143 .179 .260 .417 .000 .041 .025 244 .041 .136 1.781 0.165 2.7 1.2 6.5 2.8 2220 740037 EC EC 207 .560 .343 .560 .068 .029 .000 .191 .022 .191 265 .233 .0282 .0.156 3.5 1.2 4.0 1.4 2221 740038 EC EC .235 .383 .374 .230 .213 .000 .382 .382 .160 .279 .019 1.171 .148 .00 .499 .027 .332 .329 .499 .0550	2216	739995	EC	EC	202	.446	.139	.257	.446	.158	.000	.214	069	139	.214	060	0.856	0.158	3.4	1.2	4.1	1.5	A+	
2219 740036 EC EC 223 .260 .143 .179 .260 .417 .000 .041 .025 244 .041 .136 1.781 0.165 2.7 1.2 6.5 2.8 2220 740037 EC EC 207 .560 .343 .560 .068 .029 .000 .191 .022 .191 265 233 .0.282 0.156 3.5 1.2 4.0 1.4 2221 740038 EC EC 235 .383 .383 .174 .230 .213 .000 .382 .382 160 279 019 1.171 0.148 -1.3 0.9 4.3 1.7 2222 740039 EC EC EC 193 .518 .171 .171 .140 .518 .000 .499 .027 332 .329 .499 0.550 0.161 -1.9 0.9 -1.7 0.8	2217	739996	EC	EC	223	.247	.152	.247	.345	.256	.000	.029	016	.029	.058	079	1.948	0.167	2.7	1.2	6.5	2.9	A-	
2220 740037 EC EC 207 .560 .343 .560 .068 .029 .000 .191 .022 .191 265 233 0.282 0.156 3.5 1.2 4.0 1.4 2221 740038 EC EC 235 .383 .383 .174 .230 .213 .000 .382 .382 .160 .279 .019 1.171 .0.48 -1.3 0.9 4.3 1.7 2222 740039 EC EC 193 .518 .171 .171 .140 .518 .000 .499 .027 .332 .329 .499 .0.550 0.161 -1.9 0.9 -1.7 0.8 2223 740040 EC EC 247 .547 .182 .186 .085 .547 .000 .470 .140 .229 .499 .0.550 0.161 -1.9 0.9 .9 2224 740041 EC E	2218	739997	EC	EC	217	.765	.055	.088	.092	.765	.000	.519	237	250	329	.519	-1.042	0.190	-0.1	1.0	-0.3	0.9	A+	
2221 740038 EC EC 235 .383 .383 .174 .230 .213 .000 .382 .382 160 279 019 1.171 0.148 -1.3 0.9 4.3 1.7 2222 740039 EC EC 193 .518 .171 .171 .140 .518 .000 .499 027 332 329 .499 0.550 0.161 -1.9 0.9 -1.7 0.8 2223 740040 EC EC 247 .547 .182 .186 .085 .547 .000 .470 140 249 296 .470 0.255 0.146 -0.9 1.0 0.6 1.1 2224 740041 EC EC 214 .636 .117 .154 .093 .636 .000 .519 240 257 275 .519 -0.231 0.162 -1.2 0.99 -0.9 2226 740042 <td>2219</td> <td>740036</td> <td>EC</td> <td>EC</td> <td>223</td> <td>.260</td> <td>.143</td> <td>.179</td> <td>.260</td> <td>.417</td> <td>.000</td> <td>.041</td> <td>.025</td> <td>244</td> <td>.041</td> <td>.136</td> <td>1.781</td> <td>0.165</td> <td>2.7</td> <td>1.2</td> <td>6.5</td> <td>2.8</td> <td>A+</td> <td></td>	2219	740036	EC	EC	223	.260	.143	.179	.260	.417	.000	.041	.025	244	.041	.136	1.781	0.165	2.7	1.2	6.5	2.8	A+	
2222 740039 EC EC 193 .518 .171 .171 .140 .518 .000 .499 027 332 329 .499 0.550 0.161 -1.9 0.9 -1.7 0.8 2223 740040 EC EC 247 .547 .182 .186 .085 .547 .000 .470 249 296 .470 0.255 0.146 -0.9 1.0 0.6 1.1 2224 740041 EC EC EC 214 .636 .117 .154 .093 .636 .000 .519 240 257 275 .519 -0.231 .0162 -1.2 0.9 -0.9 0.9 2225 740042 EC EC EC 226 .301 .301 .177 .332 .190 .000 .310 .310 228 144 .037 1.593 0.158 0.5 1.0 0.5 1.1 <	2220	740037	EC	EC	207	.560	.343	.560	.068	.029	.000	.191	.022	.191	265	233	0.282	0.156	3.5	1.2	4.0	1.4	A+	
2223 740040 EC EC 247 .547 .182 .186 .085 .547 .000 .470 140 249 296 .470 0.255 0.146 -0.9 1.0 0.6 1.1 2224 740041 EC EC 214 .636 .117 .154 .093 .636 .000 .519 240 257 275 .519 -0.231 0.162 -1.2 0.9 -0.9 0.9 2225 740042 EC EC EC 224 .746 .103 .036 .116 .000 .467 .467 228 184 313 -0.889 0.174 -0.2 1.0 -0.7 0.9 2226 740043 EC EC 226 .301 .301 .177 .332 .190 .000 .310 .310 .310 229 147 .037 1.593 0.158 0.5 1.0 0.5 1.1	2221	740038	EC	EC	235	.383	.383	.174	.230	.213	.000	.382	.382	160	279	019	1.171	0.148	-1.3	0.9	4.3	1.7	B+	
2224 740041 EC EC 214 .636 .117 .154 .093 .636 .000 .519 240 257 275 .519 -0.231 0.162 -1.2 0.9 -0.9 0.9 2225 740042 EC EC EC 224 .746 .103 .036 .116 .000 .467 .467 228 184 313 -0.889 0.174 -0.2 1.0 -0.7 0.9 2226 740043 EC EC 226 .301 .301 .177 .332 .190 .000 .310 .310 229 147 .037 1.593 0.158 0.5 1.0 0.5 1.1 2227 740091 EC EC 218 .271 .372 .078 .280 .000 .099 .099 044 176 .054 1.798 0.165 2.3 1.2 5.3 2.3 2228 740092	2222	740039	EC	EC	193	.518	.171	.171	.140	.518	.000	.499	027	332	329	.499	0.550	0.161	-1.9	0.9	-1.7	8.0	A-	
2225 740042 EC EC 224 .746 .746 .103 .036 .116 .000 .467 .467 228 184 313 -0.889 0.174 -0.2 1.0 -0.7 0.9 2226 740043 EC EC 226 .301 .301 .177 .332 .190 .000 .310 229 147 .037 1.593 0.158 0.5 1.0 0.5 1.1 2227 740091 EC EC 218 .271 .271 .372 .078 .280 .000 .099 .099 044 176 .054 1.798 0.165 2.3 1.2 5.3 2.3 2228 740092 EC EC EC 210 .600 .124 .600 .138 .138 .000 .292 102 .292 159 158 0.010 0.159 2.1 1.2 3.1 1.3 2229 <t< td=""><td>2223</td><td>740040</td><td>EC</td><td>EC</td><td>247</td><td>.547</td><td>.182</td><td>.186</td><td>.085</td><td>.547</td><td>.000</td><td>.470</td><td>140</td><td>249</td><td>296</td><td>.470</td><td>0.255</td><td>0.146</td><td>-0.9</td><td>1.0</td><td>0.6</td><td>1.1</td><td>A+</td><td></td></t<>	2223	740040	EC	EC	247	.547	.182	.186	.085	.547	.000	.470	140	249	296	.470	0.255	0.146	-0.9	1.0	0.6	1.1	A+	
2226 740043 EC EC 226 .301 .301 .177 .332 .190 .000 .310 229 147 .037 1.593 0.158 0.5 1.0 0.5 1.1 2227 740091 EC EC 218 .271 .372 .078 .280 .000 .099 044 176 .054 1.798 0.165 2.3 1.2 5.3 2.3 2228 740092 EC EC 210 .600 .124 .600 .138 .138 .000 .292 102 .292 159 158 0.010 0.159 2.1 1.2 3.1 1.3 2229 740093 EC EC 205 .595 .200 .112 .093 .595 .000 .476 264 257 163 .476 0.144 0.159 -1.4 0.9 -1.0 0.9 2230 740094 EC EC <td< td=""><td>2224</td><td>740041</td><td>EC</td><td>EC</td><td>214</td><td>.636</td><td>.117</td><td>.154</td><td>.093</td><td>.636</td><td>.000</td><td>.519</td><td>240</td><td>257</td><td>275</td><td>.519</td><td>-0.231</td><td>0.162</td><td>-1.2</td><td>0.9</td><td>-0.9</td><td>0.9</td><td>C+</td><td></td></td<>	2224	740041	EC	EC	214	.636	.117	.154	.093	.636	.000	.519	240	257	275	.519	-0.231	0.162	-1.2	0.9	-0.9	0.9	C+	
2227 740091 EC EC 218 .271 .271 .372 .078 .280 .000 .099 .099 044 176 .054 1.798 0.165 2.3 1.2 5.3 2.3 2228 740092 EC EC 210 .600 .124 .600 .138 .138 .000 .292 159 158 0.010 0.159 2.1 1.2 3.1 1.3 2229 740093 EC EC 205 .595 .200 .112 .093 .595 .000 .476 264 257 163 .476 0.144 0.159 -1.4 0.9 -1.0 0.9 2230 740094 EC EC 235 .192 .191 .204 .413 .191 .000 .066 .066 064 .031 039 2.307 0.176 1.4 1.1 5.0 2.5 2231 740095 EC <t< td=""><td>2225</td><td>740042</td><td>EC</td><td>EC</td><td>224</td><td>.746</td><td>.746</td><td>.103</td><td>.036</td><td>.116</td><td>.000</td><td>.467</td><td>.467</td><td>228</td><td>184</td><td>313</td><td>-0.889</td><td>0.174</td><td>-0.2</td><td>1.0</td><td>-0.7</td><td>0.9</td><td>B-</td><td></td></t<>	2225	740042	EC	EC	224	.746	.746	.103	.036	.116	.000	.467	.467	228	184	313	-0.889	0.174	-0.2	1.0	-0.7	0.9	B-	
2228 740092 EC EC 210 .600 .124 .600 .138 .138 .000 .292 102 .292 159 158 0.010 0.159 2.1 1.2 3.1 1.3 2229 740093 EC EC 205 .595 .200 .112 .093 .595 .000 .476 264 257 163 .476 0.144 0.159 -1.4 0.9 -1.0 0.9 2230 740094 EC EC 235 .192 .191 .204 .413 .191 .000 .066 .066 064 .031 039 2.307 0.176 1.4 1.1 5.0 2.5 2231 740095 EC EC 202 .267 .282 .267 .183 .000 .146 112 071 .146 .046 1.772 0.172 1.8 1.1 1.7 1.2 2232 740096 EC EC 226 .646 .075 .646 .111 .168 .000	2226	740043	EC	EC	226	.301	.301	.177	.332	.190	.000	.310	.310	229	147	.037	1.593	0.158	0.5	1.0	0.5	1.1	B-	
2229 740093 EC EC 205 .595 .200 .112 .093 .595 .000 .476 264 257 163 .476 0.144 0.159 -1.4 0.9 -1.0 0.9 2230 740094 EC EC 235 .192 .191 .204 .413 .191 .000 .066 .066 064 .031 039 2.307 0.176 1.4 1.1 5.0 2.5 2231 740095 EC EC 202 .267 .282 .267 .183 .000 .146 112 071 .146 .046 1.772 0.172 1.8 1.1 3.5 1.9 2232 740096 EC EC 226 .646 .075 .646 .111 .168 .000 .337 171 .337 163 174 -0.208 0.158 1.4 1.1 1.7 1.2	2227	740091	EC	EC	218	.271	.271	.372	.078	.280	.000	.099	.099	044	176	.054	1.798	0.165	2.3	1.2	5.3	2.3	A-	
2230 740094 EC EC 235 .192 .191 .204 .413 .191 .000 .066 .066 064 .031 039 2.307 0.176 1.4 1.1 5.0 2.5 2231 740095 EC EC 202 .267 .282 .267 .183 .000 .146 112 071 .146 .046 1.772 0.172 1.8 1.1 3.5 1.9 2232 740096 EC EC 226 .646 .075 .646 .111 .168 .000 .337 171 .337 163 174 -0.208 0.158 1.4 1.1 1.7 1.2	2228	740092	EC	EC	210	.600	.124	.600	.138	.138	.000	.292	102	.292	159	158	0.010	0.159	2.1	1.2	3.1	1.3	A-	
2231 740095 EC EC 202 .267 .282 .267 .267 .183 .000 .146 112 071 .146 .046 1.772 0.172 1.8 1.1 3.5 1.9 2232 740096 EC EC 226 .646 .075 .646 .111 .168 .000 .337 171 .337 163 174 -0.208 0.158 1.4 1.1 1.7 1.2	2229	740093	EC	EC	205	.595	.200	.112	.093	.595	.000	.476	264	257	163	.476	0.144	0.159	-1.4	0.9	-1.0	0.9	A-	
2232 740096 EC EC 226 .646 .075 .646 .111 .168 .000 .337171 .337163174 -0.208 0.158 1.4 1.1 1.7 1.2	2230	740094	EC	EC	235	.192	.191	.204	.413	.191	.000	.066	.066	064	.031	039	2.307	0.176	1.4	1.1	5.0	2.5	A+	
	2231	740095	EC	EC	202	.267	.282	.267	.267	.183	.000	.146	112	071	.146	.046	1.772	0.172	1.8	1.1	3.5	1.9	A+	
2233 740097 EC EC 231 .403 .403 .078 .134 .385 .000 .249 .249277294 .108 1.010 0.147 1.7 1.1 4.2 1.6	2232	740096	EC	EC	226	.646	.075	.646	.111	.168	.000	.337	171	.337	163	174	-0.208	0.158	1.4	1.1	1.7	1.2	A-	
	2233	740097	EC	EC	231	.403	.403	.078	.134	.385	.000	.249	.249	277	294	.108	1.010	0.147	1.7	1.1	4.2	1.6	A-	
2234 740098 EC EC 207 .488 .058 .396 .488 .058 .000 .333 214 152 .333 179 0.543 0.154 0.6 1.0 2.5 1.3	2234	740098	EC	EC	207	.488	.058	.396	.488	.058	.000	.333	214	152	.333	179	0.543	0.154	0.6	1.0	2.5	1.3	A-	
2235 740099 EC EC 202 .540 .089 .158 .540 .213 .000 .241264305 .241 .163 0.199 0.158 2.9 1.2 3.2 1.3	2235	740099	EC	EC	202	.540	.089	.158	.540	.213	.000	.241	264	305	.241	.163	0.199	0.158	2.9	1.2	3.2	1.3	A-	

Table B-5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Ref	ID	FT Grade	PCS Grade	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
2236	740100	EC	EC	214	.846	.023	.070	.061	.846	.000	.619	178	430	364	.619	-1.704	0.216	-1.9	0.8	-2.1	0.6	A+	
2237	740127	EC	EC	210	.443	.267	.133	.157	.443	.000	.304	.033	208	261	.304	0.862	0.155	1.7	1.1	2.1	1.2	C-	
2238	740128	EC	EC	206	.544	.068	.180	.209	.544	.000	.351	155	310	041	.351	0.207	0.157	0.7	1.0	4.0	1.5	A+	
2239	740129	EC	EC	209	.397	.187	.397	.230	.187	.000	.155	.059	.155	135	108	1.048	0.155	3.4	1.2	4.4	1.6	A+	
2240	740130	EC	EC	213	.540	.122	.192	.540	.146	.000	.376	182	107	.376	243	0.324	0.154	0.6	1.0	1.9	1.2	A+	
2241	740131	EC	EC	211	.597	.076	.118	.597	.209	.000	.452	226	232	.452	214	-0.096	0.161	0.1	1.0	0.8	1.1	A+	
2242	740133	EC	EC	224	.719	.036	.183	.719	.063	.000	.287	174	154	.287	154	-0.607	0.167	1.9	1.2	1.3	1.2	A-	
2243	740259	EC	EC	207	.556	.556	.111	.101	.232	.000	.338	.338	361	186	.003	0.259	0.160	2.1	1.1	3.0	1.4	B+	
2244	740260	EC	EC	207	.628	.082	.188	.628	.101	.000	.447	190	310	.447	142	-0.037	0.160	-0.8	0.9	-0.4	1.0	B+	
2245	740261	EC	EC	197	.513	.152	.513	.107	.228	.000	.323	311	.323	173	.009	0.644	0.157	0.9	1.1	1.9	1.2	A+	
2246	741707	EC	EC	217	.309	.309	.286	.166	.240	.000	.173	.173	.060	097	166	1.530	0.161	1.8	1.1	6.4	2.4	A-	
2247	741991	EC	EC	202	.584	.228	.074	.584	.114	.000	.294	.003	312	.294	203	0.209	0.162	2.2	1.2	2.9	1.3	A+	
2248	742027	EC	EC	193	.145	.145	.285	.285	.285	.000	100	100	075	.050	.102	2.558	0.214	1.7	1.2	5.3	3.5	A+	
2249	742038	EC	EC	224	.107	.598	.107	.121	.174	.000	143	.153	143	220	.107	2.954	0.225	1.0	1.2	9.0	8.3	A-	
2250	742049	EC	EC	200	.325	.365	.205	.325	.105	.000	.264	143	087	.264	065	1.484	0.165	1.2	1.1	1.9	1.4	A+	
2251	742050	EC	EC	224	.558	.558	.040	.250	.152	.000	.385	.385	267	117	245	0.342	0.150	0.5	1.0	0.6	1.1	B+	
2252	742051	EC	EC	224	.424	.388	.076	.112	.424	.000	.319	111	239	129	.319	0.968	0.150	1.2	1.1	2.6	1.4	A+	
2253	742091	EC	EC	217	.530	.272	.530	.120	.078	.000	.297	234	.297	131	005	0.358	0.154	2.3	1.1	3.9	1.4	A-	

Items with reference line numbers 1-1383 were field tested during the stand-alone field test administered in spring 2011. Items with reference line numbers 1383-1853 were field tested during the field test administered in fall 2013. Items with reference line numbers 1854-2253 were field tested during the embedded field test administered during the 2015-2016 school year.

Table B-6. Evidence-Based Selected-Response Item Statistics

Table B–6. Evidence-Based Selected-Response Item Statistics

Column Heading	Definition
Ref	Reference line number
ID	Item ID
FT Grade	Item grade or course alignment when field tested
Max Points	Maximum possible item score
N	Number of students
PVal	Item mean score/Maximum possible item score
P()	Proportion gaining given point (- = blank)
PtBis	Point biserial (item-total correlation)
PT()	Point biserial of given score point
Meas	Rasch item difficulty measure estimate
MSE	Standard error of Rasch item difficulty measure estimate
Z-in	Z-standardized infit statistic
MS-in	Mean square infit statistic
Z-out	Z-standardized outfit statistic
MS-out	Mean square outfit statistic
M/F	Male/female DIF statistic
W/B	White/black DIF statistic

READING/LITERATURE EVIDENCE-BASED SELECTED-RESPONSE ITEMS

Table B-7. Reading/Literature Evidence-Based Selected-Response Item Statistics

Table B-7. Reading/Literature Evidence-Based Selected-Response Item Statistics

Ref	ID	FT	Max	N	PVal	P(0)	P(1)	P(2)	P(3)	P(-)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
1	734505	Grade	Points 2	2107	214	.504	.363	122		.000	220	156	026	266		-0.156	0.036	8.4	1.3	9.9	out	/F	/B
2	734505	3	2	2289	.314	.353	.372	.133		.000	.238	156 325	026 114	.266 .470		-0.136	0.036	0.8	1.0	1.9	1.4	A+ A+	A- A+
3	734508	3	2	1338	.602	.290	.216	.494		.000	.643	503	237	.652		-0.770	0.032	0.6	1.0	0.2	1.0	A-	B-
4	734509	3	2	1069	.608	.331	.123	.546		.000	.403	286	299	.468		-0.417	0.040	3.4	1.1	2.8	1.2	A-	A-
5	734510	3	2	1986	.366	.450	.368	.182		.000	.127	035	125	.201		-0.571	0.035	9.9	1.5	9.9	1.5	A-	A-
6	734512	3	2	179	.439	.380	.363	.257		.000	.418	277	127	.447		-1.322	0.105	-1.3	0.9	-1.4	0.9		
7	734517	3	2	3062	.395	.365	.479	.155		.000	.219	166	.019	.195		-0.316	0.030	9.9	1.3	9.9	1.3	A-	A-
8	734518	3	2	2867	.467	.356	.354	.290		.000	.390	266	121	.409		0.020	0.028	9.0	1.2	9.0	1.3	A+	A-
9	734519	3	2	1316	.517	.380	.207	.413		.000	.530	370	279	.594		-0.585	0.038	-0.9	1.0	0.1	1.0	A-	B-
10	734521	3	2	2297	.545	.284	.342	.374		.000	.573	435	147	.549		-1.327	0.031	-6.8	0.9	-6.8	0.8	A-	A+
11	734523	3	2	181	.475	.304	.442	.254		.000	.456	325	082	.437		-0.623	0.122	1.5	1.1	1.3	1.1	B-	
12	734503	3	3	2601	.457	.174	.373	.363	.091	.000	.395	211	226	.236	.264	-0.691	0.027	5.9	1.2	6.2	1.2	A+	A-
13	734504	3	3	1353	.483	.226	.293	.287	.194	.000	.510	206	360	.122	.494	-0.738	0.036	8.2	1.3	8.0	1.3	A+	A-
14	734507	3	3	1904	.323	.239	.569	.175	.016	.000	.190	178	.063	.087	.090	0.192	0.038	7.6	1.3	8.0	1.3	A+	
15	734511	3	3	3736	.454	.212	.339	.324	.126	.000	.606	389	252	.298	.420	-0.571	0.022	-4.0	0.9	-4.0	0.9	A+	A-
16	734513	3	3	2706	.444	.171	.403	.348	.078	.000	.408	254	184	.255	.241	-0.598	0.027	5.1	1.1	5.2	1.1	A-	A-
17	734514	3	3	2556	.423	.229	.371	.301	.098	.000	.479	285	226	.296	.314	-0.739	0.026	0.4	1.0	0.4	1.0	A+	
18	734515	3	3	413	.383	.264	.404	.249	.082	.000	.321	135	160	.102	.341	-0.563	0.068	5.2	1.4	5.6	1.4	B-	
19	734516	3	3	283	.482	.205	.332	.276	.187	.000	.548	305	253	.114	.489	-1.017	0.076	1.0	1.1	0.9	1.1	A-	
20	734520	3	3	2947	.482	.191	.340	.301	.168	.000	.488	237	303	.189	.401	-0.859	0.023	3.0	1.1	2.6	1.1	A+	A-
21	734522	3	3	3606	.578	.093	.278	.432	.197	.000	.552	305	339	.169	.395	-1.283	0.023	-1.6	1.0	-1.5	1.0	A-	B-
22	734524	3	3	1502	.579	.159	.248	.290	.304	.000	.511	180	388	018	.525	-0.853	0.034	9.4	1.4	8.9	1.4	A-	A-
23	734525	4	2	1194	.795	.028	.353	.618		.000	.459	325	298	.405		-1.111	0.058	-2.9	0.9	-3.4	0.9	A+	
24	734526	4	2	1194	.717	.137	.291	.571		.000	.351	247	183	.339		0.109	0.044	-0.9	1.0	-0.8	1.0	igsquare	
25	734528	4	2	2078	.604	.296	.200	.503		.000	.590	472	206	.596		-0.678	0.033	0.6	1.0	0.0	1.0	A+	A-
26	734530	4	2	155	.603	.290	.213	.497		.000	.454	323	241	.490		-0.636	0.118	1.9	1.2	1.6	1.3	A+	-
27	734531	4	2	1212	.364	.479	.313	.208		.000	.212	089	165	.299		-0.074	0.044	9.9	1.4	9.9	1.6	A+	\vdash
28	734534	4	2	2573	.422	.431	.293	.276		.000	.382	240	172	.441		-0.260	0.029	7.0	1.2	7.8	1.3	A-	\vdash
29	734536	4	2	1159	.530	.218	.504	.278		.000	.232	108	149	.265		0.643	0.046	2.3	1.1	2.5	1.1	\vdash	\vdash
30	734538	4	2	201	.358	.512	.259	.229		.000	.469	387	.013	.447		1.147	0.107	0.7	1.1	1.2	1.2	C-	

Table B-7 (continued). Reading/Literature Evidence-Based Selected-Response Item Statistics

Ref	ID	FT Grade	Max Points	N	PVal	P(0)	P(1)	P(2)	P(3)	P(-)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
31	734539	4	2	1349	.816	.073	.223	.704		.000	.454	323	267	.428		-0.540	0.048	-3.0	0.9	-4.5	0.8	A-	,
32	734542	4	2	3386	.207	.674	.239	.087		.000	.156	087	045	.212		1.469	0.031	9.9	1.4	9.9	2.2	A+	A-
33	734543	4	2	3361	.732	.152	.232	.616		.000	.546	392	294	.545		-0.972	0.029	0.1	1.0	-0.1	1.0	A+	A+
34	734545	4	2	1159	.745	.092	.325	.582		.000	.380	293	173	.336		-0.328	0.048	-1.6	0.9	-1.7	0.9		
35	734527	4	3	1413	.723	.121	.089	.291	.499	.000	.398	220	294	052	.359	0.243	0.031	0.7	1.0	0.5	1.0		
36	734529	4	3	446	.632	.128	.200	.321	.352	.000	.601	336	435	.145	.457	-0.303	0.064	1.2	1.1	1.3	1.1	A-	
37	734532	4	3	390	.486	.133	.369	.405	.092	.000	.451	296	208	.254	.263	-0.523	0.072	0.8	1.1	0.9	1.1	A-	
38	734533	4	3	1405	.442	.200	.386	.301	.112	.000	.430	278	167	.222	.288	-0.681	0.035	3.1	1.1	2.9	1.1	A-	
39	734535	4	3	197	.607	.102	.208	.457	.234	.000	.471	335	226	.123	.311	-0.279	0.100	1.6	1.2	1.6	1.2	B+	
40	734537	4	3	467	.622	.124	.227	.308	.340	.000	.556	257	428	.097	.463	-0.062	0.058	0.6	1.0	-0.1	1.0	B+	B+
41	734540	4	3	2058	.451	.220	.347	.293	.140	.000	.374	179	226	.162	.311	-0.311	0.028	8.4	1.3	8.7	1.3	A-	A+
42	734541	4	3	2102	.612	.139	.192	.362	.307	.000	.553	306	389	.132	.424	-0.525	0.028	2.6	1.1	1.9	1.1	A+	A+
43	734544	4	3	1292	.353	.316	.401	.191	.092	.000	.271	117	133	.103	.273	0.548	0.036	8.0	1.3	9.7	1.4	A+	A-
44	734546	4	3	774	.675	.080	.151	.433	.336	.000	.478	309	290	.062	.333	-0.059	0.048	-0.2	1.0	-0.7	1.0	A-	A-
45	734548	5	2	753	.766	.129	.210	.661		.000	.476	387	196	.442		-0.848	0.060	-0.7	1.0	-1.1	0.9	A+	A+
46	734550	5	2	766	.487	.358	.311	.332		.000	.351	205	203	.409		0.853	0.053	4.9	1.2	9.6	1.7	A-	
47	734551	5	2	588	.560	.304	.270	.425		.000	.512	402	141	.501		-0.242	0.059	-0.4	1.0	-0.4	1.0	A+	
48	734552	5	2	1388	.319	.426	.511	.063		.000	.211	223	.188	.066		0.562	0.050	5.9	1.2	7.3	1.3	A-	
49	734554	5	2	1742	.760	.126	.227	.646		.000	.504	329	331	.519		-0.937	0.040	-1.0	1.0	-1.9	0.9	A-	A-
50	734557	5	2	1071	.817	.061	.246	.694		.000	.371	289	193	.330		-0.769	0.056	-0.8	1.0	-1.6	0.9	A+	
51	734558	5	2	629	.400	.447	.307	.246		.000	.181	098	106	.226		0.972	0.055	4.3	1.2	4.6	1.3	A-	
52	734559	5	2	1006	.646	.164	.380	.456		.000	.400	306	137	.360		0.016	0.048	-0.8	1.0	-1.0	1.0	A-	A-
53	734561	5	2	555	.532	.301	.333	.366		.000	.316	208	141	.336		0.586	0.058	0.9	1.0	1.2	1.1	A-	B-
54	734564	5	2	2188	.829	.052	.238	.710		.000	.394	364	152	.321		-1.216	0.042	-0.5	1.0	0.5	1.0	A+	A+
55	734547	5	3	1183	.480	.205	.290	.368	.138	.000	.226	062	194	.070	.231	0.396	0.036	9.7	1.4	9.9	1.5	A+	A-
56	734549	5	3	1256	.767	.056	.090	.354	.501	.000	.403	246	284	023	.298	-0.315	0.039	0.1	1.0	-0.1	1.0	A+	A+
57	734553	5	3	2181	.506	.249	.257	.222	.272	.000	.522	247	331	.042	.526	0.020	0.026	8.8	1.3	9.9	1.4	A-	A-
58	734555	5	3	173	.769	.081	.075	.301	.543	.000	.580	507	237	.013	.391	-0.097	0.116	1.1	1.1	1.2	1.2	<u> </u>	
59	734556	5	3	778	.477	.170	.355	.351	.125	.000	.445	222	250	.172	.365	-0.813	0.048	1.7	1.1	2.0	1.1	A-	
60	734560	5	3	1275	.620	.076	.229	.455	.240	.000	.446	229	335	.154	.292	-0.301	0.039	2.2	1.1	2.1	1.1	A+	A-
61	734562	5	3	1364	.691	.084	.141	.392	.383	.000	.406	157	371	.027	.328	-0.046	0.035	1.2	1.0	1.9	1.1	A+	A+
62	734563	5	3	712	.418	.226	.390	.288	.096	.000	.417	203	219	.193	.354	-0.877	0.048	0.5	1.0	0.5	1.0	<u> </u>	
63	734565	5	3	1903	.613	.142	.180	.374	.304	.000	.379	175	310	.077	.311	0.241	0.028	7.0	1.2	7.7	1.3	A+	A-
64	734566	5	3	2339	.562	.168	.277	.256	.299	.000	.448	229	248	003	.433	-0.479	0.025	9.2	1.3	9.5	1.3	A+	A-
65	734568	5	3	780	.655	.049	.247	.395	.309	.000	.282	200	121	022	.229	0.234	0.046	1.1	1.1	1.7	1.1		

Table B-7 (continued). Reading/Literature Evidence-Based Selected-Response Item Statistics

Ref	ID	FT Grade	Max Points	N	PVal	P(0)	P(1)	P(2)	P(3)	P(-)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MSE	Z- in	MS- in	Z- out	MS- out	M /F	W /B
66	737329	6	2	2773	.683	.214	.207	.579		.000	.451	311	274	.483		-0.172	0.030	8.3	1.2	7.3	1.3	A-	A+
67	737519	6	2	2780	.486	.327	.374	.299		.000	.497	392	052	.456		0.677	0.029	1.8	1.0	2.3	1.1	A+	A-
68	740077	6	2	2805	.318	.463	.438	.099		.000	.322	297	.172	.210		1.661	0.033	5.9	1.2	9.9	1.3	A+	A-
69	740148	6	2	2690	.502	.281	.435	.284		.000	.464	412	.042	.364		0.552	0.031	3.4	1.1	3.9	1.1	A+	A+
70	740322	6	2	2790	.424	.378	.396	.226		.000	.231	136	092	.264		0.996	0.030	9.9	1.4	9.9	1.6	A+	A+
71	741072	6	2	2761	.533	.257	.419	.324		.000	.348	254	085	.327		0.457	0.030	9.9	1.3	9.9	1.3	A-	A+
72	741076	6	2	2732	.515	.173	.626	.202		.000	.355	373	.134	.190		0.447	0.036	4.6	1.1	4.8	1.1	A-	A+
73	741129	6	2	2733	.576	.330	.189	.481		.000	.480	336	281	.537		0.342	0.028	7.4	1.2	7.1	1.3	A-	A-
74	741219	6	2	2816	.352	.469	.358	.173		.000	.297	203	040	.318		1.333	0.030	9.7	1.2	9.9	1.6	A-	A+
75	741341	6	2	2780	.482	.410	.217	.373		.000	.524	402	164	.549		0.706	0.027	1.1	1.0	4.7	1.2	A+	A+
76	739545	6	3	2846	.580	.110	.265	.400	.225	.000	.457	282	266	.155	.312	0.220	0.026	8.0	1.2	8.8	1.2	A+	A-
77	739553	6	3	2700	.477	.190	.346	.308	.157	.000	.432	171	336	.222	.343	0.699	0.026	9.7	1.3	9.9	1.3	A+	A-
78	740162	6	3	2838	.513	.143	.341	.350	.166	.000	.554	322	319	.261	.374	0.509	0.026	0.2	1.0	0.2	1.0	A-	A-
79	740359	6	3	2767	.487	.135	.395	.345	.125	.000	.412	280	151	.155	.290	0.639	0.027	7.9	1.2	8.7	1.2	A+	A-
80	741191	6	3	2714	.565	.163	.201	.414	.223	.000	.530	335	352	.259	.329	0.385	0.026	4.6	1.1	5.8	1.2	A+	A-
81	741329	6	3	2708	.613	.114	.208	.404	.274	.000	.515	238	400	.122	.400	0.067	0.026	5.4	1.2	5.9	1.2	A+	A-
82	741348	6	3	2686	.601	.109	.235	.397	.258	.000	.529	254	406	.167	.387	0.081	0.026	4.2	1.1	3.6	1.1	A-	A-
83	741508	6	3	2788	.305	.445	.307	.135	.112	.000	.187	.069	302	039	.375	1.449	0.024	9.9	1.5	9.9	2.2	A-	A-
84	741538	6	3	2821	.460	.165	.381	.364	.091	.000	.420	282	191	.284	.212	0.844	0.027	8.4	1.2	8.9	1.2	A+	B-
85	737325	7	2	2032	.340	.532	.256	.212		.000	.318	204	119	.375		1.542	0.034	8.2	1.2	9.9	2.0	A-	A-
86	737524	7	2	2116	.578	.211	.422	.367		.000	.460	404	025	.368		0.361	0.036	4.4	1.1	5.2	1.2	A-	A+
87	739558	7	2	1992	.427	.325	.495	.180		.000	.381	363	.151	.247		1.238	0.039	5.6	1.2	8.0	1.3	A+	A+
88	740155	7	2	1925	.541	.346	.226	.428		.000	.445	299	251	.500		0.628	0.034	8.1	1.3	9.7	1.5	A+	A-
89	740351	7	2	2000	.294	.635	.144	.222		.000	.200	059	312	.331		1.653	0.033	9.9	1.4	9.9	2.9	A+	A+
90	740564	7	2	1983	.482	.356	.326	.319		.000	.476	398	020	.429		0.890	0.034	3.4	1.1	6.4	1.2	A+	A-
91	740758	7	2	2095	.677	.194	.257	.549		.000	.523	415	188	.495		-0.047	0.036	3.6	1.1	3.3	1.1	A+	A+
92	741284	7	2	1996	.622	.244	.268	.487		.000	.517	340	297	.555		0.267	0.035	4.4	1.1	3.9	1.2	A+	A-
93	741359	7	2	1974	.642	.180	.355	.465		.000	.513	416	136	.452		0.095	0.037	1.9	1.1	2.6	1.1	A+	A-
94	741621	7	2	2074	.472	.444	.169	.388		.000	.333	212	245	.405		0.983	0.031	9.9	1.4	9.9	1.9	A-	A-
95	741827	7	2	2019	.490	.373	.274	.353		.000	.373	206	267	.457		0.858	0.033	9.8	1.3	9.9	1.5	A-	A-
96	737756	7	3	2030	.545	.131	.309	.352	.207	.000	.533	298	331	.207	.381	0.486	0.030	3.4	1.1	3.1	1.1	A+	B-
97	740312	7	3	2020	.494	.181	.331	.313	.175	.000	.489	261	275	.174	.393	0.816	0.030	6.4	1.2	6.9	1.2	A+	A-
98	740343	7	3	1971	.410	.232	.399	.275	.094	.000	.393	248	150	.230	.259	1.276	0.031	8.0	1.3	9.9	1.4	A-	A+
99	740813	7	3	2008	.481	.150	.375	.356	.119	.000	.386	241	174	.176	.266	0.886	0.032	9.9	1.3	9.9	1.4	A+	A-
100	741096	7	3	1923	.566	.121	.296	.348	.235	.000	.547	333	308	.170	.397	0.406	0.031	3.2	1.1	3.0	1.1	A+	A-

Table B–7 (continued). Reading/Literature Evidence-Based Selected-Response Item Statistics

Ref	ID	FT	Max	N	PVal	P(0)	P(1)	P(2)	P(3)	P(-)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MSE	Z-	MS-	Z-	MS-	M	W
		Grade	Points			. (0)	. (-/	. (-/	. (0)	٠,,	. (5.0	(0)	(-/		(0)			in	in	out	out	/F	/B
101	741157	7	3	1963	.560	.123	.290	.371	.216	.000	.544	291	351	.188	.399	0.432	0.031	3.2	1.1	3.8	1.1	A-	B-
102	741323	7	3	2009	.571	.139	.258	.354	.249	.000	.537	314	342	.196	.381	0.442	0.030	4.0	1.1	4.7	1.2	A+	A-
103	741676	7	3	2020	.468	.145	.375	.411	.069	.000	.490	370	166	.306	.237	1.096	0.034	3.8	1.1	4.2	1.1	A-	A-
104	741685	7	3	2038	.363	.348	.364	.140	.149	.000	.279	036	248	.004	.380	1.341	0.028	9.9	1.5	9.9	1.8	A+	A+
105	741697	7	3	2122	.609	.128	.158	.475	.239	.000	.608	400	390	.232	.376	0.334	0.031	-0.6	1.0	-0.8	1.0	A+	A-
106	736998	8	2	4103	.673	.231	.191	.578		.000	.491	314	364	.558		0.316	0.025	9.9	1.3	9.9	1.4	A+	A-
107	737008	8	2	4245	.742	.157	.202	.641		.000	.588	450	284	.579		-0.074	0.027	0.9	1.0	-1.8	0.9	A+	A+
108	739560	8	2	4235	.633	.234	.266	.500		.000	.521	357	276	.546		0.502	0.024	5.6	1.1	6.8	1.2	A+	A-
109	739753	8	2	4266	.552	.250	.396	.354		.000	.431	341	074	.385		0.799	0.025	9.9	1.2	9.9	1.3	A+	A+
110	740240	8	2	4253	.481	.328	.384	.289		.000	.492	403	015	.434		1.164	0.024	3.6	1.1	7.1	1.2	A+	A-
111	740308	8	2	4077	.527	.339	.268	.393		.000	.371	214	256	.440		1.005	0.023	9.9	1.4	9.9	1.7	A+	A-
112	741131	8	2	4176	.663	.224	.227	.549		.000	.570	423	271	.582		0.336	0.025	1.9	1.0	3.4	1.1	A+	A-
113	741330	8	2	4142	.342	.544	.228	.227		.000	.249	104	239	.363		1.794	0.023	9.9	1.4	9.9	2.6	A-	A-
114	741630	8	2	4280	.584	.275	.283	.442		.000	.489	351	205	.502		0.693	0.024	9.9	1.2	9.9	1.3	A+	A+
115	741670	8	2	4230	.530	.310	.319	.370		.000	.418	260	221	.463		0.944	0.024	9.9	1.3	9.9	1.4	A-	A-
116	741717	8	2	4059	.575	.284	.283	.433		.000	.526	397	179	.524		0.719	0.024	4.5	1.1	7.5	1.2	A-	A-
117	742017	8	2	4187	.309	.516	.350	.134		.000	.224	127	067	.281		2.081	0.026	9.9	1.3	9.9	1.8	A+	A-
118	737750	8	3	4103	.468	.265	.240	.320	.175	.000	.189	.052	337	.041	.268	1.276	0.020	9.9	2.0	9.9	2.4	A-	A-
119	739763	8	3	4122	.370	.282	.377	.290	.051	.000	.408	276	137	.329	.189	1.901	0.023	9.9	1.3	9.9	1.4	A+	A-
120	740084	8	3	4214	.661	.088	.173	.408	.331	.000	.651	398	436	.134	.450	0.206	0.022	-3.8	0.9	-5.1	0.9	A+	A-
121	740363	8	3	4194	.420	.175	.460	.296	.069	.000	.386	323	054	.227	.182	1.529	0.023	9.9	1.3	9.9	1.4	A+	A-
122	741500	8	3	4196	.615	.098	.240	.381	.281	.000	.543	258	398	.118	.420	0.417	0.022	8.1	1.2	7.7	1.2	A-	B-
123	741515	8	3	4247	.505	.139	.361	.345	.155	.000	.414	161	301	.163	.340	0.997	0.022	9.9	1.3	9.9	1.4	A+	A-
124	741533	8	3	4294	.455	.177	.374	.357	.092	.000	.372	206	208	.231	.237	1.385	0.022	9.9	1.4	9.9	1.4	A-	A-
125	741690	8	3	4134	.594	.090	.227	.492	.190	.000	.554	396	293	.225	.316	0.533	0.024	3.1	1.1	2.8	1.1	B+	A-
126	741724	8	3	4228	.398	.165	.530	.251	.054	.000	.288	217	034	.125	.192	1.616	0.024	9.9	1.4	9.9	1.4	A+	A-

Items with reference line numbers 1-126 were field tested during the embedded field test administered during the 2015-2016 school year.

APPENDIX C: VERTICAL LINKING ITEM DETAILS

This appendix provides details on the items used to build the vertical scales in each content area. Information such as grade, n-count, eligible content code, and diagnostic category is provided for each of the vertical linking items. This information is based on the academic standards in place at the time each of the content area vertical scale was established¹. Summary tables indicate the number of linking items in each diagnostic category. A sample of the vertical linking Excel file is provided as well as plots of the vertical linking items.

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Tables C–1 through C–8 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 600869 is a grade 3 item used to link grades 3 and 4. It was administered 1,280 times on the lower grade forms (grade 3) and 964 times on the upper grade forms (grade 4).

Diagnostic categories for Algebra I, Geometry, and Algebra II are different than diagnostic categories for grades 3 through 8 and 11 Mathematics. Items may fall into both a Mathematics diagnostic category and an Algebra I, Geometry, or Algebra II diagnostic category. This is shown in Tables C–6, C–7, and C–8. For example, item 601329 is in the Mathematics diagnostic category "Geometry" and the Geometry diagnostic category "Coordinate Geometry and Right Triangles".

The Mathematics diagnostic categories are²:

- Numbers and Operations
- Measurement
- Geometry
- Algebraic Concepts
- Data Analysis and Probability

The Algebra I diagnostic categories are:

- Operations with Real Numbers and Expressions
- Linear Equations & Inequalities
- Functions & Coordinate Geometry
- Data Analysis

The Geometry diagnostic categories are:

- Geometric Properties
- Congruence, Similarity, & Proofs
- Coordinate Geometry and Right Triangles
- Measurement

The Algebra II diagnostic categories are:

- Operations with Complex Numbers
- Non-linear Expressions & Equations
- Functions
- Data Analysis

¹ Before the 2013-2014 school year items in mathematics, reading, and writing were re-aligned to the new Pennsylvania Core Standards.

² Mathematics diagnostic categories changed at the start of the 2013-2014 school year due to re-alignment to the Pennsylvania Core Standards. See Chapter Thirteen for a list of the current diagnostic categories.

Table C-1. Mathematics Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
600869	3	Grade 3 to Grade 4	1280	964	M3.B.1.1.1	Measure.
600871	3	Grade 3 to Grade 4	1275	964	M3.B.2.2.1	Measure.
601980	3	Grade 3 to Grade 4	1280	964	M3.B.1.2.1	Measure.
604352	3	Grade 3 to Grade 4	1281	964	M3.D.2.1.1	Alg. Con.
600442	3	Grade 3 to Grade 4	1280	964	M3.C.2.1.1	Geo.
600431	3	Grade 3 to Grade 4	1274	964	M3.A.1.1.1	Numbers & Op.
601975	3	Grade 3 to Grade 4	1281	964	M3.A.2.1.1	Numbers & Op.
600865	3	Grade 3 to Grade 4	1279	964	M3.A.1.3.1	Numbers & Op.
601985	3	Grade 3 to Grade 4	1285	963	M3.E.1.1.1	Data & Prob.
601897	3	Grade 3 to Grade 4	1282	964	M3.A.1.2.1	Numbers & Op.
601437	3	Grade 3 to Grade 4	1274	963	M3.A.1.1.4	Numbers & Op.
600438	3	Grade 3 to Grade 4	1277	963	M3.A.1.2.2	Numbers & Op.
600427	3	Grade 3 to Grade 4	1282	963	M3.C.1.1.1	Geo.
600877	3	Grade 3 to Grade 4	1283	963	M3.E.1.2.1	Data & Prob.
601587	3	Grade 3 to Grade 4	1276	963	M3.A.2.1.3	Numbers & Op.
600440	3	Grade 3 to Grade 4	639	963	M3.B.2.1.1	Measure.
600921	3	Grade 3 to Grade 4	1271	963	M3.A.1.3.2	Numbers & Op.
601589	3	Grade 3 to Grade 4	639	962	M3.D.1.1.1	Alg. Con.
601440	3	Grade 3 to Grade 4	1272	962	M3.B.1.1.3	Measure.
601984	3	Grade 3 to Grade 4	1278	962	M3.D.2.1.2	Alg. Con.
604193	4	Grade 3 to Grade 4	1283	959	M4.D.1.1.2	Alg. Con.
602015	4	Grade 3 to Grade 4	1284	481	M4.E.1.2.1	Data & Prob.
601993	4	Grade 3 to Grade 4	1282	1447	M4.C.1.1.1	Geo.
603609	4	Grade 3 to Grade 4	1284	959	M4.B.2.1.1	Measure.
604189	4	Grade 3 to Grade 4	1280	962	M4.B.1.1.3	Measure.
602010	4	Grade 3 to Grade 4	1285	961	M4.C.1.1.2	Geo.
601646	4	Grade 3 to Grade 4	1283	960	M4.D.2.2.2	Alg. Con.
604186	4	Grade 3 to Grade 4	1279	965	M4.A.3.1.1	Numbers & Op.
601958	4	Grade 3 to Grade 4	1281	961	M4.A.1.1.2	Numbers & Op.
604488	4	Grade 3 to Grade 4	1279	958	M4.A.1.2.2	Numbers & Op.
603744	4	Grade 3 to Grade 4	1279	481	M4.B.2.2.1	Measure.
602009	4	Grade 3 to Grade 4	1279	963	M4.C.1.1.2	Geo.
604514	4	Grade 3 to Grade 4	1280	481	M4.C.2.1.1	Geo.
604492	4	Grade 3 to Grade 4	1278	961	M4.A.3.1.2	Numbers & Op.
601972	4	Grade 3 to Grade 4	1281	965	M4.E.1.2.2	Data & Prob.
601962	4	Grade 3 to Grade 4	1278	962	M4.A.1.3.2	Numbers & Op.
601987	4	Grade 3 to Grade 4	1278	961	M4.A.1.1.4	Numbers & Op.

Table C-1 (continued). Mathematics Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
604195	4	Grade 3 to Grade 4	1279	481	M4.D.2.1.1	Alg. Con.
604501	4	Grade 3 to Grade 4	1279	959	M4.E.1.1.1	Data & Prob.
604493	4	Grade 3 to Grade 4	1279	1443	M4.B.1.1.4	Measure.

Table C-2. Mathematics Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
601646	4	Grade 4 to Grade 5	960	1187	M4.D.2.2.2	Alg. Con.
601987	4	Grade 4 to Grade 5	961	1186	M4.A.1.1.4	Numbers & Op.
604493	4	Grade 4 to Grade 5	1443	1183	M4.B.1.1.4	Measure.
601961	4	Grade 4 to Grade 5	965	1184	M4.A.1.3.2	Numbers & Op.
604499	4	Grade 4 to Grade 5	962	1188	M4.E.1.1.1	Data & Prob.
602889	4	Grade 4 to Grade 5	962	1187	M4.E.1.2.2	Data & Prob.
602885	4	Grade 4 to Grade 5	965	1186	M4.B.2.2.1	Measure.
602887	4	Grade 4 to Grade 5	962	1187	M4.C.3.1.1	Geo.
601639	4	Grade 4 to Grade 5	960	1184	M4.A.3.1.3	Numbers & Op.
604969	4	Grade 4 to Grade 5	480	1184	M4.C.1.2.2	Geo.
601994	4	Grade 4 to Grade 5	479	1185	M4.D.1.2.2	Alg. Con.
601998	4	Grade 4 to Grade 5	960	1191	M4.E.3.1.1	Data & Prob.
602000	4	Grade 4 to Grade 5	959	1190	M4.C.1.1.1	Geo.
601991	4	Grade 4 to Grade 5	959	1189	M4.A.2.1.2	Numbers & Op.
604879	4	Grade 4 to Grade 5	1441	1188	M4.D.1.1.3	Alg. Con.
601964	4	Grade 4 to Grade 5	961	1188	M4.A.3.2.2	Numbers & Op.
602971	4	Grade 4 to Grade 5	480	1187	M4.B.2.1.1	Measure.
604486	4	Grade 4 to Grade 5	481	1186	M4.E.1.2.1	Data & Prob.
604967	4	Grade 4 to Grade 5	962	1187	M4.A.1.2.2	Numbers & Op.
602973	4	Grade 4 to Grade 5	964	1186	M4.C.2.1.1	Geo.
600853	5	Grade 4 to Grade 5	964	1790	M5.B.2.1.1	Measure.
604790	5	Grade 4 to Grade 5	964	586	M5.C.2.1.2	Geo.
604956	5	Grade 4 to Grade 5	959	1175	M5.A.2.1.1	Numbers & Op.
604862	5	Grade 4 to Grade 5	960	1182	M5.D.1.2.1	Alg. Con.
604783	5	Grade 4 to Grade 5	961	1179	M5.A.1.2.1	Numbers & Op.
606159	5	Grade 4 to Grade 5	960	1190	M5.A.1.5.1	Numbers & Op.
604848	5	Grade 4 to Grade 5	961	1784	M5.E.3.1.1	Data & Prob.
604843	5	Grade 4 to Grade 5	959	1186	M5.C.1.1.2	Geo.
604966	5	Grade 4 to Grade 5	961	596	M5.E.1.1.1	Data & Prob.
606163	5	Grade 4 to Grade 5	961	1188	M5.B.1.1.1	Measure.
601532	5	Grade 4 to Grade 5	956	2369	M5.A.1.1.1	Numbers & Op.
606160	5	Grade 4 to Grade 5	958	1190	M5.A.3.1.1	Numbers & Op.
604960	5	Grade 4 to Grade 5	957	594	M5.B.2.2.3	Measure.
600852	5	Grade 4 to Grade 5	958	1178	M5.D.1.1.1	Alg. Con.
604834	5	Grade 4 to Grade 5	954	1189	M5.A.1.3.1	Numbers & Op.
604959	5	Grade 4 to Grade 5	956	1183	M5.B.1.2.2	Measure.
604961	5	Grade 4 to Grade 5	956	1193	M5.C.1.2.1	Geo.

Table C-2 (continued). Mathematics Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
606278	5	Grade 4 to Grade 5	954	1177	M5.D.2.1.2	Alg. Con.
604965	5	Grade 4 to Grade 5	957	1190	M5.E.1.1.1	Data & Prob.
604865	5	Grade 4 to Grade 5	956	1192	M5.A.1.6.2	Numbers & Op.

Table C-3. Mathematics Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
606277	5	Grade 5 to Grade 6	1175	1225	M5.D.2.1.2	Alg. Con.
606153	5	Grade 5 to Grade 6	590	1225	M5.A.1.4.2	Numbers & Op.
604796	5	Grade 5 to Grade 6	1194	1224	M5.B.1.3.2	Measure.
606154	5	Grade 5 to Grade 6	1195	1223	M5.A.2.1.3	Numbers & Op.
604962	5	Grade 5 to Grade 6	1192	1222	M5.C.1.2.1	Geo.
606826	5	Grade 5 to Grade 6	593	1221	M5.A.1.3.2	Numbers & Op.
604859	5	Grade 5 to Grade 6	1766	1223	M5.C.1.1.1	Geo.
604860	5	Grade 5 to Grade 6	1184	1215	M5.D.1.2.1	Alg. Con.
606167	5	Grade 5 to Grade 6	1181	1216	M5.E.3.1.1	Data & Prob.
604836	5	Grade 5 to Grade 6	1176	1216	M5.A.1.6.1	Numbers & Op.
606162	5	Grade 5 to Grade 6	593	1216	M5.B.1.1.1	Measure.
604841	5	Grade 5 to Grade 6	594	1215	M5.B.2.2.1	Measure.
606155	5	Grade 5 to Grade 6	1193	1215	M5.C.2.1.2	Geo.
601592	5	Grade 5 to Grade 6	595	1214	M5.E.2.1.1	Data & Prob.
601590	5	Grade 5 to Grade 6	2372	1214	M5.A.1.1.1	Numbers & Op.
604953	5	Grade 5 to Grade 6	1171	1226	M5.A.1.3.3	Numbers & Op.
604853	5	Grade 5 to Grade 6	1175	1227	M5.A.1.5.1	Numbers & Op.
604784	5	Grade 5 to Grade 6	1178	1227	M5.A.1.2.1	Numbers & Op.
604868	5	Grade 5 to Grade 6	1176	1225	M5.B.1.2.1	Measure.
604964	5	Grade 5 to Grade 6	1190	1226	M5.E.1.1.1	Data & Prob.
601542	5	Grade 5 to Grade 6	1189	1225	M5.B.2.1.1	Measure.
606276	5	Grade 5 to Grade 6	590	1223	M5.C.2.1.1	Geo.
604856	5	Grade 5 to Grade 6	1180	1219	M5.A.3.1.1	Numbers & Op.
606166	5	Grade 5 to Grade 6	1181	1220	M5.D.2.1.1	Alg. Con.
604958	5	Grade 5 to Grade 6	1176	1219	M5.A.2.1.1	Numbers & Op.
604842	5	Grade 5 to Grade 6	1182	1219	M5.C.1.1.2	Geo.
606157	5	Grade 5 to Grade 6	1188	1219	M5.D.1.1.2	Alg. Con.
604794	5	Grade 5 to Grade 6	1177	1217	M5.E.2.1.2	Data & Prob.
604869	5	Grade 5 to Grade 6	1191	1216	M5.B.2.2.2	Measure.
606279	5	Grade 5 to Grade 6	1196	1219	M5.E.3.1.2	Data & Prob.
601040	6	Grade 5 to Grade 6	1190	609	M6.E.3.1.1	Data & Prob.
602096	6	Grade 5 to Grade 6	1190	1213	M6.B.2.1.1	Measure.
601730	6	Grade 5 to Grade 6	1191	1223	M6.B.2.2.1	Measure.
602081	6	Grade 5 to Grade 6	1188	1199	M6.E.1.1.3	Data & Prob.
599668	6	Grade 5 to Grade 6	1186	608	M6.A.1.3.1	Numbers & Op.
600989	6	Grade 5 to Grade 6	1184	1223	M6.D.1.1.1	Alg. Con.
602070	6	Grade 5 to Grade 6	1184	614	M6.E.1.1.1	Data & Prob.

Table C-3 (continued). Mathematics Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
601689	6	Grade 5 to Grade 6	1185	609	M6.C.1.2.2	Geo.
601031	6	Grade 5 to Grade 6	1185	1206	M6.D.2.1.2	Alg. Con.
602174	6	Grade 5 to Grade 6	1181	1210	M6.A.3.2.1	Numbers & Op.
601249	6	Grade 5 to Grade 6	1186	600	M6.C.3.1.1	Geo.
599670	6	Grade 5 to Grade 6	1181	1199	M6.A.1.3.2	Numbers & Op.
600978	6	Grade 5 to Grade 6	1184	615	M6.D.2.2.1	Alg. Con.
601706	6	Grade 5 to Grade 6	1186	1209	M6.E.2.1.1	Data & Prob.
601024	6	Grade 5 to Grade 6	1183	608	M6.D.1.2.1	Alg. Con.
602176	6	Grade 5 to Grade 6	1183	1213	M6.B.1.1.1	Measure.
602071	6	Grade 5 to Grade 6	1184	1210	M6.E.1.1.2	Data & Prob.
602104	6	Grade 5 to Grade 6	1179	607	M6.B.2.1.2	Measure.
599667	6	Grade 5 to Grade 6	1181	1226	M6.A.1.2.1	Numbers & Op.
601260	6	Grade 5 to Grade 6	1181	610	M6.C.1.1.1	Geo.

Table C-4. Mathematics Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
599606	6	Grade 6 to Grade 7	1224	792	M6.A.1.2.1	Numbers & Op.
601257	6	Grade 6 to Grade 7	1214	792	M6.C.3.1.1	Geo.
601026	6	Grade 6 to Grade 7	614	790	M6.D.1.2.1	Alg. Con.
601705	6	Grade 6 to Grade 7	1221	786	M6.E.1.1.1	Data & Prob.
601811	6	Grade 6 to Grade 7	1220	785	M6.A.2.1.1	Numbers & Op.
601714	6	Grade 6 to Grade 7	1203	786	M6.C.1.2.1	Geo.
601032	6	Grade 6 to Grade 7	1210	783	M6.D.2.1.2	Alg. Con.
599590	6	Grade 6 to Grade 7	2447	783	M6.A.1.1.1	Numbers & Op.
602095	6	Grade 6 to Grade 7	606	784	M6.B.2.1.3	Measure.
601700	6	Grade 6 to Grade 7	1230	785	M6.C.1.1.3	Geo.
601277	6	Grade 6 to Grade 7	1223	785	M6.E.3.1.1	Data & Prob.
602073	6	Grade 6 to Grade 7	603	784	M6.E.1.1.3	Data & Prob.
599643	6	Grade 6 to Grade 7	1217	778	M6.A.1.3.2	Numbers & Op.
602177	6	Grade 6 to Grade 7	1217	778	M6.B.1.1.1	Measure.
601220	6	Grade 6 to Grade 7	1205	778	M6.B.2.3.1	Measure.
601030	6	Grade 6 to Grade 7	1217	789	M6.D.2.1.1	Alg. Con.
601275	6	Grade 6 to Grade 7	592	786	M6.E.2.1.1	Data & Prob.
601678	6	Grade 6 to Grade 7	1220	785	M6.D.1.1.1	Alg. Con.
601301	6	Grade 6 to Grade 7	1220	785	M6.E.1.1.2	Data & Prob.
601245	6	Grade 6 to Grade 7	1225	783	M6.E.3.1.2	Data & Prob.
599593	6	Grade 6 to Grade 7	1221	784	M6.A.1.1.2	Numbers & Op.
601664	6	Grade 6 to Grade 7	600	780	M6.C.1.1.4	Geo.
599609	6	Grade 6 to Grade 7	1207	776	M6.A.1.3.1	Numbers & Op.
601799	6	Grade 6 to Grade 7	1211	778	M6.A.1.4.1	Numbers & Op.
602101	6	Grade 6 to Grade 7	612	775	M6.B.2.1.1	Measure.
602175	6	Grade 6 to Grade 7	614	773	M6.A.3.2.1	Numbers & Op.
601044	6	Grade 6 to Grade 7	1210	773	M6.D.2.2.1	Alg. Con.
601694	6	Grade 6 to Grade 7	1211	773	M6.C.1.1.2	Geo.
602088	6	Grade 6 to Grade 7	1226	772	M6.B.2.2.1	Measure.
601702	6	Grade 6 to Grade 7	605	771	M6.C.1.2.2	Geo.
601287	7	Grade 6 to Grade 7	1222	395	M7.D.2.1.1	Alg. Con.
601050	7	Grade 6 to Grade 7	1223	399	M7.E.2.1.1	Data & Prob.
601772	7	Grade 6 to Grade 7	1222	793	M7.D.1.1.1	Alg. Con.
602215	7	Grade 6 to Grade 7	1222	765	M7.B.2.1.3	Measure.
601132	7	Grade 6 to Grade 7	1221	764	M7.E.4.1.1	Data & Prob.
599720	7	Grade 6 to Grade 7	1221	757	M7.A.2.1.1	Numbers & Op.
602190	7	Grade 6 to Grade 7	1219	788	M7.B.1.1.1	Measure.

Table C-4 (continued). Mathematics Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
601273	7	Grade 6 to Grade 7	1215	762	M7.D.2.2.1	Alg. Con.
599734	7	Grade 6 to Grade 7	1215	792	M7.A.1.2.1	Numbers & Op.
601784	7	Grade 6 to Grade 7	1216	373	M7.C.1.1.2	Geo.
601278	7	Grade 6 to Grade 7	1213	401	M7.D.3.1.1	Alg. Con.
601704	7	Grade 6 to Grade 7	1214	788	M7.C.3.1.1	Geo.
602189	7	Grade 6 to Grade 7	1212	780	M7.A.3.2.2	Numbers & Op.
601123	7	Grade 6 to Grade 7	1209	385	M7.E.3.1.1	Data & Prob.
599633	7	Grade 6 to Grade 7	1209	797	M7.A.2.2.4	Numbers & Op.
601099	7	Grade 6 to Grade 7	1218	777	M7.E.1.1.1	Data & Prob.
599685	7	Grade 6 to Grade 7	1214	400	M7.A.2.2.2	Numbers & Op.
601124	7	Grade 6 to Grade 7	1216	785	M7.E.3.1.2	Data & Prob.
602193	7	Grade 6 to Grade 7	1214	792	M7.B.2.1.1	Measure.
601827	7	Grade 6 to Grade 7	1211	772	M7.C.1.1.3	Geo.
601067	7	Grade 6 to Grade 7	1208	781	M7.D.2.1.1	Alg. Con.
601379	7	Grade 6 to Grade 7	1212	793	M7.E.2.1.2	Data & Prob.
599708	7	Grade 6 to Grade 7	1206	563	M7.A.1.1.1	Numbers & Op.
601771	7	Grade 6 to Grade 7	1202	767	M7.D.1.1.1	Alg. Con.
601271	7	Grade 6 to Grade 7	1206	761	M7.D.2.2.1	Alg. Con.
599715	7	Grade 6 to Grade 7	1206	781	M7.A.1.2.2	Numbers & Op.
599650	7	Grade 6 to Grade 7	1193	798	M7.A.3.2.1	Numbers & Op.
602180	7	Grade 6 to Grade 7	1199	789	M7.B.1.1.1	Measure.
601355	7	Grade 6 to Grade 7	1190	399	M7.D.3.1.1	Alg. Con.
602202	7	Grade 6 to Grade 7	1194	795	M7.C.1.1.1	Geo.

Table C-5. Mathematics Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
601054	7	Grade 8 to Grade 7	745	312	M7.E.3.1.1	Data & Prob.
601365	7	Grade 8 to Grade 7	746	312	M7.D.3.1.1	Alg. Con.
601117	7	Grade 8 to Grade 7	747	311	M7.E.1.1.1	Data & Prob.
601835	7	Grade 8 to Grade 7	748	310	M7.C.1.1.3	Geo.
601677	7	Grade 8 to Grade 7	749	312	M7.C.1.2.2	Geo.
602155	7	Grade 8 to Grade 7	750	312	M7.A.3.2.2	Numbers & Op.
602142	7	Grade 8 to Grade 7	751	312	M7.B.2.1.3	Measure.
601300	7	Grade 8 to Grade 7	752	312	M7.D.2.1.2	Alg. Con.
601130	7	Grade 8 to Grade 7	753	312	M7.E.3.1.3	Data & Prob.
599682	7	Grade 8 to Grade 7	754	311	M7.A.2.2.1	Numbers & Op.
602144	7	Grade 8 to Grade 7	755	309	M7.B.2.2.2	Measure.
599732	7	Grade 8 to Grade 7	756	309	M7.A.2.2.6	Numbers & Op.
599727	7	Grade 8 to Grade 7	757	309	M7.A.1.2.1	Numbers & Op.
599686	7	Grade 8 to Grade 7	758	309	M7.A.2.2.3	Numbers & Op.
601687	7	Grade 8 to Grade 7	759	307	M7.C.3.1.2	Geo.
601218	7	Grade 8 to Grade 7	760	315	M7.C.3.1.1	Geo.
599722	7	Grade 8 to Grade 7	761	314	M7.A.2.1.1	Numbers & Op.
599684	7	Grade 8 to Grade 7	762	313	M7.A.2.2.2	Numbers & Op.
602141	7	Grade 8 to Grade 7	763	311	M7.B.2.1.2	Measure.
601051	7	Grade 8 to Grade 7	764	314	M7.E.2.1.2	Data & Prob.
599712	7	Grade 8 to Grade 7	765	314	M7.A.3.2.1	Numbers & Op.
602234	7	Grade 8 to Grade 7	766	314	M7.C.1.1.1	Geo.
602146	7	Grade 8 to Grade 7	767	314	M7.C.1.2.1	Geo.
601773	7	Grade 8 to Grade 7	768	313	M7.D.2.1.1	Alg. Con.
599711	7	Grade 8 to Grade 7	769	313	M7.A.2.2.5	Numbers & Op.
602143	7	Grade 8 to Grade 7	770	313	M7.B.2.2.1	Measure.
601110	7	Grade 8 to Grade 7	771	313	M7.E.3.1.2	Data & Prob.
601272	7	Grade 8 to Grade 7	772	312	M7.D.2.2.1	Alg. Con.
601357	7	Grade 8 to Grade 7	773	313	M7.D.3.1.2	Alg. Con.
601086	7	Grade 8 to Grade 7	774	313	M7.E.4.1.1	Data & Prob.
601263	8	Grade 8 to Grade 7	775	309	M8.C.3.1.1	Geo.
601757	8	Grade 8 to Grade 7	776	158	M8.D.1.1.2	Alg. Con.
601069	8	Grade 8 to Grade 7	777	308	M8.E.4.1.2	Data & Prob.
599651	8	Grade 8 to Grade 7	778	318	M8.A.3.1.2	Numbers & Op.
601073	8	Grade 8 to Grade 7	779	314	M8.D.2.1.3	Alg. Con.
601801	8	Grade 8 to Grade 7	780	154	M8.B.1.1.1	Measure.
599610	8	Grade 8 to Grade 7	781	160	M8.A.2.1.1	Numbers & Op.

Table C-5 (continued). Mathematics Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category
601097	8	Grade 8 to Grade 7	782	159	M8.E.1.1.1	Data & Prob.
601725	8	Grade 8 to Grade 7	783	316	M8.B.1.1.3	Measure.
601744	8	Grade 8 to Grade 7	784	157	M8.B.2.2.3	Measure.
601288	8	Grade 8 to Grade 7	785	157	M8.D.2.1.1	Alg. Con.
601247	8	Grade 8 to Grade 7	786	312	M8.D.2.2.2	Alg. Con.
599698	8	Grade 8 to Grade 7	787	156	M8.A.2.2.2	Numbers & Op.
601763	8	Grade 8 to Grade 7	788	306	M8.D.4.1.2	Alg. Con.
601090	8	Grade 8 to Grade 7	789	154	M8.E.1.1.3	Data & Prob.
601804	8	Grade 8 to Grade 7	790	318	M8.B.1.1.4	Measure.
599640	8	Grade 8 to Grade 7	791	311	M8.A.3.1.1	Numbers & Op.
602158	8	Grade 8 to Grade 7	792	310	M8.B.1.1.2	Measure.
602072	8	Grade 8 to Grade 7	793	315	M8.D.1.1.1	Alg. Con.
601707	8	Grade 8 to Grade 7	794	317	M8.D.1.1.3	Alg. Con.
601332	8	Grade 8 to Grade 7	795	312	M8.D.2.1.2	Alg. Con.
599613	8	Grade 8 to Grade 7	796	317	M8.A.2.2.1	Numbers & Op.
601675	8	Grade 8 to Grade 7	797	317	M8.D.4.1.3	Alg. Con.
601100	8	Grade 8 to Grade 7	798	157	M8.E.3.1.1	Data & Prob.
599583	8	Grade 8 to Grade 7	799	636	M8.A.1.1.1	Numbers & Op.
601340	8	Grade 8 to Grade 7	800	156	M8.D.2.2.1	Alg. Con.
601344	8	Grade 8 to Grade 7	801	321	M8.D.4.1.1	Alg. Con.
600990	8	Grade 8 to Grade 7	802	306	M8.E.1.1.2	Data & Prob.
599645	8	Grade 8 to Grade 7	803	160	M8.A.3.3.1	Numbers & Op.
602058	8	Grade 8 to Grade 7	804	307	M8.C.1.1.1	Geo.

Table C-6. Mathematics Items Used to Link Algebra I to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade		Mathematics Diagnostic Category	Algebra I Diagnostic Category
601121	8	Algebra I to Grade 8	316	1400	M8.A.3.3.1	Numbers & Op.	Op. with Real Num.
601102	8	Algebra I to Grade 8	310	1406	M8.E.3.1.1	Data & Prob.	Data Anal.
601360	8	Algebra I to Grade 8	155	1403	M8.D.4.1.1	Alg. Con.	Functions & Geo.
601764	8	Algebra I to Grade 8	316	1396	M8.D.4.1.3	Alg. Con.	Functions & Geo.
602052	8	Algebra I to Grade 8	318	1396	M8.D.1.1.3	Alg. Con.	Functions & Geo.
599639	8	Algebra I to Grade 8	154	1391	M8.A.3.1.1	Numbers & Op.	Op. with Real Num.
602065	8	Algebra I to Grade 8	156	1376	M8.D.1.1.1	Alg. Con.	Functions & Geo.
601346	8	Algebra I to Grade 8	306	1390	M8.D.2.2.2	Alg. Con.	Linear Eq.
599582	8	Algebra I to Grade 8	625	1387	M8.A.1.1.1	Numbers & Op.	Op. with Real Num.
599697	8	Algebra I to Grade 8	314	1377	M8.A.2.2.1	Numbers & Op.	Op. with Real Num.
600980	8	Algebra I to Grade 8	318	1376	M8.D.2.1.3	Alg. Con.	Linear Eq.
601127	8	Algebra I to Grade 8	158	1376	M8.E.4.1.1	Data & Prob.	Data Anal.
601776	8	Algebra I to Grade 8	311	1370	M8.D.4.1.2	Alg. Con.	Functions & Geo.
601092	8	Algebra I to Grade 8	306	1362	M8.E.1.1.2	Data & Prob.	Data Anal.
601232	8	Algebra I to Grade 8	151	1359	M8.D.2.1.1	Alg. Con.	Linear Eq.
601348	8	Algebra I to Grade 8	311	1402	M8.D.2.2.1	Alg. Con.	Linear Eq.
601777	8	Algebra I to Grade 8	307	1401	M8.D.4.1.3	Alg. Con.	Functions & Geo.
599619	8	Algebra I to Grade 8	314	1388	M8.A.2.2.2	Numbers & Op.	Op. with Real Num.
601222	8	Algebra I to Grade 8	311	1389	M8.C.3.1.1	Geo.	None
601384	8	Algebra I to Grade 8	317	1388	M8.D.4.1.1	Alg. Con.	Functions & Geo.
601091	8	Algebra I to Grade 8	314	1390	M8.E.1.1.3	Data & Prob.	Data Anal.
599585	8	Algebra I to Grade 8	310	1377	M8.A.2.1.1	Numbers & Op.	Op. with Real Num.
599637	8	Algebra I to Grade 8	308	1380	M8.A.3.1.2	Numbers & Op.	Op. with Real Num.
601231	8	Algebra I to Grade 8	313	1374	M8.D.2.1.1	Alg. Con.	Linear Eq.
601663	8	Algebra I to Grade 8	155	1368	M8.D.1.1.2	Alg. Con.	Functions & Geo.
601126	8	Algebra I to Grade 8	308	1370	M8.E.4.1.2	Data & Prob.	Data Anal.
601089	8	Algebra I to Grade 8	151	1357	M8.E.1.1.2	Data & Prob.	Data Anal.
601234	8	Algebra I to Grade 8	303	1356	M8.D.2.1.2	Alg. Con.	Linear Eq.
601775	8	Algebra I to Grade 8	312	1349	M8.D.4.1.2	Alg. Con.	Functions & Geo.
601103	8	Algebra I to Grade 8	319	1344	M8.E.3.2.1	Data & Prob.	Data Anal.
602259	11	Algebra I to Grade 8	312	714	M11.E.2.1.3	Data & Prob.	Data Anal.
604952	11	Algebra I to Grade 8	312	710	M11.E.4.1.2	Data & Prob.	Data Anal.
601837	A1	Algebra I to Grade 8	312	700	A1.2.2.1.1	Alg. Con.	Functions & Geo.
602184	A1	Algebra I to Grade 8	313	1421	A1.2.1.1.1	Alg. Con.	Functions & Geo.
601554	11	Algebra I to Grade 8	313	711	M11.E.2.1.3	Data & Prob.	Data Anal.
602171	A1	Algebra I to Grade 8	309	1382	A1.2.1.2.2	Alg. Con.	Functions & Geo.
601841	A1	Algebra I to Grade 8	313	1383	A1.2.2.1.2	Alg. Con.	Functions & Geo.

Table C-6 (continued). Mathematics Items Used to Link Algebra I to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category	Algebra I Diagnostic Category
604806	11	Algebra I to Grade 8	312	710	M11.E.4.1.2	Data & Prob.	Data Anal.
600839	11	Algebra I to Grade 8	313	713	M11.E.1.1.1	Data & Prob.	Data Anal.
601461	11	Algebra I to Grade 8	313	711	M11.E.1.1.1	Data & Prob.	Data Anal.
604804	11	Algebra I to Grade 8	313	705	M11.E.2.1.3	Data & Prob.	Data Anal.
602241	A1	Algebra I to Grade 8	312	1420	A1.2.1.2.1	Alg. Con.	Functions & Geo.
601793	A1	Algebra I to Grade 8	313	1425	A1.2.2.1.4	Alg. Con.	Functions & Geo.
602159	A1	Algebra I to Grade 8	312	1416	A1.2.2.2.1	Alg. Con.	Functions & Geo.
602274	11	Algebra I to Grade 8	312	713	M11.E.4.1.2	Data & Prob.	Data Anal.
601135	A1	Algebra I to Grade 8	315	1418	A1.2.3.3.1	Data & Prob.	Data Anal.
601144	A1	Algebra I to Grade 8	317	1415	A1.1.2.1.3	Alg. Con.	Linear Eq.
600842	11	Algebra I to Grade 8	316	717	M11.A.2.1.3	Numbers & Op.	Op. with Real Num.
601370	A1	Algebra I to Grade 8	314	1364	A1.1.3.1.3	Alg. Con.	Linear Eq.
600646	11	Algebra I to Grade 8	315	710	M11.A.3.1.1	Numbers & Op.	Op. with Real Num.
601630	11	Algebra I to Grade 8	314	718	M11.A.3.1.1	Numbers & Op.	Op. with Real Num.
601138	A1	Algebra I to Grade 8	313	1378	A1.2.3.2.1	Data & Prob.	Data Anal.
601139	A1	Algebra I to Grade 8	310	1413	A1.2.3.2.2	Data & Prob.	Data Anal.
600826	11	Algebra I to Grade 8	311	716	M11.A.3.1.1	Numbers & Op.	Op. with Real Num.
601140	A1	Algebra I to Grade 8	310	1408	A1.2.3.2.3	Data & Prob.	Data Anal.
600930	A1	Algebra I to Grade 8	311	707	A1.1.1.4.1	Numbers & Op.	Op. with Real Num.
602260	11	Algebra I to Grade 8	312	717	M11.A.2.1.1	Numbers & Op.	Op. with Real Num.
600931	A1	Algebra I to Grade 8	310	1375	A1.1.1.5.1	Alg. Con.	Op. with Real Num.
602644	11	Algebra I to Grade 8	311	714	M11.A.2.1.1	Numbers & Op.	Op. with Real Num.
604162	11	Algebra I to Grade 8	310	714	M11.A.2.1.2	Numbers & Op.	Op. with Real Num.

Table C-7. Mathematics Items Used to Link Geometry to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category	Geometry Diagnostic Category
601740	8	Geometry to Grade 8	306	1052	M8.B.2.1.3	Measure.	Measure.
602118	8	Geometry to Grade 8	319	1049	M8.B.2.2.1	Measure.	Measure.
602056	8	Geometry to Grade 8	306	1052	M8.C.1.1.2	Geo.	Geo. Prop.
602059	8	Geometry to Grade 8	156	1052	M8.C.1.1.2	Geo.	Geo. Prop.
601733	8	Geometry to Grade 8	151	1039	M8.B.2.1.1	Measure.	Measure.
602133	8	Geometry to Grade 8	320	1049	M8.C.1.1.3	Geo.	Geo. Prop.
602117	8	Geometry to Grade 8	151	1046	M8.B.2.2.2	Measure.	Measure.
602128	8	Geometry to Grade 8	312	1047	M8.C.1.1.1	Geo.	Geo. Prop.
601802	8	Geometry to Grade 8	319	1047	M8.B.1.1.3	Measure.	None
602205	8	Geometry to Grade 8	318	1047	M8.C.1.1.1	Geo.	Geo. Prop.
601723	8	Geometry to Grade 8	306	1037	M8.B.1.1.1	Measure.	None
602208	8	Geometry to Grade 8	317	1043	M8.C.1.1.3	Geo.	Geo. Prop.
601326	8	Geometry to Grade 8	317	1038	M8.C.1.2.1	Geo.	Coor. Geo.
601338	8	Geometry to Grade 8	311	1038	M8.C.3.1.1	Geo.	Coor. Geo.
601371	8	Geometry to Grade 8	316	1031	M8.C.3.1.1	Geo.	Coor. Geo.
601736	8	Geometry to Grade 8	316	1048	M8.B.2.1.2	Measure.	Measure.
602136	8	Geometry to Grade 8	316	1034	M8.C.1.2.1	Geo.	Coor. Geo.
601755	8	Geometry to Grade 8	306	1039	M8.C.1.2.1	Geo.	Coor. Geo.
601372	8	Geometry to Grade 8	316	1037	M8.C.3.1.1	Geo.	Coor. Geo.
601782	8	Geometry to Grade 8	156	1028	M8.B.1.1.4	Measure.	None
602204	8	Geometry to Grade 8	308	1039	M8.C.1.1.1	Geo.	Geo. Prop.
602131	8	Geometry to Grade 8	317	1037	M8.C.1.1.2	Geo.	Geo. Prop.
602061	8	Geometry to Grade 8	314	1035	M8.C.1.1.2	Geo.	Geo. Prop.
602115	8	Geometry to Grade 8	317	1029	M8.B.2.2.2	Measure.	Measure.
602087	8	Geometry to Grade 8	312	1034	M8.C.1.1.3	Geo.	Geo. Prop.
602212	8	Geometry to Grade 8	319	1030	M8.C.1.1.3	Geo.	Geo. Prop.
601724	8	Geometry to Grade 8	310	1023	M8.B.1.1.2	Measure.	None
602113	8	Geometry to Grade 8	315	1023	M8.B.2.2.1	Measure.	Measure.
601329	8	Geometry to Grade 8	302	1031	M8.C.3.1.1	Geo.	Coor. Geo.
601743	8	Geometry to Grade 8	305	1029	M8.B.2.2.3	Measure.	Measure.
602661	11	Geometry to Grade 8	316	531	M11.B.2.1.1	Measure.	Measure.
604163	11	Geometry to Grade 8	317	531	M11.B.2.2.2	Measure.	Measure.
604671	GE	Geometry to Grade 8	311	1963	G.1.1.1.1	Geo.	Geo. Prop.
604400	GE	Geometry to Grade 8	316	992	G.1.3.1.1	Geo.	Congruence
604389	GE	Geometry to Grade 8	316	1001	G.2.1.1.1	Geo.	Coor. Geo.
604799	11	Geometry to Grade 8	316	528	M11.B.2.3.1	Measure.	Measure.
604418	GE	Geometry to Grade 8	312	478	G.1.2.1.4	Geo.	Geo. Prop.

Table C-7 (continued). Mathematics Items Used to Link Geometry to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Mathematics Diagnostic Category	Geometry Diagnostic Category
600651	11	Geometry to Grade 8	315	531	M11.B.2.2.4	Measure.	Measure.
604707	GE	Geometry to Grade 8	314	1053	G.1.2.1.5	Geo.	Geo. Prop.
604180	11	Geometry to Grade 8	316	528	M11.B.2.2.3	Measure.	Measure.
604378	GE	Geometry to Grade 8	316	1048	G.2.2.1.1	Geo.	Measure.
601544	11	Geometry to Grade 8	316	532	M11.B.2.1.1	Measure.	Measure.
600749	11	Geometry to Grade 8	314	531	M11.B.2.2.4	Measure.	Measure.
604392	GE	Geometry to Grade 8	315	1053	G.1.1.1.4	Geo.	Geo. Prop.
604395	GE	Geometry to Grade 8	314	1024	G.1.3.1.2	Geo.	Congruence
604178	11	Geometry to Grade 8	315	531	M11.C.1.3.1	Geo.	Congruence
600785	11	Geometry to Grade 8	315	530	M11.C.1.2.2	Geo.	Geo. Prop.
604522	11	Geometry to Grade 8	313	533	M11.C.1.4.1	Geo.	Coor. Geo.
604763	GE	Geometry to Grade 8	308	503	G.2.2.2.1	Geo.	Measure.
602650	11	Geometry to Grade 8	313	530	M11.C.1.3.1	Geo.	Congruence
604474	GE	Geometry to Grade 8	313	988	G.2.2.1.2	Geo.	Measure.
604600	GE	Geometry to Grade 8	310	1053	G.2.2.2.4	Geo.	Measure.
604361	GE	Geometry to Grade 8	312	525	G.2.3.2.1	Geo.	Measure.
601550	11	Geometry to Grade 8	311	530	M11.C.1.2.3	Geo.	Geo. Prop.
604360	GE	Geometry to Grade 8	309	1042	G.2.3.1.3	Geo.	Measure.
604170	11	Geometry to Grade 8	309	528	M11.C.1.4.1	Geo.	Coor. Geo.
604354	GE	Geometry to Grade 8	306	1007	G.2.2.3.1	Geo.	Measure.
601549	11	Geometry to Grade 8	306	530	M11.C.1.2.3	Geo.	Geo. Prop.
602268	11	Geometry to Grade 8	305	527	M11.C.1.3.1	Geo.	Congruence
604453	GE	Geometry to Grade 8	304	955	G.2.2.2.2	Geo.	Measure.

Table C-8. Mathematics Items Used to Link Algebra II to Algebra I

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Algebra I	Algebra II
			Grade	Grade		Diagnostic Category	Diagnostic Category
602167	A1	Algebra II to Algebra I	701	949	A1.1.3.2.1	Linear Eq.	Non-linear
601423	A1	Algebra II to Algebra I	709	951	A1.1.2.1.3	Linear Eq.	Non-linear
602188	A1	Algebra II to Algebra I	708	943	A1.2.2.1.4	Functions & Geo.	Functions
600971	A1	Algebra II to Algebra I	1407	944	A1.1.1.5.1	Op. with Real Num.	Non-linear
601180	A1	Algebra II to Algebra I	1372	948	A1.1.2.1.1	Linear Eq.	Non-linear
601854	A1	Algebra II to Algebra I	670	937	A1.1.2.2.2	Linear Eq.	Non-linear
602253	A1	Algebra II to Algebra I	705	939	A1.2.2.1.2	Functions & Geo.	Functions
601419	A1	Algebra II to Algebra I	693	941	A1.1.3.1.2	Linear Eq.	Non-linear
602251	A1	Algebra II to Algebra I	1371	942	A1.2.1.2.2	Functions & Geo.	Functions
601176	A1	Algebra II to Algebra I	676	941	A1.2.3.2.3	Data Anal.	Data Anal.
600928	A1	Algebra II to Algebra I	1405	935	A1.1.1.2.1	Op. with Real Num.	Non-linear
600926	A1	Algebra II to Algebra I	2816	940	A1.1.1.1	Op. with Real Num.	Non-linear
602237	A1	Algebra II to Algebra I	662	931	A1.2.1.1.1	Functions & Geo.	Functions
601394	A1	Algebra II to Algebra I	697	931	A1.2.1.1.3	Functions & Geo.	Functions
600973	A1	Algebra II to Algebra I	682	925	A1.1.1.5.3	Op. with Real Num.	Non-linear
601397	A1	Algebra II to Algebra I	1378	943	A1.1.3.1.1	Linear Eq.	Non-linear
601368	A1	Algebra II to Algebra I	1374	948	A1.1.3.1.3	Linear Eq.	Non-linear
601136	A1	Algebra II to Algebra I	709	942	A1.1.2.1.2	Linear Eq.	Non-linear
601836	A1	Algebra II to Algebra I	713	946	A1.2.2.1.1	Functions & Geo.	Functions
601148	A1	Algebra II to Algebra I	1395	942	A1.2.3.3.1	Data Anal.	Data Anal.
602160	A1	Algebra II to Algebra I	1397	947	A1.2.2.2.1	Functions & Geo.	Functions
601813	A1	Algebra II to Algebra I	1424	941	A1.2.1.2.1	Functions & Geo.	Functions
601805	A1	Algebra II to Algebra I	1348	920	A1.2.2.1.3	Functions & Geo.	Functions
600953	A1	Algebra II to Algebra I	659	940	A1.1.1.2	Op. with Real Num.	Non-linear
600932	A1	Algebra II to Algebra I	1411	941	A1.1.1.5.2	Op. with Real Num.	Non-linear
601398	A1	Algebra II to Algebra I	1410	931	A1.1.2.2.1	Linear Eq.	Non-linear
600948	A1	Algebra II to Algebra I	1387	920	A1.2.3.1.1	Data Anal.	Data Anal.
600966	A1	Algebra II to Algebra I	1395	912	A1.1.1.3.1	Op. with Real Num.	Non-linear
602154	A1	Algebra II to Algebra I	1387	918	A1.1.3.2.2	Linear Eq.	Non-linear
601380	A1	Algebra II to Algebra I	1392	915	A1.2.1.1.2	Functions & Geo.	Functions
604700	A2	Algebra II to Algebra I	1406	927	A2.2.1.1.1	Functions & Geo.	Functions
603013	A2	Algebra II to Algebra I	1406	957	A2.1.3.1.4	Linear Eq.	Non-linear
604570	A2	Algebra II to Algebra I	1386	462	A2.2.2.1.3	Functions & Geo.	Functions
603086	A2	Algebra II to Algebra I	1400	914	A2.1.2.1.4	Op. with Real Num.	Non-linear
604625	A2	Algebra II to Algebra I	1380	948	A2.2.1.1.3	Functions & Geo.	Functions
604530	A2	Algebra II to Algebra I	1380	935	A2.1.3.2.2	Linear Eq.	Non-linear
604686	A2	Algebra II to Algebra I	1379	446	A2.2.2.1	Functions & Geo.	Functions

Table C-8 (continued). Mathematics Items Used to Link Algebra II to Algebra I

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Algebra I	Algebra II
			Grade	Grade		Diagnostic Category	Diagnostic Category
603043	A2	Algebra II to Algebra I	1383	932	A2.1.2.1.2	Op. with Real Num.	Non-linear
603037	A2	Algebra II to Algebra I	1366	950	A2.2.1.1.4	Functions & Geo.	Functions
604572	A2	Algebra II to Algebra I	1377	453	A2.2.2.1.4	Functions & Geo.	Functions
603000	A2	Algebra II to Algebra I	1372	471	A2.1.2.2.2	Op. with Real Num.	Non-linear
604537	A2	Algebra II to Algebra I	1373	908	A2.2.1.1.2	Functions & Geo.	Functions
604634	A2	Algebra II to Algebra I	1369	472	A2.2.3.2.3	Data Anal.	Data Anal.
603106	A2	Algebra II to Algebra I	1360	898	A2.2.3.1.2	Data Anal.	Data Anal.
603057	A2	Algebra II to Algebra I	1351	456	A2.2.3.2.1	Data Anal.	Data Anal.
603055	A2	Algebra II to Algebra I	1397	919	A2.2.3.1.1	Data Anal.	Data Anal.
603018	A2	Algebra II to Algebra I	1408	937	A2.1.2.2.1	Op. with Real Num.	Non-linear
604685	A2	Algebra II to Algebra I	1404	476	A2.2.2.1	Functions & Geo.	Functions
603126	A2	Algebra II to Algebra I	1396	474	A2.2.3.2.3	Data Anal.	Data Anal.
604539	A2	Algebra II to Algebra I	1395	941	A2.1.3.2.1	Linear Eq.	Non-linear
604540	A2	Algebra II to Algebra I	1382	889	A2.1.3.2.2	Linear Eq.	Non-linear
604703	A2	Algebra II to Algebra I	1397	479	A2.2.1.1.1	Functions & Geo.	Functions
604629	A2	Algebra II to Algebra I	1387	902	A2.2.2.1.1	Functions & Geo.	Functions
603056	A2	Algebra II to Algebra I	1390	928	A2.2.3.2.1	Data Anal.	Data Anal.
603003	A2	Algebra II to Algebra I	1376	473	A2.1.3.1.2	Linear Eq.	Non-linear
604550	A2	Algebra II to Algebra I	1369	939	A2.2.2.1.4	Functions & Geo.	Functions
603098	A2	Algebra II to Algebra I	1374	944	A2.1.2.1.3	Op. with Real Num.	Non-linear
604544	A2	Algebra II to Algebra I	1370	461	A2.2.1.1.2	Functions & Geo.	Functions
604627	A2	Algebra II to Algebra I	1363	953	A2.2.1.1.3	Functions & Geo.	Functions
603042	A2	Algebra II to Algebra I	1368	936	A2.1.2.1.1	Op. with Real Num.	Non-linear

Tables C–9 through C–16 summarize the number of linking items by diagnostic category. Items coded in a Mathematics diagnostic category and an Algebra I, Geometry, or Algebra II diagnostic category are noted.

Table C-9. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

Diagnostic Category	Grade 3 Items	Grade 4 Items	Total
Numbers & Operations	8	6	14
Measurement	5	4	9
Geometry	2	4	6
Algebraic Concepts	3	3	6
Data Analysis & Probability	2	3	5
TOTAL	20	20	40

Table C-10. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

Diagnostic Category	Grade 4 Items	Grade 5 Items	Total
Numbers & Operations	6	7	13
Measurement	3	4	7
Geometry	4	3	7
Algebraic Concepts	3	3	6
Data Analysis & Probability	4	3	7
TOTAL	20	20	40

Table C-11. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

Diagnostic Category	Grade 5 Items	Grade 6 Items	Total
Numbers & Operations	10	4	14
Measurement	6	4	10
Geometry	5	3	8
Algebraic Concepts	4	4	8
Data Analysis & Probability	5	5	10
TOTAL	30	20	50

Table C-12. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 6 Items	Grade 7 Items	Total
Numbers & Operations	8	8	16
Measurement	5	4	9
Geometry	6	4	10
Algebraic Concepts	5	8	13
Data Analysis & Probability	6	6	12
TOTAL	30	30	60

Table C-13. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 7 Items	Grade 8 Items	Total
Numbers & Operations	9	7	16
Measurement	4	5	9
Geometry	6	2	8
Algebraic Concepts	5	11	16
Data Analysis & Probability	6	5	11
TOTAL	30	30	60

Table C-14a. Number of Items Linking Algebra I to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Algebra I Items	Total
Numbers & Operations	7	8	15
Measurement	0	0	0
Geometry	1	0	1
Algebraic Concepts	15	10	25
Data Analysis & Probability	7	12	19
No Grade 8 DC	0	0	0
TOTAL	30	30	60

Table C-14b. Number of Items Linking Algebra I to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Algebra I Items	Total
Operations with Real Numbers	7	9	16
Linear Equations	6	2	8
Functions	9	7	16
Data Analysis	7	12	19
No Algebra I DC	1	0	1
TOTAL	30	30	60

Table C-15a. Number of Items Linking Geometry to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Geometry Items	Total
Numbers & Operations	0	0	0
Measurement	12	0	12
Geometry	18	30	48
Algebraic Concepts	0	0	0
Data Analysis & Probability	0	0	0
No Grade 8 DC	0	0	0
TOTAL	30	30	60

Table C-15b. Number of Items Linking Geometry to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Geometry Items	Total
Geometric Properties	11	8	19
Congruence	0	4	4
Coordinate	7	2	9
Measurement	8	16	24
No Geometry DC	4	0	4
TOTAL	30	30	60

Table C-16a. Number of Items Linking Algebra II to Algebra I by Diagnostic Category

Diagnostic Category	Algebra I Items	Algebra II Items	Total
Operations with Real Numbers	7	6	13
Linear Equations	10	5	15
Functions	10	13	23
Data Analysis	3	6	9
No Algebra I DC	0	0	0
TOTAL	30	30	60

Table C-16b. Number of Items Linking Algebra II to Algebra I by Diagnostic Category

Diagnostic Category	Algebra I Items	Algebra II Items	Total
Op. with Complex Numbers	0	0	0
Non-linear	17	11	28
Functions	10	13	23
Data Analysis	3	6	9
No Algebra II DC	0	0	0
TOTAL	30	30	60

Table C-17. Mathematics Example of Vertical Linking Workbook

		Gra	de 4 Calibrat	ion	Gra	de 5 Calibrat	tion		Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
601646	4	-1.028	1.020	-0.006	-1.880	1.000	-0.004	-0.852	-1.650	-0.458	
601987	4	0.195	0.970	0.001	-0.384	0.930	0.000	-0.579	-0.427	0.205	
604493	4	0.784	1.030	0.000	0.204	1.010	0.000	-0.580	0.162	0.203	
601961	4	0.684	1.000	0.002	-0.469	0.910	0.000	-1.153	0.062	-1.189	
604499	4	-0.488	0.900	0.001	-0.492	0.910	0.000	-0.004	-1.110	1.601	
602889	4	-0.160	0.920	-0.002	-1.157	0.840	0.000	-0.997	-0.782	-0.810	
602885	4	0.112	1.200	0.003	0.051	1.220	0.000	-0.061	-0.510	1.463	
602887	4	-0.493	1.070	-0.002	-1.063	1.030	0.000	-0.570	-1.115	0.227	
601639	4	0.397	1.070	0.001	0.149	1.090	0.000	-0.248	-0.225	1.009	
604969	4	1.559	1.050	0.000	1.469	1.080	0.000	-0.090	0.937	1.393	
601994	4	0.257	0.950	0.000	0.100	1.090	0.000	-0.157	-0.365	1.230	
601998	4	-0.551	1.120	-0.001	-1.376	1.140	-0.004	-0.825	-1.173	-0.392	
602000	4	2.034	1.070	-0.006	1.248	1.060	-0.003	-0.786	1.412	-0.297	
601991	4	1.106	0.900	0.001	0.095	0.860	-0.003	-1.011	0.484	-0.844	
604879	4	-0.099	1.020	0.000	-1.101	0.870	-0.003	-1.002	-0.721	-0.822	
601964	4	1.069	1.020	0.001	0.154	1.010	-0.003	-0.915	0.447	-0.611	
602971	4	-0.355	1.000	0.000	-0.858	1.070	-0.003	-0.503	-0.977	0.390	
604486	4	-0.420	0.940	0.000	-0.749	0.970	-0.003	-0.329	-1.042	0.812	
604967	4	-1.495	0.900	0.001	-1.254	0.960	-0.003	0.241	-2.117		high robust Z
602973	4	-0.035	0.940	0.003	0.362	1.220		0.397	-0.657		high robust Z
600853	5	0.883	1.100	0.004	-0.047	1.100	-0.003	-0.930	0.261	-0.647	mgi robust z
604790	5	-0.495	1.010	0.004	-1.082	0.970	0.000	-0.587	-1.117	0.186	
604956	5	1.299	0.870	0.004	0.590	0.820	-0.003	-0.709	0.677	-0.110	
604862	5	1.405	0.920	0.004	0.368	0.850	-0.003	-1.037	0.877	-0.110	
604783	5	0.764	0.970	0.004	-0.814	0.890	0.001	-1578	0.142		high robust Z
606159	5	0.793	1.090	0.004	-0.514	0.990	-0.003	-0.950	0.171	-0.696	migh robust z
	5		0.910	0.004	-0.157	1.020	0.001	-1.008	-0.321	-0.837	
604848	5	0.301	1.050	0.004	0.819	0.940			0.859	0.004	
604843 604966	5	1.481 -1.974	0.920	0.004	-3.190	0.870	-0.001	-0.662 -1.216	-2.596	-1.342	
606163	5	0.780	1.130	0.004	0.478	1.200	0.002	-0.302	0.158	0.878	
601532	5	-0.368	0.950	0.000	-1.033	0.920	-0.001	-0.665	-0.990	-0.004	
	5										-
606160		0.382	1.070	0.000	-0.313	0.940	-0.005	-0.695	-0.240	-0.076	
604960	5	0.618	0.910	0.000	0.223	1.050	0.000	-0.395	-0.004	0.652	
600852	5	0.753	1.100	0.000	0.050	0.980	-0.002	-0.703	0.131	-0.096	
604834 604959	5 5	-0.673 0.012	0.980	0.000	-1.151 -0.871	0.840	-0.001	-0.478 -0.883	-1.295	-0.533	
									-0.610		
604961	5	0.141	1.000	0.000	-0.319	1.010	0.002	-0.460	-0.481	0.494	
606278	5	1.197	1.000	0.000	0.700	0.960	0.001	-0.497	0.575	0.404	
604965	5	-1.454	0.890	0.000	-1.565	0.900	-0.005	-0.111	-2.076	1.342	
604865	5	0.454	0.930	0.000	-0.537	0.910	-0.001	-0.991	-0.168	-0.795	
									2.200	* **	
	Mean	0.234			-0.388			-0.622	-0.388	0.101	
	SD	0.887			0.893			0.413	0.887	1.002	
	SD Ratio	0.993									
	Correlation	0.892									
	Add. Constant	-0.622									
	Median O							-0.664 0.557			

Figures C-1 through C-8 are the adjacent grade linking plots. Items removed from final linking procedure are colored red.

Figure C-1. CDT Mathematics: Grade 3 to Grade 4 Linking - All Links

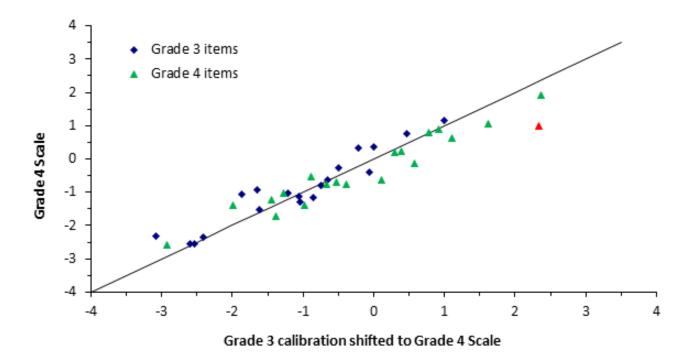


Figure C-2. CDT Mathematics: Grade 4 to Grade 5 Linking - All Links

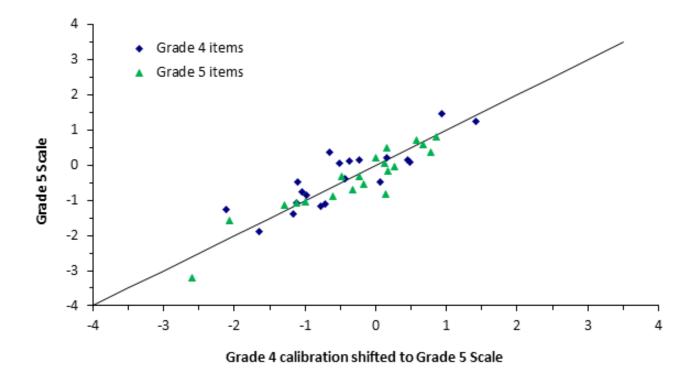


Figure C-3. CDT Mathematics: Grade 5 to Grade 6 Linking - All Links

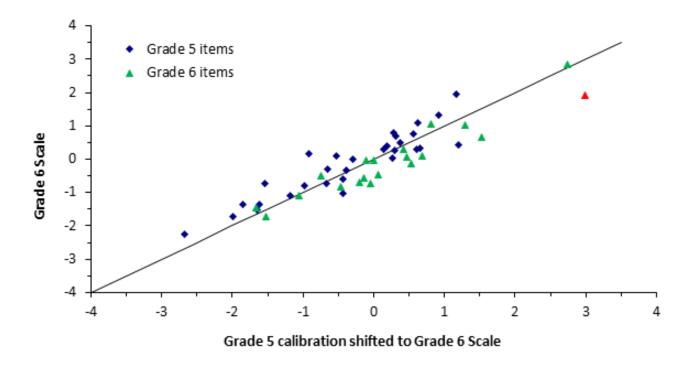


Figure C-4. CDT Mathematics: Grade 6 to Grade 7 Linking - All Links

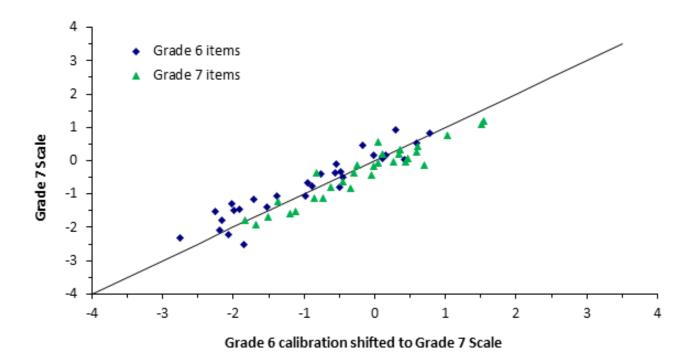


Figure C-5. CDT Mathematics: Grade 8 to Grade 7 Linking - All Links

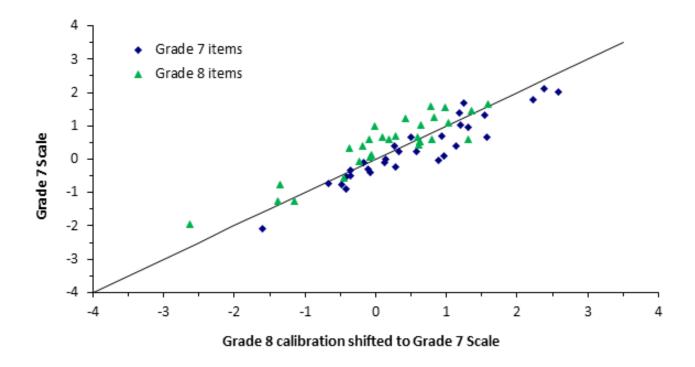


Figure C-6. CDT Mathematics: Algebra I to Grade 8 Linking - All Links

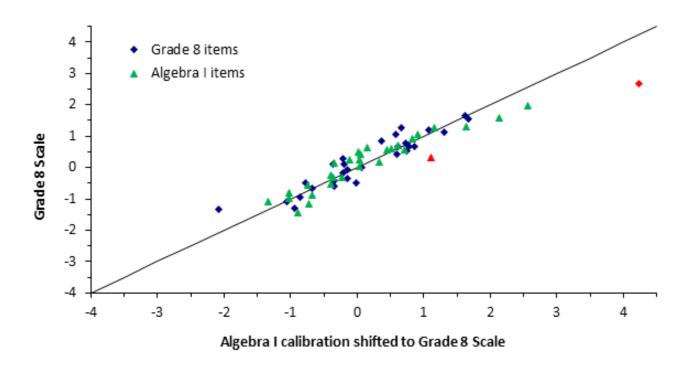


Figure C-7. CDT Mathematics: Geometry to Grade 8 Linking - All Links

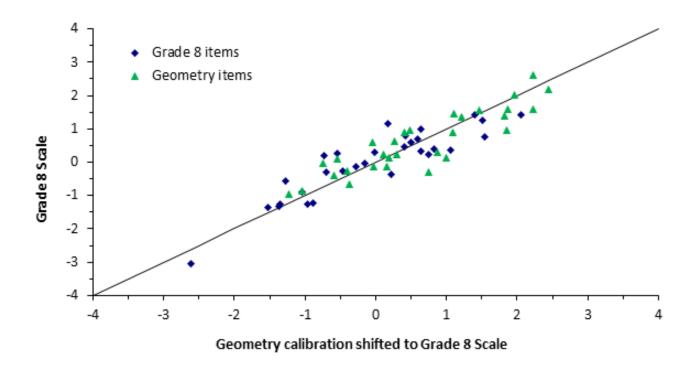
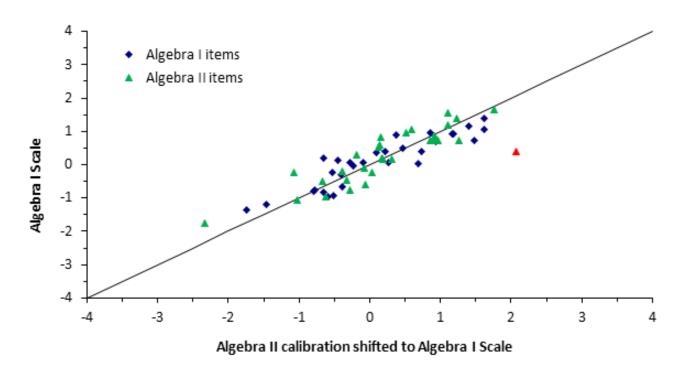


Figure C-8. CDT Mathematics: Algebra II to Algebra I Linking - All Links



READING/LITERATURE

Tables C–18 through C–23 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 613607 is a grade 3 item used to link grades 3 and 4. It was administered 761 times on the lower grade form (grade 3) and 826 times on the upper grade form (grade 4). In some cases, a linking item was also a common item. This results in n-count that is much higher in one of the two grades. For example, item 613400 is a grade 4 item used to link grades 3 and 4. It was also a common grade 4 item (meaning it appeared on all grade 4 forms). The n-counts reflect this: Grade 3 n-count is 754 while grade 4 n-count is 6,574.

The diagnostic categories are³:

- Comprehension
- Vocabulary
- Interpretation/Analysis Literary Elements & Devices
- Interpretation/Analysis Persuasive Techniques
- Interpretation/Analysis Organizational Skills

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Reading diagnostic categories changed at the start of the 2013-2014 school year due to re-alignment to the Pennsylvania Core Standards. See Chapter Thirteen for a list of the current diagnostic categories.

Table C-18. Reading/Literature Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
613605	3	Grade 3 to Grade 4	5272	823	R3A.1.1.2	Vocabulary
613613	3	Grade 3 to Grade 4	5270	822	R3A.2.2.1	Vocabulary
613614	3	Grade 3 to Grade 4	5275	822	R3A.2.1.1	Vocabulary
613592	3	Grade 3 to Grade 4	5262	822	R3A.2.3.1	Comprehension
613593	3	Grade 3 to Grade 4	5263	822	R3A.2.4.1	Comprehension
613460	3	Grade 3 to Grade 4	5251	823	R3A.1.2.2	Vocabulary
613459	3	Grade 3 to Grade 4	5245	822	R3A.1.1.1	Vocabulary
613461	3	Grade 3 to Grade 4	5242	823	R3A.1.4.1	Comprehension
613463	3	Grade 3 to Grade 4	5246	823	R3B.2.1.1	I/A Literary
613462	3	Grade 3 to Grade 4	5241	823	R3A.1.5.1	Comprehension
613607	3	Grade 3 to Grade 4	761	826	R3A.1.2.1	Vocabulary
613446	3	Grade 3 to Grade 4	752	825	R3A.1.1.1	Vocabulary
613444	3	Grade 3 to Grade 4	752	824	R3B.1.1.1	I/A Literary
613445	3	Grade 3 to Grade 4	751	823	R3A.1.5.1	Comprehension
613440	3	Grade 3 to Grade 4	744	823	R3A.1.2.2	Vocabulary
613439	3	Grade 3 to Grade 4	740	823	R3A.1.1.1	Vocabulary
613438	3	Grade 3 to Grade 4	739	822	R3B.1.1.1	I/A Literary
613443	3	Grade 3 to Grade 4	739	823	R3A.1.6.1	Comprehension
613442	3	Grade 3 to Grade 4	735	822	R3A.1.5.1	Comprehension
613441	3	Grade 3 to Grade 4	733	821	R3A.1.3.1	Comprehension
613220	4	Grade 3 to Grade 4	755	6576	R4B.2.1.3	I/A Literary
613219	4	Grade 3 to Grade 4	754	6573	R4B.2.1.2	I/A Literary
613399	4	Grade 3 to Grade 4	757	6569	R4A.2.2.1	Vocabulary
613400	4	Grade 3 to Grade 4	754	6574	R4A.2.3.1	Comprehension
613402	4	Grade 3 to Grade 4	756	6568	R4B.3.2.1	I/A Persuasive
613403	4	Grade 3 to Grade 4	759	6566	R4B.3.2.1	I/A Persuasive
613401	4	Grade 3 to Grade 4	756	6570	R4A.2.6.1	Comprehension
613288	4	Grade 3 to Grade 4	757	6569	R4A.1.1.2	Vocabulary
613291	4	Grade 3 to Grade 4	756	6567	R4A.1.1.1	Vocabulary
613295	4	Grade 3 to Grade 4	757	6563	R4A.2.2.1	Vocabulary
613289	4	Grade 3 to Grade 4	756	804	R4A.1.2.1	Vocabulary
613292	4	Grade 3 to Grade 4	756	805	R4A.1.2.2	Vocabulary
613215	4	Grade 3 to Grade 4	755	805	R4A.1.2.2	Vocabulary
613213	4	Grade 3 to Grade 4	751	803	R4B.2.1.1	I/A Literary
613214	4	Grade 3 to Grade 4	752	804	R4A.1.4.1	Comprehension
613388	4	Grade 3 to Grade 4	749	827	R4A.2.3.1	Comprehension
613389	4	Grade 3 to Grade 4	750	827	R4A.2.4.1	Comprehension

Table C-18 (continued). Reading/Literature Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
613391	4	Grade 3 to Grade 4	748	827	R4B.3.3.2	I/A Organizational
613392	4	Grade 3 to Grade 4	746	826	R4B.3.3.3	I/A Organizational
613390	4	Grade 3 to Grade 4	746	826	R4A.2.5.1	Comprehension

Table C-19. Reading/Literature Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
613220	4	Grade 4 to Grade 5	6576	955	R4B.2.1.3	I/A Literary
613219	4	Grade 4 to Grade 5	6573	957	R4B.2.1.2	I/A Literary
613399	4	Grade 4 to Grade 5	6569	958	R4A.2.2.1	Vocabulary
613400	4	Grade 4 to Grade 5	6574	958	R4A.2.3.1	Comprehension
613402	4	Grade 4 to Grade 5	6568	957	R4B.3.2.1	I/A Persuasive
613403	4	Grade 4 to Grade 5	6566	957	R4B.3.2.1	I/A Persuasive
613401	4	Grade 4 to Grade 5	6570	958	R4A.2.6.1	Comprehension
613288	4	Grade 4 to Grade 5	6569	958	R4A.1.1.2	Vocabulary
613291	4	Grade 4 to Grade 5	6567	958	R4A.1.1.1	Vocabulary
613295	4	Grade 4 to Grade 5	6563	958	R4A.2.2.1	Vocabulary
613293	4	Grade 4 to Grade 5	830	931	R4A.2.1.2	Vocabulary
613297	4	Grade 4 to Grade 5	829	930	R4A.2.2.2	Vocabulary
613212	4	Grade 4 to Grade 5	829	930	R4A.1.1.2	Vocabulary
613211	4	Grade 4 to Grade 5	830	926	R4A.1.5.1	Comprehension
613210	4	Grade 4 to Grade 5	829	925	R4A.1.6.1	Comprehension
613369	4	Grade 4 to Grade 5	815	920	R4A.2.2.1	Vocabulary
613370	4	Grade 4 to Grade 5	813	920	R4A.2.4.1	Comprehension
613372	4	Grade 4 to Grade 5	813	919	R4B.3.1.1	I/A Persuasive
613371	4	Grade 4 to Grade 5	813	917	R4A.2.5.1	Comprehension
613373	4	Grade 4 to Grade 5	812	915	R4B.3.3.1	I/A Organizational
611554	5	Grade 4 to Grade 5	812	7546	R5A.2.1.1	Vocabulary
613007	5	Grade 4 to Grade 5	813	7530	R5B.2.1.4	I/A Literary
613005	5	Grade 4 to Grade 5	810	7528	R5B.1.1.1	I/A Literary
613006	5	Grade 4 to Grade 5	812	7526	R5A.1.6.2	Comprehension
611354	5	Grade 4 to Grade 5	811	7530	R5A.2.1.2	Vocabulary
611377	5	Grade 4 to Grade 5	808	7524	R5B.3.3.2	I/A Organizational
611376	5	Grade 4 to Grade 5	812	7526	R5B.3.1.1	I/A Persuasive
611390	5	Grade 4 to Grade 5	810	7517	R5B.3.3.3	I/A Organizational
611374	5	Grade 4 to Grade 5	807	7510	R5A.2.5.1	Comprehension
611375	5	Grade 4 to Grade 5	808	7509	R5A.2.6.2	Comprehension
611550	5	Grade 4 to Grade 5	826	931	R5A.2.1.2	Vocabulary
611245	5	Grade 4 to Grade 5	826	924	R5B.2.1.1	I/A Literary
611246	5	Grade 4 to Grade 5	826	924	R5B.2.2.1	I/A Literary
611244	5	Grade 4 to Grade 5	826	921	R5A.1.4.1	Comprehension
611269	5	Grade 4 to Grade 5	826	935	R5A.2.1.1	Vocabulary
611272	5	Grade 4 to Grade 5	824	935	R5B.3.1.1	I/A Persuasive
611270	5	Grade 4 to Grade 5	823	935	R5A.2.3.1	Comprehension

Table C-19 (continued). Reading/Literature Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
611274	5	Grade 4 to Grade 5	824	935	R5B.3.3.2	I/A Organizational
611271	5	Grade 4 to Grade 5	824	934	R5A.2.6.1	Comprehension
611273	5	Grade 4 to Grade 5	824	933	R5B.3.3.1	I/A Organizational

Table C-20. Reading/Literature Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
611554	5	Grade 5 to Grade 6	7546	716	R5A.2.1.1	Vocabulary
613007	5	Grade 5 to Grade 6	7530	719	R5B.2.1.4	I/A Literary
613005	5	Grade 5 to Grade 6	7528	721	R5B.1.1.1	I/A Literary
613006	5	Grade 5 to Grade 6	7526	720	R5A.1.6.2	Comprehension
611354	5	Grade 5 to Grade 6	7530	719	R5A.2.1.2	Vocabulary
611377	5	Grade 5 to Grade 6	7524	717	R5B.3.3.2	I/A Organizational
611376	5	Grade 5 to Grade 6	7526	719	R5B.3.1.1	I/A Persuasive
611390	5	Grade 5 to Grade 6	7517	718	R5B.3.3.3	I/A Organizational
611374	5	Grade 5 to Grade 6	7510	717	R5A.2.5.1	Comprehension
611375	5	Grade 5 to Grade 6	7509	717	R5A.2.6.2	Comprehension
611247	5	Grade 5 to Grade 6	928	697	R5A.1.1.1	Vocabulary
611251	5	Grade 5 to Grade 6	928	698	R5B.2.1.4	I/A Literary
611250	5	Grade 5 to Grade 6	926	697	R5B.2.1.3	I/A Literary
611249	5	Grade 5 to Grade 6	926	696	R5A.1.3.2	Comprehension
611248	5	Grade 5 to Grade 6	926	694	R5A.1.3.1	Comprehension
611309	5	Grade 5 to Grade 6	925	688	R5B.3.3.3	I/A Organizational
611278	5	Grade 5 to Grade 6	924	687	R5A.2.3.2	Comprehension
611291	5	Grade 5 to Grade 6	921	685	R5B.3.3.1	I/A Organizational
611545	5	Grade 5 to Grade 6	942	682	R5A.1.1.2	Vocabulary
611553	5	Grade 5 to Grade 6	945	680	R5A.2.1.1	Vocabulary
610132	6	Grade 5 to Grade 6	936	7111	R6A.1.2.1	Vocabulary
610135	6	Grade 5 to Grade 6	937	7105	R6B.2.1.2	I/A Literary
610133	6	Grade 5 to Grade 6	935	7086	R6A.1.4.1	Comprehension
610355	6	Grade 5 to Grade 6	935	7075	R6A.1.3.2	Comprehension
610136	6	Grade 5 to Grade 6	935	7066	R6B.2.2.2	I/A Literary
610134	6	Grade 5 to Grade 6	936	7069	R6A.1.6.1	Comprehension
612249	6	Grade 5 to Grade 6	937	7035	R6B.3.3.4	I/A Organizational
612248	6	Grade 5 to Grade 6	936	7026	R6A.2.6.2	Comprehension
607918	6	Grade 5 to Grade 6	937	7150	R6A.2.1.1	Vocabulary
607921	6	Grade 5 to Grade 6	937	7142	R6A.2.1.2	Vocabulary
607927	6	Grade 5 to Grade 6	941	713	R6A.2.2.1	Vocabulary
607917	6	Grade 5 to Grade 6	941	716	R6A.2.1.1	Vocabulary
610141	6	Grade 5 to Grade 6	938	703	R6A.1.1.1	Vocabulary
610144	6	Grade 5 to Grade 6	937	701	R6B.2.1.1	I/A Literary
610305	6	Grade 5 to Grade 6	933	700	R6A.1.3.1	Comprehension
610145	6	Grade 5 to Grade 6	932	695	R6B.2.2.2	I/A Literary
610142	6	Grade 5 to Grade 6	927	695	R6A.1.5.1	Comprehension

Table C-20 (continued). Reading/Literature Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
610143	6	Grade 5 to Grade 6	925	694	R6A.1.6.1	Comprehension
610310	6	Grade 5 to Grade 6	917	726	R6B.3.2.2	I/A Persuasive
610309	6	Grade 5 to Grade 6	917	726	R6A.2.6.1	Comprehension

Table C-21. Reading/Literature Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
610132	6	Grade 6 to Grade 7	7111	549	R6A.1.2.1	Vocabulary
610135	6	Grade 6 to Grade 7	7105	550	R6B.2.1.2	I/A Literary
610133	6	Grade 6 to Grade 7	7086	551	R6A.1.4.1	Comprehension
610355	6	Grade 6 to Grade 7	7075	551	R6A.1.3.2	Comprehension
610136	6	Grade 6 to Grade 7	7066	551	R6B.2.2.2	I/A Literary
610134	6	Grade 6 to Grade 7	7069	551	R6A.1.6.1	Comprehension
607921	6	Grade 6 to Grade 7	7142	550	R6A.2.1.2	Vocabulary
610327	6	Grade 6 to Grade 7	685	550	R6A.1.2.2	Vocabulary
610328	6	Grade 6 to Grade 7	682	549	R6B.2.1.4	I/A Literary
610329	6	Grade 6 to Grade 7	679	548	R6B.2.2.1	I/A Literary
610065	6	Grade 6 to Grade 7	696	551	R6A.1.1.1	Vocabulary
610071	6	Grade 6 to Grade 7	692	550	R6A.1.3.1	Comprehension
610066	6	Grade 6 to Grade 7	691	550	R6B.2.1.4	I/A Literary
610070	6	Grade 6 to Grade 7	689	551	R6A.1.3.2	Comprehension
610078	6	Grade 6 to Grade 7	687	551	R6B.2.1.3	I/A Literary
609022	6	Grade 6 to Grade 7	1433	551	R6A.1.1.2	Vocabulary
609025	6	Grade 6 to Grade 7	1431	550	R6B.2.1.1	I/A Literary
609026	6	Grade 6 to Grade 7	1431	550	R6B.2.1.4	I/A Literary
609023	6	Grade 6 to Grade 7	1431	549	R6A.1.3.1	Comprehension
609024	6	Grade 6 to Grade 7	1432	548	R6A.1.6.2	Comprehension
609658	7	Grade 6 to Grade 7	722	4978	R7A.1.1.1	Vocabulary
609663	7	Grade 6 to Grade 7	725	4976	R7B.2.2.1	I/A Literary
609661	7	Grade 6 to Grade 7	723	4971	R7A.1.5.1	Comprehension
610324	7	Grade 6 to Grade 7	724	4974	R7A.2.2.1	Vocabulary
610325	7	Grade 6 to Grade 7	723	4968	R7A.2.3.2	Comprehension
610146	7	Grade 6 to Grade 7	722	563	R7A.1.1.1	Vocabulary
610149	7	Grade 6 to Grade 7	723	565	R7B.2.1.1	I/A Literary
610147	7	Grade 6 to Grade 7	722	564	R7A.1.3.1	Comprehension
610338	7	Grade 6 to Grade 7	721	563	R7B.1.1.1	I/A Literary
610148	7	Grade 6 to Grade 7	721	564	R7A.1.6.1	Comprehension
607933	7	Grade 6 to Grade 7	705	545	R7A.1.1.2	Vocabulary
607936	7	Grade 6 to Grade 7	703	545	R7A.1.2.1	Vocabulary
609243	7	Grade 6 to Grade 7	701	544	R7B.2.1.2	I/A Literary
609053	7	Grade 6 to Grade 7	700	544	R7A.1.3.2	Comprehension
609219	7	Grade 6 to Grade 7	700	544	R7A.1.6.2	Comprehension
609037	7	Grade 6 to Grade 7	695	553	R7A.2.2.2	Vocabulary
609038	7	Grade 6 to Grade 7	692	552	R7A.2.4.1	Comprehension

Table C-21 (continued). Reading/Literature Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
609039	7	Grade 6 to Grade 7	684	551	R7A.2.6.2	Comprehension
609040	7	Grade 6 to Grade 7	680	553	R7B.3.1.1	I/A Persuasive
609041	7	Grade 6 to Grade 7	678	552	R7B.3.3.1	I/A Organizational

Table C-22. Reading/Literature Items Used to Link Grade 7 to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
609658	7	Grade 8 to Grade 7	4978	518	R7A.1.1.1	Vocabulary
609663	7	Grade 8 to Grade 7	4976	518	R7B.2.2.1	I/A Literary
609661	7	Grade 8 to Grade 7	4971	517	R7A.1.5.1	Comprehension
610324	7	Grade 8 to Grade 7	4974	516	R7A.2.2.1	Vocabulary
610325	7	Grade 8 to Grade 7	4968	515	R7A.2.3.2	Comprehension
610146	7	Grade 8 to Grade 7	563	491	R7A.1.1.1	Vocabulary
610149	7	Grade 8 to Grade 7	565	491	R7B.2.1.1	I/A Literary
610147	7	Grade 8 to Grade 7	564	490	R7A.1.3.1	Comprehension
610338	7	Grade 8 to Grade 7	563	488	R7B.1.1.1	I/A Literary
610148	7	Grade 8 to Grade 7	564	485	R7A.1.6.1	Comprehension
614855	7	Grade 8 to Grade 7	559	516	R7A.1.1.2	Vocabulary
614859	7	Grade 8 to Grade 7	558	516	R7B.2.2.1	I/A Literary
614858	7	Grade 8 to Grade 7	559	515	R7B.2.1.2	I/A Literary
614856	7	Grade 8 to Grade 7	559	515	R7A.1.3.2	Comprehension
614857	7	Grade 8 to Grade 7	558	514	R7A.1.6.1	Comprehension
609152	7	Grade 8 to Grade 7	550	504	R7B.3.1.1	I/A Persuasive
609072	7	Grade 8 to Grade 7	551	502	R7A.2.5.1	Comprehension
609209	7	Grade 8 to Grade 7	548	500	R7B.1.1.1	I/A Literary
609210	7	Grade 8 to Grade 7	548	496	R7B.2.1.1	I/A Literary
609208	7	Grade 8 to Grade 7	548	495	R7A.1.3.1	Comprehension
609060	8	Grade 8 to Grade 7	550	4645	R8B.3.1.1	I/A Persuasive
609059	8	Grade 8 to Grade 7	550	4647	R8A.2.5.1	Comprehension
608017	8	Grade 8 to Grade 7	550	4637	R8A.1.1.2	Vocabulary
608016	8	Grade 8 to Grade 7	551	4629	R8B.2.1.2	I/A Literary
607999	8	Grade 8 to Grade 7	550	4622	R8A.1.6.2	Comprehension
610087	8	Grade 8 to Grade 7	550	510	R8B.3.3.4	I/A Organizational
610260	8	Grade 8 to Grade 7	550	509	R8B.3.3.2	I/A Organizational
610090	8	Grade 8 to Grade 7	550	511	R8B.3.3.4	I/A Organizational
610089	8	Grade 8 to Grade 7	550	511	R8B.3.3.4	I/A Organizational
610088	8	Grade 8 to Grade 7	550	510	R8B.3.3.4	I/A Organizational
609135	8	Grade 8 to Grade 7	540	531	R8B.3.2.1	I/A Persuasive
609131	8	Grade 8 to Grade 7	540	532	R8B.3.2.1	I/A Persuasive
609120	8	Grade 8 to Grade 7	539	532	R8B.3.3.2	I/A Organizational
609143	8	Grade 8 to Grade 7	539	531	R8A.2.3.2	Comprehension
609140	8	Grade 8 to Grade 7	539	532	R8A.2.6.2	Comprehension
609264	8	Grade 8 to Grade 7	539	513	R8A.1.1.2	Vocabulary
609267	8	Grade 8 to Grade 7	539	513	R8B.2.1.2	I/A Literary

Table C-22 (continued). Reading/Literature Items Used to Link Grade 7 to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
609265	8	Grade 8 to Grade 7	539	514	R8A.1.3.2	Comprehension
609269	8	Grade 8 to Grade 7	539	514	R8B.2.2.1	I/A Literary
609266	8	Grade 8 to Grade 7	539	515	R8A.1.6.1	Comprehension

Table C-23. Reading/Literature Items Used to Link Literature to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
608017	8	Literature to Grade 8	4637	255	R8A.1.1.2	Vocabulary
608016	8	Literature to Grade 8	4629	253	R8B.2.1.2	I/A Literary
607999	8	Literature to Grade 8	4622	252	R8A.1.6.2	Comprehension
610087	8	Literature to Grade 8	510	256	R8B.3.3.4	I/A Organizational
610260	8	Literature to Grade 8	509	256	R8B.3.3.2	I/A Organizational
610090	8	Literature to Grade 8	511	255	R8B.3.3.4	I/A Organizational
610089	8	Literature to Grade 8	511	255	R8B.3.3.4	I/A Organizational
610088	8	Literature to Grade 8	510	255	R8B.3.3.4	I/A Organizational
607957	8	Literature to Grade 8	502	254	R8A.1.1.2	Vocabulary
607963	8	Literature to Grade 8	501	254	R8A.1.1.1	Vocabulary
607958	8	Literature to Grade 8	516	258	R8A.1.2.1	Vocabulary
607962	8	Literature to Grade 8	516	258	R8A.1.1.1	Vocabulary
612324	8	Literature to Grade 8	516	257	R8B.3.3.4	I/A Organizational
612280	8	Literature to Grade 8	517	257	R8B.3.3.4	I/A Organizational
612279	8	Literature to Grade 8	517	257	R8A.2.6.1	Comprehension
609244	8	Literature to Grade 8	523	257	R8A.1.1.1	Vocabulary
609254	8	Literature to Grade 8	523	256	R8B.2.1.1	I/A Literary
609279	8	Literature to Grade 8	522	256	R8B.1.1.1	I/A Literary
609245	8	Literature to Grade 8	523	256	R8A.1.3.1	Comprehension
609252	8	Literature to Grade 8	523	256	R8A.1.6.1	Comprehension
608136	Lit	Literature to Grade 8	515	258	L.F.1.3.1	Comprehension
608138	Lit	Literature to Grade 8	515	258	L.F.2.3.4	I/A Literary
608137	Lit	Literature to Grade 8	512	257	L.F.2.2.1	Comprehension
614029	Lit	Literature to Grade 8	515	271	L.F.1.2.4	Vocabulary
614032	Lit	Literature to Grade 8	515	271	L.F.2.3.1	I/A Literary
614030	Lit	Literature to Grade 8	515	271	L.F.2.1.1	Comprehension
614031	Lit	Literature to Grade 8	515	271	L.F.2.2.2	Comprehension
614033	Lit	Literature to Grade 8	515	271	L.F.2.3.2	I/A Literary
614034	Lit	Literature to Grade 8	510	271	L.F.2.5.1	I/A Literary
608118	Lit	Literature to Grade 8	514	265	L.F.1.2.4	Vocabulary
610352	Lit	Literature to Grade 8	516	261	L.F.2.5.2	I/A Literary
610092	Lit	Literature to Grade 8	511	261	L.F.2.2.1	Comprehension
610094	Lit	Literature to Grade 8	509	260	L.F.2.3.6	I/A Literary
610095	Lit	Literature to Grade 8	510	259	L.F.2.4.1	I/A Literary
610093	Lit	Literature to Grade 8	509	260	L.F.2.3.4	I/A Literary
610091	Lit	Literature to Grade 8	507	260	L.F.1.1.1	Comprehension
612547	Lit	Literature to Grade 8	504	258	L.F.1.2.2	Vocabulary

Table C-23 (continued). Reading/Literature Items Used to Link Literature to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Reading/Literature Diagnostic Category
612498	Lit	Literature to Grade 8	502	258	L.F.2.2.2	Comprehension
612548	Lit	Literature to Grade 8	499	258	L.F.1.3.2	Comprehension
612496	Lit	Literature to Grade 8	497	258	L.F.1.1.1	Comprehension

Tables C-24 through C-29 summarize the number of linking items by diagnostic category.

Vertical linking items are not distributed evenly across the diagnostic categories. This is due to the fact that Reading and Literature items are passage based. The three passage types (literary, persuasive, and organizational) may each have associated comprehension and vocabulary items, as well as interpretation/analysis items.

Table C-24. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

Diagnostic Category	Grade 3 Items	Grade 4 Items	Total
Comprehension	8	6	14
Vocabulary	9	7	16
I/A Literary	3	3	6
I/A Persuasive	0	2	2
I/A Organizational	0	2	2
TOTAL	20	20	40

Table C-25. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

Diagnostic Category	Grade 4 Items	Grade 5 Items	Total
Comprehension	6	6	12
Vocabulary	8	4	12
I/A Literary	2	4	6
I/A Persuasive	3	2	5
I/A Organizational	1	4	5
TOTAL	20	20	40

Table C-26. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

Diagnostic Category	Grade 5 Items	Grade 6 Items	Total
Comprehension	6	8	14
Vocabulary	5	6	11
I/A Literary	4	4	8
I/A Persuasive	1	1	2
I/A Organizational	4	1	5
TOTAL	20	20	40

Table C-27. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 6 Items	Grade 7 Items	Total
Comprehension	7	8	15
Vocabulary	5	6	11
I/A Literary	8	4	12
I/A Persuasive	0	1	1
I/A Organizational	0	1	1
TOTAL	20	20	40

Table C-28. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 7 Items	Grade 8 Items	Total
Comprehension	8	6	14
Vocabulary	4	2	6
I/A Literary	7	3	10
I/A Persuasive	1	3	4
I/A Organizational	0	6	6
TOTAL	20	20	40

Table C-29. Number of Items Linking Literature to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Literature Items	Total
Comprehension	4	9	13
Vocabulary	6	3	9
I/A Literary	3	8	11
I/A Persuasive	0	0	0
I/A Organizational	7	0	7
TOTAL	20	20	40

Table C-30. Reading/Literature Example of Vertical Linking Workbook

		Gra	de 4 Calibrat	ion	Gra	ade 5 Calibrat	tion		Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit		Discrepancy	Grade 5 Scale	Robust Z	Flag
613220	4	0.700	1.090	0.000	0.258	1.040	-0.003	-0.442	0.290	-0.271	
613219	4	-0.063	0.980	0.000	-0.495	0.960	-0.003	-0.432	-0.473	-0.235	
613399	4	0.557	1.040	0.000	0.056	0.980	-0.003	-0.501	0.147	-0.486	
613400	4	0.589	1.020	0.000	0.131	1.000	-0.003	-0.458	0.179	-0.329	
613402	4	0.316	1.070	0.000	0.014	0.930	-0.003	-0.302	-0.094	0.238	
613403	4	0.295	0.970	0.000	-0.446	0.890	-0.003	-0.741	-0.115	-1.360	
613401	4	-0.657	0.810	0.000	-1.307	0.810	-0.003	-0.650	-1.067	-1.028	
613288	4	-0.608	0.960	0.000	-1.044	0.950	-0.003	-0.436	-1.018	-0.249	
613291	4	0.927	1.200	0.000	0.628	1.170	-0.003	-0.299	0.517	0.249	
613295	4	-1.117	0.880	0.000	-1.712	0.900	-0.003	-0.595	-1.527	-0.828	
613293	4	0.173	0.930	0.002	-0.113	0.880	0.000	-0.286	-0.237	0.297	
613297	4	0.807	1.070	0.002	0.424	0.990	0.000	-0.383	0.397	-0.056	
613212	4	1.664	1.210	0.003	1.491	1.220	0.000	-0.173	1.254	0.708	
613211	4	0.245	0.930	0.002	0.082	0.890	0.000	-0.163	-0.165	0.744	
613210	4	0.203	1.000	0.002	-0.273	0.910	0.000	-0.476	-0.207	-0.395	
613369	4	-0.556	0.900	0.004	-0.791	0.920	0.000	-0.235	-0.966	0.482	
613370	4	0.433	0.930	0.004	0.151	0.950	0.000	-0.282	0.023	0.311	
613372	4	-0.305	0.860	0.004	-0.698	0.870	0.000	-0.393	-0.715	-0.093	
613371	4	-0.513	0.910	0.004	-0.670	0.960	0.000	-0.157	-0.923	0.766	
613373	4	1.012	1.060	0.004	1.002	1.040	0.000	-0.010	0.602	1.301	
611554	5	1.180	1.170	0.003	1.126	1.050	0.000	-0.054	0.770	1.141	
613007	5	-0.124	0.900	0.003	-0.476	0.960	-0.001	-0.352	-0.534	0.056	
613005	5	2.069	1.250	0.003	2.138	1.220	0.000	0.069	1.659	1.589	
613006	5	2.275	1.240	0.003	2.367	1.120	0.000	0.092	1.865	1.673	
611354	5	0.669	1.020	0.003	0.576	1.020	-0.001	-0.093	0.259	0.999	
611377	5	0.336	1.060	0.003	0.559	1.010	-0.001	0.223	-0.074	2.149	high robust Z
611376	5	-0.804	0.840	0.003	-0.946	0.850	-0.001	-0.142	-1.214	0.821	
611390	5	1.351	1.110	0.003	1.443	1.040	0.000	0.092	0.941	1.673	
611374	5	0.109	0.930	0.003	-0.065	0.920	-0.001	-0.174	-0.301	0.704	
611375	5	0.581	1.160	0.003	0.605	1.120	-0.001	0.024	0.171	1.425	
611550	5	0.355	1.000	0.001	-0.586	0.900	0.000	-0.941	-0.055	-2.088	high robust Z
611245	5	1.298	1.070	0.001	0.635	1.030	0.000	-0.663	0.888	-1.076	
611246	5	-0.051	0.860	0.001	-0.532	0.850	0.000	-0.481	-0.461	-0.413	
611244	5	-0.152	0.910	0.001	-0.226	0.940	0.000	-0.074	-0.562	1.068	
611269	5	-0.287	0.900	0.001	-1.341	0.960	-0.006	-1.054	-0.697	-2.499	high robust Z
611272	5	-0.860	0.840	0.001	-2.081	0.930	-0.006	-1.221	-1.270	-3.107	high robust Z
611270	5	-0.274	0.900	0.001	-1.286	0.960	-0.006	-1.012	-0.684	-2.346	high robust Z
611274	5	-0.784	0.760	0.001	-2.720	0.870	-0.006	-1.936	-1.194	-5.709	high robust Z
611271	5	0.972	0.910	0.001	0.157	0.900	-0.005	-0.815	0.562	-1.629	
611273	5	2.533	1.250	0.001	2.056	1.040	-0.004	-0.477	2.123	-0.399	
	Mean	0.362			-0.048			-0.410	-0.048	-0.155	
	SD	0.868			1.107			0.415	0.868	1.511	
	SD Ratio	0.784									
	Correlation	0.940									
	Add. Constant	-0.410									
	Median				-			-0.368			
	Q							0.371			

Figures C–9 through C–14 are the adjacent grade linking plots. Items removed from final linking procedure are colored red.

Figure C-9. CDT Reading/Literature: Grade 3 to Grade 4 Linking - All Links

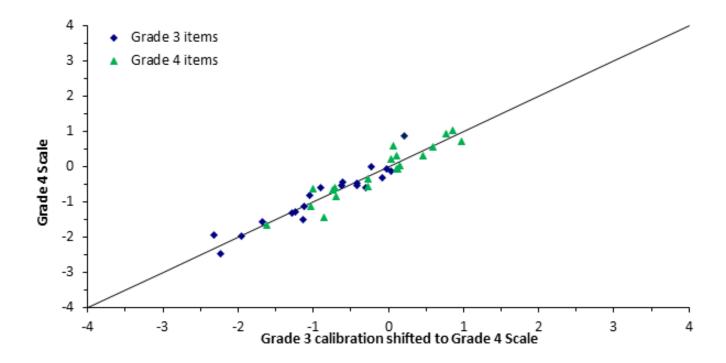


Figure C-10. CDT Reading/Literature: Grade 4 to Grade 5 Linking - All Links

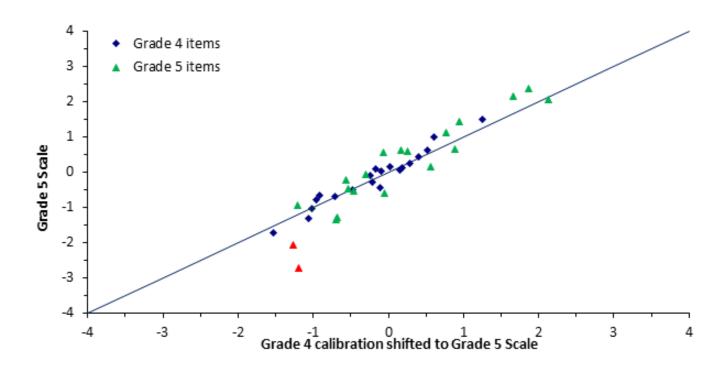


Figure C-11. CDT Reading/Literature: Grade 5 to Grade 6 Linking - All Links

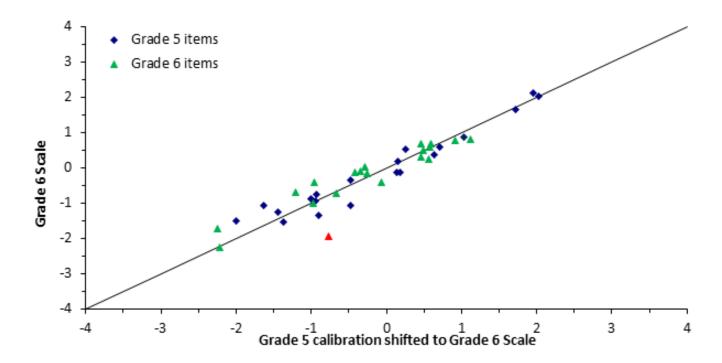


Figure C-12. CDT Reading/Literature: Grade 6 to Grade 7 Linking - All Links

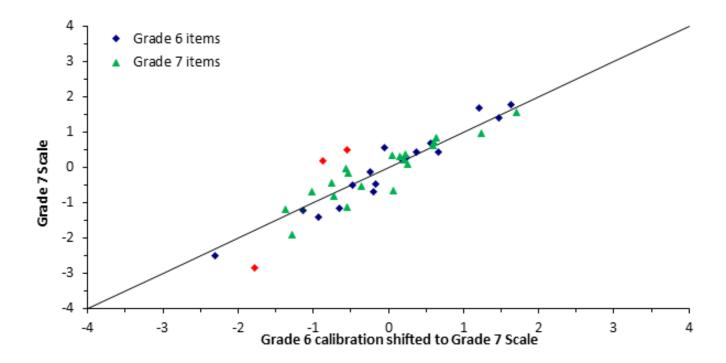


Figure C-13. CDT Reading/Literature: Grade 8 to Grade 7 Linking - All Links

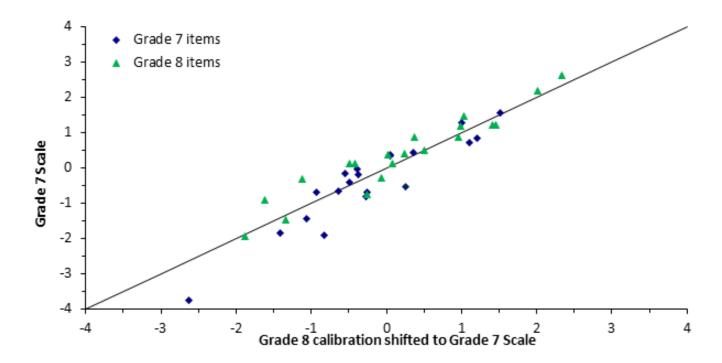
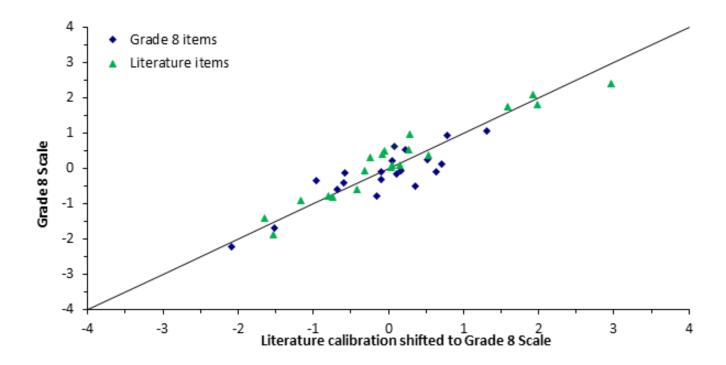


Figure C-14. CDT Reading/Literature: Literature to Grade 8 Linking - All Links



SCIENCE

Tables C-31 through C-37 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 615315 is a grade 3 item used to link grades 3 and 4. It was administered 789 times on the lower grade form (grade 3) and 530 times on the upper grade form (grade 4). In some cases, a linking item was also a common item. This results in n-count that is much higher in one of the two grades. For example, item 617401 is a Biology item used to link Biology and grade 8. It was also a common Biology item (meaning it appeared on all Biology forms). The n-counts reflect this: Grade 8 n-count is 256 while Biology n-count is 4,874.

Diagnostic categories for Biology and Chemistry are different than diagnostic categories for grades 3 through 8 and 11 Science. Items may fall into both a Science diagnostic category and a Biology or Chemistry diagnostic category. This is shown in Tables C–36 and C–37. For example, item 615777 is in the Science diagnostic category "Biological Sciences" and the Biology diagnostic category "Basic Biological Principles".

The Science diagnostic categories are:

- The Nature of Science
- Biological Science
- Physical Sciences
- Earth and Space Sciences

The Biology diagnostic categories are:

- Basic Biological Principles/Chemical Basis for Life
- Bioenergetics/Homeostasis and Transport
- Cell Growth and Reproduction/Genetics
- Theory of Evolution/Ecology

The Chemistry diagnostic categories are:

- Properties and Classification of Matter
- Atomic Structure and the Periodic Table
- The Mole and Chemical Bonding
- Chemical Relationships and Reactions

Table C-31. Science Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Science
	urauc		Grade	Grade	Content	Diagnostic Category
615315	3	Grade 3 to Grade 4	789	530	S3.A.2.1.3	Nature of Science
615379	3	Grade 3 to Grade 4	790	530	S3.D.1.2.1	Earth and Space Sci.
615333	3	Grade 3 to Grade 4	770	530	S3.B.2.1.1	Biological Sci.
615395	3	Grade 3 to Grade 4	797	530	S3.D.1.3.3	Earth and Space Sci.
615363	3	Grade 3 to Grade 4	1559	530	S3.C.1.1.4	Physical Sci.
615368	3	Grade 3 to Grade 4	773	530	S3.C.2.1.2	Physical Sci.
615314	3	Grade 3 to Grade 4	796	530	S3.A.2.1.2	Nature of Science
615331	3	Grade 3 to Grade 4	782	529	S3.B.1.1.4	Biological Sci.
615324	3	Grade 3 to Grade 4	786	529	S3.A.2.1.3	Nature of Science
615347	3	Grade 3 to Grade 4	796	528	S3.B.3.1.2	Biological Sci.
615385	3	Grade 3 to Grade 4	771	525	S3.D.1.2.1	Earth and Space Sci.
615319	3	Grade 3 to Grade 4	790	524	S3.A.3.1.1	Nature of Science
615339	3	Grade 3 to Grade 4	785	524	S3.B.2.2.1	Biological Sci.
617274	3	Grade 3 to Grade 4	796	525	S3.A.1.1.1	Nature of Science
615400	3	Grade 3 to Grade 4	771	524	S3.D.3.1.1	Earth and Space Sci.
615322	3	Grade 3 to Grade 4	1572	523	S3.A.3.2.1	Nature of Science
615325	3	Grade 3 to Grade 4	773	523	S3.B.1.1.1	Biological Sci.
615376	3	Grade 3 to Grade 4	785	521	S3.D.1.1.1	Earth and Space Sci.
615327	3	Grade 3 to Grade 4	787	521	S3.B.1.1.2	Biological Sci.
615334	3	Grade 3 to Grade 4	794	521	S3.B.2.1.2	Biological Sci.
617229	4	Grade 3 to Grade 4	792	538	S4.C.1.1.2	Physical Sci.
617061	4	Grade 3 to Grade 4	793	1086	S4.A.2.1.4	Nature of Science
617244	4	Grade 3 to Grade 4	789	558	S4.D.1.1.1	Earth and Space Sci.
617095	4	Grade 3 to Grade 4	792	1097	S4.B.2.1.2	Biological Sci.
615621	4	Grade 3 to Grade 4	793	1065	S4.A.1.1.1	Nature of Science
617239	4	Grade 3 to Grade 4	793	1073	S4.C.3.1.1	Physical Sci.
617099	4	Grade 3 to Grade 4	793	539	S4.B.2.2.1	Biological Sci.
617249	4	Grade 3 to Grade 4	792	539	S4.D.1.1.3	Earth and Space Sci.
617084	4	Grade 3 to Grade 4	790	536	S4.B.1.1.1	Biological Sci.
615625	4	Grade 3 to Grade 4	791	539	S4.A.1.3.1	Nature of Science
617233	4	Grade 3 to Grade 4	780	535	S4.C.2.1.2	Physical Sci.
615632	4	Grade 3 to Grade 4	782	534	S4.A.1.3.5	Nature of Science
617245	4	Grade 3 to Grade 4	780	536	S4.D.1.1.1	Earth and Space Sci.
617096	4	Grade 3 to Grade 4	780	1092	S4.B.2.1.2	Biological Sci.
615627	4	Grade 3 to Grade 4	781	528	S4.A.1.3.2	Nature of Science
617255	4	Grade 3 to Grade 4	779	538	S4.D.1.2.3	Earth and Space Sci.
617101	4	Grade 3 to Grade 4	778	540	S4.B.3.1.1	Biological Sci.

Table C-31 (continued). Science Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science Diagnostic Category
617253	4	Grade 3 to Grade 4	779	559	S4.D.1.2.2	Earth and Space Sci.
617071	4	Grade 3 to Grade 4	779	531	S4.A.3.1.4	Nature of Science
617091	4	Grade 3 to Grade 4	779	529	S4.B.1.1.5	Biological Sci.

Table C-32. Science Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Science
			Grade	Grade		Diagnostic Category
617231	4	Grade 4 to Grade 5	1099	608	S4.C.2.1.1	Physical Sci.
617060	4	Grade 4 to Grade 5	527	606	S4.A.2.1.3	Nature of Science
617092	4	Grade 4 to Grade 5	524	607	S4.B.1.1.5	Biological Sci.
617074	4	Grade 4 to Grade 5	528	608	S4.A.3.2.2	Nature of Science
617246	4	Grade 4 to Grade 5	537	606	S4.D.1.1.2	Earth and Space Sci.
617237	4	Grade 4 to Grade 5	538	607	S4.C.2.1.4	Physical Sci.
617068	4	Grade 4 to Grade 5	536	607	S4.A.3.1.3	Nature of Science
617102	4	Grade 4 to Grade 5	534	604	S4.B.3.1.2	Biological Sci.
617075	4	Grade 4 to Grade 5	557	606	S4.A.3.2.2	Nature of Science
617259	4	Grade 4 to Grade 5	523	604	S4.D.1.3.3	Earth and Space Sci.
617072	4	Grade 4 to Grade 5	539	599	S4.A.3.2.1	Nature of Science
617240	4	Grade 4 to Grade 5	540	600	S4.C.3.1.2	Physical Sci.
617112	4	Grade 4 to Grade 5	533	600	S4.B.3.3.3	Biological Sci.
617080	4	Grade 4 to Grade 5	533	601	S4.A.3.3.1	Nature of Science
617257	4	Grade 4 to Grade 5	538	600	S4.D.1.3.1	Earth and Space Sci.
617271	4	Grade 4 to Grade 5	533	600	S4.D.3.1.3	Earth and Space Sci.
617089	4	Grade 4 to Grade 5	534	600	S4.B.1.1.4	Biological Sci.
617234	4	Grade 4 to Grade 5	527	600	S4.C.2.1.3	Physical Sci.
617070	4	Grade 4 to Grade 5	537	599	S4.A.3.1.4	Nature of Science
617260	4	Grade 4 to Grade 5	531	599	S4.D.1.3.3	Earth and Space Sci.
617311	5	Grade 4 to Grade 5	532	604	S5.B.1.1.2	Biological Sci.
616317	5	Grade 4 to Grade 5	533	609	S5.A.1.1.2	Nature of Science
615950	5	Grade 4 to Grade 5	532	616	S5.B.2.1.1	Biological Sci.
617328	5	Grade 4 to Grade 5	532	610	S5.C.3.2.1	Physical Sci.
617304	5	Grade 4 to Grade 5	533	598	S5.A.2.1.2	Nature of Science
615962	5	Grade 4 to Grade 5	533	606	S5.D.3.1.1	Earth and Space Sci.
615936	5	Grade 4 to Grade 5	533	633	S5.A.1.1.2	Nature of Science
617330	5	Grade 4 to Grade 5	532	636	S5.D.1.1.1	Earth and Space Sci.
615958	5	Grade 4 to Grade 5	532	629	S5.C.1.2.1	Physical Sci.
617307	5	Grade 4 to Grade 5	528	635	S5.A.2.2.1	Nature of Science
617338	5	Grade 4 to Grade 5	540	617	S5.D.1.2.2	Earth and Space Sci.
615939	5	Grade 4 to Grade 5	538	610	S5.A.2.1.1	Nature of Science
617504	5	Grade 4 to Grade 5	541	630	S5.B.3.2.2	Biological Sci.
616969	5	Grade 4 to Grade 5	541	637	S5.C.2.1.1	Physical Sci.
615943	5	Grade 4 to Grade 5	538	627	S5.B.1.1.1	Biological Sci.
617502	5	Grade 4 to Grade 5	539	616	S5.B.2.1.3	Biological Sci.
617499	5	Grade 4 to Grade 5	540	614	S5.A.1.1.3	Nature of Science

Table C-32 (continued). Science Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science Diagnostic Category
615965	5	Grade 4 to Grade 5	540	608	S5.D.1.1.1	Earth and Space Sci.
615942	5	Grade 4 to Grade 5	539	608	S5.A.3.1.1	Nature of Science
617507	5	Grade 4 to Grade 5	539	607	S5.C.2.1.2	Physical Sci.

Table C-33. Science Items Used to Link Grade 5 to Grade 6

Item ID	Item Crede	Link	N Count Lower	N Count	Eligible Content	Science
	Grade		Grade	Upper Grade	Content	Diagnostic Category
617334	5	Grade 5 to Grade 6	605	621	S5.C.2.1.4	Physical Sci.
615949	5	Grade 5 to Grade 6	629	622	S5.B.1.1.3	Biological Sci.
615938	5	Grade 5 to Grade 6	608	622	S5.A.2.1.1	Nature of Science
615963	5	Grade 5 to Grade 6	617	623	S5.D.3.1.2	Earth and Space Sci.
615946	5	Grade 5 to Grade 6	617	621	S5.B.1.1.3	Biological Sci.
616968	5	Grade 5 to Grade 6	608	620	S5.C.1.2.2	Physical Sci.
617725	5	Grade 5 to Grade 6	602	620	S5.A.2.2.2	Nature of Science
616319	5	Grade 5 to Grade 6	637	618	S5.C.1.1.2	Physical Sci.
617318	5	Grade 5 to Grade 6	629	618	S5.B.3.1.2	Biological Sci.
616970	5	Grade 5 to Grade 6	637	617	S5.C.2.1.1	Physical Sci.
617339	5	Grade 5 to Grade 6	602	624	S5.D.1.2.1	Earth and Space Sci.
617729	5	Grade 5 to Grade 6	1215	623	S5.B.2.1.4	Biological Sci.
617501	5	Grade 5 to Grade 6	606	625	S5.A.1.1.3	Nature of Science
617342	5	Grade 5 to Grade 6	616	627	S5.D.2.1.2	Earth and Space Sci.
617310	5	Grade 5 to Grade 6	628	626	S5.A.3.2.1	Nature of Science
617326	5	Grade 5 to Grade 6	636	625	S5.C.2.1.4	Physical Sci.
617305	5	Grade 5 to Grade 6	617	625	S5.A.2.1.2	Nature of Science
617323	5	Grade 5 to Grade 6	1219	626	S5.C.1.1.1	Physical Sci.
617312	5	Grade 5 to Grade 6	634	618	S5.B.1.1.2	Biological Sci.
617327	5	Grade 5 to Grade 6	629	609	S5.C.2.1.4	Physical Sci.
615560	6	Grade 5 to Grade 6	614	623	S6.C.1.2.2	Physical Sci.
615518	6	Grade 5 to Grade 6	614	625	S6.A.2.2.1	Nature of Science
617741	6	Grade 5 to Grade 6	614	616	S6.B.2.1.2	Biological Sci.
615520	6	Grade 5 to Grade 6	614	619	S6.A.2.1.1	Nature of Science
615594	6	Grade 5 to Grade 6	614	624	S6.D.2.1.1	Earth and Space Sci.
619132	6	Grade 5 to Grade 6	614	617	S6.C.2.1.3	Physical Sci.
615554	6	Grade 5 to Grade 6	613	625	S6.B.3.2.1	Biological Sci.
615557	6	Grade 5 to Grade 6	613	620	S6.C.1.2.1	Physical Sci.
615514	6	Grade 5 to Grade 6	614	624	S6.A.1.1.3	Nature of Science
615603	6	Grade 5 to Grade 6	612	616	S6.D.3.1.2	Earth and Space Sci.
615574	6	Grade 5 to Grade 6	613	620	S6.C.2.1.3	Physical Sci.
618591	6	Grade 5 to Grade 6	612	625	S6.A.1.2.2	Nature of Science
615532	6	Grade 5 to Grade 6	612	621	S6.B.2.1.2	Biological Sci.
619296	6	Grade 5 to Grade 6	611	625	S6.A.2.1.1	Nature of Science
615601	6	Grade 5 to Grade 6	610	616	S6.D.3.1.1	Earth and Space Sci.
617512	6	Grade 5 to Grade 6	610	625	S6.C.2.1.1	Physical Sci.
615540	6	Grade 5 to Grade 6	610	624	S6.B.3.1.1	Biological Sci.

Table C-33 (continued). Science Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science Diagnostic Category
617508	6	Grade 5 to Grade 6	608	619	S6.B.1.1.1	Biological Sci.
615526	6	Grade 5 to Grade 6	608	620	S6.A.3.2.1	Nature of Science
619365	6	Grade 5 to Grade 6	608	618	S6.D.2.1.1	Earth and Space Sci.

Table C-34. Science Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Science
			Grade	Grade		Diagnostic Category
615535	6	Grade 6 to Grade 7	1248	428	S6.A.3.2.1	Nature of Science
615562	6	Grade 6 to Grade 7	620	428	S6.C.1.2.2	Physical Sci.
615530	6	Grade 6 to Grade 7	1234	428	S6.B.2.1.1	Biological Sci.
619141	6	Grade 6 to Grade 7	616	426	S6.D.2.1.3	Earth and Space Sci.
615510	6	Grade 6 to Grade 7	1253	425	S6.A.1.1.2	Nature of Science
618609	6	Grade 6 to Grade 7	625	426	S6.C.3.1.2	Physical Sci.
618590	6	Grade 6 to Grade 7	1243	425	S6.A.1.2.1	Nature of Science
615576	6	Grade 6 to Grade 7	621	424	S6.C.2.1.3	Physical Sci.
615551	6	Grade 6 to Grade 7	621	424	S6.C.1.2.1	Physical Sci.
615512	6	Grade 6 to Grade 7	1233	423	S6.A.1.1.3	Nature of Science
615577	6	Grade 6 to Grade 7	619	428	S6.C.3.1.1	Physical Sci.
618791	6	Grade 6 to Grade 7	1235	428	S6.A.1.2.1	Nature of Science
615531	6	Grade 6 to Grade 7	1225	428	S6.B.2.1.1	Biological Sci.
619624	6	Grade 6 to Grade 7	627	428	S6.D.3.1.2	Earth and Space Sci.
616332	6	Grade 6 to Grade 7	1228	426	S6.A.1.1.3	Nature of Science
619149	6	Grade 6 to Grade 7	618	425	S6.C.3.2.1	Physical Sci.
617533	6	Grade 6 to Grade 7	1249	427	S6.B.2.1.1	Biological Sci.
618794	6	Grade 6 to Grade 7	624	426	S6.C.3.2.1	Physical Sci.
615517	6	Grade 6 to Grade 7	1245	426	S6.A.1.2.2	Nature of Science
615567	6	Grade 6 to Grade 7	616	425	S6.C.2.1.1	Physical Sci.
616616	7	Grade 6 to Grade 7	619	428	S7.D.1.1.2	Earth and Space Sci.
615235	7	Grade 6 to Grade 7	619	430	S7.B.1.1.2	Biological Sci.
617184	7	Grade 6 to Grade 7	616	424	S7.A.1.1.1	Nature of Science
618806	7	Grade 6 to Grade 7	618	427	S7.D.2.1.1	Earth and Space Sci.
615974	7	Grade 6 to Grade 7	618	443	S7.A.1.2.1	Nature of Science
618603	7	Grade 6 to Grade 7	617	439	S7.C.2.1.3	Physical Sci.
615973	7	Grade 6 to Grade 7	617	424	S7.A.1.1.4	Nature of Science
615275	7	Grade 6 to Grade 7	614	870	S7.B.3.3.2	Biological Sci.
615238	7	Grade 6 to Grade 7	609	427	S7.B.1.1.3	Biological Sci.
618802	7	Grade 6 to Grade 7	606	430	S7.C.2.1.1	Physical Sci.
617531	7	Grade 6 to Grade 7	624	424	S7.D.1.1.2	Earth and Space Sci.
616339	7	Grade 6 to Grade 7	626	431	S7.A.2.2.3	Nature of Science
615970	7	Grade 6 to Grade 7	625	429	S7.A.1.1.2	Nature of Science
616626	7	Grade 6 to Grade 7	625	443	S7.D.3.1.1	Earth and Space Sci.
617195	7	Grade 6 to Grade 7	626	444	S7.A.1.3.1	Nature of Science
617526	7	Grade 6 to Grade 7	624	422	S7.C.1.2.2	Physical Sci.
619627	7	Grade 6 to Grade 7	625	428	S7.A.1.1.4	Nature of Science

Table C-34 (continued). Science Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science Diagnostic Category
615252	7	Grade 6 to Grade 7	624	444	S7.B.2.1.3	Biological Sci.
615234	7	Grade 6 to Grade 7	620	427	S7.B.1.1.1	Biological Sci.
616039	7	Grade 6 to Grade 7	618	424	S7.C.2.1.3	Physical Sci.

Table C-35. Science Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Science
			Grade	Grade		Diagnostic Category
617198	7	Grade 8 to Grade 7	431	256	S7.A.1.3.2	Nature of Science
616619	7	Grade 8 to Grade 7	426	256	S7.D.1.2.2	Earth and Space Sci.
615969	7	Grade 8 to Grade 7	427	255	S7.A.1.1.1	Nature of Science
616038	7	Grade 8 to Grade 7	424	256	S7.C.2.1.2	Physical Sci.
616622	7	Grade 8 to Grade 7	427	254	S7.D.2.1.1	Earth and Space Sci.
615971	7	Grade 8 to Grade 7	429	254	S7.A.1.1.3	Nature of Science
615249	7	Grade 8 to Grade 7	425	255	S7.B.2.1.2	Biological Sci.
618803	7	Grade 8 to Grade 7	432	254	S7.D.2.1.1	Earth and Space Sci.
618801	7	Grade 8 to Grade 7	427	252	S7.C.2.1.3	Physical Sci.
615999	7	Grade 8 to Grade 7	423	251	S7.B.1.1.3	Biological Sci.
615308	7	Grade 8 to Grade 7	422	253	S7.C.3.1.3	Physical Sci.
618855	7	Grade 8 to Grade 7	430	254	S7.A.2.1.1	Nature of Science
618853	7	Grade 8 to Grade 7	425	254	S7.A.1.3.1	Nature of Science
616348	7	Grade 8 to Grade 7	438	254	S7.B.2.2.2	Biological Sci.
616621	7	Grade 8 to Grade 7	426	254	S7.D.1.2.3	Earth and Space Sci.
617000	7	Grade 8 to Grade 7	441	254	S7.D.3.1.3	Earth and Space Sci.
616014	7	Grade 8 to Grade 7	419	254	S7.B.3.1.1	Biological Sci.
617196	7	Grade 8 to Grade 7	441	252	S7.A.1.3.1	Nature of Science
616313	7	Grade 8 to Grade 7	430	251	S7.C.3.1.1	Physical Sci.
616007	7	Grade 8 to Grade 7	429	252	S7.B.2.1.2	Biological Sci.
615771	8	Grade 8 to Grade 7	445	262	S8.A.3.3.2	Nature of Science
617489	8	Grade 8 to Grade 7	445	257	S8.C.3.1.1	Physical Sci.
615784	8	Grade 8 to Grade 7	444	262	S8.B.2.1.1	Biological Sci.
620362	8	Grade 8 to Grade 7	444	271	S8.D.1.2.1	Earth and Space Sci.
618535	8	Grade 8 to Grade 7	444	267	S8.A.3.2.2	Nature of Science
617484	8	Grade 8 to Grade 7	444	258	S8.D.1.1.2	Earth and Space Sci.
618896	8	Grade 8 to Grade 7	443	272	S8.D.1.3.2	Earth and Space Sci.
615776	8	Grade 8 to Grade 7	443	255	S8.B.1.1.2	Biological Sci.
618543	8	Grade 8 to Grade 7	442	264	S8.C.2.2.2	Physical Sci.
617735	8	Grade 8 to Grade 7	441	287	S8.A.2.1.2	Nature of Science
617294	8	Grade 8 to Grade 7	432	262	S8.D.2.1.3	Earth and Space Sci.
617289	8	Grade 8 to Grade 7	432	255	S8.B.2.2.1	Biological Sci.
618544	8	Grade 8 to Grade 7	432	260	S8.C.2.2.2	Physical Sci.
620027	8	Grade 8 to Grade 7	432	289	S8.A.3.1.5	Nature of Science
617962	8	Grade 8 to Grade 7	432	259	S8.A.1.3.4	Nature of Science
615810	8	Grade 8 to Grade 7	432	267	S8.C.2.1.1	Physical Sci.
617279	8	Grade 8 to Grade 7	432	258	S8.B.1.1.1	Biological Sci.

Table C-35 (continued). Science Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science Diagnostic Category
617293	8	Grade 8 to Grade 7	430	286	S8.D.2.1.3	Earth and Space Sci.
620020	8	Grade 8 to Grade 7	430	256	S8.A.1.1.2	Nature of Science
620400	8	Grade 8 to Grade 7	430	255	S8.B.3.2.3	Biological Sci.

Table C-36. Science Items Used to Link Biology to Grade 8

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Science	Biology
			Grade	Grade		Diagnostic Category	Diagnostic Category
615777	8	Biology to Grade 8	261	306	S8.B.1.1.3	Biological Sci.	Basic Bio. Princ.
615790	8	Biology to Grade 8	259	306	S8.B.2.1.3	Biological Sci.	Cell Growth
615817	8	Biology to Grade 8	519	306	S8.C.2.1.3	Physical Sci.	No Biology DC
620364	8	Biology to Grade 8	256	305	S8.D.1.3.1	Earth and Space Sci.	Theory of Evolution
617739	8	Biology to Grade 8	288	304	S8.A.2.1.4	Nature of Science	No Biology DC
615789	8	Biology to Grade 8	257	303	S8.B.2.1.2	Biological Sci.	Theory of Evolution
618786	8	Biology to Grade 8	257	305	S8.A.3.2.3	Nature of Science	No Biology DC
617059	8	Biology to Grade 8	266	306	S8.B.1.1.1	Biological Sci.	Basic Bio. Princ.
615791	8	Biology to Grade 8	529	305	S8.B.2.1.3	Biological Sci.	Cell Growth
617284	8	Biology to Grade 8	259	305	S8.B.2.1.3	Biological Sci.	Cell Growth
620015	8	Biology to Grade 8	254	298	S8.A.1.1.1	Nature of Science	No Biology DC
620396	8	Biology to Grade 8	256	298	S8.B.3.2.2	Biological Sci.	Theory of Evolution
617737	8	Biology to Grade 8	252	298	S8.A.2.1.3	Nature of Science	No Biology DC
617292	8	Biology to Grade 8	255	297	S8.B.2.2.2	Biological Sci.	Cell Growth
615822	8	Biology to Grade 8	542	298	S8.C.2.2.3	Physical Sci.	Theory of Evolution
620637	8	Biology to Grade 8	262	298	S8.B.3.1.3	Biological Sci.	Theory of Evolution
618540	8	Biology to Grade 8	259	298	S8.A.3.3.1	Nature of Science	No Biology DC
618548	8	Biology to Grade 8	260	298	S8.D.1.3.4	Earth and Space Sci.	Theory of Evolution
620029	8	Biology to Grade 8	522	298	S8.A.3.2.3	Nature of Science	No Biology DC
620401	8	Biology to Grade 8	259	298	S8.B.3.2.3	Biological Sci.	Theory of Evolution
617377	Bio	Biology to Grade 8	257	305	BIO.A.4.2.1	Biological Sci.	Bioenergetics
617565	Bio	Biology to Grade 8	256	311	BIO.B.4.2.5	Biological Sci.	Theory of Evolution
616111	Bio	Biology to Grade 8	256	303	BIO.A.1.2.1	Biological Sci.	Basic Bio. Princ.
617401	Bio	Biology to Grade 8	256	4874	BIO.B.2.1.1	Biological Sci.	Cell Growth
617430	Bio	Biology to Grade 8	256	309	BIO.B.3.1.1	Biological Sci.	Theory of Evolution
617395	Bio	Biology to Grade 8	256	310	BIO.B.1.2.2	Biological Sci.	Cell Growth
617013	Bio	Biology to Grade 8	257	311	BIO.A.2.2.3	Biological Sci.	Basic Bio. Princ.
617444	Bio	Biology to Grade 8	257	311	BIO.B.3.2.1	Biological Sci.	Theory of Evolution
617458	Bio	Biology to Grade 8	256	295	BIO.B.4.1.2	Biological Sci.	Theory of Evolution
617449	Bio	Biology to Grade 8	256	311	BIO.B.3.3.1	Biological Sci.	Theory of Evolution
617839	Bio	Biology to Grade 8	263	300	BIO.A.4.2.1	Biological Sci.	Bioenergetics
617462	Bio	Biology to Grade 8	263	297	BIO.B.3.3.1	Biological Sci.	Theory of Evolution
616112	Bio	Biology to Grade 8	263	305	BIO.A.1.2.1	Biological Sci.	Basic Bio. Princ.
617457	Bio	Biology to Grade 8	263	4863	BIO.B.4.1.2	Biological Sci.	Theory of Evolution
617394	Bio	Biology to Grade 8	262	296	BIO.B.1.2.2	Biological Sci.	Cell Growth
617454	Bio	Biology to Grade 8	263	310	BIO.B.4.1.1	Biological Sci.	Theory of Evolution
617349	Bio	Biology to Grade 8	263	309	BIO.A.3.1.1	Biological Sci.	Bioenergetics

Table C-36 (continued). Science Items Used to Link Biology to Grade 8

Item ID	Item Grade	Link	N Count Lower	N Count Upper	Eligible Content	Science	Biology
			Grade	Grade		Diagnostic Category	Diagnostic Category
617414	Bio	Biology to Grade 8	263	300	BIO.B.2.2.2	Biological Sci.	Cell Growth
617880	Bio	Biology to Grade 8	263	305	BIO.B.2.2.2	Biological Sci.	Cell Growth
617451	Bio	Biology to Grade 8	263	298	BIO.B.3.3.1	Biological Sci.	Theory of Evolution

Table C-37. Science Items Used to Link Chemistry to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science Diagnostic Category	Chemistry Diagnostic Category
615817	8	Chemistry to Grade 8	519	305	S8.C.2.1.3	Physical Sci.	Properties of Matter
615822	8	Chemistry to Grade 8	542	304	S8.C.2.2.3	Physical Sci.	No Chemistry DC
620029	8	Chemistry to Grade 8	522	307	S8.A.3.2.3	Nature of Science	No Chemistry DC
620025	8	Chemistry to Grade 8	258	308	S8.A.2.1.1	Nature of Science	No Chemistry DC
615819	8	Chemistry to Grade 8	261	308	S8.C.2.2.1	Physical Sci.	No Chemistry DC
620021	8	Chemistry to Grade 8	262	308	S8.A.1.1.3	Nature of Science	No Chemistry DC
615833	8	Chemistry to Grade 8	265	306	S8.D.1.1.2	Earth and Space Sci.	No Chemistry DC
615749	8	Chemistry to Grade 8	259	307	S8.A.2.2.3	Nature of Science	No Chemistry DC
620426	8	Chemistry to Grade 8	253	306	S8.B.3.3.4	Biological Sci.	No Chemistry DC
615723	8	Chemistry to Grade 8	270	305	S8.A.1.3.3	Nature of Science	No Chemistry DC
615809	8	Chemistry to Grade 8	511	307	S8.C.1.1.3	Physical Sci.	Chem. Relation.
615884	8	Chemistry to Grade 8	253	306	S8.A.2.1.1	Nature of Science	No Chemistry DC
615919	8	Chemistry to Grade 8	260	306	S8.C.1.1.1	Physical Sci.	Mole
620030	8	Chemistry to Grade 8	258	307	S8.A.3.2.3	Nature of Science	No Chemistry DC
620427	8	Chemistry to Grade 8	287	304	S8.B.3.3.4	Biological Sci.	No Chemistry DC
615927	8	Chemistry to Grade 8	266	305	S8.A.1.3.1	Nature of Science	No Chemistry DC
615826	8	Chemistry to Grade 8	262	306	S8.C.3.1.2	Physical Sci.	No Chemistry DC
620023	8	Chemistry to Grade 8	262	305	S8.A.1.3.2	Nature of Science	No Chemistry DC
615857	8	Chemistry to Grade 8	267	304	S8.D.2.1.1	Earth and Space Sci.	No Chemistry DC
615804	8	Chemistry to Grade 8	259	306	S8.C.1.1.1	Physical Sci.	Mole
616406	Chem	Chemistry to Grade 8	258	305	CHEM.A.2.1.2	Physical Sci.	Atomic Structure

Table C-37 (continued). Science Items Used to Link Chemistry to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Science	Chemistry Diagnostic
						Diagnostic Category	Category
618699	Chem	Chemistry to Grade 8	259	302	CHEM.B.2.1.5	Physical Sci.	Chem. Relation.
616511	Chem	Chemistry to Grade 8	259	299	CHEM.B.1.4.1	Physical Sci.	Mole
616362	Chem	Chemistry to Grade 8	258	303	CHEM.A.1.1.2	Physical Sci.	Properties of Matter
618734	Chem	Chemistry to Grade 8	259	307	CHEM.B.2.1.4	Physical Sci.	Chem. Relation.
616367	Chem	Chemistry to Grade 8	259	615	CHEM.A.1.2.2	Physical Sci.	Properties of Matter
616559	Chem	Chemistry to Grade 8	259	305	CHEM.A.1.1.5	Physical Sci.	Properties of Matter
619910	Chem	Chemistry to Grade 8	259	306	CHEM.B.1.4.2	Physical Sci.	Mole
616494	Chem	Chemistry to Grade 8	259	305	CHEM.A.1.2.3	Physical Sci.	Properties of Matter
616518	Chem	Chemistry to Grade 8	259	304	CHEM.B.2.1.5	Physical Sci.	Chem. Relation.
616427	Chem	Chemistry to Grade 8	260	306	CHEM.A.1.1.1	Physical Sci.	Properties of Matter
618726	Chem	Chemistry to Grade 8	260	309	CHEM.B.1.3.1	Physical Sci.	Mole
616365	Chem	Chemistry to Grade 8	260	301	CHEM.A.1.1.5	Physical Sci.	Properties of Matter
616516	Chem	Chemistry to Grade 8	260	306	CHEM.B.2.1.3	Physical Sci.	Chem. Relation.
618733	Chem	Chemistry to Grade 8	260	307	CHEM.B.2.1.3	Physical Sci.	Chem. Relation.
620468	Chem	Chemistry to Grade 8	260	315	CHEM.B.2.1.1	Physical Sci.	Chem. Relation.
616561	Chem	Chemistry to Grade 8	260	307	CHEM.A.1.2.2	Physical Sci.	Properties of Matter
616376	Chem	Chemistry to Grade 8	259	304	CHEM.A.2.3.1	Physical Sci.	Atomic Structure
616533	Chem	Chemistry to Grade 8	259	306	CHEM.A.2.2.2	Physical Sci.	Atomic Structure
618698	Chem	Chemistry to Grade 8	259	302	CHEM.B.2.1.4	Physical Sci.	Chem. Relation.

Tables C–38 through C–44 summarize the number of linking items by diagnostic category. Items coded in a Science diagnostic category and a Biology or Chemistry diagnostic category are noted.

Table C-38. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

Diagnostic Category	Grade 3 Items	Grade 4 Items	Total
Nature of Science	6	6	12
Biological Sciences	7	6	13
Physical Sciences	2	3	5
Earth and Space Sciences	5	5	10
TOTAL	20	20	40

Table C-39. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

Diagnostic Category	Grade 4 Items	Grade 5 Items	Total
Nature of Science	7	7	14
Biological Sciences	4	5	9
Physical Sciences	4	4	8
Earth and Space Sciences	5	4	9
TOTAL	20	20	40

Table C-40. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

Diagnostic Category	Grade 5 Items	Grade 6 Items	Total
Nature of Science	5	6	11
Biological Sciences	5	5	10
Physical Sciences	7	5	12
Earth and Space Sciences	3	4	7
TOTAL	20	20	40

Table C-41. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 6 Items	Grade 7 Items	Total
Nature of Science	7	7	14
Biological Sciences	3	5	8
Physical Sciences	8	4	12
Earth and Space Sciences	2	4	6
TOTAL	20	20	40

Table C-42. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 7 Items	Grade 8 Items	Total
Nature of Science	6	6	12
Biological Sciences	5	5	10
Physical Sciences	4	4	8
Earth and Space Sciences	5	5	10
TOTAL	20	20	40

Table C-43a. Number of Items Linking Biology to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Biology Items	Total
Nature of Science	6	0	6
Biological Sciences	10	20	30
Physical Sciences	2	0	2
Earth and Space Sciences	2	0	2
No Grade 8 DC	0	0	0
TOTAL	20	20	40

Table C-43b. Number of Items Linking Biology to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Biology Items	Total
Basic Biological Principles	2	3	5
Bioenergetics	0	3	3
Cell Growth	4	5	9
Theory of Evolution	7	9	16
No Biology DC	7	0	7
TOTAL	20	20	40

Table C-44a. Number of Items Linking Chemistry to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Chemistry Items	Total
Nature of Science	9	0	9
Biological Sciences	2	0	2
Physical Sciences	7	20	27
Earth and Space Sciences	2	0	2
No Grade 8 DC	0	0	0
TOTAL	20	20	40

Table C-44b. Number of Items Linking Chemistry to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Chemistry Items	Total
Properties of Matter	1	7	8
Atomic Structure	0	3	3
The Mole	2	3	5
Chemical Relationships	1	7	8
No Chemistry DC	16	0	16
TOTAL	20	20	40

Table C-45. Science Example of Vertical Linking Workbook

		Gra	de 4 Calibrat	ion	Gra	de 5 Calibrat	tion		Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
617231	4	-0.669	0.980	0.001	-1.440	1.040	-0.004	-0.771	-1.442	-0.097	_
617060	4	0.409	1.030	-0.002	-0.267	1.050	-0.003	-0.676	-0.364	0.312	
617092	4	-0.519	1.040	-0.002	-1.314	0.930	-0.004	-0.795	-1.292	-0.200	
617074	4	-0.048	0.950	-0.002	-0.773	1.000	-0.003	-0.725	-0.821	0.101	
617246	4	0.952	0.930	0.000	-0.093	0.900	-0.003	-1.045	0.179	-1.275	
617237	4	0.497	0.970	0.000	-0.250	0.950	-0.003	-0.747	-0.276	0.006	
617068	4	-0.016	1.030	0.002	-0.396	0.980	-0.003	-0.380	-0.789	1.585	
617102	4	2.758	1.090	-0.006	1.678	1.100	-0.003	-1.080	1.985	-1.426	
617075	4	0.654	1.030	-0.001	0.375	1.010	-0.003	-0.279	-0.119		high robust Z
617259	4	1.107	1.120	-0.001	0.532	1.070	-0.003	-0.575	0.334	0.746	mgm robust 2
617072	4	0.683	0.970	0.001	-0.653	0.950	-0.002	-1.336	-0.090		high robust Z
617240	4	0.983	1.080	0.004	0.131	1.100	-0.002	-0.852	0.210	-0.445	mgm robust 2
617112	4	0.827	0.970	-0.001	0.131	0.930	-0.002	-0.682	0.054	0.286	
617080	4	1.924	1.230	-0.001	1.183	1.110	-0.002	-0.741	1.151	0.032	
617257	4	0.184	0.950	0.001	-0.368	0.960	-0.002	-0.741	-0.589	0.032	
617271	4	0.184	0.930	0.004	-0.502	0.980	-0.002	-0.532	-0.255	-1.168	
617089	4	0.518	1.140	-0.002	-0.345	1.080	-0.002	-0.491	-0.233	1.107	
			0.990		0.000						
617234	4	0.420		-0.002		1.060	-0.002	-0.420	-0.353	1.413	
617070	4	-0.383	0.940	0.000	-1.133	0.920	-0.002	-0.750	-1.156	-0.006	
617260	4	1.940	1.120	0.003	1.201	1.140	-0.002	-0.739	1.167	0.041	
617311	5	-0.320	1.000	0.002	-0.902	0.970	-0.001	-0.582	-1.093	0.716	
616317	5	-0.027	1.040	0.002	-0.296	1.080	0.001	-0.269	-0.800		high robust Z
615950	5	0.038	0.970	0.002	-0.902	0.920	0.001	-0.940	-0.735	-0.823	
617328	5	-0.257	0.960	0.002	-0.859	0.860	0.001	-0.602	-1.030	0.630	
617304	5	1.292	1.120	0.002	0.486	1.020	0.001	-0.806	0.519	-0.247	
615962	5	-0.868	0.940	0.002	-1.223	0.930	0.001	-0.355	-1.641	1.692	
615936	5	-0.152	0.990	0.002	-1.059	0.890	0.003	-0.907	-0.925	-0.682	
617330	5	0.732	0.940	0.002	-0.012	0.840	-0.002	-0.744	-0.041	0.019	
615958	5	0.180	1.070	0.002	-0.560	1.010	0.003	-0.740	-0.593	0.037	
617307	5	1.109	0.950	0.002	0.289	0.970	-0.002	-0.820	0.336	-0.307	
617338	5	0.456	0.940	0.005	-0.715	0.920	0.001	-1.171	-0.317	-1.817	
615939	5	0.484	0.980	0.005	-0.418	0.850	-0.002	-0.902	-0.289	-0.660	
617504	5	2.443	0.990	0.005	1.115	1.020	0.004	-1.328	1.670	-2.492	high robust Z
616969	5	-0.111	1.080	0.005	-0.812	1.030	-0.002	-0.701	-0.884	0.204	
615943	5	0.657	1.070	0.005	-0.391	0.940	0.003	-1.048	-0.116	-1.288	
617502	5	0.997	0.980	0.005	0.107	0.970	0.001	-0.890	0.224	-0.608	
617499	5	0.794	1.030	0.005	-0.130	1.000	-0.002	-0.924	0.021	-0.755	
615965	5	1.460	0.920	0.005	0.316	0.920	-0.001	-1.144	0.687	-1.701	
615942	5	-1.725	0.940	0.005	-2.577	0.940	-0.001	-0.852	-2.498	-0.445	
617507	5	0.870	1.230	0.005	0.340	1.130	0.001	-0.530	0.097	0.940	
	Mean	0.510			-0.262			-0.773	-0.262	-0.104	
	SD	0.875			0.810			0.259	0.875	1.114	
	SD Ratio	1.080			0.010			J. <u>_</u>	0.075	2,227	
	Correlation	0.956									
	Add. Constant	-0.773									
	Median	0.773						-0.749			
)							0.314			

Figures C–15 through C–21 are the adjacent grade linking plots. Items removed from final linking procedure are colored red.

Figure C-15. CDT Science: Grade 3 to Grade 4 Linking - All Links

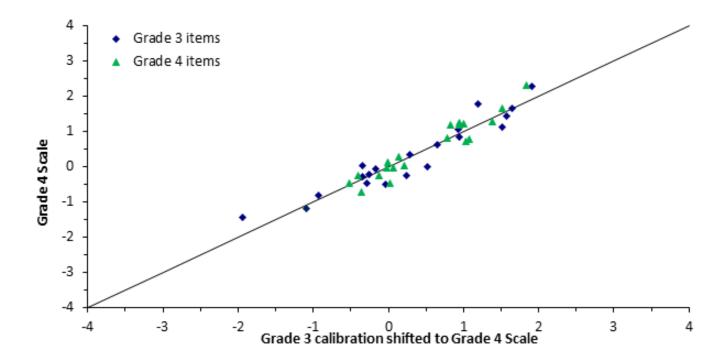


Figure C-16. CDT Science: Grade 4 to Grade 5 Linking - All Links

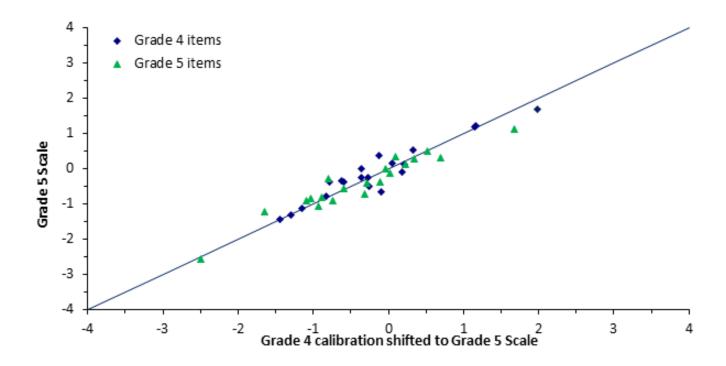


Figure C-17. CDT Science: Grade 5 to Grade 6 Linking - All Links

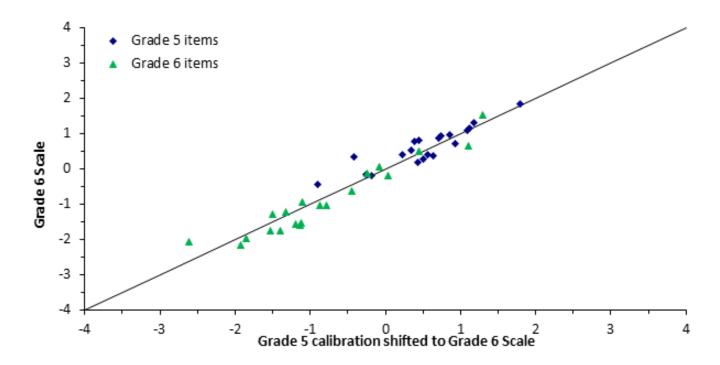


Figure C-18. CDT Science: Grade 6 to Grade 7 Linking - All Links

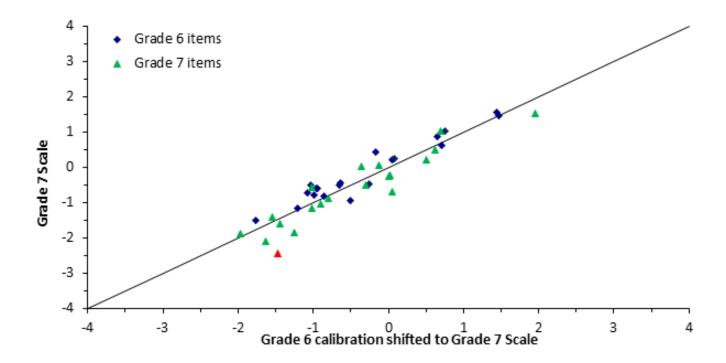


Figure C-19. CDT Science: Grade 8 to Grade 7 Linking - All Links

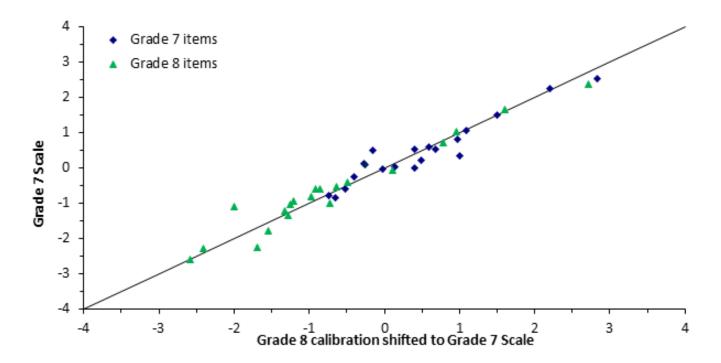


Figure C-20. CDT Science: Biology to Grade 8 Linking - All Links

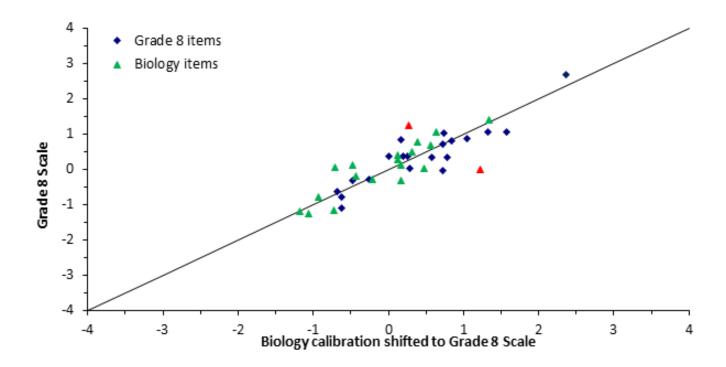
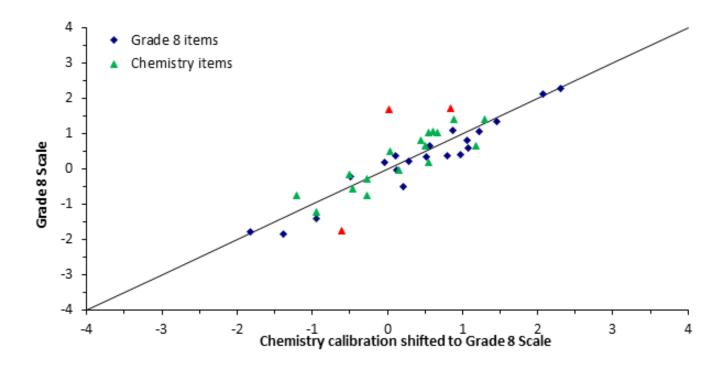


Figure C-21. CDT Science: Chemistry to Grade 8 Linking - All Links



WRITING/ENGLISH COMPOSITION

Tables C–46 through C–51 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 626547 is a grade 3 item used to link grades 3 and 4. It was administered 274 times on the lower grade form (grade 3) and 234 times on the upper grade form (grade 4).

The diagnostic categories are4:

Quality of Writing: Focus and Content

• Quality of Writing: Organization and Style

Quality of Writing: Editing

Conventions: Spelling, Capitalization, and Punctuation

• Conventions: Grammar and Sentence Formation

Writing diagnostic categories changed at the start of the 2013-2014 school year due to re-alignment to the Pennsylvania Core Standards. See Chapter Thirteen for a list of the current diagnostic categories.

Table C-46. Writing/English Composition Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
626547	3	Grade 3 to Grade 4	274	234	W.1.5.3.F.b	Spell., Cap., Punct.
621012	3	Grade 3 to Grade 4	276	234	W.1.5.3.F.d	Gram. and Sent.
634030	3	Grade 3 to Grade 4	277	234	W.1.5.3.F.a	Spell., Cap., Punct.
634160	3	Grade 3 to Grade 4	275	234	W.1.5.3.D	Org and Style
623056	3	Grade 3 to Grade 4	275	234	W.1.5.3.C	Org and Style
621006	3	Grade 3 to Grade 4	277	234	W.1.5.3.F.d	Gram. and Sent.
624801	3	Grade 3 to Grade 4	276	234	W.1.5.3.A	Focus and Content
623023	3	Grade 3 to Grade 4	274	234	W.1.5.3.F.d	Gram. and Sent.
622985	3	Grade 3 to Grade 4	274	234	W.1.5.3.B	Focus and Content
624847	3	Grade 3 to Grade 4	277	234	W.1.5.3.F.c	Spell., Cap., Punct.
624849	3	Grade 3 to Grade 4	276	232	W.1.5.3.F.b	Spell., Cap., Punct.
622465	3	Grade 3 to Grade 4	277	232	W.1.5.3.F.d	Gram. and Sent.
634029	3	Grade 3 to Grade 4	275	232	W.1.5.3.F.a	Spell., Cap., Punct.
634162	3	Grade 3 to Grade 4	275	232	W.1.5.3.D	Org and Style
626574	3	Grade 3 to Grade 4	277	232	W.1.5.3.C	Org and Style
636550	3	Grade 3 to Grade 4	276	232	W.1.5.3.F.d	Gram. and Sent.
622979	3	Grade 3 to Grade 4	274	232	W.1.5.3.A	Focus and Content
621008	3	Grade 3 to Grade 4	274	232	W.1.5.3.F.d	Gram. and Sent.
623107	3	Grade 3 to Grade 4	276	232	W.1.5.3.B	Focus and Content
625516	3	Grade 3 to Grade 4	275	232	W.1.5.3.F.c	Spell., Cap., Punct.
623113	4	Grade 3 to Grade 4	274	233	W.1.5.4.C	Org and Style
637175	4	Grade 3 to Grade 4	274	232	W.1.5.4.D	Org and Style
633445	4	Grade 3 to Grade 4	274	235	W.1.5.4.F.a	Spell., Cap., Punct.
635414	4	Grade 3 to Grade 4	274	233	W.1.5.4.A	Focus and Content
639852	4	Grade 3 to Grade 4	274	234	W.1.5.4.F.c	Spell., Cap., Punct.
623033	4	Grade 3 to Grade 4	274	232	W.1.5.4.F.b	Spell., Cap., Punct.
623013	4	Grade 3 to Grade 4	274	233	W.1.5.4.B	Focus and Content
633852	4	Grade 3 to Grade 4	274	233	W.1.5.4.C	Org and Style
624765	4	Grade 3 to Grade 4	274	233	W.1.5.4.F.d	Gram. and Sent.
625527	4	Grade 3 to Grade 4	274	232	W.1.5.4.E	Editing
627004	4	Grade 3 to Grade 4	275	232	W.1.5.4.E	Editing
637177	4	Grade 3 to Grade 4	275	235	W.1.5.4.D	Org and Style
633432	4	Grade 3 to Grade 4	275	233	W.1.5.4.F.a	Spell., Cap., Punct.
633464	4	Grade 3 to Grade 4	275	234	W.1.5.4.A	Focus and Content
639854	4	Grade 3 to Grade 4	275	232	W.1.5.4.F.c	Spell., Cap., Punct.
623136	4	Grade 3 to Grade 4	275	233	W.1.5.4.F.b	Spell., Cap., Punct.
635900	4	Grade 3 to Grade 4	275	233	W.1.5.4.B	Focus and Content

Table C-46 (continued). Writing/English Composition Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
635412	4	Grade 3 to Grade 4	275	233	W.1.5.4.C	Org and Style
630419	4	Grade 3 to Grade 4	275	232	W.1.5.4.F.d	Gram. and Sent.
630295	4	Grade 3 to Grade 4	275	235	W.1.5.4.E	Editing

Table C-47. Writing/English Composition Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
623017	4	Grade 4 to Grade 5	235	221	W.1.5.4.E	Editing
625455	4	Grade 4 to Grade 5	233	221	W.1.5.4.A	Focus and Content
622453	4	Grade 4 to Grade 5	234	221	W.1.5.4.E	Editing
623135	4	Grade 4 to Grade 5	232	221	W.1.5.4.F.b	Spell., Cap., Punct.
632573	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.d	Gram. and Sent.
623020	4	Grade 4 to Grade 5	233	221	W.1.5.4.C	Org and Style
633435	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.a	Spell., Cap., Punct.
623108	4	Grade 4 to Grade 5	232	221	W.1.5.4.B	Focus and Content
633468	4	Grade 4 to Grade 5	235	221	W.1.5.4.C	Org and Style
627696	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.c	Spell., Cap., Punct.
623115	4	Grade 4 to Grade 5	233	221	W.1.5.4.E	Editing
622983	4	Grade 4 to Grade 5	234	221	W.1.5.4.A	Focus and Content
622454	4	Grade 4 to Grade 5	232	221	W.1.5.4.E	Editing
621395	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.b	Spell., Cap., Punct.
632587	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.d	Gram. and Sent.
623019	4	Grade 4 to Grade 5	233	221	W.1.5.4.C	Org and Style
634025	4	Grade 4 to Grade 5	232	221	W.1.5.4.F.a	Spell., Cap., Punct.
626922	4	Grade 4 to Grade 5	235	221	W.1.5.4.B	Focus and Content
633469	4	Grade 4 to Grade 5	233	221	W.1.5.4.C	Org and Style
628471	4	Grade 4 to Grade 5	234	221	W.1.5.4.F.c	Spell., Cap., Punct.
637149	5	Grade 4 to Grade 5	233	218	W.1.5.5.F.d	Gram. and Sent.
633440	5	Grade 4 to Grade 5	233	221	W.1.5.5.F.a	Spell., Cap., Punct.
635884	5	Grade 4 to Grade 5	233	221	W.1.5.5.E	Editing
637062	5	Grade 4 to Grade 5	233	218	W.1.5.5.F.d	Gram. and Sent.
623027	5	Grade 4 to Grade 5	233	220	W.1.5.5.F.d	Gram. and Sent.
622469	5	Grade 4 to Grade 5	233	221	W.1.5.5.F.b	Spell., Cap., Punct.
639843	5	Grade 4 to Grade 5	233	222	W.1.5.5.F.c	Spell., Cap., Punct.
635417	5	Grade 4 to Grade 5	233	221	W.1.5.5.C	Org and Style
620819	5	Grade 4 to Grade 5	233	220	W.1.5.5.C	Org and Style
635605	5	Grade 4 to Grade 5	233	221	W.1.5.5.C	Org and Style
637148	5	Grade 4 to Grade 5	232	221	W.1.5.5.C	Org and Style
633439	5	Grade 4 to Grade 5	232	221	W.1.5.5.F.a	Spell., Cap., Punct.
620820	5	Grade 4 to Grade 5	232	218	W.1.5.5.E	Editing
626566	5	Grade 4 to Grade 5	232	220	W.1.5.5.F.d	Gram. and Sent.
623129	5	Grade 4 to Grade 5	232	221	W.1.5.5.F.d	Gram. and Sent.
629858	5	Grade 4 to Grade 5	232	222	W.1.5.5.F.b	Spell., Cap., Punct.
639864	5	Grade 4 to Grade 5	232	221	W.1.5.5.F.c	Spell., Cap., Punct.

Table C-47 (continued). Writing/English Composition Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
627291	5	Grade 4 to Grade 5	232	220	W.1.5.5.C	Org and Style
639349	5	Grade 4 to Grade 5	232	218	W.1.5.5.C	Org and Style
626818	5	Grade 4 to Grade 5	232	221	W.1.5.5.C	Org and Style

Table C-48. Writing/English Composition Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
623105	5	Grade 5 to Grade 6	221	303	W.1.5.5.A	Focus and Content
626927	5	Grade 5 to Grade 6	218	303	W.1.5.5.F.d	Gram. and Sent.
632608	5	Grade 5 to Grade 6	220	303	W.1.5.5.E	Editing
625460	5	Grade 5 to Grade 6	221	303	W.1.5.5.C	Org and Style
626923	5	Grade 5 to Grade 6	222	303	W.1.5.5.E	Editing
628065	5	Grade 5 to Grade 6	221	303	W.1.5.5.F.b	Spell., Cap., Punct.
633443	5	Grade 5 to Grade 6	220	303	W.1.5.5.F.a	Spell., Cap., Punct.
621390	5	Grade 5 to Grade 6	218	303	W.1.5.5.F.c	Spell., Cap., Punct.
626820	5	Grade 5 to Grade 6	221	303	W.1.5.5.E	Editing
624842	5	Grade 5 to Grade 6	218	303	W.1.5.5.F.d	Gram. and Sent.
624800	5	Grade 5 to Grade 6	218	304	W.1.5.5.A	Focus and Content
627413	5	Grade 5 to Grade 6	220	304	W.1.5.5.F.d	Gram. and Sent.
630403	5	Grade 5 to Grade 6	221	304	W.1.5.5.E	Editing
624804	5	Grade 5 to Grade 6	222	304	W.1.5.5.C	Org and Style
626570	5	Grade 5 to Grade 6	221	304	W.1.5.5.E	Editing
624773	5	Grade 5 to Grade 6	220	304	W.1.5.5.F.b	Spell., Cap., Punct.
633442	5	Grade 5 to Grade 6	218	304	W.1.5.5.F.a	Spell., Cap., Punct.
629854	5	Grade 5 to Grade 6	221	304	W.1.5.5.F.c	Spell., Cap., Punct.
623060	5	Grade 5 to Grade 6	221	304	W.1.5.5.E	Editing
627488	5	Grade 5 to Grade 6	220	304	W.1.5.5.F.d	Gram. and Sent.
624292	6	Grade 5 to Grade 6	221	304	W.1.5.6.E	Editing
626934	6	Grade 5 to Grade 6	221	303	W.1.5.6.A	Focus and Content
627013	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.b	Spell., Cap., Punct.
632646	6	Grade 5 to Grade 6	221	305	W.1.5.6.F.d	Gram. and Sent.
624829	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.d	Gram. and Sent.
630378	6	Grade 5 to Grade 6	221	304	W.1.5.6.B	Focus and Content
624297	6	Grade 5 to Grade 6	221	303	W.1.5.6.C	Org and Style
635654	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.c	Spell., Cap., Punct.
639363	6	Grade 5 to Grade 6	221	305	W.1.5.6.C	Org and Style
633448	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.a	Spell., Cap., Punct.
623114	6	Grade 5 to Grade 6	222	303	W.1.5.6.E	Editing
626932	6	Grade 5 to Grade 6	222	304	W.1.5.6.A	Focus and Content
635660	6	Grade 5 to Grade 6	222	305	W.1.5.6.F.b	Spell., Cap., Punct.
626822	6	Grade 5 to Grade 6	222	304	W.1.5.6.F.d	Gram. and Sent.
625478	6	Grade 5 to Grade 6	222	304	W.1.5.6.F.d	Gram. and Sent.
626776	6	Grade 5 to Grade 6	222	303	W.1.5.6.B	Focus and Content
624296	6	Grade 5 to Grade 6	222	304	W.1.5.6.C	Org and Style

Table C-48 (continued). Writing/English Composition Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
628055	6	Grade 5 to Grade 6	222	305	W.1.5.6.F.c	Spell., Cap., Punct.
627289	6	Grade 5 to Grade 6	222	304	W.1.5.6.C	Org and Style
633444	6	Grade 5 to Grade 6	222	304	W.1.5.6.F.a	Spell., Cap., Punct.

Table C-49. Writing/English Composition Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
633446	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.a	Spell., Cap., Punct.
635619	6	Grade 6 to Grade 7	305	279	W.1.5.6.D	Org and Style
635662	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.b	Spell., Cap., Punct.
623111	6	Grade 6 to Grade 7	304	279	W.1.5.6.E	Editing
624754	6	Grade 6 to Grade 7	303	279	W.1.5.6.F.d	Gram. and Sent.
628060	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.c	Spell., Cap., Punct.
627415	6	Grade 6 to Grade 7	305	279	W.1.5.6.F.d	Gram. and Sent.
624287	6	Grade 6 to Grade 7	304	279	W.1.5.6.E	Editing
624763	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.d	Gram. and Sent.
627960	6	Grade 6 to Grade 7	303	279	W.1.5.6.A	Focus and Content
633447	6	Grade 6 to Grade 7	305	279	W.1.5.6.F.a	Spell., Cap., Punct.
639392	6	Grade 6 to Grade 7	304	279	W.1.5.6.D	Org and Style
635661	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.b	Spell., Cap., Punct.
624289	6	Grade 6 to Grade 7	303	279	W.1.5.6.E	Editing
624756	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.d	Gram. and Sent.
628061	6	Grade 6 to Grade 7	305	279	W.1.5.6.F.c	Spell., Cap., Punct.
628112	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.d	Gram. and Sent.
626567	6	Grade 6 to Grade 7	304	279	W.1.5.6.E	Editing
624840	6	Grade 6 to Grade 7	303	279	W.1.5.6.F.d	Gram. and Sent.
627030	6	Grade 6 to Grade 7	304	279	W.1.5.6.A	Focus and Content
627052	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
639447	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
627058	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
639380	7	Grade 6 to Grade 7	303	279	W.1.5.7.A	Focus and Content
624286	7	Grade 6 to Grade 7	303	280	W.1.5.7.B	Focus and Content
624822	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.b	Spell., Cap., Punct.
636003	7	Grade 6 to Grade 7	303	280	W.1.5.7.C	Org and Style
633454	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.a	Spell., Cap., Punct.
635909	7	Grade 6 to Grade 7	303	279	W.1.5.7.D	Org and Style
634300	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.c	Spell., Cap., Punct.
626992	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
639438	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
628116	7	Grade 6 to Grade 7	303	279	W.1.5.7.F.d	Gram. and Sent.
626764	7	Grade 6 to Grade 7	303	280	W.1.5.7.A	Focus and Content
639394	7	Grade 6 to Grade 7	303	280	W.1.5.7.B	Focus and Content
628476	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.b	Spell., Cap., Punct.
636008	7	Grade 6 to Grade 7	303	280	W.1.5.7.C	Org and Style

Table C-49 (continued). Writing/English Composition Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count Lower Grade	Lower Upper		Writing/Composition Diagnostic Category
633455	7	Grade 6 to Grade 7	303	279	W.1.5.7.F.a	Spell., Cap., Punct.
639420	7	Grade 6 to Grade 7	303	280	W.1.5.7.D	Org and Style
634299	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.c	Spell., Cap., Punct.

Table C-50. Writing/English Composition Items Used to Link Grade 7 to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
627684	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.d	Gram. and Sent.
625487	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.d	Gram. and Sent.
627464	7	Grade 8 to Grade 7	280	145	W.1.5.7.A	Focus and Content
639375	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
633458	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.a	Spell., Cap., Punct.
626996	7	Grade 8 to Grade 7	280	145	W.1.5.7.E	Editing
628098	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.b	Spell., Cap., Punct.
639358	7	Grade 8 to Grade 7	280	145	W.1.5.7.B	Focus and Content
635665	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.c	Spell., Cap., Punct.
627361	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
627056	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.d	Gram. and Sent.
639407	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.d	Gram. and Sent.
626943	7	Grade 8 to Grade 7	280	145	W.1.5.7.A	Focus and Content
639364	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
633457	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.a	Spell., Cap., Punct.
626997	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.d	Gram. and Sent.
630429	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.b	Spell., Cap., Punct.
625506	7	Grade 8 to Grade 7	280	145	W.1.5.7.B	Focus and Content
635668	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.c	Spell., Cap., Punct.
627362	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
633498	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.a	Spell., Cap., Punct.
639580	8	Grade 8 to Grade 7	279	145	W.1.5.8.C	Org and Style
624848	8	Grade 8 to Grade 7	279	143	W.1.5.8.F.b	Spell., Cap., Punct.
639612	8	Grade 8 to Grade 7	279	144	W.1.5.8.B	Focus and Content
628115	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.d	Gram. and Sent.
627963	8	Grade 8 to Grade 7	279	144	W.1.5.8.A	Focus and Content
628311	8	Grade 8 to Grade 7	279	145	W.1.5.8.F.d	Gram. and Sent.
628242	8	Grade 8 to Grade 7	279	143	W.1.5.8.B	Focus and Content
639857	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.c	Spell., Cap., Punct.
639441	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.d	Gram. and Sent.
633497	8	Grade 8 to Grade 7	280	145	W.1.5.8.F.a	Spell., Cap., Punct.
639588	8	Grade 8 to Grade 7	280	143	W.1.5.8.C	Org and Style
625522	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.b	Spell., Cap., Punct.
639610	8	Grade 8 to Grade 7	280	144	W.1.5.8.B	Focus and Content
624828	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.d	Gram. and Sent.
625520	8	Grade 8 to Grade 7	280	145	W.1.5.8.A	Focus and Content
625508	8	Grade 8 to Grade 7	280	143	W.1.5.8.F.d	Gram. and Sent.

Table C-50 (continued). Writing/English Composition Items Used to Link Grade 7 to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
626775	8	Grade 8 to Grade 7	280	144	W.1.5.8.B	Focus and Content
639856	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.c	Spell., Cap., Punct.
639439	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.d	Gram. and Sent.

Table C-51. Writing/English Composition Items Used to Link English Composition to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category	
636213	8	English Comp to Grade 8	143	173	W.1.5.8.F.d	Gram. and Sent.	
639599	8	English Comp to Grade 8	144	173	W.1.5.8.C	Org and Style	
633503	8	English Comp to Grade 8	144	173	W.1.5.8.F.a	Spell., Cap., Punct.	
629857	8	English Comp to Grade 8	144	173	W.1.5.8.F.b	Spell., Cap., Punct.	
634156	8	English Comp to Grade 8	145	173	W.1.5.8.F.c	Spell., Cap., Punct.	
639577	8	English Comp to Grade 8	143	173	W.1.5.8.E	Editing	
635385	8	English Comp to Grade 8	144	173	W.1.5.8.F.d	Gram. and Sent.	
635351	8	English Comp to Grade 8	144	173	W.1.5.8.F.d	Gram. and Sent.	
627964	8	English Comp to Grade 8	144	173	W.1.5.8.A	Focus and Content	
626786	8	English Comp to Grade 8	145	173	W.1.5.8.C	Org and Style	
636212	8	English Comp to Grade 8	144	171	W.1.5.8.F.d	Gram. and Sent.	
639597	8	English Comp to Grade 8	144	171	W.1.5.8.C	Org and Style	
633502	8	English Comp to Grade 8	144	171	W.1.5.8.F.a	Spell., Cap., Punct.	
629860	8	English Comp to Grade 8	145	171	W.1.5.8.F.b	Spell., Cap., Punct.	
634157	8	English Comp to Grade 8	143	171	W.1.5.8.F.c	Spell., Cap., Punct.	
639608	8	English Comp to Grade 8	144	171	W.1.5.8.E	Editing	
635386	8	English Comp to Grade 8	144	171	W.1.5.8.F.d	Gram. and Sent.	
635350	8	English Comp to Grade 8	144	171	W.1.5.8.F.d	Gram. and Sent.	
628143	8	English Comp to Grade 8	145	171	W.1.5.8.A	Focus and Content	
626785	8	English Comp to Grade 8	143	171	W.1.5.8.C	Org and Style	
622816	EC	English Comp to Grade 8	143	173	C.E.1.1.1	Focus and Content	
639932	EC	English Comp to Grade 8	143	173	C.E.3.1.5	Gram. and Sent.	
639920	EC	English Comp to Grade 8	143	171	C.E.3.1.4	Gram. and Sent.	
634313	EC	English Comp to Grade 8	143	173	C.E.3.1.2	Spell., Cap., Punct.	
633540	EC	English Comp to Grade 8	143	172	C.E.3.1.1	Spell., Cap., Punct.	
622613	EC	English Comp to Grade 8	143	173	C.E.1.1.3	Org and Style	
623126	EC	English Comp to Grade 8	143	173	C.E.3.1.4	Gram. and Sent.	
639971	EC	English Comp to Grade 8	143	174	C.E.1.1.2	Focus and Content	
629853	EC	English Comp to Grade 8	143	174	C.E.3.1.3	Spell., Cap., Punct.	
630391	EC	English Comp to Grade 8	143	173	C.E.1.1.3	Org and Style	
622815	EC	English Comp to Grade 8	145	174	C.P.1.1.1	Focus and Content	
639933	EC	English Comp to Grade 8	145	173	C.E.3.1.5	Gram. and Sent.	
639919	EC	English Comp to Grade 8	145	173	C.E.3.1.4	Gram. and Sent.	
634349	EC	English Comp to Grade 8	145	174	C.E.3.1.2	Spell., Cap., Punct.	
633536	EC	English Comp to Grade 8	145	174	C.E.3.1.1	Spell., Cap., Punct.	
622611	EC	English Comp to Grade 8	145	174	C.E.1.1.3	Org and Style	
621166	EC	English Comp to Grade 8	145	173	C.E.3.1.4	Gram. and Sent.	

Table C-51 (continued). Writing/English Composition Items Used to Link English Composition to Grade 8

Item ID	Item Grade	Link	N Count Lower Grade	N Count Upper Grade	Eligible Content	Writing/Composition Diagnostic Category
630659	EC	English Comp to Grade 8	145	173	C.E.1.1.2	Focus and Content
629822	EC	English Comp to Grade 8	145	173	C.E.3.1.3	Spell., Cap., Punct.
630392	EC	English Comp to Grade 8	145	171	C.E.1.1.3	Org and Style

Tables C-52 through C-57 summarize the number of linking items by diagnostic category.

Table C-52. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

Diagnostic Category	Grade 3 Items	Grade 4 Items	Total
Focus and Content	4	4	8
Org and Style	4	5	9
Editing	0	3	3
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	6	2	8
TOTAL	20	20	40

Table C-53. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

Diagnostic Category	Grade 4 Items	Grade 5 Items	Total	
Focus and Content	4	0	4	
Org and Style	4	7	11	
Editing	4	2	6	
Spell., Cap., Punct.	6	6	12	
Gram. and Sent.	2	5	7	
TOTAL	20	20	40	

Table C-54. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

Diagnostic Category	Grade 5 Items	Grade 6 Items	Total
Focus and Content	2	4	6
Org and Style	2	4	6
Editing	6	2	8
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	4	4	8
TOTAL	20	20	40

Table C-55. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 6 Items	Grade 7 Items	Total
Focus and Content	2	4	6
Org and Style	2	4	6
Editing	4	0	4
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	6	6	12
TOTAL	20	20	40

Table C-56. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

Diagnostic Category	Grade 7 Items	Grade 8 Items	Total
Focus and Content	4	6	10
Org and Style	4	2	6
Editing	1	0	1
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	5	6	11
TOTAL	20	20	40

Table C-57. Number of Items Linking English Composition to Grade 8 by Diagnostic Category

Diagnostic Category	Grade 8 Items	Eng Comp Items	Total
Focus and Content	2	4	6
Org and Style	4	4	8
Editing	2	0	2
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	6	6	12
TOTAL	20	20	40

Table C-58. Writing/English Composition Example of Vertical Linking Workbook

		Grade	e 4 Calibr	ation	Grade	e 5 Calibr	ation		Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
623017	4	-0.784	0.910	-0.006	-0.927	0.910	0.000	-0.143	-1.005	0.233	
625455	4	-0.205	1.030	-0.001	0.132	1.010	0.001	0.337	-0.426	1.437	
622453	4	-0.955	0.910	0.003	-1.526	0.860	0.000	-0.571	-1.176	-0.840	
623135	4	1.520	1.200	0.005	1.516	1.110	0.001	-0.004	1.299	0.582	
632573	4	0.527	1.250	-0.002	0.872	1.190	0.001	0.345	0.306	1.457	
623020	4	-1.254	0.890	-0.001	-1.487	0.900	0.000	-0.233	-1.475	0.008	
633435	4	-0.452	1.020	-0.003	-0.441	0.910	0.000	0.011	-0.673	0.620	
623108	4	-0.152	0.830	0.000	0.025	0.920	0.000	0.177	-0.373	1.036	
633468	4	-0.857	0.900	-0.006	-0.475	0.860	0.000	0.382	-1.078	1.550	
627696	4	1.837	1.210	-0.001	1.968	1.140	0.001	0.131	1.616	0.921	
623115	4	-0.678	0.960	-0.001	-1.072	0.890	-0.003	-0.394	-0.899	-0.396	
622983	4	-0.797	1.020	0.003	-1.360	0.980	-0.003	-0.563	-1.018	-0.820	
622454	4	0.922	1.070	0.005	0.483	1.000	-0.002	-0.439	0.701	-0.509	
621395	4	1.634	1.080	-0.002	0.998	1.090	-0.002	-0.636	1.413	-1.003	
632587	4	0.650	0.830	-0.001	0.149	0.980	-0.002	-0.501	0.429	-0.665	
623019	4	-1.134	0.990	-0.003	-1.611	1.020	-0.003	-0.477	-1.355	-0.605	
634025	4	-0.885	0.960	0.000	-1.496	0.920	-0.003	-0.611	-1.106	-0.941	
626922	4	0.516	1.000	-0.006	0.159	0.970	-0.002	-0.357	0.295	-0.304	
633469	4	-0.151	0.880	-0.001	-0.121	0.900	-0.002	0.030	-0.372	0.667	
628471	4	2.662	1.140	0.003	2.119	1.130	-0.001	-0.543	2.441	-0.770	
637149	5	-2.406	0.960	0.003	-2.126	0.960	0.005	0.280	-2.627	1.294	
633440	5	-0.302	1.040	0.003	-0.227	0.960	0.001	0.075	-0.523	0.780	
635884	5	-1.607	0.840	0.003	-1.708	0.870	-0.001	-0.101	-1.828	0.339	
637062	5	0.739	1.110	0.004	0.794	1.170	0.000	0.055	0.518	0.730	
623027	5	-0.341	0.780	0.003	-0.917	0.800	-0.004	-0.576	-0.562	-0.853	
622469	5	1.057	1.110	0.004	0.730	1.000	0.000	-0.327	0.836	-0.228	
639843	5	-0.548	0.910	0.003	-1.127	0.990	-0.002	-0.579	-0.769	-0.860	
635417	5	0.499	1.050	0.004	0.561	1.050	-0.005	0.062	0.278	0.747	
620819	5	0.739	0.970	0.004	0.337	0.950	-0.005	-0.402	0.518	-0.416	
635605	5	1.417	1.220	0.004	1.437	1.080	0.001	0.020	1.196	0.642	
637148	5	-0.606	0.950	0.002	-1.440	0.920	0.001	-0.834	-0.827	-1.500	
633439	5	0.404	1.100	0.002	0.544	1.050	-0.001	0.140	0.183	0.943	
620820	5	0.287	0.950	0.002	0.089	0.960	0.000	-0.198	0.066	0.095	
626566	5	-0.764	0.860	0.002	-1.003	0.860	-0.004	-0.239	-0.985	-0.008	
623129	5	-1.331	0.800	0.002	-1.323	0.820	0.000	0.008	-1.552	0.612	
629858	5	1.124	1.020	0.003	0.983	1.020	-0.002	-0.141	0.903	0.238	
639864	5	-0.729	0.950	0.002	-1.075	0.900	-0.005	-0.346	-0.950	-0.276	
627291	5	0.515	0.880	0.002	0.008	0.970	-0.005	-0.507	0.294	-0.680	
639349	5	0.658	1.040	0.002	0.285	0.890	0.005	-0.373	0.437	-0.344	
626818	5	1.722	0.970	0.003	0.913	0.990	-0.001	-0.809	1.501	-1.437	
	Mean	0.062			-0.159			-0.221	-0.159	0.037	
	SD	1.088			1.095			0.330	1.088	0.828	
	SD Ratio	0.993			1.033			3.330	1.300	5.520	
	Correlation	0.954									
	Add. Constant	-0.221									
	Median	0.221						-0.236			
—	Q							0.539			
	٧							0.559			

Figures C–22 through C–27 are the adjacent grade linking plots. No items were removed from final linking procedure so there are no red items in these plots.

Figure C-22. CDT Writing/English Composition: Grade 3 to Grade 4 Linking - All Links

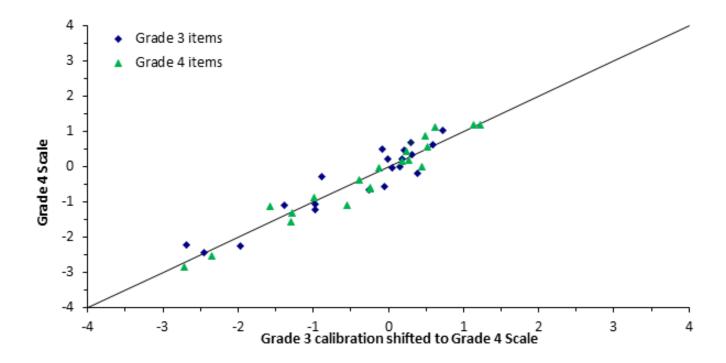


Figure C-23. CDT Writing/English Composition: Grade 4 to Grade 5 Linking - All Links

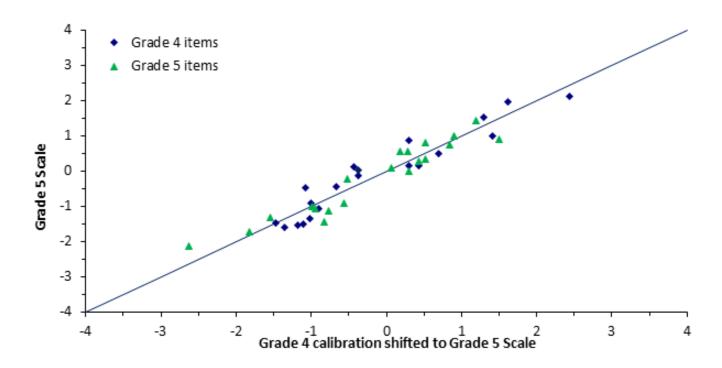


Figure C-24. CDT Writing/English Composition: Grade 5 to Grade 6 Linking - All Links

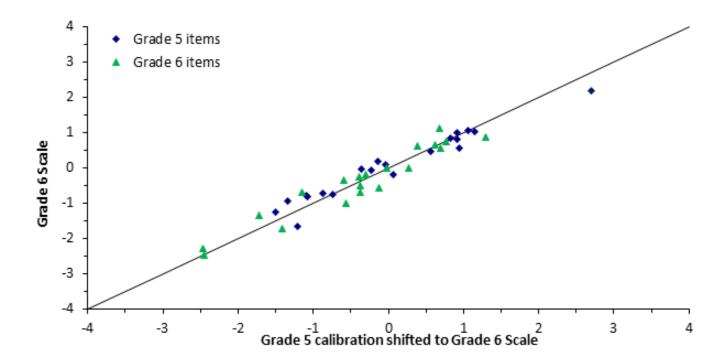


Figure C-25. CDT Writing/English Composition: Grade 6 to Grade 7 Linking - All Links

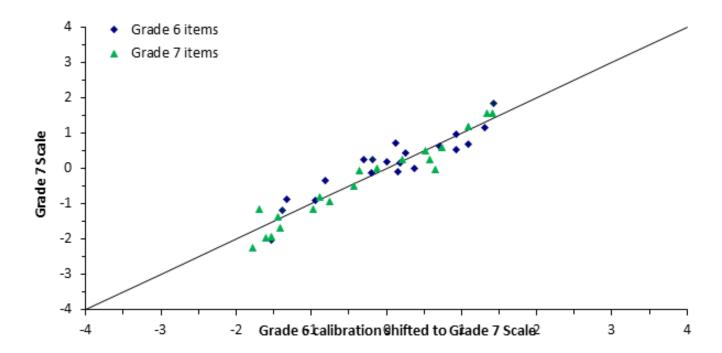


Figure C-26. CDT Writing/English Composition: Grade 8 to Grade 7 Linking - All Links

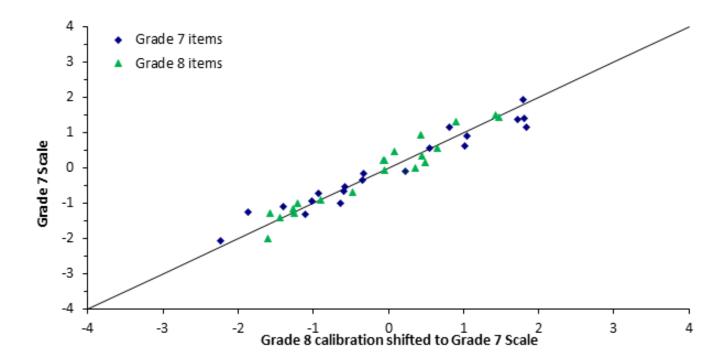
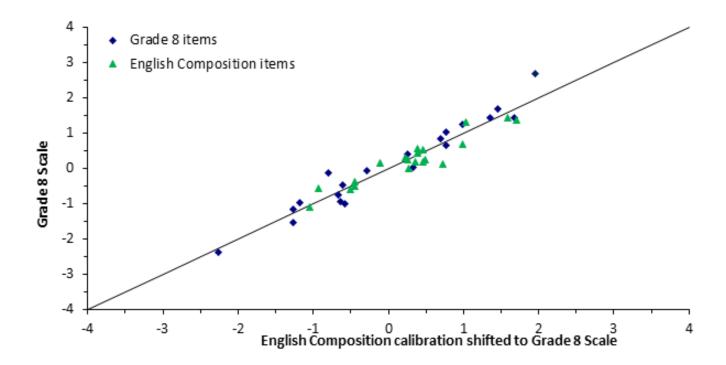


Figure C-27. CDT Writing/English Composition: Literature to Grade 8 Linking - All Links



APPENDIX D: SIGNIFICANT DIFFERENCES AMONG DIAGNOSTIC CATEGORIES

In Chapter Fifteen (Operational Administration 2015–2016), significant differences among diagnostic categories were tested with a t-test using a Bonferroni correction for multiple comparisons to keep the familywise Type I error rate at 0.32. The tables in this appendix show the significant differences with the familywise Type I error rate at 0.10.

DIAGNOSTIC CATEGORY SIGNIFICANT DIFFERENCES

Table D-1a. Diagnostic Category Significant Differences - Math Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	631	188,316	0.3%	99.7%
DC1	DC3	1,347	187,600	0.7%	99.3%
DC1	DC4	808	188,139	0.4%	99.6%
DC2	DC3	1,506	187,441	0.8%	99.2%
DC2	DC4	779	188,168	0.4%	99.6%
DC3	DC4	1,503	187,444	0.8%	99.2%

Note: Z value is 2.39

Table D-1b. Total Number of Diagnostic Category Significant Differences - Math Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	183,833	97.3%
1	3,923	2.1%
2	926	0.5%
3	261	0.1%
4	4	0.0%
5	0	0.0%
6	0	0.0%

Table D-2a. Diagnostic Category Significant Differences - Math Grades 6-8

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,479	192,015	0.8%	99.2%
DC1	DC3	1,523	191,971	0.8%	99.2%
DC1	DC4	1,794	191,700	0.9%	99.1%
DC2	DC3	1,550	191,944	0.8%	99.2%
DC2	DC4	1,911	191,583	1.0%	99.0%
DC3	DC4	1,711	191,783	0.9%	99.1%

Table D-2b. Total Number of Diagnostic Category Significant Differences - Math Grades 6-8

Number of Significant Differences	Number of Students	Percent of Students
0	186,136	96.2%
1	5,261	2.7%
2	1,619	0.8%
3	443	0.2%
4	35	0.0%
5	0	0.0%
6	0	0.0%

Table D-3a. Diagnostic Category Significant Differences - Algebra I

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,679	119,401	1.4%	98.6%
DC1	DC3	1,691	119,389	1.4%	98.6%
DC1	DC4	2,095	118,985	1.7%	98.3%
DC2	DC3	723	120,357	0.6%	99.4%
DC2	DC4	1,446	119,634	1.2%	98.8%
DC3	DC4	1,378	119,702	1.1%	98.9%

Table D-3b. Total Number of Diagnostic Category Significant Differences - Algebra I

Number of Significant Differences	Number of Students	Percent of Students
0	114,516	94.6%
1	4,586	3.8%
2	1,542	1.3%
3	402	0.3%
4	34	0.0%
5	0	0.0%
6	0	0.0%

Table D-4a. Diagnostic Category Significant Differences - Geometry

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	100	11,289	0.9%	99.1%
DC1	DC3	119	11,270	1.0%	99.0%
DC1	DC4	156	11,233	1.4%	98.6%
DC2	DC3	129	11,260	1.1%	98.9%
DC2	DC4	155	11,234	1.4%	98.6%
DC3	DC4	161	11,228	1.4%	98.6%

Table D-4b. Total Number of Diagnostic Category Significant Differences – Geometry

Number of Significant Differences	Number of Students	Percent of Students
0	10,818	95.0%
1	372	3.3%
2	154	1.4%
3	40	0.4%
4	5	0.0%
5	0	0.0%
6	0	0.0%

Table D-5a. Diagnostic Category Significant Differences - Algebra II

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	307	11,333	2.6%	97.4%
DC1	DC3	215	11,425	1.8%	98.2%
DC1	DC4	433	11,207	3.7%	96.3%
DC2	DC3	129	11,511	1.1%	98.9%
DC2	DC4	168	11,472	1.4%	98.6%
DC3	DC4	184	11,456	1.6%	98.4%

Table D-5b. Total Number of Diagnostic Category Significant Differences - Algebra II

Number of Significant Differences	Number of Students	
0	10,650	91.5%
1	643	5.5%
2	256	2.2%
3	83	0.7%
4	8	0.1%
5	0	0.0%
6	0	0.0%

Table D-6a. Diagnostic Category Significant Differences – Reading Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	26	163,995	0.0%	100.0%
DC1	DC3	41	163,980	0.0%	100.0%
DC1	DC4	41	163,980	0.0%	100.0%
DC1	DC5	35	163,986	0.0%	100.0%
DC2	DC3	50	163,971	0.0%	100.0%
DC2	DC4	40	163,981	0.0%	100.0%
DC2	DC5	41	163,980	0.0%	100.0%
DC3	DC4	35	163,986	0.0%	100.0%
DC3	DC5	131	163,890	0.1%	99.9%
DC4	DC5	75	163,946	0.0%	100.0%

Table D-6b. Total Number of Diagnostic Category Significant Differences – Reading Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	163,566	99.7%
1	406	0.2%
2	39	0.0%
3	9	0.0%
4	1	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table D-7a. Diagnostic Category Significant Differences - Reading/Lit Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	85	354,573	0.0%	100.0%
DC1	DC3	60	354,598	0.0%	100.0%
DC1	DC4	111	354,547	0.0%	100.0%
DC1	DC5	101	354,557	0.0%	100.0%
DC2	DC3	49	354,609	0.0%	100.0%
DC2	DC4	44	354,614	0.0%	100.0%
DC2	DC5	147	354,511	0.0%	100.0%
DC3	DC4	51	354,607	0.0%	100.0%
DC3	DC5	206	354,452	0.1%	99.9%
DC4	DC5	222	354,436	0.1%	99.9%

Table D-7b. Total Number of Diagnostic Category Significant Differences - Reading/Lit Grades 6-HS

Number of Significant Differences	Number of Students	Percent of Students
0	353,700	99.7%
1	851	0.2%
2	97	0.0%
3	9	0.0%
4	1	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table D-8a. Diagnostic Category Significant Differences - Science Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	66	22,124	0.3%	99.7%
DC1	DC3	82	22,108	0.4%	99.6%
DC1	DC4	74	22,116	0.3%	99.7%
DC2	DC3	72	22,118	0.3%	99.7%
DC2	DC4	61	22,129	0.3%	99.7%
DC3	DC4	81	22,109	0.4%	99.6%

Table D-8b. Total Number of Diagnostic Category Significant Differences - Science Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	21,852	98.5%
1	259	1.2%
2	61	0.3%
3	17	0.1%
4	1	0.0%
5	0	0.0%
6	0	0.0%

Table D-9a. Diagnostic Category Significant Differences - Science Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	563	89,365	0.6%	99.4%
DC1	DC3	602	89,326	0.7%	99.3%
DC1	DC4	569	89,359	0.6%	99.4%
DC2	DC3	566	89,362	0.6%	99.4%
DC2	DC4	561	89,367	0.6%	99.4%
DC3	DC4	555	89,373	0.6%	99.4%

Table D-9b. Total Number of Diagnostic Category Significant Differences - Science Grades 6-HS

Number of Significant Differences	Number of Students	Percent of Students
0	87,385	97.2%
1	1,838	2.0%
2	541	0.6%
3	160	0.2%
4	4	0.0%
5	0	0.0%
6	0	0.0%

Table D-10a. Diagnostic Category Significant Differences - Biology

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,083	131,599	0.8%	99.2%
DC1	DC3	1,054	131,628	0.8%	99.2%
DC1	DC4	1,193	131,489	0.9%	99.1%
DC2	DC3	368	132,314	0.3%	99.7%
DC2	DC4	1,384	131,298	1.0%	99.0%
DC3	DC4	1,193	131,489	0.9%	99.1%

Table D-10b. Total Number of Diagnostic Category Significant Differences - Biology

Number of Significant Differences	Number of Students	Percent of Students
0	127,806	96.3%
1	3,683	2.8%
2	1,009	0.8%
3	162	0.1%
4	22	0.0%
5	0	0.0%
6	0	0.0%

Table D-11a. Diagnostic Category Significant Differences - Chemistry

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	241	10,256	2.3%	97.7%
DC1	DC3	158	10,339	1.5%	98.5%
DC1	DC4	137	10,360	1.3%	98.7%
DC2	DC3	10	10,487	0.1%	99.9%
DC2	DC4	17	10,480	0.2%	99.8%
DC3	DC4	12	10,485	0.1%	99.9%

Table D-11b. Total Number of Diagnostic Category Significant Differences - Chemistry

Number of Significant Differences	Number of Students	Percent of Students
0	10,067	95.9%
1	309	2.9%
2	97	0.9%
3	24	0.2%
4	0	0.0%
5	0	0.0%
6	0	0.0%

Table D-12a. Diagnostic Category Significant Differences - Writing Grades 3-5

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	30	21,769	0.1%	99.9%
DC1	DC3	29	21,770	0.1%	99.9%
DC1	DC4	31	21,768	0.1%	99.9%
DC1	DC5	55	21,744	0.3%	99.7%
DC2	DC3	27	21,772	0.1%	99.9%
DC2	DC4	39	21,760	0.2%	99.8%
DC2	DC5	48	21,751	0.2%	99.8%
DC3	DC4	22	21,777	0.1%	99.9%
DC3	DC5	25	21,774	0.1%	99.9%
DC4	DC5	38	21,761	0.2%	99.8%

Table D-12b. Total Number of Diagnostic Category Significant Differences – Writing Grades 3-5

Number of Significant Differences	Number of Students	Percent of Students
0	21,549	98.9%
1	181	0.8%
2	47	0.2%
3	19	0.1%
4	3	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table D-13a. Diagnostic Category Significant Differences - Writing/Eng Comp Grades 6-HS

Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	75	51,680	0.1%	99.9%
DC1	DC3	127	51,628	0.2%	99.8%
DC1	DC4	198	51,557	0.4%	99.6%
DC1	DC5	142	51,613	0.3%	99.7%
DC2	DC3	92	51,663	0.2%	99.8%
DC2	DC4	125	51,630	0.2%	99.8%
DC2	DC5	94	51,661	0.2%	99.8%
DC3	DC4	126	51,629	0.2%	99.8%
DC3	DC5	107	51,648	0.2%	99.8%
DC4	DC5	109	51,646	0.2%	99.8%

Table D-13b. Total Number of Diagnostic Category Significant Differences - Writing/Eng Comp Grades 6-HS

Number of Significant Differences	Number of Students	Percent of Students
0	50,887	98.3%
1	618	1.2%
2	185	0.4%
3	53	0.1%
4	12	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

APPENDIX E: DECISION CONSISTENCY

In Chapter Sixteen (Reliability), decision consistency for each CDT test and benchmark cut is reported with two values: exact agreement rate and kappa. However, as noted in the chapter, retest classification probability varies at different points along the scale. For example, the retest probability of green is higher for scores near the red/green cut than for scores very low in the red range. This appendix provides a more detailed examination of the differences in retest probability across the score range. 3 X 3 retest classification probability tables and retest classification percent tables by score range are presented for all CDT tests and benchmark cuts.

3 X 3 RETEST CLASSIFICATION PROBABILITY

Table E-1. Retest Classification Probability - Mathematics Grade 3

	Red - retest	Green - retest	Blue - retest
Red – test	0.936	0.064	0.000
Green – test	0.132	0.816	0.052
Blue – test	0.000	0.183	0.817

Exact Agreement Rate = 0.897

Kappa = 0.781

N-count = 58,253

Table E-2. Retest Classification Probability - Mathematics Grade 4

	Red - retest	Green - retest	Blue - retest
Red – test	0.929	0.071	0.000
Green – test	0.127	0.817	0.056
Blue – test	0.000	0.175	0.825

Exact Agreement Rate = 0.889

Kappa = 0.779

N-count = 63,771

Table E-3. Retest Classification Probability - Mathematics Grade 5

	Red - retest	Green - retest	Blue - retest
Red – test	0.923	0.077	0.000
Green – test	0.132	0.816	0.052
Blue – test	0.000	0.192	0.808

Exact Agreement Rate = 0.883

Kappa = 0.766

N-count = 66,923

Table E-4. Retest Classification Probability - Mathematics Grade 6

	Red - retest	Green - retest	Blue - retest
Red – test	0.936	0.064	0.000
Green – test	0.124	0.824	0.051
Blue – test	0.000	0.172	0.828

Kappa = 0.790

N-count = 71,208

Table E-5. Retest Classification Probability - Mathematics Grade 7

	Red - retest	Green - retest	Blue - retest
Red – test	0.940	0.060	0.000
Green – test	0.132	0.822	0.046
Blue – test	0.000	0.190	0.810

Exact Agreement Rate = 0.903

Kappa = 0.785

N-count = 70,509

Table E-6. Retest Classification Probability - Mathematics Grade 8

	Red - retest	Green - retest	Blue - retest
Red – test	0.936	0.064	0.000
Green – test	0.155	0.811	0.034
Blue – test	0.000	0.194	0.806

Exact Agreement Rate = 0.904

Kappa = 0.760

N-count = 51,713

Table E-7. Retest Classification Probability - Mathematics High School

	Red - retest	Green - retest	Blue - retest
Red – test	0.986	0.014	0.000
Green – test	N/A	N/A	N/A
Blue – test	N/A	N/A	N/A

N-count = 64

Table E-8. Retest Classification Probability - Algebra I

	Red - retest	Green - retest	Blue - retest
Red – test	0.921	0.079	0.000
Green – test	0.154	0.815	0.030
Blue – test	0.000	0.197	0.803

Kappa = 0.750

N-count = 121,080

Table E-9. Retest Classification Probability - Geometry

	Red - retest	Green - retest	Blue - retest
Red – test	0.934	0.066	0.000
Green – test	0.140	0.813	0.047
Blue – test	0.000	0.171	0.829

Exact Agreement Rate = 0.899

Kappa = 0.774

N-count = 11,389

Table E-10. Retest Classification Probability - Algebra II

	Red - retest	Green - retest	Blue - retest
Red – test	0.948	0.052	0.000
Green – test	0.142	0.817	0.041
Blue – test	0.000	0.183	0.817

Exact Agreement Rate = 0.919

Kappa = 0.776

N-count = 11,640

Table E-11. Retest Classification Probability - Reading Grade 3

	Red - retest	Green - retest	Blue - retest
Red – test	0.933	0.067	0.000
Green – test	0.096	0.847	0.057
Blue – test	0.000	0.189	0.811

Exact Agreement Rate = 0.892

Kappa = 0.805

N-count = 51,398

Table E-12. Retest Classification Probability - Reading Grade 4

	Red - retest	Green - retest	Blue - retest
Red – test	0.932	0.068	0.000
Green – test	0.085	0.852	0.062
Blue – test	0.000	0.213	0.787

Kappa = 0.802

N-count = 54,918

Table E-13. Retest Classification Probability - Reading Grade 5

	Red - retest	Green - retest	Blue - retest
Red – test	0.925	0.075	0.000
Green – test	0.082	0.856	0.062
Blue – test	0.000	0.231	0.769

Exact Agreement Rate = 0.882

Kappa = 0.792

N-count = 57,705

Table E-14. Retest Classification Probability - Reading Grade 6

	Red - retest	Green - retest	Blue - retest
Red – test	0.919	0.081	0.000
Green – test	0.089	0.858	0.052
Blue – test	0.000	0.251	0.749

Exact Agreement Rate = 0.881

Kappa = 0.785

N-count = 66,926

Table E-15. Retest Classification Probability - Reading Grade 7

	Red - retest	Green - retest	Blue - retest
Red – test	0.922	0.078	0.000
Green – test	0.091	0.859	0.050
Blue – test	0.000	0.255	0.745

Exact Agreement Rate = 0.885

Kappa = 0.789

N-count = 67,146

Table E-16. Retest Classification Probability - Reading Grade 8

	Red - retest	Green - retest	Blue - retest
Red – test	0.922	0.078	0.000
Green – test	0.094	0.857	0.049
Blue – test	0.000	0.268	0.732

Kappa = 0.787

N-count = 62,572

Table E-17. Retest Classification Probability - Literature

	Red - retest	Green - retest	Blue - retest
Red – test	0.921	0.079	0.000
Green – test	0.086	0.854	0.060
Blue – test	0.000	0.261	0.739

Exact Agreement Rate = 0.877

Kappa = 0.781

N-count = 158,014

Table E-18. Retest Classification Probability - Science Grade 3

	Red - retest	Green - retest	Blue - retest
Red – test	0.914	0.086	0.000
Green – test	0.096	0.825	0.079
Blue – test	0.000	0.180	0.820

Exact Agreement Rate = 0.860

Kappa = 0.770

N-count = 3,305

Table E-19. Retest Classification Probability - Science Grade 4

	Red - retest	Green - retest	Blue - retest
Red – test	0.905	0.095	0.000
Green – test	0.091	0.828	0.081
Blue – test	0.000	0.188	0.812

Exact Agreement Rate = 0.853

Kappa = 0.759

N-count = 15,435

Table E-20. Retest Classification Probability - Science Grade 5

	Red - retest	Green - retest	Blue - retest
Red – test	0.911	0.089	0.000
Green – test	0.085	0.829	0.085
Blue – test	0.000	0.193	0.807

Kappa = 0.763

N-count = 3,450

Table E-21. Retest Classification Probability - Science Grade 6

	Red - retest	Green - retest	Blue - retest
Red – test			
Green – test			
Blue – test			

Exact Agreement Rate = 0.863

Kappa = 0.756

N-count = 15,039

Table E-22. Retest Classification Probability - Science Grade 7

	Red - retest	Green - retest	Blue - retest
Red – test	0.913	0.087	0.000
Green – test	0.105	0.839	0.057
Blue – test	0.000	0.265	0.735

Exact Agreement Rate = 0.870

Kappa = 0.762

N-count = 27,567

Table E-23. Retest Classification Probability - Science Grade 8

	Red - retest	Green - retest	Blue - retest
Red – test	0.905	0.095	0.000
Green – test	0.118	0.838	0.044
Blue – test	0.000	0.255	0.745

Exact Agreement Rate = 0.870

Kappa = 0.754

N-count = 45,942

Table E-24. Retest Classification Probability - Science High School

	Red - retest	Green - retest	Blue - retest
Red – test	0.932	0.068	0.000
Green – test	0.102	0.842	0.056
Blue – test	0.000	0.234	0.766

Kappa = 0.790

N-count = 1,380

Table E-25. Retest Classification Probability - Biology

	Red - retest	Green - retest	Blue - retest
Red – test	0.907	0.093	0.000
Green – test	0.124	0.830	0.047
Blue – test	0.000	0.187	0.813

Exact Agreement Rate = 0.870

Kappa = 0.762

N-count = 132,682

Table E-26. Retest Classification Probability - Chemistry

	Red - retest	Green - retest	Blue - retest
Red – test	0.895	0.105	0.000
Green – test	0.162	0.817	0.021
Blue – test	0.000	0.220	0.780

Exact Agreement Rate = 0.866

Kappa = 0.718

N-count = 10,497

Table E-27. Retest Classification Probability - Writing Grade 3

	Red - retest	Green - retest	Blue - retest
Red – test	0.925	0.075	0.000
Green – test	0.096	0.831	0.073
Blue – test	0.000	0.219	0.781

Exact Agreement Rate = 0.876

Kappa = 0.781

N-count = 6,677

Table E-28. Retest Classification Probability - Writing Grade 4

	Red - retest	Green - retest	Blue - retest
Red – test	0.926	0.074	0.000
Green – test	0.097	0.836	0.066
Blue – test	0.000	0.224	0.776

Kappa = 0.783

N-count = 7,225

Table E-29. Retest Classification Probability - Writing Grade 5

	Red - retest	Green - retest	Blue - retest
Red – test	0.919	0.081	0.000
Green – test	0.097	0.838	0.065
Blue – test	0.000	0.232	0.768

Exact Agreement Rate = 0.870

Kappa = 0.770

N-count = 7,897

Table E-30. Retest Classification Probability - Writing Grade 6

	Red - retest	Green - retest	Blue - retest
Red – test	0.918	0.082	0.000
Green – test	0.105	0.845	0.049
Blue – test	0.000	0.220	0.780

Exact Agreement Rate = 0.877

Kappa = 0.778

N-count = 13,594

Table E-31. Retest Classification Probability - Writing Grade 7

	Red - retest	Green - retest	Blue - retest
Red – test	0.921	0.079	0.000
Green – test	0.106	0.843	0.052
Blue – test	0.000	0.237	0.763

Exact Agreement Rate = 0.880

Kappa = 0.778

N-count = 14,079

Table E-32. Retest Classification Probability - Writing Grade 8

	Red - retest	Green - retest	Blue - retest
Red – test	0.917	0.083	0.000
Green – test	0.102	0.846	0.052
Blue – test	0.000	0.234	0.766

Kappa = 0.775

N-count = 14,182

Table E-33. Retest Classification Probability - English Composition

	Red - retest	Green - retest	Blue - retest
Red – test	0.907	0.093	0.000
Green – test	0.082	0.846	0.072
Blue – test	0.000	0.178	0.822

Exact Agreement Rate = 0.864

Kappa = 0.772

N-count = 9,900

RETEST CLASSIFICATION PERCENT FOR VARIOUS SCALE SCORE RANGES

Tables E–34 through E–66 show the percent chance of scoring in each color range if retested without additional instruction for various scale scores ranges.

Table E-34. Retest Classification Percent for Various Scale Score Ranges - Mathematics Grade 3

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0				
200 to 249	6	>99.9%	0.0%	0.0%	>99.9%
250 to 299	30	>99.9%	0.0%	0.0%	>99.9%
300 to 349	158	>99.9%	0.0%	0.0%	>99.9%
350 to 399	469	>99.9%	0.0%	0.0%	>99.9%
400 to 449	1,042	>99.9%	0.0%	0.0%	>99.9%
450 to 499	1,563	>99.9%	0.0%	0.0%	>99.9%
500 to 549	2,472	>99.9%	0.0%	0.0%	>99.9%
550 to 599	3,453	>99.9%	0.0%	0.0%	>99.9%
600 to 649	4,624	>99.9%	0.0%	0.0%	>99.9%
650 to 699	6,187	>99.9%	0.0%	0.0%	>99.9%
700 to 749	7,506	99.1%	0.9%	0.0%	99.1%
750 to 799	8,154	87.2%	12.8%	0.0%	87.2%
800 to 849 (Red/Green cut = 822)	7,723	47.1%	52.9%	0.0%	62.7%
850 to 899	6,223	10.2%	89.5%	0.3%	89.5%
900 to 949	4,195	0.7%	92.9%	6.4%	92.9%
950 to 999 (Green/Blue cut = 985)	2,389	0.0%	62.8%	37.2%	66.1%
1000 to 1049	1,221	0.0%	19.1%	80.9%	80.9%
1050 to 1099	508	0.0%	1.7%	98.3%	98.3%
1100 to 1149	223	0.0%	0.0%	>99.9%	>99.9%
1150 to 1199	81	0.0%	0.0%	>99.9%	>99.9%
1200 to 1249	20	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	5	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	1	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	58,253				

^{*} Retest assuming no additional instruction

Table E-35. Retest Classification Percent for Various Scale Score Ranges - Mathematics Grade 4

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0	·	-	·	
200 to 249	0				
250 to 299	3	>99.9%	0.0%	0.0%	>99.9%
300 to 349	12	>99.9%	0.0%	0.0%	>99.9%
350 to 399	54	>99.9%	0.0%	0.0%	>99.9%
400 to 449	201	>99.9%	0.0%	0.0%	>99.9%
450 to 499	489	>99.9%	0.0%	0.0%	>99.9%
500 to 549	835	>99.9%	0.0%	0.0%	>99.9%
550 to 599	1,457	>99.9%	0.0%	0.0%	>99.9%
600 to 649	2,247	>99.9%	0.0%	0.0%	>99.9%
650 to 699	3,332	>99.9%	0.0%	0.0%	>99.9%
700 to 749	5,126	>99.9%	0.0%	0.0%	>99.9%
750 to 799	6,886	>99.9%	0.0%	0.0%	>99.9%
800 to 849	8,613	98.0%	2.0%	0.0%	98.0%
850 to 899	9,332	80.0%	20.0%	0.0%	80.0%
900 to 949 (Red/Green cut = 910)	8,595	35.8%	64.2%	0.0%	66.2%
950 to 999	6,720	5.8%	93.4%	0.7%	93.4%
1000 to 1049	4,653	0.3%	88.8%	10.9%	88.8%
1050 to 1099 (Green/Blue cut = 1073)	2,726	0.0%	50.6%	49.4%	62.5%
1100 to 1149	1,462	0.0%	11.8%	88.2%	88.2%
1150 to 1199	656	0.0%	0.8%	99.2%	99.2%
1200 to 1249	256	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	83	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	20	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	13	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	63,771				

^{*} Retest assuming no additional instruction

Table E-36. Retest Classification Percent for Various Scale Score Ranges - Mathematics Grade 5

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	1	>99.9%	0.0%	0.0%	>99.9%
300 to 349	0				
350 to 399	9	>99.9%	0.0%	0.0%	>99.9%
400 to 449	53	>99.9%	0.0%	0.0%	>99.9%
450 to 499	217	>99.9%	0.0%	0.0%	>99.9%
500 to 549	434	>99.9%	0.0%	0.0%	>99.9%
550 to 599	835	>99.9%	0.0%	0.0%	>99.9%
600 to 649	1,358	>99.9%	0.0%	0.0%	>99.9%
650 to 699	2,176	>99.9%	0.0%	0.0%	>99.9%
700 to 749	3,315	>99.9%	0.0%	0.0%	>99.9%
750 to 799	4,913	>99.9%	0.0%	0.0%	>99.9%
800 to 849	7,345	99.9%	0.1%	0.0%	99.9%
850 to 899	9,287	97.8%	2.2%	0.0%	97.8%
900 to 949	10,562	78.6%	21.4%	0.0%	78.6%
950 to 999 (Red/Green cut = 958)	9,824	34.2%	65.8%	0.0%	67.1%
1000 to 1049	7,381	5.3%	93.9%	0.9%	93.9%
1050 to 1099	4,769	0.2%	88.0%	11.8%	88.0%
1100 to 1149 (Green/Blue cut = 1121)	2,584	0.0%	49.2%	50.8%	62.2%
1150 to 1199	1,119	0.0%	11.0%	89.0%	89.0%
1200 to 1249	459	0.0%	0.7%	99.3%	99.3%
1250 to 1299	164	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	73	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	27	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	11	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	5	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	1	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	1	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	66,923				

^{*} Retest assuming no additional instruction

Table E-37. Retest Classification Percent for Various Scale Score Ranges - Mathematics Grade 6

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	6	>99.9%	0.0%	0.0%	>99.9%
450 to 499	20	>99.9%	0.0%	0.0%	>99.9%
500 to 549	102	>99.9%	0.0%	0.0%	>99.9%
550 to 599	394	>99.9%	0.0%	0.0%	>99.9%
600 to 649	829	>99.9%	0.0%	0.0%	>99.9%
650 to 699	1,403	>99.9%	0.0%	0.0%	>99.9%
700 to 749	2,291	>99.9%	0.0%	0.0%	>99.9%
750 to 799	3,593	>99.9%	0.0%	0.0%	>99.9%
800 to 849	5,479	>99.9%	0.0%	0.0%	>99.9%
850 to 899	7,762	>99.9%	0.0%	0.0%	>99.9%
900 to 949	9,913	99.3%	0.7%	0.0%	99.3%
950 to 999	10,218	88.3%	11.7%	0.0%	88.3%
1000 to 1049 (Red/Green cut = 1023)	9,464	48.1%	51.9%	0.0%	63.0%
1050 to 1099	7,885	9.9%	89.8%	0.2%	89.8%
1100 to 1149	5,512	0.5%	93.9%	5.6%	93.9%
1150 to 1199 (Green/Blue cut = 1186)	3,204	0.0%	63.6%	36.4%	66.7%
1200 to 1249	1,820	0.0%	18.1%	81.9%	81.9%
1250 to 1299	802	0.0%	1.4%	98.6%	98.6%
1300 to 1349	315	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	134	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	43	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	12	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	6	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	1	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	71,208				

^{*} Retest assuming no additional instruction

Table E-38. Retest Classification Percent for Various Scale Score Ranges - Mathematics Grade 7

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	0				
450 to 499	9	>99.9%	0.0%	0.0%	>99.9%
500 to 549	38	>99.9%	0.0%	0.0%	>99.9%
550 to 599	202	>99.9%	0.0%	0.0%	>99.9%
600 to 649	564	>99.9%	0.0%	0.0%	>99.9%
650 to 699	999	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,659	>99.9%	0.0%	0.0%	>99.9%
750 to 799	2,554	>99.9%	0.0%	0.0%	>99.9%
800 to 849	3,787	>99.9%	0.0%	0.0%	>99.9%
850 to 899	5,598	>99.9%	0.0%	0.0%	>99.9%
900 to 949	7,676	>99.9%	0.0%	0.0%	>99.9%
950 to 999	9,301	99.6%	0.4%	0.0%	99.6%
1000 to 1049	10,187	92.2%	7.8%	0.0%	92.2%
1050 to 1099 (Red/Green cut = 1082)	9,542	56.7%	43.3%	0.0%	63.8%
1100 to 1149	7,805	14.4%	85.5%	0.1%	85.5%
1150 to 1199	5,301	1.0%	95.7%	3.3%	95.7%
1200 to 1249 (Green/Blue cut = 1245)	2,882	0.0%	71.6%	28.4%	71.9%
1250 to 1299	1,479	0.0%	25.5%	74.5%	74.5%
1300 to 1349	616	0.0%	2.6%	97.4%	97.4%
1350 to 1399	202	0.0%	0.1%	99.9%	99.9%
1400 to 1449	78	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	17	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	10	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	1	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	1	0.0%	0.0%	>99.9%	>99.9%
1650 to 1699	1	0.0%	0.0%	>99.9%	>99.9%
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	70,509				

^{*} Retest assuming no additional instruction

Table E-39. Retest Classification Percent for Various Scale Score Ranges - Mathematics Grade 8

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	4	>99.9%	0.0%	0.0%	>99.9%
450 to 499	15	>99.9%	0.0%	0.0%	>99.9%
500 to 549	81	>99.9%	0.0%	0.0%	>99.9%
550 to 599	225	>99.9%	0.0%	0.0%	>99.9%
600 to 649	467	>99.9%	0.0%	0.0%	>99.9%
650 to 699	751	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,038	>99.9%	0.0%	0.0%	>99.9%
750 to 799	1,532	>99.9%	0.0%	0.0%	>99.9%
800 to 849	2,197	>99.9%	0.0%	0.0%	>99.9%
850 to 899	3,038	>99.9%	0.0%	0.0%	>99.9%
900 to 949	4,371	>99.9%	0.0%	0.0%	>99.9%
950 to 999	5,824	>99.9%	0.0%	0.0%	>99.9%
1000 to 1049	7,146	99.1%	0.9%	0.0%	99.1%
1050 to 1099	8,242	87.3%	12.7%	0.0%	87.3%
1100 to 1149 (Red/Green cut = 1121)	7,377	46.8%	53.2%	0.0%	62.8%
1150 to 1199	4,838	9.5%	90.3%	0.2%	90.3%
1200 to 1249	2,459	0.5%	93.9%	5.6%	93.9%
1250 to 1299 (Green/Blue cut = 1284)	1,169	0.0%	61.0%	39.0%	65.6%
1300 to 1349	589	0.0%	17.8%	82.2%	82.2%
1350 to 1399	242	0.0%	1.2%	98.8%	98.8%
1400 to 1449	76	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	23	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	5	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	3	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	0				
1650 to 1699	1	0.0%	0.0%	>99.9%	>99.9%
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	51,713				

^{*} Retest assuming no additional instruction

Table E-40. Retest Classification Percent for Various Scale Score Ranges - Mathematics High School

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	,		,	
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	0				
450 to 499	0				
500 to 549	0				
550 to 599	1	>99.9%	0.0%	0.0%	>99.9%
600 to 649	0				
650 to 699	4	>99.9%	0.0%	0.0%	>99.9%
700 to 749	9	>99.9%	0.0%	0.0%	>99.9%
750 to 799	7	>99.9%	0.0%	0.0%	>99.9%
800 to 849	4	>99.9%	0.0%	0.0%	>99.9%
850 to 899	14	>99.9%	0.0%	0.0%	>99.9%
900 to 949	9	>99.9%	0.0%	0.0%	>99.9%
950 to 999	5	>99.9%	0.0%	0.0%	>99.9%
1000 to 1049	4	99.7%	0.3%	0.0%	99.7%
1050 to 1099	5	92.7%	7.3%	0.0%	92.7%
1100 to 1149 (Red/Green cut = 1134)	2	73.3%	26.7%	0.0%	73.3%
1150 to 1199	0				
1200 to 1249	0				
1250 to 1299 (Green/Blue cut = 1297)	0				
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	64				

^{*} Retest assuming no additional instruction

Table E-41. Retest Classification Percent for Various Scale Score Ranges - Algebra I

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 400	0	N/A	N/A	N/A	N/A
400 to 449	1	>99.9%	0.0%	0.0%	>99.9%
450 to 499	11	>99.9%	0.0%	0.0%	>99.9%
500 to 549	38	>99.9%	0.0%	0.0%	>99.9%
550 to 599	183	>99.9%	0.0%	0.0%	>99.9%
600 to 649	574	>99.9%	0.0%	0.0%	>99.9%
650 to 699	1,234	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,890	>99.9%	0.0%	0.0%	>99.9%
750 to 799	2,708	>99.9%	0.0%	0.0%	>99.9%
800 to 849	3,676	>99.9%	0.0%	0.0%	>99.9%
850 to 899	5,147	>99.9%	0.0%	0.0%	>99.9%
900 to 949	7,312	>99.9%	0.0%	0.0%	>99.9%
950 to 999	10,305	>99.9%	0.0%	0.0%	>99.9%
1000 to 1049	14,770	99.7%	0.3%	0.0%	99.7%
1050 to 1099	19,443	92.6%	7.4%	0.0%	92.6%
1100 to 1149 (Red/Green cut = 1134)	21,769	58.7%	41.3%	0.0%	64.3%
1150 to 1199	17,061	15.9%	84.0%	0.1%	84.0%
1200 to 1249	9,065	1.3%	96.1%	2.7%	96.1%
1250 to 1299 (Green/Blue cut = 1297)	3,630	0.0%	74.5%	25.5%	74.6%
1300 to 1349	1,430	0.0%	27.1%	72.9%	72.9%
1350 to 1399	565	0.0%	3.0%	97.0%	97.0%
1400 to 1449	167	0.0%	0.1%	99.9%	99.9%
1450 to 1499	61	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	27	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	7	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	4	0.0%	0.0%	>99.9%	>99.9%
1650 to 1699	2	0.0%	0.0%	>99.9%	>99.9%
1700 to 1749	0	N/A	N/A	N/A	N/A
1750 to 1799	0	N/A	N/A	N/A	N/A
1800 to 1849	0	N/A	N/A	N/A	N/A
1850 to 1899	0	N/A	N/A	N/A	N/A
1900 to 1949	0	N/A	N/A	N/A	N/A
1950 to 1999	0	N/A	N/A	N/A	N/A
>= 2000	0	N/A	N/A	N/A	N/A
TOTAL	121,080	N/A	N/A	N/A	N/A

^{*} Retest assuming no additional instruction

Table E-42. Retest Classification Percent for Various Scale Score Ranges - Geometry

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 400	0				
400 to 449	0				
450 to 499	0				
500 to 549	6	>99.9%	0.0%	0.0%	>99.9%
550 to 599	21	>99.9%	0.0%	0.0%	>99.9%
600 to 649	35	>99.9%	0.0%	0.0%	>99.9%
650 to 699	78	>99.9%	0.0%	0.0%	>99.9%
700 to 749	118	>99.9%	0.0%	0.0%	>99.9%
750 to 799	194	>99.9%	0.0%	0.0%	>99.9%
800 to 849	275	>99.9%	0.0%	0.0%	>99.9%
850 to 899	412	>99.9%	0.0%	0.0%	>99.9%
900 to 949	599	>99.9%	0.0%	0.0%	>99.9%
950 to 999	868	>99.9%	0.0%	0.0%	>99.9%
1000 to 1049	1,302	>99.9%	0.0%	0.0%	>99.9%
1050 to 1099	1,739	98.8%	1.2%	0.0%	98.8%
1100 to 1149	1,870	84.4%	15.6%	0.0%	84.4%
1150 to 1199 (Red/Green cut = 1165)	1,516	40.6%	59.4%	0.0%	64.4%
1200 to 1249	974	6.8%	92.8%	0.4%	92.8%
1250 to 1299	611	0.3%	91.4%	8.3%	91.4%
1300 to 1349 (Green/Blue cut = 1328)	383	0.0%	54.4%	45.6%	63.6%
1350 to 1399	218	0.0%	14.5%	85.5%	85.5%
1400 to 1449	104	0.0%	1.1%	98.9%	98.9%
1450 to 1499	41	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	15	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	6	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	2	0.0%	0.0%	>99.9%	>99.9%
1650 to 1699	0				
1700 to 1749	1	0.0%	0.0%	>99.9%	>99.9%
1750 to 1799	0				
1800 to 1849	1	0.0%	0.0%	>99.9%	>99.9%
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	11,389				

^{*} Retest assuming no additional instruction

Table E-43. Retest Classification Percent for Various Scale Score Ranges - Algebra II

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 400	0				
400 to 449	0				
450 to 499	0				
500 to 549	2	>99.9%	0.0%	0.0%	>99.9%
550 to 599	11	>99.9%	0.0%	0.0%	>99.9%
600 to 649	16	>99.9%	0.0%	0.0%	>99.9%
650 to 699	49	>99.9%	0.0%	0.0%	>99.9%
700 to 749	97	>99.9%	0.0%	0.0%	>99.9%
750 to 799	157	>99.9%	0.0%	0.0%	>99.9%
800 to 849	203	>99.9%	0.0%	0.0%	>99.9%
850 to 899	252	>99.9%	0.0%	0.0%	>99.9%
900 to 949	427	>99.9%	0.0%	0.0%	>99.9%
950 to 999	618	>99.9%	0.0%	0.0%	>99.9%
1000 to 1049	924	>99.9%	0.0%	0.0%	>99.9%
1050 to 1099	1,540	>99.9%	0.0%	0.0%	>99.9%
1100 to 1149	2,029	99.5%	0.5%	0.0%	99.5%
1150 to 1199	1,929	91.1%	8.9%	0.0%	91.1%
1200 to 1249 (Red/Green cut = 1228)	1,351	54.6%	45.4%	0.0%	63.3%
1250 to 1299	926	12.1%	87.7%	0.1%	87.7%
1300 to 1349	535	0.8%	95.4%	3.9%	95.4%
1350 to 1399 (Green/Blue cut = 1391)	299	0.0%	69.0%	31.0%	70.1%
1400 to 1449	162	0.0%	22.5%	77.5%	77.5%
1450 to 1499	68	0.0%	2.5%	97.5%	97.5%
1500 to 1549	25	0.0%	0.1%	99.9%	99.9%
1550 to 1599	12	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	6	0.0%	0.0%	>99.9%	>99.9%
1650 to 1699	1	0.0%	0.0%	>99.9%	>99.9%
1700 to 1749	1	0.0%	0.0%	>99.9%	>99.9%
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	11,640				

^{*} Retest assuming no additional instruction

Table E-44. Retest Classification Percent for Various Scale Score Ranges - Reading Grade 3

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0	·	·	·	
200 to 249	0				
250 to 299	2	>99.9%	0.0%	0.0%	>99.9%
300 to 349	16	>99.9%	0.0%	0.0%	>99.9%
350 to 399	93	>99.9%	0.0%	0.0%	>99.9%
400 to 449	497	>99.9%	0.0%	0.0%	>99.9%
450 to 499	1,819	>99.9%	0.0%	0.0%	>99.9%
500 to 549	4,075	>99.9%	0.0%	0.0%	>99.9%
550 to 599	5,737	>99.9%	0.0%	0.0%	>99.9%
600 to 649	5,931	99.4%	0.6%	0.0%	99.4%
650 to 699	5,640	92.7%	7.3%	0.0%	92.7%
700 to 749 (Red/Green cut = 741)	5,503	63.4%	36.6%	0.0%	65.2%
750 to 799	5,478	22.1%	77.9%	0.0%	77.9%
800 to 849	4,914	3.1%	96.7%	0.2%	96.7%
850 to 899	4,233	0.2%	96.3%	3.5%	96.3%
900 to 949	3,275	0.0%	76.0%	24.0%	76.0%
950 to 999 (Green/Blue cut = 956)	2,212	0.0%	36.3%	63.7%	64.7%
1000 to 1049	1,213	0.0%	8.1%	91.9%	91.9%
1050 to 1099	535	0.0%	0.9%	99.1%	99.1%
1100 to 1149	175	0.0%	0.1%	99.9%	99.9%
1150 to 1199	38	0.0%	0.0%	>99.9%	>99.9%
1200 to 1249	11	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	1	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	51,398				

^{*} Retest assuming no additional instruction

Table E-45. Retest Classification Percent for Various Scale Score Ranges - Reading Grade 4

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	1	>99.9%	0.0%	0.0%	>99.9%
300 to 349	2	>99.9%	0.0%	0.0%	>99.9%
350 to 399	24	>99.9%	0.0%	0.0%	>99.9%
400 to 449	131	>99.9%	0.0%	0.0%	>99.9%
450 to 499	658	>99.9%	0.0%	0.0%	>99.9%
500 to 549	1,806	>99.9%	0.0%	0.0%	>99.9%
550 to 599	3,289	>99.9%	0.0%	0.0%	>99.9%
600 to 649	4,152	>99.9%	0.0%	0.0%	>99.9%
650 to 699	4,417	>99.9%	0.0%	0.0%	>99.9%
700 to 749	4,851	98.7%	1.3%	0.0%	98.7%
750 to 799	5,414	86.9%	13.1%	0.0%	86.9%
800 to 849 (Red/Green cut = 826)	5,679	50.2%	49.8%	0.0%	61.6%
850 to 899	5,968	13.5%	86.5%	0.0%	86.5%
900 to 949	5,819	1.4%	98.1%	0.5%	98.1%
950 to 999	5,183	0.1%	92.8%	7.2%	92.8%
1000 to 1049 (Green/Blue cut = 1041)	3,830	0.0%	65.0%	35.0%	66.1%
1050 to 1099	2,230	0.0%	26.2%	73.8%	73.8%
1100 to 1149	976	0.0%	5.3%	94.7%	94.7%
1150 to 1199	348	0.0%	0.6%	99.4%	99.4%
1200 to 1249	106	0.0%	0.1%	99.9%	99.9%
1250 to 1299	28	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	5	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	0				
1400 to 1449	1	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	54,918				

^{*} Retest assuming no additional instruction

Table E-46. Retest Classification Percent for Various Scale Score Ranges - Reading Grade 5

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	7	>99.9%	0.0%	0.0%	>99.9%
400 to 449	48	>99.9%	0.0%	0.0%	>99.9%
450 to 499	272	>99.9%	0.0%	0.0%	>99.9%
500 to 549	959	>99.9%	0.0%	0.0%	>99.9%
550 to 599	1,949	>99.9%	0.0%	0.0%	>99.9%
600 to 649	2,657	>99.9%	0.0%	0.0%	>99.9%
650 to 699	3,140	>99.9%	0.0%	0.0%	>99.9%
700 to 749	3,423	>99.9%	0.0%	0.0%	>99.9%
750 to 799	4,245	99.5%	0.5%	0.0%	99.5%
800 to 849	4,977	92.3%	7.7%	0.0%	92.3%
850 to 899 (Red/Green cut = 890)	5,996	62.1%	37.9%	0.0%	64.3%
900 to 949	6,793	21.2%	78.8%	0.0%	78.8%
950 to 999	7,134	2.9%	96.8%	0.2%	96.8%
1000 to 1049	6,651	0.2%	95.9%	4.0%	95.9%
1050 to 1099	5,032	0.0%	75.4%	24.6%	75.4%
1100 to 1149 (Green/Blue cut = 1105)	2,723	0.0%	36.8%	63.2%	63.9%
1150 to 1199	1,169	0.0%	10.2%	89.8%	89.8%
1200 to 1249	396	0.0%	1.8%	98.2%	98.2%
1250 to 1299	112	0.0%	0.3%	99.7%	99.7%
1300 to 1349	19	0.0%	0.1%	99.9%	99.9%
1350 to 1399	3	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	57,705				

^{*} Retest assuming no additional instruction

Table E-47. Retest Classification Percent for Various Scale Score Ranges - Reading Grade 6

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	·	,	·	
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	6	>99.9%	0.0%	0.0%	>99.9%
450 to 499	40	>99.9%	0.0%	0.0%	>99.9%
500 to 549	239	>99.9%	0.0%	0.0%	>99.9%
550 to 599	775	>99.9%	0.0%	0.0%	>99.9%
600 to 649	1,752	>99.9%	0.0%	0.0%	>99.9%
650 to 699	2,602	>99.9%	0.0%	0.0%	>99.9%
700 to 749	3,410	>99.9%	0.0%	0.0%	>99.9%
750 to 799	4,149	>99.9%	0.0%	0.0%	>99.9%
800 to 849	5,140	99.6%	0.4%	0.0%	99.6%
850 to 899	6,307	94.1%	5.9%	0.0%	94.1%
900 to 949 (Red/Green cut = 945)	7,675	66.5%	33.5%	0.0%	67.1%
950 to 999	9,003	24.0%	76.0%	0.0%	76.0%
1000 to 1049	8,878	3.6%	96.3%	0.1%	96.3%
1050 to 1099	7,510	0.2%	96.8%	2.9%	96.8%
1100 to 1149	5,216	0.0%	78.5%	21.5%	78.5%
1150 to 1199 (Green/Blue cut = 1160)	2,696	0.0%	41.3%	58.7%	61.2%
1200 to 1249	1,094	0.0%	13.4%	86.6%	86.6%
1250 to 1299	329	0.0%	3.2%	96.8%	96.8%
1300 to 1349	78	0.0%	0.8%	99.2%	99.2%
1350 to 1399	21	0.0%	0.2%	99.8%	99.8%
1400 to 1449	5	0.0%	0.1%	99.9%	99.9%
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	1	0.0%	0.1%	99.9%	99.9%
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	66,926				

^{*} Retest assuming no additional instruction

Table E-48. Retest Classification Percent for Various Scale Score Ranges - Reading Grade 7

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	·			
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	1	>99.9%	0.0%	0.0%	>99.9%
400 to 449	5	>99.9%	0.0%	0.0%	>99.9%
450 to 499	39	>99.9%	0.0%	0.0%	>99.9%
500 to 549	193	>99.9%	0.0%	0.0%	>99.9%
550 to 599	686	>99.9%	0.0%	0.0%	>99.9%
600 to 649	1,663	>99.9%	0.0%	0.0%	>99.9%
650 to 699	2,411	>99.9%	0.0%	0.0%	>99.9%
700 to 749	3,107	>99.9%	0.0%	0.0%	>99.9%
750 to 799	3,544	>99.9%	0.0%	0.0%	>99.9%
800 to 849	4,237	>99.9%	0.0%	0.0%	>99.9%
850 to 899	5,479	99.0%	1.0%	0.0%	99.0%
900 to 949	6,830	88.4%	11.6%	0.0%	88.4%
950 to 999 (Red/Green cut = 979)	8,183	52.8%	47.2%	0.0%	61.8%
1000 to 1049	8,992	14.4%	85.6%	0.0%	85.6%
1050 to 1099	8,469	1.6%	98.0%	0.4%	98.0%
1100 to 1149	6,747	0.1%	93.3%	6.6%	93.3%
1150 to 1199 (Green/Blue cut = 1194)	3,930	0.0%	67.8%	32.2%	68.1%
1200 to 1249	1,722	0.0%	30.9%	69.1%	69.1%
1250 to 1299	640	0.0%	9.0%	91.0%	91.0%
1300 to 1349	217	0.0%	2.3%	97.7%	97.7%
1350 to 1399	41	0.0%	0.6%	99.4%	99.4%
1400 to 1449	7	0.0%	0.3%	99.7%	99.7%
1450 to 1499	2	0.0%	0.2%	99.8%	99.8%
1500 to 1549	1	0.0%	0.1%	99.9%	99.9%
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	67,146				

^{*} Retest assuming no additional instruction

Table E-49. Retest Classification Percent for Various Scale Score Ranges - Reading Grade 8

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	1	>99.9%	0.0%	0.0%	>99.9%
400 to 449	6	>99.9%	0.0%	0.0%	>99.9%
450 to 499	43	>99.9%	0.0%	0.0%	>99.9%
500 to 549	188	>99.9%	0.0%	0.0%	>99.9%
550 to 599	602	>99.9%	0.0%	0.0%	>99.9%
600 to 649	1,239	>99.9%	0.0%	0.0%	>99.9%
650 to 699	1,968	>99.9%	0.0%	0.0%	>99.9%
700 to 749	2,380	>99.9%	0.0%	0.0%	>99.9%
750 to 799	2,782	>99.9%	0.0%	0.0%	>99.9%
800 to 849	3,428	>99.9%	0.0%	0.0%	>99.9%
850 to 899	4,398	99.9%	0.1%	0.0%	99.9%
900 to 949	5,515	97.3%	2.7%	0.0%	97.3%
950 to 999	7,012	78.3%	21.7%	0.0%	78.3%
1000 to 1049 (Red/Green cut = 1011)	7,853	36.8%	63.2%	0.0%	65.1%
1050 to 1099	8,472	7.6%	92.4%	0.0%	92.4%
1100 to 1149	7,357	0.7%	97.9%	1.4%	97.9%
1150 to 1199	5,000	0.0%	86.3%	13.6%	86.3%
1200 to 1249 (Green/Blue cut = 1226)	2,662	0.0%	53.6%	46.4%	60.0%
1250 to 1299	1,186	0.0%	21.7%	78.3%	78.3%
1300 to 1349	351	0.0%	6.7%	93.3%	93.3%
1350 to 1399	83	0.0%	1.9%	98.1%	98.1%
1400 to 1449	34	0.0%	0.7%	99.3%	99.3%
1450 to 1499	4	0.0%	0.4%	99.6%	99.6%
1500 to 1549	6	0.0%	0.3%	99.7%	99.7%
1550 to 1599	0				
1600 to 1649	2	0.0%	0.4%	99.6%	99.6%
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	62,572				

^{*} Retest assuming no additional instruction

Table E-50. Retest Classification Percent for Various Scale Score Ranges - Literature

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	•	,	•	
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	2	>99.9%	0.0%	0.0%	>99.9%
400 to 449	11	>99.9%	0.0%	0.0%	>99.9%
450 to 499	96	>99.9%	0.0%	0.0%	>99.9%
500 to 549	434	>99.9%	0.0%	0.0%	>99.9%
550 to 599	1,378	>99.9%	0.0%	0.0%	>99.9%
600 to 649	2,674	>99.9%	0.0%	0.0%	>99.9%
650 to 699	4,080	>99.9%	0.0%	0.0%	>99.9%
700 to 749	4,880	>99.9%	0.0%	0.0%	>99.9%
750 to 799	5,743	>99.9%	0.0%	0.0%	>99.9%
800 to 849	6,644	>99.9%	0.0%	0.0%	>99.9%
850 to 899	8,509	>99.9%	0.0%	0.0%	>99.9%
900 to 949	10,859	99.2%	0.8%	0.0%	99.2%
950 to 999	14,356	90.0%	10.0%	0.0%	90.0%
1000 to 1049 (Red/Green cut = 1033)	17,809	56.2%	43.8%	0.0%	62.2%
1050 to 1099	20,812	16.9%	83.1%	0.0%	83.1%
1100 to 1149	21,229	2.3%	97.3%	0.4%	97.3%
1150 to 1199	17,542	0.2%	93.5%	6.4%	93.5%
1200 to 1249 (Green/Blue cut = 1248)	11,758	0.0%	69.2%	30.8%	69.2%
1250 to 1299	5,862	0.0%	34.3%	65.7%	65.7%
1300 to 1349	2,276	0.0%	12.3%	87.7%	87.7%
1350 to 1399	756	0.0%	4.0%	96.0%	96.0%
1400 to 1449	213	0.0%	1.6%	98.4%	98.4%
1450 to 1499	52	0.0%	0.8%	99.2%	99.2%
1500 to 1549	28	0.0%	0.6%	99.4%	99.4%
1550 to 1599	5	0.0%	0.8%	99.2%	99.2%
1600 to 1649	6	0.0%	0.6%	99.4%	99.4%
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	158,014				

^{*} Retest assuming no additional instruction

Table E-51. Retest Classification Percent for Various Scale Score Ranges - Science Grade 3

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	,		,	
200 to 249	3	>99.9%	0.0%	0.0%	>99.9%
250 to 299	24	>99.9%	0.0%	0.0%	>99.9%
300 to 349	59	>99.9%	0.0%	0.0%	>99.9%
350 to 399	75	>99.9%	0.0%	0.0%	>99.9%
400 to 449	113	>99.9%	0.0%	0.0%	>99.9%
450 to 499	133	>99.9%	0.0%	0.0%	>99.9%
500 to 549	138	>99.9%	0.0%	0.0%	>99.9%
550 to 599	193	99.7%	0.3%	0.0%	99.7%
600 to 649	281	93.8%	6.2%	0.0%	93.8%
650 to 699 (Red/Green cut = 694)	375	65.8%	34.2%	0.0%	67.0%
700 to 749	457	23.4%	76.6%	0.0%	76.6%
750 to 799	483	3.0%	95.5%	1.6%	95.5%
800 to 849	432	0.1%	84.3%	15.6%	84.3%
850 to 899 (Green/Blue cut = 867)	279	0.0%	45.1%	54.9%	62.2%
900 to 949	164	0.0%	10.6%	89.4%	89.4%
950 to 999	66	0.0%	0.8%	99.2%	99.2%
1000 to 1049	22	0.0%	0.0%	>99.9%	>99.9%
1050 to 1099	8	0.0%	0.0%	>99.9%	>99.9%
1100 to 1149	0				
1150 to 1199	0				
1200 to 1249	0				
1250 to 1299	0				
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	3,305				

^{*} Retest assuming no additional instruction

Table E-52. Retest Classification Percent for Various Scale Score Ranges - Science Grade 4

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	,		,	
200 to 249	4	>99.9%	0.0%	0.0%	>99.9%
250 to 299	19	>99.9%	0.0%	0.0%	>99.9%
300 to 349	55	>99.9%	0.0%	0.0%	>99.9%
350 to 399	195	>99.9%	0.0%	0.0%	>99.9%
400 to 449	271	>99.9%	0.0%	0.0%	>99.9%
450 to 499	404	>99.9%	0.0%	0.0%	>99.9%
500 to 549	439	>99.9%	0.0%	0.0%	>99.9%
550 to 599	598	>99.9%	0.0%	0.0%	>99.9%
600 to 649	758	99.8%	0.2%	0.0%	99.8%
650 to 699	1,156	95.8%	4.2%	0.0%	95.8%
700 to 749	1,609	71.5%	28.5%	0.0%	71.5%
750 to 799 (Red/Green cut = 751)	2,196	28.0%	71.9%	0.0%	71.9%
800 to 849	2,413	4.1%	94.8%	1.1%	94.8%
850 to 899	2,288	0.2%	87.6%	12.2%	87.6%
900 to 949 (Green/Blue cut = 924)	1,596	0.0%	50.7%	49.3%	61.7%
950 to 999	860	0.0%	13.3%	86.7%	86.7%
1000 to 1049	399	0.0%	1.3%	98.7%	98.7%
1050 to 1099	134	0.0%	0.0%	>99.9%	>99.9%
1100 to 1149	34	0.0%	0.0%	>99.9%	>99.9%
1150 to 1199	5	0.0%	0.0%	>99.9%	>99.9%
1200 to 1249	2	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	0				
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	15,435				

^{*} Retest assuming no additional instruction

Table E-53. Retest Classification Percent for Various Scale Score Ranges - Science Grade 5

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0	·			
200 to 249	0				
250 to 299	0				
300 to 349	4	>99.9%	0.0%	0.0%	>99.9%
350 to 399	14	>99.9%	0.0%	0.0%	>99.9%
400 to 449	37	>99.9%	0.0%	0.0%	>99.9%
450 to 499	60	>99.9%	0.0%	0.0%	>99.9%
500 to 549	69	>99.9%	0.0%	0.0%	>99.9%
550 to 599	95	>99.9%	0.0%	0.0%	>99.9%
600 to 649	143	>99.9%	0.0%	0.0%	>99.9%
650 to 699	172	99.8%	0.2%	0.0%	99.8%
700 to 749	300	96.5%	3.5%	0.0%	96.5%
750 to 799	332	74.3%	25.7%	0.0%	74.3%
800 to 849 (Red/Green cut = 804)	457	29.9%	70.1%	0.0%	70.3%
850 to 899	509	4.7%	94.4%	0.8%	94.4%
900 to 949	545	0.3%	89.0%	10.8%	89.0%
950 to 999 (Green/Blue cut = 977)	377	0.0%	54.3%	45.7%	62.3%
1000 to 1049	213	0.0%	15.4%	84.6%	84.6%
1050 to 1099	90	0.0%	1.5%	98.5%	98.5%
1100 to 1149	25	0.0%	0.0%	>99.9%	>99.9%
1150 to 1199	8	0.0%	0.0%	>99.9%	>99.9%
1200 to 1249	0				
1250 to 1299	0				
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	3,450				

^{*} Retest assuming no additional instruction

Table E-54. Retest Classification Percent for Various Scale Score Ranges - Science Grade 6

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	5	>99.9%	0.0%	0.0%	>99.9%
450 to 499	26	>99.9%	0.0%	0.0%	>99.9%
500 to 549	139	>99.9%	0.0%	0.0%	>99.9%
550 to 599	325	>99.9%	0.0%	0.0%	>99.9%
600 to 649	592	>99.9%	0.0%	0.0%	>99.9%
650 to 699	824	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,158	99.9%	0.1%	0.0%	99.9%
750 to 799	1,370	97.8%	2.2%	0.0%	97.8%
800 to 849	1,857	79.1%	20.9%	0.0%	79.1%
850 to 899 (Red/Green cut = 861)	2,402	36.1%	63.9%	0.0%	65.9%
900 to 949	2,419	6.2%	93.4%	0.4%	93.4%
950 to 999	2,090	0.3%	92.5%	7.2%	92.5%
1000 to 1049 (Green/Blue cut = 1034)	1,201	0.0%	62.0%	38.0%	65.5%
1050 to 1099	463	0.0%	19.3%	80.7%	80.7%
1100 to 1149	130	0.0%	2.1%	97.9%	97.9%
1150 to 1199	34	0.0%	0.1%	99.9%	99.9%
1200 to 1249	4	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	0				
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	15,039				

^{*} Retest assuming no additional instruction

Table E-55. Retest Classification Percent for Various Scale Score Ranges - Science Grade 7

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	,		,	
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	1	>99.9%	0.0%	0.0%	>99.9%
450 to 499	52	>99.9%	0.0%	0.0%	>99.9%
500 to 549	171	>99.9%	0.0%	0.0%	>99.9%
550 to 599	509	>99.9%	0.0%	0.0%	>99.9%
600 to 649	887	>99.9%	0.0%	0.0%	>99.9%
650 to 699	1,248	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,548	>99.9%	0.0%	0.0%	>99.9%
750 to 799	2,055	99.9%	0.1%	0.0%	99.9%
800 to 849	2,680	97.3%	2.7%	0.0%	97.3%
850 to 899	3,480	77.4%	22.6%	0.0%	77.4%
900 to 949 (Red/Green cut = 908)	4,385	33.3%	66.7%	0.0%	67.8%
950 to 999	4,541	5.4%	94.0%	0.5%	94.0%
1000 to 1049	3,543	0.3%	91.5%	8.3%	91.5%
1050 to 1099 (Green/Blue cut = 1081)	1,779	0.0%	59.6%	40.4%	64.3%
1100 to 1149	562	0.0%	18.6%	81.4%	81.4%
1150 to 1199	95	0.0%	1.6%	98.4%	98.4%
1200 to 1249	19	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	10	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	1	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	1	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	27,567				

^{*} Retest assuming no additional instruction

Table E-56. Retest Classification Percent for Various Scale Score Ranges - Science Grade 8

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	·	,	·	
200 to 249	0				
250 to 299	1	>99.9%	0.0%	0.0%	>99.9%
300 to 349	0				
350 to 399	3	>99.9%	0.0%	0.0%	>99.9%
400 to 449	13	>99.9%	0.0%	0.0%	>99.9%
450 to 499	47	>99.9%	0.0%	0.0%	>99.9%
500 to 549	230	>99.9%	0.0%	0.0%	>99.9%
550 to 599	552	>99.9%	0.0%	0.0%	>99.9%
600 to 649	1,032	>99.9%	0.0%	0.0%	>99.9%
650 to 699	1,609	>99.9%	0.0%	0.0%	>99.9%
700 to 749	1,887	>99.9%	0.0%	0.0%	>99.9%
750 to 799	2,620	>99.9%	0.0%	0.0%	>99.9%
800 to 849	3,505	99.8%	0.2%	0.0%	99.8%
850 to 899	5,124	95.8%	4.2%	0.0%	95.8%
900 to 949 (Red/Green cut = 949)	7,019	70.3%	29.7%	0.0%	70.3%
950 to 999	8,261	26.2%	73.8%	0.0%	73.8%
1000 to 1049	7,462	3.6%	95.5%	0.9%	95.5%
1050 to 1099	4,476	0.1%	88.5%	11.4%	88.5%
1100 to 1149 (Green/Blue cut = 1122)	1,592	0.0%	52.7%	47.3%	62.1%
1150 to 1199	389	0.0%	12.6%	87.4%	87.4%
1200 to 1249	94	0.0%	1.0%	99.0%	99.0%
1250 to 1299	23	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	3	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	45,942				

^{*} Retest assuming no additional instruction

Table E-57. Retest Classification Percent for Various Scale Score Ranges - Science High School

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0	•		·	
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%
450 to 499	8	>99.9%	0.0%	0.0%	>99.9%
500 to 549	15	>99.9%	0.0%	0.0%	>99.9%
550 to 599	29	>99.9%	0.0%	0.0%	>99.9%
600 to 649	66	>99.9%	0.0%	0.0%	>99.9%
650 to 699	76	>99.9%	0.0%	0.0%	>99.9%
700 to 749	82	>99.9%	0.0%	0.0%	>99.9%
750 to 799	77	>99.9%	0.0%	0.0%	>99.9%
800 to 849	100	99.8%	0.2%	0.0%	99.8%
850 to 899	136	95.9%	4.1%	0.0%	95.9%
900 to 949 (Red/Green cut = 949)	159	70.9%	29.1%	0.0%	71.0%
950 to 999	201	25.3%	74.6%	0.0%	74.6%
1000 to 1049	197	3.4%	95.6%	1.0%	95.6%
1050 to 1099	141	0.1%	88.2%	11.6%	88.2%
1100 to 1149 (Green/Blue cut = 1122)	65	0.0%	51.1%	48.9%	61.8%
1150 to 1199	15	0.0%	11.7%	88.3%	88.3%
1200 to 1249	7	0.0%	1.0%	99.0%	99.0%
1250 to 1299	4	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	1,380				

^{*} Retest assuming no additional instruction

Table E-58. Retest Classification Percent for Various Scale Score Ranges - Biology

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 400	0				
400 to 449	9	>99.9%	0.0%	0.0%	>99.9%
450 to 499	37	>99.9%	0.0%	0.0%	>99.9%
500 to 549	144	>99.9%	0.0%	0.0%	>99.9%
550 to 599	505	>99.9%	0.0%	0.0%	>99.9%
600 to 649	1,078	>99.9%	0.0%	0.0%	>99.9%
650 to 699	2,115	>99.9%	0.0%	0.0%	>99.9%
700 to 749	3,567	>99.9%	0.0%	0.0%	>99.9%
750 to 799	5,255	>99.9%	0.0%	0.0%	>99.9%
800 to 849	7,371	>99.9%	0.0%	0.0%	>99.9%
850 to 899	10,734	99.9%	0.1%	0.0%	99.9%
900 to 949	15,175	97.9%	2.1%	0.0%	97.9%
950 to 999	20,074	80.3%	19.7%	0.0%	80.3%
1000 to 1049 (Red/Green cut = 1012)	22,272	37.4%	62.6%	0.0%	65.3%
1050 to 1099	19,130	6.7%	92.9%	0.4%	92.9%
1100 to 1149	12,882	0.4%	93.1%	6.5%	93.1%
1150 to 1199 (Green/Blue cut = 1185)	6,801	0.0%	62.5%	37.5%	65.8%
1200 to 1249	3,166	0.0%	19.2%	80.8%	80.8%
1250 to 1299	1,455	0.0%	1.8%	98.2%	98.2%
1300 to 1349	614	0.0%	0.1%	99.9%	99.9%
1350 to 1399	205	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	61	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	15	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	12	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	2	0.0%	0.0%	>99.9%	>99.9%
1600 to 1649	2	0.0%	0.0%	>99.9%	>99.9%
1650 to 1699	1	0.0%	0.0%	>99.9%	>99.9%
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	132,682				

^{*} Retest assuming no additional instruction

Table E-59. Retest Classification Percent for Various Scale Score Ranges - Chemistry

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 400	0				
400 to 449	0				
450 to 499	0				
500 to 549	2	>99.9%	0.0%	0.0%	>99.9%
550 to 599	4	>99.9%	0.0%	0.0%	>99.9%
600 to 649	8	>99.9%	0.0%	0.0%	>99.9%
650 to 699	37	>99.9%	0.0%	0.0%	>99.9%
700 to 749	99	>99.9%	0.0%	0.0%	>99.9%
750 to 799	250	>99.9%	0.0%	0.0%	>99.9%
800 to 849	417	>99.9%	0.0%	0.0%	>99.9%
850 to 899	764	>99.9%	0.0%	0.0%	>99.9%
900 to 949	1,238	99.7%	0.3%	0.0%	99.7%
950 to 999	1,839	95.0%	5.0%	0.0%	95.0%
1000 to 1049 (Red/Green cut = 1045)	2,232	67.6%	32.4%	0.0%	68.3%
1050 to 1099	1,902	24.3%	75.7%	0.0%	75.7%
1100 to 1149	1,121	3.1%	96.0%	1.0%	96.0%
1150 to 1199	419	0.1%	88.1%	11.8%	88.1%
1200 to 1249 (Green/Blue cut = 1218)	106	0.0%	48.0%	52.0%	61.4%
1250 to 1299	34	0.0%	11.0%	89.0%	89.0%
1300 to 1349	15	0.0%	0.9%	99.1%	99.1%
1350 to 1399	8	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	2	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	10,497				

^{*} Retest assuming no additional instruction

Table E-60. Retest Classification Percent for Various Scale Score Ranges - Writing Grade 3

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0				
200 to 249	4	>99.9%	0.0%	0.0%	>99.9%
250 to 299	6	>99.9%	0.0%	0.0%	>99.9%
300 to 349	38	>99.9%	0.0%	0.0%	>99.9%
350 to 399	136	>99.9%	0.0%	0.0%	>99.9%
400 to 449	233	>99.9%	0.0%	0.0%	>99.9%
450 to 499	272	>99.9%	0.0%	0.0%	>99.9%
500 to 549	256	>99.9%	0.0%	0.0%	>99.9%
550 to 599	317	>99.9%	0.0%	0.0%	>99.9%
600 to 649	408	>99.9%	0.0%	0.0%	>99.9%
650 to 699	578	99.4%	0.6%	0.0%	99.4%
700 to 749	738	89.9%	10.1%	0.0%	89.9%
750 to 799 (Red/Green cut = 780)	832	54.8%	45.2%	0.0%	62.7%
800 to 849	846	13.8%	86.1%	0.1%	86.1%
850 to 899	808	1.2%	95.8%	2.9%	95.8%
900 to 949	636	0.0%	76.1%	23.9%	76.1%
950 to 999 (Green/Blue cut = 953)	375	0.0%	34.1%	65.9%	66.3%
1000 to 1049	140	0.0%	5.4%	94.6%	94.6%
1050 to 1099	46	0.0%	0.3%	99.7%	99.7%
1100 to 1149	5	0.0%	0.0%	>99.9%	>99.9%
1150 to 1199	2	0.0%	0.0%	>99.9%	>99.9%
1200 to 1249	0				
1250 to 1299	0				
1300 to 1349	1	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	6,677				

^{*} Retest assuming no additional instruction

Table E-61. Retest Classification Percent for Various Scale Score Ranges - Writing Grade 4

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	11	>99.9%	0.0%	0.0%	>99.9%
350 to 399	58	>99.9%	0.0%	0.0%	>99.9%
400 to 449	121	>99.9%	0.0%	0.0%	>99.9%
450 to 499	183	>99.9%	0.0%	0.0%	>99.9%
500 to 549	208	>99.9%	0.0%	0.0%	>99.9%
550 to 599	229	>99.9%	0.0%	0.0%	>99.9%
600 to 649	323	>99.9%	0.0%	0.0%	>99.9%
650 to 699	390	>99.9%	0.0%	0.0%	>99.9%
700 to 749	519	99.9%	0.1%	0.0%	99.9%
750 to 799	702	96.4%	3.6%	0.0%	96.4%
800 to 849	830	73.0%	27.0%	0.0%	73.0%
850 to 899 (Red/Green cut = 852)	966	28.5%	71.5%	0.0%	71.5%
900 to 949	977	4.1%	95.1%	0.8%	95.1%
950 to 999	881	0.2%	89.2%	10.6%	89.2%
1000 to 1049 (Green/Blue cut = 1025)	503	0.0%	52.5%	47.5%	62.6%
1050 to 1099	245	0.0%	14.4%	85.6%	85.6%
1100 to 1149	67	0.0%	1.3%	98.7%	98.7%
1150 to 1199	10	0.0%	0.0%	>99.9%	>99.9%
1200 to 1249	1	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	0				
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	1	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	7,225				

^{*} Retest assuming no additional instruction

Table E-62. Retest Classification Percent for Various Scale Score Ranges - Writing Grade 5

Scale Score Range	Number of	Red (% Chance	Green (% Chance	Blue (% Chance	% Chance in
	Students	in Category if Retested*)	in Category if Retested*)	in Category if Retested*)	Same Category if Retested*
< 200	0	·	,	·	
200 to 249	0				
250 to 299	1	>99.9%	0.0%	0.0%	>99.9%
300 to 349	3	>99.9%	0.0%	0.0%	>99.9%
350 to 399	19	>99.9%	0.0%	0.0%	>99.9%
400 to 449	69	>99.9%	0.0%	0.0%	>99.9%
450 to 499	110	>99.9%	0.0%	0.0%	>99.9%
500 to 549	150	>99.9%	0.0%	0.0%	>99.9%
550 to 599	184	>99.9%	0.0%	0.0%	>99.9%
600 to 649	225	>99.9%	0.0%	0.0%	>99.9%
650 to 699	272	>99.9%	0.0%	0.0%	>99.9%
700 to 749	374	>99.9%	0.0%	0.0%	>99.9%
750 to 799	511	99.9%	0.1%	0.0%	99.9%
800 to 849	738	96.0%	4.0%	0.0%	96.0%
850 to 899	885	71.1%	28.9%	0.0%	71.1%
900 to 949 (Red/Green cut = 900)	1,217	26.6%	73.4%	0.0%	73.4%
950 to 999	1,284	3.6%	95.5%	0.9%	95.5%
1000 to 1049	995	0.1%	88.0%	11.9%	88.0%
1050 to 1099 (Green/Blue cut = 1073)	563	0.0%	52.0%	48.0%	62.3%
1100 to 1149	235	0.0%	13.3%	86.7%	86.7%
1150 to 1199	51	0.0%	1.1%	98.9%	98.9%
1200 to 1249	9	0.0%	0.0%	>99.9%	>99.9%
1250 to 1299	2	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	0				
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	7,897				

^{*} Retest assuming no additional instruction

Table E-63. Retest Classification Percent for Various Scale Score Ranges - Writing Grade 6

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	•	,	·	
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	4	>99.9%	0.0%	0.0%	>99.9%
450 to 499	42	>99.9%	0.0%	0.0%	>99.9%
500 to 549	137	>99.9%	0.0%	0.0%	>99.9%
550 to 599	305	>99.9%	0.0%	0.0%	>99.9%
600 to 649	435	>99.9%	0.0%	0.0%	>99.9%
650 to 699	528	>99.9%	0.0%	0.0%	>99.9%
700 to 749	603	>99.9%	0.0%	0.0%	>99.9%
750 to 799	767	>99.9%	0.0%	0.0%	>99.9%
800 to 849	991	99.7%	0.3%	0.0%	99.7%
850 to 899	1,450	93.2%	6.8%	0.0%	93.2%
900 to 949 (Red/Green cut = 938)	1,877	60.8%	39.2%	0.0%	64.6%
950 to 999	2,277	17.7%	82.2%	0.0%	82.2%
1000 to 1049	2,055	1.6%	96.9%	1.5%	96.9%
1050 to 1099	1,251	0.0%	83.5%	16.4%	83.5%
1100 to 1149 (Green/Blue cut = 1111)	576	0.0%	40.4%	59.6%	63.4%
1150 to 1199	218	0.0%	7.5%	92.5%	92.5%
1200 to 1249	63	0.0%	0.5%	99.5%	99.5%
1250 to 1299	12	0.0%	0.0%	>99.9%	>99.9%
1300 to 1349	3	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	0				
1400 to 1449	0				
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	13,594				

^{*} Retest assuming no additional instruction

Table E-64. Retest Classification Percent for Various Scale Score Ranges - Writing Grade 7

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0	nelesteu)	netesteu)	nelesteu)	กษณะรณชน
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	7	>99.9%	0.0%	0.0%	>99.9%
450 to 499	30	>99.9%	0.0%	0.0%	>99.9%
500 to 549	130	>99.9%	0.0%	0.0%	>99.9%
550 to 599	267	>99.9%	0.0%	0.0%	>99.9%
600 to 649	428	>99.9%	0.0%	0.0%	>99.9%
650 to 699	476	>99.9%	0.0%	0.0%	>99.9%
700 to 749	537	>99.9%	0.0%	0.0%	>99.9%
750 to 799	692	>99.9%	0.0%	0.0%	>99.9%
800 to 849	935	>99.9%	0.0%	0.0%	>99.9%
850 to 899	1,189	99.2%	0.8%	0.0%	99.2%
900 to 949	1,654	87.7%	12.3%	0.0%	87.7%
950 to 999 (Red/Green cut = 974)	2,111	47.5%	52.5%	0.0%	63.0%
1000 to 1049	2,217	10.1%	89.7%	0.1%	89.7%
1050 to 1099	1,845	0.6%	96.0%	3.3%	96.0%
1100 to 1149 (Green/Blue cut = 1147)	1,027	0.0%	73.2%	26.8%	73.3%
1150 to 1199	403	0.0%	28.4%	71.6%	71.6%
1200 to 1249	101	0.0%	3.8%	96.2%	96.2%
1250 to 1299	24	0.0%	0.2%	99.8%	99.8%
1300 to 1349	2	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	2	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	1	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	1	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	14,079				

^{*} Retest assuming no additional instruction

Table E-65. Retest Classification Percent for Vaious Scale Score Ranges - Writing Grade 8

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	0				
250 to 299	0				
300 to 349	0				
350 to 399	0				
400 to 449	5	>99.9%	0.0%	0.0%	>99.9%
450 to 499	35	>99.9%	0.0%	0.0%	>99.9%
500 to 549	108	>99.9%	0.0%	0.0%	>99.9%
550 to 599	255	>99.9%	0.0%	0.0%	>99.9%
600 to 649	333	>99.9%	0.0%	0.0%	>99.9%
650 to 699	374	>99.9%	0.0%	0.0%	>99.9%
700 to 749	465	>99.9%	0.0%	0.0%	>99.9%
750 to 799	620	>99.9%	0.0%	0.0%	>99.9%
800 to 849	752	>99.9%	0.0%	0.0%	>99.9%
850 to 899	1,087	99.6%	0.4%	0.0%	99.6%
900 to 949	1,400	92.4%	7.6%	0.0%	92.4%
950 to 999 (Red/Green cut = 985)	2,010	58.1%	41.9%	0.0%	63.6%
1000 to 1049	2,342	15.9%	84.1%	0.0%	84.1%
1050 to 1099	2,144	1.3%	96.9%	1.8%	96.9%
1100 to 1149	1,393	0.0%	81.9%	18.1%	81.9%
1150 to 1199 (Green/Blue cut = 1158)	593	0.0%	38.4%	61.6%	63.6%
1200 to 1249	188	0.0%	7.1%	92.9%	92.9%
1250 to 1299	51	0.0%	0.4%	99.6%	99.6%
1300 to 1349	19	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	4	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	4	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	0				
1500 to 1549	0				
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	14,182				

^{*} Retest assuming no additional instruction

Table E-66. Retest Classification Percent for Various Scale Score Ranges - English Composition

Scale Score Range	Number of Students	Red (% Chance in Category if Retested*)	Green (% Chance in Category if Retested*)	Blue (% Chance in Category if Retested*)	% Chance in Same Category if Retested*
< 200	0				
200 to 249	1	>99.9%	0.0%	0.0%	>99.9%
250 to 299	0				
300 to 349	0				
350 to 399	2	>99.9%	0.0%	0.0%	>99.9%
400 to 449	4	>99.9%	0.0%	0.0%	>99.9%
450 to 499	20	>99.9%	0.0%	0.0%	>99.9%
500 to 549	54	>99.9%	0.0%	0.0%	>99.9%
550 to 599	98	>99.9%	0.0%	0.0%	>99.9%
600 to 649	139	>99.9%	0.0%	0.0%	>99.9%
650 to 699	173	>99.9%	0.0%	0.0%	>99.9%
700 to 749	220	>99.9%	0.0%	0.0%	>99.9%
750 to 799	275	>99.9%	0.0%	0.0%	>99.9%
800 to 849	350	>99.9%	0.0%	0.0%	>99.9%
850 to 899	460	99.8%	0.2%	0.0%	99.8%
900 to 949	733	94.6%	5.4%	0.0%	94.6%
950 to 999 (Red/Green cut = 994)	1,068	66.1%	33.9%	0.0%	67.2%
1000 to 1049	1,480	21.3%	78.7%	0.0%	78.7%
1050 to 1099	1,747	2.2%	96.8%	1.1%	96.8%
1100 to 1149	1,412	0.1%	86.0%	14.0%	86.0%
1150 to 1199 (Green/Blue cut = 1167)	911	0.0%	45.3%	54.7%	62.6%
1200 to 1249	450	0.0%	9.1%	90.9%	90.9%
1250 to 1299	188	0.0%	0.7%	99.3%	99.3%
1300 to 1349	73	0.0%	0.0%	>99.9%	>99.9%
1350 to 1399	32	0.0%	0.0%	>99.9%	>99.9%
1400 to 1449	7	0.0%	0.0%	>99.9%	>99.9%
1450 to 1499	2	0.0%	0.0%	>99.9%	>99.9%
1500 to 1549	1	0.0%	0.0%	>99.9%	>99.9%
1550 to 1599	0				
1600 to 1649	0				
1650 to 1699	0				
1700 to 1749	0				
1750 to 1799	0				
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	9,900				

^{*} Retest assuming no additional instruction

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