



pennsylvania
DEPARTMENT OF EDUCATION

The Pennsylvania System of School Assessment

Mathematics Item and Scoring Sampler



2018–2019
Grade 3

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INTRODUCTION

General Introduction

The Pennsylvania Department of Education (PDE) provides districts and schools with tools to assist in delivering focused instructional programs aligned with the Pennsylvania Core Standards (PCS). These tools include Academic Standards, Assessment Anchor documents, assessment handbooks, and content-based item and scoring samplers. This Item and Scoring Sampler is a useful tool for Pennsylvania educators in preparing local instructional programs. It can also be useful in preparing students for the statewide assessment.

This Item and Scoring Sampler is available in Braille format. For more information regarding Braille call (717) 901-2238.

Pennsylvania Core Standards (PCS)

This sampler contains examples of test questions designed to assess the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards. The Mathematics, Reading, and Writing PSSA transitioned to PCS-based operational Mathematics and English Language Arts assessments starting with the spring 2015 PSSA administration.

The 2013 PCS-aligned Assessment Anchor and Eligible Content documents are posted on this portal:

- www.education.pa.gov [Roll over 'DATA AND REPORTING' in the dark blue bar across the top of the page. Select 'ASSESSMENT AND ACCOUNTABILITY.' Click on the link that reads 'Pennsylvania System of School Assessment (PSSA). Then click on 'Assessment Anchors/Eligible Content!']

What Is Included

This sampler contains test questions (items) that have been written to align to the Assessment Anchors that are based on the Pennsylvania Core Standards (PCS). The test questions provide an idea of the types of items that will appear on an operational, PCS-based PSSA. Each sample test question has been through a rigorous review process to ensure alignment with the Assessment Anchors.

Purpose and Uses

The items in this sampler may be used as examples for creating assessment items at the classroom level, and they may also be copied and used as part of a local instructional program.¹ Classroom teachers may find it beneficial to have students respond to the open-ended item in this sampler. Educators can then use the sampler as a guide to score the responses either independently or together with colleagues within a school or district.

Item Format and Scoring Guidelines

The multiple-choice (MC) items have four answer choices. Each correct response to an MC item is worth one point.

Each open-ended (OE) item is designed to take approximately ten to fifteen minutes to complete. During the administration of the PSSA, students are given additional time as necessary to complete the test items. Each OE item in mathematics is scored using an item-specific scoring guideline based on a 0–4-point scale. In this sampler, every item-specific scoring guideline is combined with examples of student responses that represent each score point to form a practical, item-specific scoring guide.

This sampler also includes the *General Description of Scoring Guidelines for Mathematics Open-Ended Questions* that students will have access to during a PSSA mathematics administration. The general description of scoring guidelines can be distributed to students for use during local assessments and can also be used by educators when scoring local assessments.¹

¹ The permission to copy and/or use these materials does not extend to commercial purposes.

Item Alignment

All PSSA items are aligned to statements and specifications included in the *Assessment Anchors and Eligible Content Aligned to the Pennsylvania Core Standards*. The mathematics content, process skills, directives, and action statements included in the PSSA mathematics questions align with the Assessment Anchor Content Standards. The Eligible Content statements represent the limits of the content of the mathematics questions.

Testing Time and Mode of Testing Delivery for the PSSA

The PSSA is delivered in traditional paper-and-pencil format as well as in an online format. The estimated time to respond to a test question is the same for both methods of test delivery. During an official testing administration, students are given additional time as necessary to complete the test questions. The following table shows the estimated response time for each item type.

Mathematics Item Type	MC	OE
Estimated Response Time (minutes)	2	10 to 15

Mathematics Reporting Categories

The Assessment Anchors are organized into four classifications as listed below.

• A = Numbers and Operations	• C = Geometry
• B = Algebraic Concepts	• D = Data Analysis and Probability

These four classifications are used throughout the grade levels. In addition to these classifications, there are five Reporting Categories for each grade level. The first letter of each Reporting Category represents the classification; the second letter represents the Domain as stated in the Common Core State Standards for Mathematics. Listed below are the Reporting Categories for Grade 3.

- A-T = Numbers and Operations in Base Ten
- A-F = Numbers and Operations—Fractions
- B-O = Operations and Algebraic Thinking
- C-G = Geometry
- D-M = Measurement and Data

Examples of multiple-choice and open-ended items assessing these categories are included in this booklet.

General Description of Scoring Guidelines for Mathematics Open-Ended Questions

4— The response demonstrates a *thorough* understanding of the mathematical concepts and procedures required by the task.

The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor “blemish” or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

3— The response demonstrates a *general* understanding of the mathematical concepts and procedures required by the task.

The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a *general* understanding.

2— The response demonstrates a *partial* understanding of the mathematical concepts and procedures required by the task.

The response is somewhat correct with *partial* understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1— The response demonstrates a *minimal* understanding of the mathematical concepts and procedures required by the task.

0— The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task for that grade level.

Special Categories within zero reported separately:

Blank.....Blank, entirely erased, entirely crossed out, or consists entirely of whitespace

Refusal.....Refusal to respond to the task

Off Task.....Makes no reference to the item but is not an intentional refusal

Foreign Language.....Written entirely in a language other than English

IllegibleIllegible or incoherent

Item and Scoring Sampler Format

This sampler includes the test directions and scoring guidelines that appear in the PSSA Mathematics assessments. Each multiple-choice item is followed by a table that includes the alignment, the answer key, the depth of knowledge (DOK) level, the percentage² of students who chose each answer option, and a brief answer-option analysis or rationale. The open-ended item is followed by a table that includes the item alignment, DOK level, and mean student score. Additionally, each of the included item-specific scoring guidelines is combined with sample student responses representing each score point to form a practical, item-specific scoring guide. The *General Description of Scoring Guidelines for Mathematics Open-Ended Questions* used to develop the item-specific scoring guidelines should be used if any additional item-specific scoring guidelines are created for use within local instructional programs.

Example Multiple-Choice Item Information Table

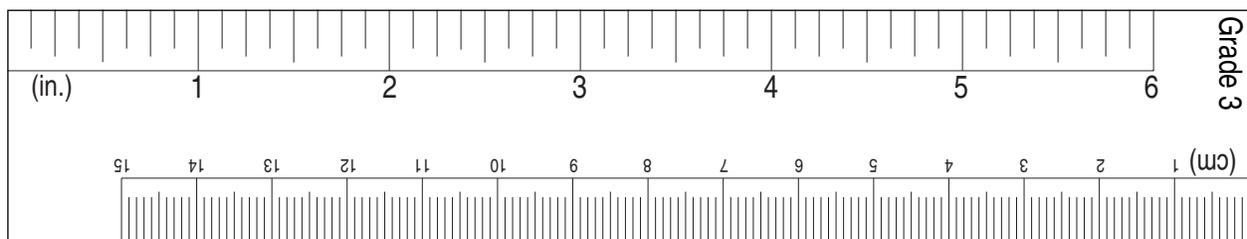
Item Information	
Alignment	Assigned AAEC
Answer Key	Correct Answer
Depth of Knowledge	Assigned DOK
p-value A	Percentage of students who selected each option
p-value B	Percentage of students who selected each option
p-value C	Percentage of students who selected each option
p-value D	Percentage of students who selected each option
Option Annotations	Brief answer-option analysis or rationale

Example Open-Ended Item Information Table

Alignment	Assigned AAEC	Depth of Knowledge	Assigned DOK	Mean Score

Grade 3 Ruler

The ruler shown below is not intended to be used to measure. It has been included as a representation of the rulers that will be provided for students when they take the test. Due to differences in printers, the ruler and measurement questions may not accurately reproduce to scale.



² All p-value percentages listed in the item information tables have been rounded.

Mathematics Test Directions

Directions: On the following pages are the Mathematics questions.

- You may not use a calculator on this test.
- You may need a ruler for question(s) on this test.

Directions for Multiple-Choice Questions:

Some questions will ask you to select an answer from among four choices.

For the multiple-choice questions:

- First solve the problem on scratch paper.
- Choose the correct answer and record your choice in the booklet.
- If none of the choices matches your answer, go back and check your work for possible errors.
- Only one of the answers provided is the correct response.

Directions for Open-Ended Questions:

Some questions will require you to write your response.

For the open-ended questions:

- These questions have more than one part. Be sure to read the directions carefully.
- You cannot receive the highest score for an open-ended question without completing all tasks in the question. For example, if the question asks you to show your work or explain your reasoning, be sure to show your work or explain your reasoning in the space provided.
- If the question does **not** ask you to show your work or explain your reasoning, you may use the space provided, but only those parts of your response that the question specifically asks for will be scored.
- Write your response in the appropriate location within the response box in the booklet. Some answers may require graphing, plotting, labeling, drawing, or shading. If you use scratch paper, be sure to transfer your final response and any needed work or reasoning to the booklet.

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MULTIPLE-CHOICE ITEMS

1. Alden and his family go bowling.

Alden's scores are listed below.

55 79 92

Which expression can be used to find Alden's total score when each score is rounded to the nearest ten?

- Ⓐ $50 + 70 + 90$
- Ⓑ $50 + 80 + 90$
- Ⓒ $60 + 80 + 90$
- Ⓓ $60 + 80 + 100$

Item Information	
Alignment	A-T.1.1.1
Answer Key	C
Depth of Knowledge	1
p-value A	19%
p-value B	14%
p-value C	60% (correct answer)
p-value D	7%
Option Annotations	A. rounds each number down B. rounds 55 down C. correct D. rounds each number up

2. Esther makes 40 bags of granola mix.

Each bag has 3 ounces of raisins.

How many ounces of raisins, in total, does Esther use to make 40 bags of granola mix?

- Ⓐ 37
- Ⓑ 43
- Ⓒ 80
- Ⓓ 120

Item Information	
Alignment	A-T.1.1.3
Answer Key	D
Depth of Knowledge	1
p-value A	9%
p-value B	26%
p-value C	7%
p-value D	58% (correct answer)
Option Annotations	A. subtracts $40 - 3$ B. adds $40 + 3$ C. doubles $40 + 40$ D. correct

3. Pablo lives in Hershey, Pennsylvania.

The distances to four cities from Hershey are listed in the table shown below.

Distance from Hershey

City	Distance (miles)
Beaver Falls	247
Bradford	225
Butler	233
Erie	285

Pablo visits the cities in order from the **greatest** distance from Hershey to the **least** distance.

Which city will Pablo visit second?

- Ⓐ Beaver Falls
- Ⓑ Bradford
- Ⓒ Butler
- Ⓓ Erie

Item Information	
Alignment	A-T.1.1.4 D-M.2.1
Answer Key	A
Depth of Knowledge	2
p-value A	58% (correct answer)
p-value B	17%
p-value C	11%
p-value D	14%
Option Annotations	A. correct B. selects fewest miles away C. selects city visited third D. selects city visited first

4. Craig has 8 flowers and 2 vases.

He puts the same number of flowers into each vase.

What fraction of the flowers does Craig put into each vase?

- Ⓐ $\frac{1}{8}$
- Ⓑ $\frac{1}{6}$
- Ⓒ $\frac{1}{4}$
- Ⓓ $\frac{1}{2}$

Item Information	
Alignment	A-F.1.1.1 A-F.1.1.3
Answer Key	D
Depth of Knowledge	2
p-value A	29%
p-value B	6%
p-value C	32%
p-value D	33% (correct answer)
Option Annotations	A. uses the total number of flowers as the denominator B. solves $8 - 2$ and uses the answer as the denominator C. solves $8 \div 2$ and uses the answer as the denominator D. correct

5. Ben notices that $\frac{6}{8}$ of the shoes in a store window have laces.

Which also shows the fraction of the shoes that have laces?

- (A) $\frac{2}{8}$
- (B) $\frac{4}{6}$
- (C) $\frac{3}{4}$
- (D) $\frac{12}{8}$

Item Information	
Alignment	A-F.1.1.3
Answer Key	C
Depth of Knowledge	1
p-value A	24%
p-value B	27%
p-value C	36% (correct answer)
p-value D	13%
Option Annotations	A. uses number of shoes without laces used for numerator B. subtracts two for the two without laces from both numerator and denominator C. correct D. doubles the numerator

6. The table below lists the amounts of time, in hours, it takes three students to go to school each morning.

Going to School

Student	Amount of Time (hours)
1	$\frac{1}{6}$
2	$\frac{4}{6}$
3	$\frac{3}{6}$

Which statement correctly compares the amounts of time, in hours, it takes two of the students to go to school?

- Ⓐ $\frac{1}{6} > \frac{3}{6}$ because 1 is less than 3.
- Ⓑ $\frac{4}{6} > \frac{3}{6}$ because 4 is greater than 3.
- Ⓒ $\frac{1}{6} < \frac{4}{6}$ because the numerators are less than the denominators.
- Ⓓ $\frac{4}{6} < \frac{3}{6}$ because both fractions have the same denominator.

Item Information	
Alignment	A-F.1.1.5
Answer Key	B
Depth of Knowledge	2
p-value A	18%
p-value B	56% (correct answer)
p-value C	20%
p-value D	6%
Option Annotations	A. uses the incorrect comparison symbol B. correct C. compares a numerator to a denominator D. compares denominators instead of numerators

7. At a park, Calvin sees a total of 27 birds sitting in 3 trees.

He sees the same number of birds in each tree.

Which number sentence correctly shows how many birds Calvin sees in each tree?

- Ⓐ $3 \times 3 = 27$
- Ⓑ $3 + 27 = 30$
- Ⓒ $27 \div 3 = 9$
- Ⓓ $27 - 3 = 24$

Item Information	
Alignment	B-O.1.1
Answer Key	C
Depth of Knowledge	2
p-value A	10%
p-value B	16%
p-value C	70% (correct answer)
p-value D	4%
Option Annotations	<p>A. chooses an incorrect sentence</p> <p>B. chooses a correct sentence, but one that shows the sum of the number of birds and the number of trees</p> <p>C. correct</p> <p>D. chooses a correct number sentence, but one that shows the difference between the number of birds and the number of trees</p>

8. Mrs. Harris rode her bike 40 miles.

She biked 8 miles each day.

How many days did Mrs. Harris ride her bike?

- (A) 5
- (B) 6
- (C) 7
- (D) 8

Item Information	
Alignment	B-O.1.2.1
Answer Key	A
Depth of Knowledge	1
p-value A	64% (correct answer)
p-value B	7%
p-value C	10%
p-value D	19%
Option Annotations	<p>A. correct</p> <p>B. thinks that $\frac{40}{8} = 6$</p> <p>C. thinks $\frac{40}{8} = 7$</p> <p>D. thinks $\frac{40}{8} = 8$</p>

9. Which expression is equal to 10×6 ?

- Ⓐ $2 \times 5 \times 6$
- Ⓑ $10 + 2 \times 3$
- Ⓒ $2 + 5 + 2 + 3$
- Ⓓ $6 \times 2 \times 6 \times 5$

Item Information	
Alignment	B-O.2.1
Answer Key	A
Depth of Knowledge	1
p-value A	70% (correct answer)
p-value B	14%
p-value C	4%
p-value D	12%
Option Annotations	<ul style="list-style-type: none"> A. correct B. uses addition instead of multiplication C. finds the correct factors, but adds instead of multiplies D. distributes the 6 and multiplies

10. Jason puts 28 cans of food into 4 bags.

The equation below can be used to find the number of cans he puts into each bag.

$$28 \div 4 = ?$$

Which equation can also be used to find the number of cans Jason puts into each bag?

- Ⓐ $4 + ? = 28$
- Ⓑ $4 \times ? = 28$
- Ⓒ $4 \times 28 = ?$
- Ⓓ $4 \div ? = 28$

Item Information	
Alignment	B-O.2.2.1
Answer Key	B
Depth of Knowledge	1
p-value A	4%
p-value B	67% (correct answer)
p-value C	15%
p-value D	14%
Option Annotations	A. uses addition instead of multiplication B. correct C. changes the order and sign D. keeps division and rearranges the numbers

11. Anya buys 6 packs of cards.

There are 35 cards in each pack.

Anya has a total of 210 cards.

Which sentence explains how many cards Anya would have if she had bought 12 packs of cards instead of 6 packs of cards?

- Ⓐ Anya would have 6 more cards because $6 + 6 = 12$.
- Ⓑ Anya would have half as many cards because $12 \div 2 = 6$.
- Ⓒ Anya would have twice as many cards because $6 \times 2 = 12$.
- Ⓓ Anya would have 6 times as many cards because $6 + 6 = 12$.

Item Information	
Alignment	B-O.3
Answer Key	C
Depth of Knowledge	2
p-value A	15%
p-value B	18%
p-value C	54% (correct answer)
p-value D	13%
Option Annotations	A. uses an additive comparison B. compares in the wrong direction C. correct D. combines an additive and multiplicative comparison

12. Rosa bought 42 cups to use at her lemonade stand.

She used 17 cups for lemonade on Monday and 18 cups on Tuesday.

How many cups does Rosa have remaining?

- Ⓐ 7
- Ⓑ 13
- Ⓒ 24
- Ⓓ 25

Item Information	
Alignment	B-O.3.1.1
Answer Key	A
Depth of Knowledge	2
p-value A	59% (correct answer)
p-value B	12%
p-value C	10%
p-value D	19%
Option Annotations	A. correct B. subtracts in the wrong direction C. subtracts number sold on Tuesday D. subtracts number sold on Monday

13. Mr. Hernandez is training for a race.

The table below shows the numbers of times he ran around a track on four different days.

Mr. Hernandez’s Training

Day	Number of Times Ran around the Track
2	6
3	9
4	12
5	15

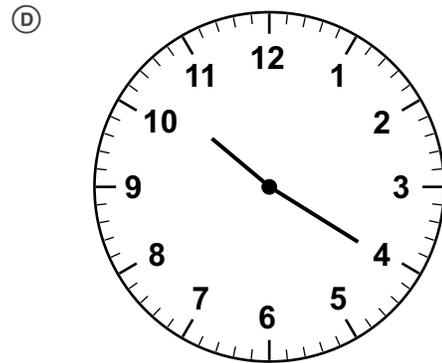
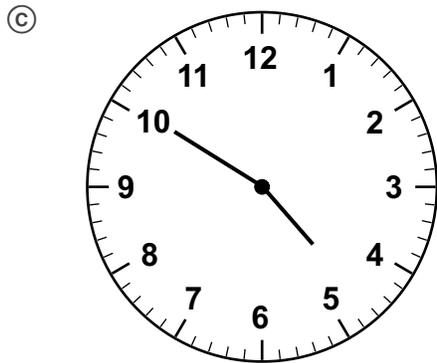
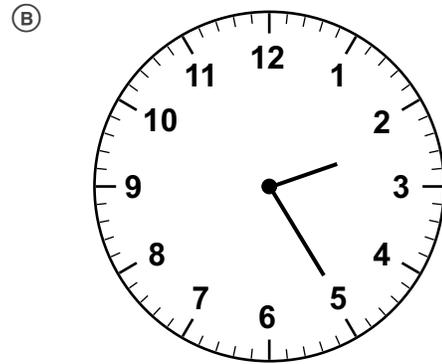
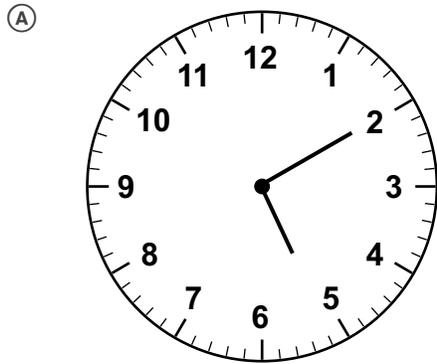
Which statement describes the pattern shown by the numbers of times Mr. Hernandez ran around the track?

- Ⓐ add 1
- Ⓑ add 3
- Ⓒ add 4
- Ⓓ add 10

Item Information	
Alignment	B-O.3.1.5
Answer Key	B
Depth of Knowledge	2
p-value A	7%
p-value B	70% (correct answer)
p-value C	11%
p-value D	12%
Option Annotations	A. finds the pattern in the days column B. correct C. adds 4 to day 2 to get 6 laps D. adds 10 to day 5 to get 15 laps

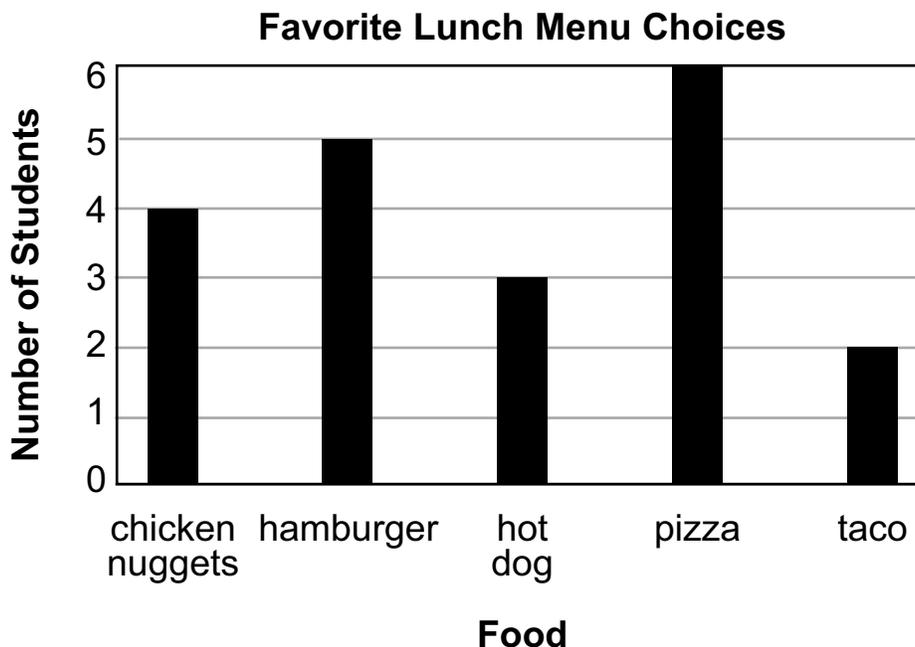
14. Terra leaves her house for soccer practice at 10 minutes to 5:00.

Which clock shows the time Terra leaves her house for soccer practice?



Item Information	
Alignment	D-M.1.1.1
Answer Key	C
Depth of Knowledge	1
p-value A	26%
p-value B	7%
p-value C	58% (correct answer)
p-value D	9%
Option Annotations	A. finds 5:10; ten minutes after 5:00 B. finds 2:25; ten minutes after 5:00 and reverses hands C. correct D. finds 10:20; reverses hands

15. The graph shows the favorite lunch menu choices of Tamara’s third-grade class.



How many students chose chicken nuggets or hot dog as their favorite lunch menu choices?

- Ⓐ 1
- Ⓑ 3
- Ⓒ 4
- Ⓓ 7

Item Information	
Alignment	D-M.2.1.2
Answer Key	D
Depth of Knowledge	2
p-value A	9%
p-value B	6%
p-value C	28%
p-value D	57% (correct answer)
Option Annotations	A. finds how many more students prefer chicken nuggets than hot dogs B. finds number of hot dogs C. finds number of chicken nuggets D. correct

OPEN-ENDED QUESTION

16. Dorie has the five shapes listed below.

octagon, pentagon, rectangle, square, triangle

Dorie only wants quadrilateral shapes for an art project.

A. Which shapes from the list can Dorie use for her art project?

PUT your answer in the **BLANK BELOW**.

Answer: _____

B. **EXPLAIN** how a square and a rhombus are alike.

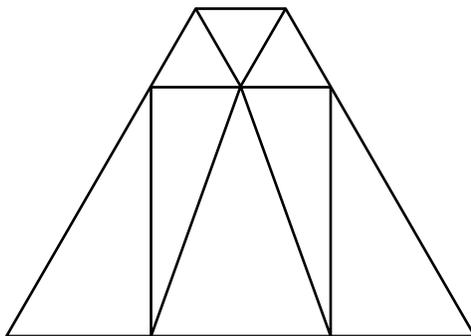
C. **EXPLAIN** how a square and a rhombus could be different.

Go to the next page to finish question 16.



16. **Continued.** Please refer to the previous page for task explanation.

Dorie draws the picture below for another part of her art project.



Dorie states each section inside the shape is $\frac{1}{8}$ of the whole shape.

D. EXPLAIN why Dorie is **not** correct.

After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.



Item-Specific Scoring Guideline

#16 Item Information

Alignment	C-G.1 A-F.1	Depth of Knowledge	2	Mean Score	1.86
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Assessment Anchor this item will be reported under:

M03.C-G.1 — Reason with shapes and their attributes.

Specific Anchor Descriptor addressed by this item:

M03.C-G.1.1 — Analyze characteristics of polygons.

M03.A-F.1.1 — Develop and apply number theory concepts to compare quantities and magnitudes of fractions and whole numbers.

Scoring Guide

Score	In this item, the student . . .
4	Demonstrates a thorough understanding of how to reason with shapes and their attributes by correctly solving problems and clearly explaining procedures.
3	Demonstrates a general understanding of how to reason with shapes and their attributes by correctly solving problems and clearly explaining procedures with only minor errors or omissions.
2	Demonstrates a partial understanding of how to reason with shapes and their attributes by correctly performing a significant portion of the required task.
1	Demonstrates minimal understanding of how to reason with shapes and their attributes.
0	The response has no correct answer and insufficient evidence to demonstrate any understanding of the mathematical concepts and procedures as required by the task. Response may show only information copied from the question.

Top-Scoring Student Response and Training Notes

Score	Description
4	Student earns 4 points.
3	Student earns 3.0–3.5 points.
2	Student earns 2.0–2.5 points.
1	Student earns 0.5–1.5 points. OR Student demonstrates minimal understanding of how to reason with shapes and their attributes.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

Top-Scoring Response

Part A (1 point):

$\frac{1}{2}$ point for each correct answer

Note: No credit if any other shape is listed.

What?	Why?
rectangle, square	

Part B (1 point):

1 point for correct and complete explanation

OR $\frac{1}{2}$ point for correct but incomplete explanation

What?	Why?
	<p>Sample Explanation: Both shapes have four sides.</p> <p>OR</p> <p>All four sides are the same length.</p> <p>OR equivalent</p>

Part C (1 point):

1 point for correct and complete explanation

OR $\frac{1}{2}$ point for correct but incomplete explanation

What?	Why?
	<p>Sample Explanation: A square has four right angles where a rhombus has four angles of any measure.</p> <p>OR equivalent</p>

Part D (1 point):

1 point for correct and complete explanation

OR $\frac{1}{2}$ point for correct but incomplete explanation

What?	Why?
	<p>Sample Explanation: The inside sections are not each $\frac{1}{8}$ of the whole shape, because they do not cover equal areas.</p> <p>OR equivalent</p>

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STUDENT RESPONSE

Response Score: 4 points

16. Dorie has the five shapes listed below.

octagon, pentagon, rectangle, square, triangle

Dorie only wants quadrilateral shapes for an art project.

A. Which shapes from the list can Dorie use for her art project?

PUT your answer in the **BLANK BELOW**.

The response provides both correct shapes.

Answer: square, and a rectangleB. **EXPLAIN** how a square and a rhombus are alike.They're both polygons and quadrilaterals

The response correctly explains how a square and a rhombus are alike.

C. **EXPLAIN** how a square and a rhombus could be different.A rhombus doesn't have right angles, and a square does

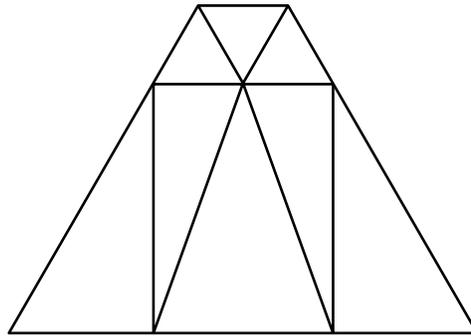
The response correctly explains how a square and a rhombus could be different.

Go to the next page to finish question 16.

GO ON 

16. **Continued.** Please refer to the previous page for task explanation.

Dorie draws the picture below for another part of her art project.



Dorie states each section inside the shape is $\frac{1}{8}$ of the whole shape.

D. EXPLAIN why Dorie is **not** correct.

Dorie isn't correct because the shapes aren't the same size.

The response provides a correct and complete explanation.

After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.



STUDENT RESPONSE

Response Score: 3 points



PART A

WBTE Preview
Question 16
Page 1 of 3

Item ID ?

Dorie has the five shapes listed below.

octagon, pentagon, rectangle, square, triangle

Dorie only wants quadrilateral shapes for an art project.

A. Which shapes from the list can Dorie use for her art project?

PUT your answer in the **BLANK BELOW**.

Eq

rectangle, square

The response provides both correct shapes.

Next

Review/End Test

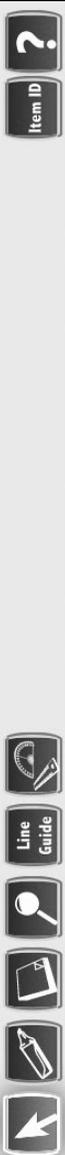
Pause

Flag

Options

PARTS B AND C

WBTE Preview
Question 16
Page 2 of 3



B. EXPLAIN how a square and a rhombus are alike.

C. EXPLAIN how a square and a rhombus could be different.

The response correctly explains how a square and a rhombus are alike (4 straight sides).

The response incorrectly explains how a square and a rhombus could be different.

Review/End Test
Pause
Flag
Options

Back
Next

PART D

WBTE Preview

Question 16

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Item ID

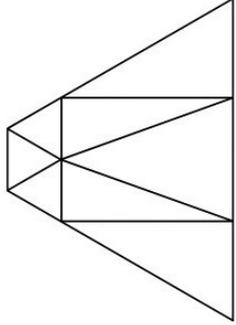
?







Dorie draws the picture below for another part of her art project.



Dorie states each section inside the shape is $\frac{1}{8}$ of the whole shape.

D. EXPLAIN why Dorie is **not** correct.

Dorie is not correct because the shape is not spit into equile pats. that is why she is not correct.

The response provides a correct and complete explanation (not split into equal parts).

Review/End Test

Pause

Flag

Options

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STUDENT RESPONSE

Response Score: 2 points

16. Dorie has the five shapes listed below.

octagon, pentagon, rectangle, square, triangle

Dorie only wants quadrilateral shapes for an art project.

A. Which shapes from the list can Dorie use for her art project?

PUT your answer in the **BLANK BELOW**.Answer: rectangle square

The response provides both correct shapes.

B. **EXPLAIN** how a square and a rhombus are alike.the rhombus and square
are both quadrilaterals

The response correctly explains how a square and a rhombus are alike.

C. **EXPLAIN** how a square and a rhombus could be different.one comes from a
rectangle and the other
is a polygon

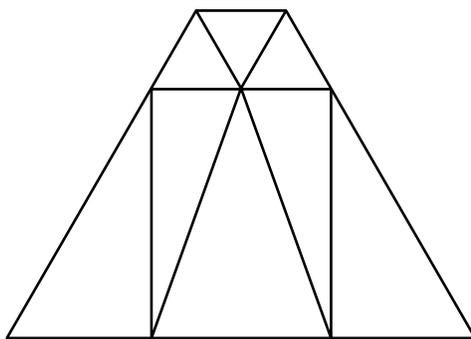
The response incorrectly explains how a square and a rhombus could be different.

Go to the next page to finish question 16.

GO ON 

16. **Continued.** Please refer to the previous page for task explanation.

Dorie draws the picture below for another part of her art project.



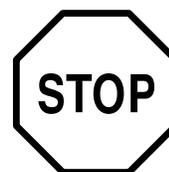
Dorie states each section inside the shape is $\frac{1}{8}$ of the whole shape.

D. EXPLAIN why Dorie is **not** correct.

no because it is $\frac{1}{3}$

The response provides an incorrect explanation.

After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.



STUDENT RESPONSE

Response Score: 1 point



PART A

WBTE Preview
Question 16
Page 1 of 3

Item ID

?

Dorie has the five shapes listed below.

octagon, pentagon, rectangle, square, triangle

Dorie only wants quadrilateral shapes for an art project.

A. Which shapes from the list can Dorie use for her art project?

PUT your answer in the BLANK BELOW.

Answer:

The response provides one of two correct shapes and does not list any incorrect shapes.

Review/End Test

Pause

Flag

Options

Next

PARTS B AND C

WBTE Preview
Question 16
Page 2 of 3

Item ID ?

Line Guide

B. EXPLAIN how a square and a rhombus are alike.

The reason why a square and a rhombus are alike cause they are both quadrilateral and the lines do not cross.

109 / 1000

The response correctly explains how a square and a rhombus are alike.

C. EXPLAIN how a square and a rhombus could be different.

A square and a rhombus could be different is that a square could be a quadrilateral and the rhombus could be a paralleloagram.

125 / 1000

Review/End Test

Pause

Flag

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PART D

WBTE Preview

Question 16
Page 3 of 3

Item ID

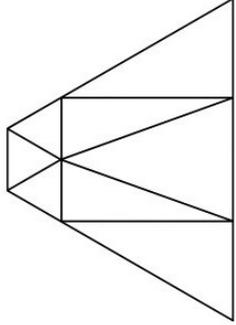
?








Dorie draws the picture below for another part of her art project.



Dorie states each section inside the shape is $\frac{1}{8}$ of the whole shape.

D. EXPLAIN why Dorie is **not** correct.

The reason why Dorie is not correct because she states each section is $\frac{1}{8}$ their is 8 shapes but their is not one shaded.

The response provides an incorrect explanation.

Review/End Test

Pause

Flag

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STUDENT RESPONSE

Response Score: 0 points

16. Dorie has the five shapes listed below.

octagon, pentagon, rectangle, square, triangle

Dorie only wants quadrilateral shapes for an art project.

A. Which shapes from the list can Dorie use for her art project?

PUT your answer in the **BLANK BELOW**.Answer: The penagon

The response provides an incorrect shape.

B. **EXPLAIN** how a square and a rhombus are alike.

They are alike because when you
look at them they look the
some.

The response incorrectly explains how a square and rhombus are alike.

C. **EXPLAIN** how a square and a rhombus could be different.

The could be different because
a rombus a four point and a
triangle has three

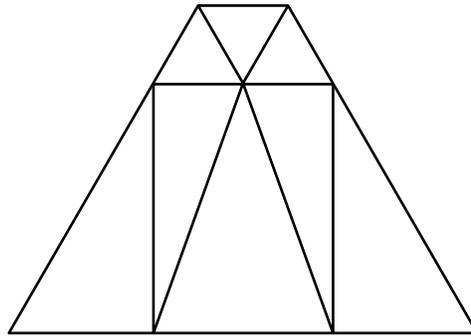
The response incorrectly explains how a square and a rhombus could be different.

Go to the next page to finish question 16.

GO ON 

16. **Continued.** Please refer to the previous page for task explanation.

Dorie draws the picture below for another part of her art project.



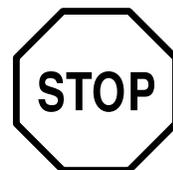
Dorie states each section inside the shape is $\frac{1}{8}$ of the whole shape.

D. EXPLAIN why Dorie is **not** correct.

Dorie is not correct because
there is nothing shaded so
that means she is wrong.

The response provides an incorrect explanation.

After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.



MATHEMATICS—SUMMARY DATA

MULTIPLE-CHOICE

Sample Number	Alignment	Answer Key	Depth of Knowledge	p-values A	p-values B	p-values C	p-values D
1	A-T.1.1.1	C	1	19%	14%	60%	7%
2	A-T.1.1.3	D	1	9%	26%	7%	58%
3	A-T.1.1.4 D-M.2.1	A	2	58%	17%	11%	14%
4	A-F.1.1.1 A-F.1.1.3	D	2	29%	6%	32%	33%
5	A-F.1.1.3	C	1	24%	27%	36%	13%
6	A-F.1.1.5	B	2	18%	56%	20%	6%
7	B-O.1.1	C	2	10%	16%	70%	4%
8	B-O.1.2.1	A	1	64%	7%	10%	19%
9	B-O.2.1	A	1	70%	14%	4%	12%
10	B-O.2.2.1	B	1	4%	67%	15%	14%
11	B-O.3	C	2	15%	18%	54%	13%
12	B-O.3.1.1	A	2	59%	12%	10%	19%
13	B-O.3.1.5	B	2	7%	70%	11%	12%
14	D-M.1.1.1	C	1	26%	7%	58%	9%
15	D-M.2.1.2	D	2	9%	6%	28%	57%

OPEN-ENDED

Sample Number	Alignment	Points	Depth of Knowledge	Mean Score
16	C-G.1 A-F.1	4	2	1.86

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PSSA Grade 3 Mathematics Item and Scoring Sampler

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