Pennsylvania PSSA 2016 Grade 4 Math

Reference Materials
Page 2

Exam & Answer Key Materials
Pages 3 - 37

Grade 4 Formula Sheet

Formulas and conversions that you may need to work questions on this test are found below. You may refer back to this page at any time during the mathematics test.

2016
Grade 4

Standard Conversions

1 yard (yd) = 3 feet (ft)
1 foot = 12 inches (in.)

1 pound (lb) = 16 ounces (oz.)

1 gallon (gal) = 4 quarts (qt)
1 quart = 2 pints (pt)
1 pint = 2 cups (c)

Metric Conversions

1 kilometer (km) = 1,000 meters (m)
1 meter = 100 centimeters (cm)

1 kilogram (kg) = 1,000 grams (g)

1 liter (L) = 1,000 milliliters (mL)

Time Conversions

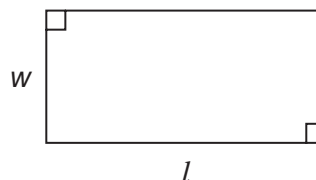1 year (yr) = 12 months (mo)
1 year = 52 weeks (wk)
1 year = 365 days
1 week = 7 days
1 day = 24 hours (hr)
1 hour = 60 minutes (min)
1 minute = 60 seconds (sec)

Rectangle

Area = length × width
$A = l \times w$

Perimeter = length + length + width + width
$P = l + l + w + w$

pennsylvania
DEPARTMENT OF EDUCATION

The Pennsylvania System of School Assessment

Mathematics
Item and Scoring Sampler

2016–2017
Grade 4

MATHEMATICS TEST DIRECTIONS

On the following pages are the mathematics questions.

- You may <u>not</u> use a calculator for question 1. You may use a calculator for all other questions on this test.
- You may need a protractor for questions 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 answer 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 answer 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 answer 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.

Response may show only information copied from the question.

Special Categories within zero reported separately:

BLK (blank)...........Blank, entirely erased, or written refusal to respond
OT..........................Off task
LOE ....Response in a language other than English
IL ....Illegible

Question 1 in this sampler is to be solved **without** the use of a calculator.

MULTIPLE-CHOICE ITEMS

1. Which value is **closest** to 79 × 4?

- A. 280
- B. 320
- C. 350
- D. 400

Item Information		Option Annotations
Alignment	A-T.2.1.4	A. rounds 79 down to 70
Answer Key	B	B. correct
Depth of Knowledge	1	C. rounds 79 down to 70 and 4 up to 5
		D. rounds both multiplicands up 1

p-values			
A	**B**	**C**	**D**
13%	73%	7%	7%

A calculator is permitted for use in solving questions 2–17 in this sampler.

2. Asia covers about $\frac{3}{10}$ of the land on Earth. South America covers about $\frac{12}{100}$ of the land on Earth. Which statement correctly compares the land sizes of Asia and South America?

   A. Since $\frac{12}{100}$ is equivalent to $\frac{12}{10}$ and $\frac{3}{10} < \frac{12}{10}$, Asia covers less land than South America.

   B. Since $\frac{3}{10}$ is equivalent to $\frac{3}{100}$ and $\frac{3}{100} < \frac{12}{100}$, Asia covers less land than South America.

   C. Since $\frac{3}{10}$ is equivalent to $\frac{30}{100}$ and $\frac{30}{100} > \frac{12}{100}$, Asia covers more land than South America.

   D. Since $\frac{3}{10}$ is equivalent to $\frac{93}{100}$ and $\frac{93}{100} > \frac{12}{100}$, Asia covers more land than South America.

Item Information		Option Annotations
Alignment	A-F.1.1.2 A-F.1.1.1	A. does not convert denominator B. does not convert denominator C. correct D. converts 3/10 to hundredths by adding 90 to both numerator and denominator
Answer Key	C	
Depth of Knowledge	2	

p-values			
A	**B**	**C**	**D**
21%	19%	52%	8%

3. In a box of 24 chocolate pieces, $\frac{2}{3}$ of the pieces have peanuts in them. How many of the chocolate pieces have peanuts in them?

    A. 8

    B. 12

    C. 16

    D. 19

Item Information		Option Annotations
Alignment	A-F.2.1.6	A. 24/3
Answer Key	C	B. 24/2 C. correct
Depth of Knowledge	1	D. 24 – 2 – 3

p-values			
A	**B**	**C**	**D**
24%	22%	42%	12%

4. Miguel went to a baseball stadium and a football stadium.

- The baseball stadium has thirty–seven thousand, four hundred ninety-five seats.
- The football stadium has sixty-nine thousand, one hundred forty-three seats.

How many times greater is the value of the digit 3 in the number of seats at the baseball stadium than the value of the digit 3 in the number of seats at the football stadium?

A. 10 times

B. 100 times

C. 1,000 times

D. 10,000 times

Item Information		Option Annotations
Alignment	A-T.1.1.2 A-T.1.1.1	A. states mathematical rule rather than applying it (each place to the left is 10 times greater)
Answer Key	D	B. incorrectly counts number of places C. counts 3 places between the ones and tens thousands place, thus 10 × 10 × 10
Depth of Knowledge	2	
		D. correct

p-values			
A	**B**	**C**	**D**
13%	13%	17%	57%

5. Rounded to the nearest ten, 8,300 books were read by the students at Matilda's school during a read-a-thon. Which value could be the actual total number of books read?

   A.   8,289

   B.   8,296

   C.   8,307

   D.   8,312

Item Information		Option Annotations
Alignment	A-T.1.1.4	A. rounds to nearest hundred
Answer Key	B	B. correct
		C. rounds down to the nearest ten
Depth of Knowledge	1	D. rounds to nearest hundred

	***p*-values**		
A	**B**	**C**	**D**
11%	53%	20%	16%

6. Each team in a football league has 53 players on it. There are 32 teams in the league. How many total players are in the league?

   A. 256

   B. 265

   C. 1,506

   D. 1,696

Item Information			Option Annotations
Alignment	A-T.2.1.2		A. does 32 × 53 and when multiplying 2 × 5 does not put down the 0 since there is already a (placeholder) 0 there
Answer Key	D		B. does 53 × 32 and when multiplying 3 × 3 does not put in a placeholder 0
Depth of Knowledge	1		C. multiplies 5 × 3 and 2 × 3
			D. correct

p-values			
A	**B**	**C**	**D**
5%	5%	5%	85%

7. Albert has been a chef for *y* years. Maria has been a chef for 3 years more than 2 times as many years as Albert. Which expression shows how many years Maria has been a chef?

   A. $3 + 2 + y$

   B. $3 + 2 \times y$

   C. $3 \times y + 2$

   D. $3 \times y \times 2$

Item Information		Option Annotations
Alignment	B-O.1.1	A. adds all the values
Answer Key	B	B. correct
Depth of Knowledge	2	C. does 3 times as many plus 2
		D. multiplies all the values

p-values			
A	**B**	**C**	**D**
14%	31%	27%	28%

8. Kara, Lynn, and Molly each play on a basketball team. The points scored in their last game are listed below.

- Kara scored 3 points.
- Lynn scored 5 times as many points as Kara.
- Molly scored 7 times as many points as Kara.

How many more points did Molly score than Lynn in their last game?

A. 2

B. 6

C. 8

D. 16

Item Information		Option Annotations
Alignment	B-O.1.1.1 B-O.1.1.3	A. $7 - 5$ B. correct C. $(3 \times 5) - 7$ D. $(3 \times 7) - 5$
Answer Key	B	
Depth of Knowledge	2	

| *p*-values			
A	**B**	**C**	**D**
24%	49%	10%	17%

9. Rosie, Stella, and Tiffany are all on a bowling team. In a recent game, Stella scored twice as many points as Rosie. Tiffany scored 2 more points than Rosie. Rosie scored 70 points. What is the total number of points scored by all three women?

   A. 177

   B. 216

   C. 282

   D. 350

Item Information		Option Annotations
Alignment	B-O.1.1.2 B-O.1.1.3	A. thinks Stella scored half as many points (35) not twice as many B. thinks Tiffany, Stella, and Rosie all scored 72 C. correct D. thinks Tiffany and Stella both scored 140
Answer Key	C	
Depth of Knowledge	2	

p-values			
A	**B**	**C**	**D**
14%	16%	64%	6%

10. Frank made a pattern starting with the number 7. He used the rule "add 7." What is true about every number in Frank's pattern?

    A.   Every number is a multiple of 7.

    B.   The last digit of every number is a 7.

    C.   The first digit of every number is a 7.

    D.   The digits in every number add up to 7.

Item Information		Option Annotations
Alignment	B-O.2.1.1 B-O.3.1.1	A. correct B. only true of the 1st term, 11th term, 21st term, 31st term, etc. C. is true for some but not all D. only true for some of the terms but not all the terms
Answer Key	A	
Depth of Knowledge	1	

p-values			
A	**B**	**C**	**D**
70%	4%	6%	20%

11. Starting with an octagon, Hillary used the rule "Replace one side with two new sides" to create the pattern shown below.
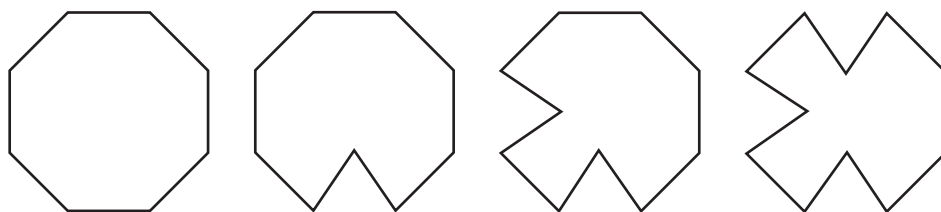
How many sides will the next shape in Hillary's pattern have?

A. 8

B. 11

C. 12

D. 16

Item Information		Option Annotations
Alignment	B-O.3.1.1	A. assumes each shape has 8 sides because it starts with an octagon
Answer Key	C	B. gives the number of sides of the last shape given
Depth of Knowledge	1	C. correct
		D. thinks the number of sides is increasing by 2 with each iteration and not 1

p-values			
A	**B**	**C**	**D**
21%	13%	58%	8%

12. In a video game, players can collect a special item that is worth different points based on what level of the game they are on, as shown in the table below.
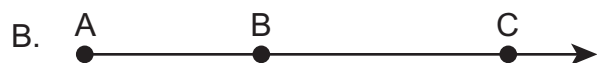
Special Item Points

Level	Number of Points
1	10
2	20
3	40
4	80

The pattern for the number of points for collecting the special item continues. Which statement explains how to find the correct number of points for collecting the special item while on level 5?

A.   Add 10 to 80 to get 90 points.

B.   Add 40 to 80 to get 120 points.

C.   Multiply 80 by 2 to get 160 points.

D.   Multiply 80 by 5 to get 400 points.

Item Information			Option Annotations
Alignment	B-O.3.1.3 B-O.3.1.2		A. returns to idea of adding 10, which only works going from level 1 to 2
Answer Key	C		B. adds the previous value
Depth of Knowledge	2		C. correct
			D. multiplies by the new level

p-values			
A	**B**	**C**	**D**
22%	18%	53%	7%

13. As part of a map, Lewis drew a ray with three points labeled A, B, and C on it. The ray Lewis drew started at point A. Which could be the part of the map Lewis drew?

A.

B.

C.

D.

Item Information		Option Annotations
Alignment	C-G.1.1.1	A. confuses a ray and a line
Answer Key	B	B. correct
Depth of Knowledge	1	C. confuses a ray with a line segment
		D. confuses a ray with a line segment and chooses a starting point that is neither at the left-most nor right-most point

p-values			
A	**B**	**C**	**D**
16%	75%	6%	3%

**14.** Eric is making a design for a school flag. He draws the pentagon shown below.
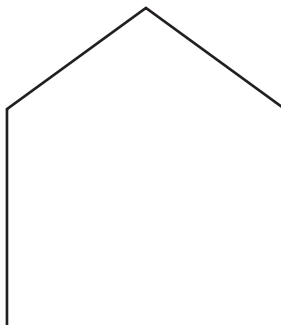
Eric will cut the figure along a line of symmetry of the shape. What are the two shapes Eric will make?

A.   two trapezoids

B.   two parallelograms

C.   a rectangle and a triangle

D.   a rectangle and a pentagon

Item Information		Option Annotations
Alignment	C-G.1.1.2 C-G.1.1.3	A. correct B. sees a set of parallel lines C. draws a horizontal line through 2 vertices D. draws a horizontal line halfway through the shape
Answer Key	A	
Depth of Knowledge	2	

p-values			
A	**B**	**C**	**D**
51%	20%	19%	10%

15. A designer drew a line of symmetry in an angle to create two acute angles. Which figure could the designer have drawn?
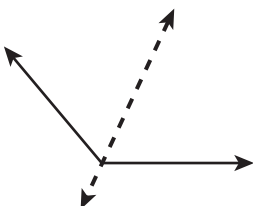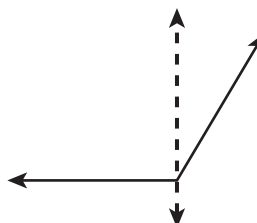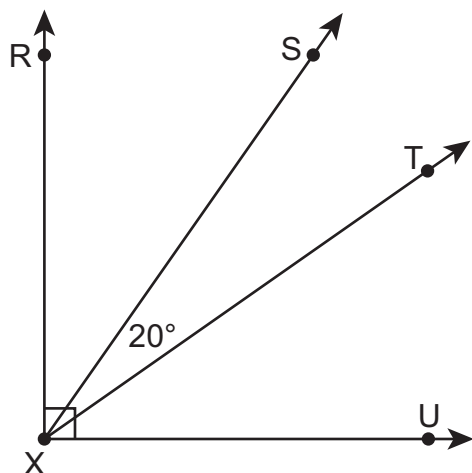
A.

B.

C.

D.
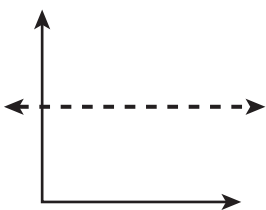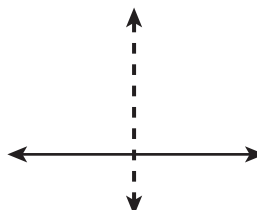
Item Information		Option Annotations
Alignment	C-G.1.1.3 C-G.1.1.1	A. does not create a line of symmetry B. creates two right angles, not acute angles C. correct D. does not create a line of symmetry
Answer Key	C	
Depth of Knowledge	2	

p-values			
A	**B**	**C**	**D**
6%	12%	69%	13%

16. A 90° angle is divided into three smaller angles, as shown below.

The middle angle is 20°. The other two angles have the same measure. What is the measure of one of the other two angles?

A. 35°

B. 45°

C. 30°

D. 70°

Item Information		Option Annotations
Alignment	D-M.3.1.2	A. correct
Answer Key	A	B. 90 divided by 2 (does not subtract the 20)
Depth of Knowledge	2	C. 90 divided by 3 (thinks all three angles are equal)
		D. 90 minus 20 (does not divide the difference)

p-values			
A	**B**	**C**	**D**
47%	20%	14%	19%

OPEN-ENDED QUESTION

17. Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

A. Write the length, in meters as a decimal, of the first piece of rope.

B. Write the total length, in meters as a fraction, of both pieces of rope. Show or explain all your work.

Go to the next page to finish question 17.

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

The length of a third piece of rope is between the lengths of the first and second pieces of rope. The length of the third piece is expressed as a decimal to the hundredths place.

C. Explain why there is only one possible length for the third piece of rope. As part of the explanation, find the length, in meters, of the third piece of rope and express it as a decimal to the hundredths place.

Item-Specific Scoring Guideline

#17 Item Information

Alignment	A-F.3	Depth of Knowledge	3	Mean Score	1.75

Assessment Anchor this item will be reported under:

M04.A-F.3—Understand decimal notation for fractions, and compare decimal fractions.

Specific Anchor Descriptor addressed by this item:

M04.A-F.3.1—Use operations to solve problems involving decimals, including converting between fractions and decimals (may include word problems).

Scoring Guide

Score	In this item, the student . . .
4	Demonstrates a thorough understanding of decimal notation for fractions and comparing decimal fractions by correctly solving problems and clearly explaining procedures.
3	Demonstrates a general understanding of decimal notation for fractions and comparing decimal fractions by correctly solving problems and clearly explaining procedures with only minor errors or omissions.
2	Demonstrates a partial understanding of decimal notation for fractions and comparing decimal fractions by correctly performing a significant portion of the required task.
1	Demonstrates minimal understanding of decimal notation for fractions and comparing decimal fractions.
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 decimal notation for fractions and comparing decimal fractions.
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):

1 point for correct answer

What?	Why?
0.4 (meter)	

Part B (2 points):

1 point for correct answer
1 point for complete support

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

What?	Why?
$\frac{82}{100}$ (meter) **OR equivalent**	**Sample Work:** $\frac{4}{10} = \frac{40}{100}$ $\frac{40}{100} + \frac{42}{100} = \frac{82}{100}$ **OR** **Sample Explanation:** First, I changed $\frac{4}{10}$ to $\frac{40}{100}$ by multiplying the numerator and denominator by 10. Then I added $\frac{40}{100} + \frac{42}{100}$ to get $\frac{82}{100}$. **OR equivalent**

Part C (1 point):

1 point for complete explanation

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

What?	Why?
	Sample Explanation: The first piece of rope is equal to $\frac{40}{100}$ meter and the second piece of rope is $\frac{42}{100}$ meter. There is only one possible length between these two lengths since 41 is the only whole number between 40 and 42. So the length of the third piece of rope must be $\frac{41}{100}$ meter, which can also be written as 0.41 meter. **OR equivalent**

STUDENT RESPONSE

Response Score: 4 points

17. Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

A. Write the length, in meters as a decimal, of the first piece of rope.

0.4 meters long

> The student has given a correct answer.

B. Write the total length, in meters as a fraction, of both pieces of rope. Show or explain all your work.

$$\frac{4}{10} + \frac{42}{100} =$$

LCM: 100

$$\frac{40}{100} + \frac{42}{100} = \frac{82}{100}$$

$$\frac{82}{100} \text{ meters}$$

> The student has given a correct answer and complete support.

Go to the next page to finish question 17.

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

The length of a third piece of rope is between the lengths of the first and second pieces of rope. The length of the third piece is expressed as a decimal to the hundredths place.

C. Explain why there is only one possible length for the third piece of rope. As part of the explanation, find the length, in meters, of the third piece of rope and express it as a decimal to the hundredths place.

0.41

The one possible length is 0.41. It is because in hundredths of 0.4 is also 0.40. Then the other one is 0.42. Then I thought it was 0.41. Thats how I got my answer.

> The student has given a complete explanation.

STUDENT RESPONSE

Response Score: 3 points

PARTS A AND B

Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

A. Write the length, in meters as a decimal, of the first piece of rope.

EQ

0.4

The student has given a correct answer.

B. Write the total length, in meters as a fraction, of both pieces of rope. Show or explain all your work.

EQ

$\frac{82}{100}$

$$\begin{array}{r} 0.42 \\ +\ 0.4 \\ \hline 0.82 \end{array}$$

The student has given a correct answer and complete support.

44 / 1000

PART C

Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

The length of a third piece of rope is between the lengths of the first and second pieces of rope. The length of the third piece is expressed as a decimal to the hundredths place.

C. Explain why there is only one possible length for the third piece of rope. As part of the explanation, find the length, in meters, of the third piece of rope and express it as a decimal to the hundredths place.

Beacuse it's between the first and second rope, and there could only be one answer for the length of the third rope the length is 0.20.

The student has given an incorrect explanation ("between the first and second rope" is given information and is insufficient for any credit).

Options

Flag

Pause

Review/End Test

Back

135 / 1000

STUDENT RESPONSE

Response Score: 2 points

17. Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

A. Write the length, in meters as a decimal, of the first piece of rope.

0.41

> The student has given an incorrect answer.

B. Write the total length, in meters as a fraction, of both pieces of rope. Show or explain all your work.

$\frac{42}{100} + \frac{4}{10} \times 10 \quad \frac{40}{100} =$

$\frac{82}{100}$ Meters

> The student has given a correct answer and complete support.

Go to the next page to finish question 17.

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

The length of a third piece of rope is between the lengths of the first and second pieces of rope. The length of the third piece is expressed as a decimal to the hundredths place.

C. Explain why there is only one possible length for the third piece of rope. As part of the explanation, find the length, in meters, of the third piece of rope and express it as a decimal to the hundredths place.

there is only one possible length for the rope to Be Because I changed $\frac{4}{10}$ to an equivelent Fraction so I could add them. I multiplied By 10 to get $\frac{40}{100}$. I also Have $\frac{42}{100}$. therefore the only possible answer could Be $\frac{41}{100}$.

> The student has given a correct but incomplete explanation (has not expressed the length as a decimal).

STUDENT RESPONSE

Response Score: 1 point

PARTS A AND B

Question 17
Page 1 of 2

Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

A. Write the length, in meters as a decimal, of the first piece of rope.

EQ

0.4

The student has given a correct answer.

B. Write the total length, in meters as a fraction, of both pieces of rope. Show or explain all your work.

EQ

$\frac{42}{100}$ $\frac{4}{10}$

I made 42 hundrths into fourdundrths so it would look more like a fraction not a decimal.

The student has given an incorrect answer and incorrect support.

95 / 1000

PART C

Question 17
Page 2 of 2

Item ID

Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

The length of a third piece of rope is between the lengths of the first and second pieces of rope. The length of the third piece is expressed as a decimal to the hundredths place.

C. Explain why there is only one possible length for the third piece of rope. As part of the explanation, find the length, in meters, of the third piece of rope and express it as a decimal to the hundredths place.

EQ

if the length is between the first and second piece of rope then it could be 32/100 because I picked a number that is close to 42 and not super far away from four.

this is the number and what it would look like in a decimal.
00.32

The student has given an incorrect explanation.

231 / 1000

Review/End Test · Pause · Flag · Options · Back

STUDENT RESPONSE

Response Score: 0 points

17. Curt has two pieces of rope. The first piece of rope is $\frac{4}{10}$ meter long. The second piece of rope is $\frac{42}{100}$ meter long.

A. Write the length, in meters as a decimal, of the first piece of rope.

4,1

> The student has given an incorrect answer.

B. Write the total length, in meters as a fraction, of both pieces of rope. Show or explain all your work.

$\frac{46}{100}$

I put the answer because I added the 4 to 42 and got 46 then I added 10 to 100 and got 110.

> The student has given an incorrect answer and incorrect support.

Go to the next page to finish question 17.

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

The length of a third piece of rope is between the lengths of the first and second pieces of rope. The length of the third piece is expressed as a decimal to the hundredths place.

C. Explain why there is only one possible length for the third piece of rope. As part of the explanation, find the length, in meters, of the third piece of rope and express it as a decimal to the hundredths place.

$$\frac{4}{10} \qquad \frac{28}{100} \qquad \frac{42}{100} \qquad\qquad 28.0$$

I put 26.0 because I Cut the 42 in half and got 26 then I Cut 4 in half and got 2 so I added the 26 and the 2 together and got 28 then I put the 28 in meters like this $\frac{28}{100}$ because it said hundreds.

When I put the 28 in decimal form to the hundreths it looks lik this.

The student has given an incorrect explanation.

MATHEMATICS—SUMMARY DATA

MULTIPLE-CHOICE

Sample Number	Alignment	Answer Key	Depth of Knowledge	p-values			
				A	B	C	D
1	A-T.2.1.4	B	1	13%	73%	7%	7%
2	A-F.1.1.2 A-F.1.1.1	C	2	21%	19%	52%	8%
3	A-F.2.1.6	C	1	24%	22%	42%	12%
4	A-T.1.1.2 A-T.1.1.1	D	2	13%	13%	17%	57%
5	A-T.1.1.4	B	1	11%	53%	20%	16%
6	A-T.2.1.2	D	1	5%	5%	5%	85%
7	B-O.1.1	B	2	14%	31%	27%	28%
8	B-O.1.1.1 B-O.1.1.3	B	2	24%	49%	10%	17%
9	B-O.1.1.2 B-O.1.1.3	C	2	14%	16%	64%	6%
10	B-O.2.1.1 B-O.3.1.1	A	1	70%	4%	6%	20%
11	B-O.3.1.1	C	1	21%	13%	58%	8%
12	B-O.3.1.3 B-O.3.1.2	C	2	22%	18%	53%	7%
13	C-G.1.1.1	B	1	16%	75%	6%	3%
14	C-G.1.1.2 C-G.1.1.3	A	2	51%	20%	19%	10%
15	C-G.1.1.3 C-G.1.1.1	C	2	6%	12%	69%	13%
16	D-M.3.1.2	A	2	47%	20%	14%	19%

OPEN-ENDED

Sample Number	Alignment	Points	Depth of Knowledge	Mean Score
17	A-F.3	4	3	1.75