Pennsylvania PSSA 2021 Grade 3 Math

Exam & Answer Key Materials
Pages 2 - 41

pennsylvania
DEPARTMENT OF EDUCATION

The Pennsylvania System of School Assessment

Mathematics
Item and Scoring Sampler

2021*
Grade 3

* This is a revised version of the 2017 Item and Scoring Sampler.

Pennsylvania Department of Education Bureau of Curriculum, Assessment and Instruction—September 2021

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.

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).....Is blank, is entirely erased, or gives a written refusal to respond

OT.....Is off-task

LOE.....Is in a language other than English

IL.....Is illegible

MULTIPLE-CHOICE ITEMS

1. Alex is painting the chairs in a classroom.

So far he has painted 3 of the 8 chairs in the classroom.

Which statement correctly compares the fraction of painted chairs to the fraction of unpainted chairs?

Ⓐ $\frac{3}{8} < \frac{5}{8}$

Ⓑ $\frac{5}{8} < \frac{3}{8}$

Ⓒ $\frac{8}{3} < \frac{8}{5}$

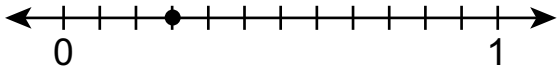
Ⓓ $\frac{8}{5} < \frac{8}{3}$

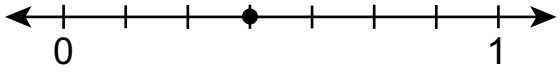
Item Information	
Alignment	A-F.1.1.1 A-F.1.1.5
Answer Key	A
Depth of Knowledge	2
p-value A	68% (correct answer)
p-value B	16%
p-value C	10%
p-value D	6%
Option Annotations	A. Correct: identifies the comparison symbol as “less than” and orders the fractions based on the numerators (3 and 5) while identifying the common denominator to represent the whole (8 chairs in the classroom) B. sets up the fractions correctly but reverses the comparison C. uses reciprocals of the fractions and compares denominators D. uses reciprocals of the fractions but compares correctly

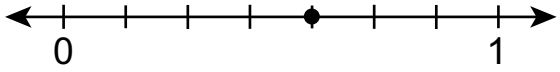
2. Matt measured a peg from one of his games.

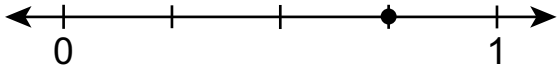
The peg was $\frac{3}{4}$ inch in length.

Which number line shows the length, in inches, of Matt's peg?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

Item Information	
Alignment	A-F.1.1.2 A-F.1.1.3
Answer Key	D
Depth of Knowledge	1
p-value A	15%
p-value B	16%
p-value C	10%
p-value D	59% (correct answer)
Option Annotations	A. plots a point at the third mark of a number line divided into twelfths (3 × 4) B. plots a point so there are 3 marks before and 4 marks after C. plots a point so there are 4 marks before and 3 marks after D. Correct: plots a point at the third mark of a number line divided into fourths

3. Maddox has a jar with $\frac{2}{6}$ ounce of peanut butter in it.

Which fraction is equal to the amount of peanut butter in the jar?

Ⓐ $\frac{1}{3}$ ounce

Ⓑ $\frac{2}{3}$ ounce

Ⓒ $\frac{1}{6}$ ounce

Ⓓ $\frac{2}{12}$ ounce

Item Information	
Alignment	A-F.1.1.3
Answer Key	A
Depth of Knowledge	1
p-value A	41% (correct answer)
p-value B	22%
p-value C	20%
p-value D	17%
Option Annotations	A. Correct: divides both numerator and denominator by 2 B. divides only the denominator by 2 C. divides only the numerator by 2 D. multiplies denominator by numerator OR doubles denominator without doubling numerator

4. Tim put 12 pictures into his scrapbook.

He filled each page with 3 pictures.

Which expression shows the number of pages Tim filled?

Ⓐ $3 \div 12$

Ⓑ $4 \div 12$

Ⓒ $12 \div 4$

Ⓓ $12 \div 3$

Item Information	
Alignment	B-O.1.1.2
Answer Key	D
Depth of Knowledge	1
p-value A	15%
p-value B	4%
p-value C	6%
p-value D	75% (correct answer)
Option Annotations	A. reverses the numbers B. reverses the numbers and uses the number of pages instead of the number of pictures per page C. uses the number of pages as the divisor instead of the number of pictures per page D. Correct: writes an expression to divide the number of pictures (12) by the number of pictures per page (3)

5. The town of Smithville has 5 fire stations.

Each fire station has 4 fire trucks.

How many fire trucks does the town of Smithville have?

Ⓐ 9

Ⓑ 16

Ⓒ 20

Ⓓ 25

Item Information	
Alignment	B-O.1.2
Answer Key	C
Depth of Knowledge	1
p-value A	15%
p-value B	4%
p-value C	78% (correct answer)
p-value D	3%
Option Annotations	A. adds the values B. multiplies 4 by 4 C. Correct: multiplies the number of fire stations (5) by the number of fire trucks (4) at each station D. multiplies 5 by 5

6. Ethan has 2 pencil boxes.

Each pencil box has 7 pencils in it.

The total number of pencils Ethan has can be expressed as 2×7.

What is another way to show the number of pencils Ethan has?

Ⓐ $7 \div 2$

Ⓑ 7×2

Ⓒ $7 + 2$

Ⓓ $7 - 2$

Item Information	
Alignment	B-O.2.1.1
Answer Key	B
Depth of Knowledge	1
p-value A	14%
p-value B	79% (correct answer)
p-value C	6%
p-value D	1%
Option Annotations	A. selects division instead of multiplication B. Correct: recognizes that, when multiplying, numbers may be switched without changing the value of the expression (commutative property of multiplication) C. selects addition (which is also commutative) instead of multiplication D. selects subtraction instead of multiplication

7. Joan puts 42 cherries into 6 bowls.

She puts the same number of cherries into each bowl.

The number of cherries in each bowl can be found using the equation shown below.

$$6 \times ? = 42$$

How many cherries are in each bowl?

Ⓐ 4

Ⓑ 5

Ⓒ 6

Ⓓ 7

Item Information	
Alignment	B-O.2.2.1 B-O.1.2
Answer Key	D
Depth of Knowledge	1
p-value A	6%
p-value B	4%
p-value C	10%
p-value D	80% (correct answer)
Option Annotations	A. mixes up 42 with 24 ($4 \times 6 = 24$) B. thinks $5 \times 6 = 42$; wrong multiple of 6 C. thinks $6 \times 6 = 42$; wrong multiple of 6 D. Correct: recalls that $6 \times 7 = 42$ OR relates the missing number equation to the division problem $42 \div 6$

8. Some friends are having a picnic at a park.

They take 5 cars to the park.

There are 4 people in each car.

Each person will eat 2 sandwiches at the picnic.

How many sandwiches in total will the friends eat at the picnic?

Ⓐ 11

Ⓑ 20

Ⓒ 22

Ⓓ 40

Item Information	
Alignment	B-O.3.1.1
Answer Key	D
Depth of Knowledge	2
p-value A	17%
p-value B	16%
p-value C	9%
p-value D	58% (correct answer)
Option Annotations	A. adds numbers in the problem B. selects number of people going to the park C. multiplies 5 by 4, then adds 2 instead of multiplying by 2 D. Correct: finds the number of people by multiplying 5 by 4 and then finds the number of sandwiches by multiplying the number of people (20) by 2

9. Which story matches the equation $3 \times 12 - 4 = \square$?

Ⓐ Kelsey buys 3 pieces of gum.
She buys 12 more pieces of gum.
She gives away 4 pieces of gum.
How many pieces of gum does Kelsey have now?

Ⓑ Kelsey buys 3 packs of gum.
Each pack has 4 pieces of gum.
She gives away 12 pieces of gum.
How many pieces of gum does Kelsey have now?

Ⓒ Kelsey buys 3 packs of gum.
Each pack has 12 pieces of gum.
She gives away 4 pieces of gum.
How many pieces of gum does Kelsey have now?

Ⓓ Kelsey buys 12 packs of gum.
Each pack has 4 pieces of gum.
She gives away 3 pieces of gum.
How many pieces of gum does Kelsey have now?

Item Information	
Alignment	B-O.3.1.6
Answer Key	C
Depth of Knowledge	2
p-value A	24%
p-value B	5%
p-value C	67% (correct answer)
p-value D	4%
Option Annotations	A. selects a story that matches $3 + 12 - 4 = ?$ B. selects a story that matches $3 \times 4 - 12 = ?$ C. Correct: selects a story that matches multiplying 3 by 12 before subtracting 4 D. selects a story that matches $12 \times 4 - 3 = ?$

10. Chris went outside to play at 3:20 P.M.

He came back inside at 4:05 P.M.

How many minutes was Chris outside?

Ⓐ 15

Ⓑ 25

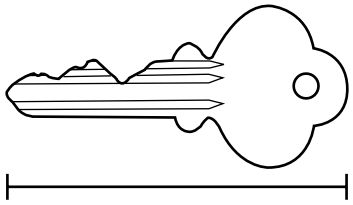
Ⓒ 45

Ⓓ 60

Item Information	
Alignment	D-M.1.1.2
Answer Key	C
Depth of Knowledge	1
p-value A	8%
p-value B	13%
p-value C	67% (correct answer)
p-value D	12%
Option Annotations	A. subtracts 5 from 20 B. adds 5 to 20 C. Correct: identifies the time from 3:20 to 4:00 as 40 minutes and the time from 4:00 to 4:05 as 5 more minutes, and then adds 5 to 40 D. looks only at the hour

11. Maria's house key is shown below.

House Key



Use your ruler to measure the length of Maria's house key.

Which measurement is **closest** to the length of Maria's house key?

Ⓐ $\frac{3}{4}$ inch

Ⓑ 1 inch

Ⓒ $1\frac{3}{4}$ inches

Ⓓ 2 inches

Alignment	D-M.1.2.3
Answer Key	C
Depth of Knowledge	1
p-value A	6%
p-value B	3%
p-value C	49% (correct answer)
p-value D	42%
Option Annotations	A. selects only the fractional part of the measurement B. selects only the whole number part of the measurement C. Correct: measures the length as $\frac{3}{4}$ inch beyond 1 inch D. selects the whole number closest to the actual length

12. Rounded to the nearest dollar, Aziza spent $12.00 on snacks while visiting the zoo.

Which could be the exact amount of money Aziza spent on snacks?

Ⓐ $11.47

Ⓑ $11.58

Ⓒ $12.54

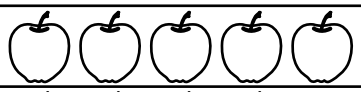
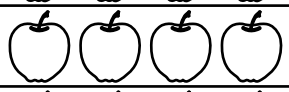
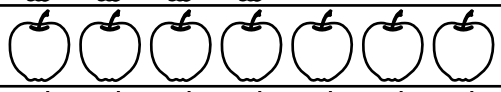
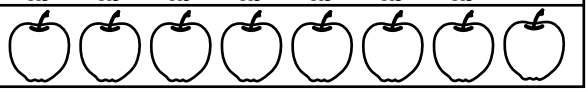
Ⓓ $12.61

Item Information	
Alignment	D-M.1.3.3
Answer Key	B
Depth of Knowledge	2
p-value A	13%
p-value B	61% (correct answer)
p-value C	16%
p-value D	10%
Option Annotations	A. looks at hundredths place (last digit) to decide whether to round up or down B. Correct: looks at the digit to the right of the dollars place (5) and recognizes that the value should be rounded up to the next dollar OR identifies a dollar amount in the interval $11.50–$12.49 (all the values that round to $12) OR recognizes that, among the four choices, $11.58 is closest to $12 C. uses “if 5 or less, then round down” as the rounding rule instead of “if 5 or greater, then round up” D. rounds down

13. Workers at an apple orchard picked four different types of apples.

They recorded the numbers of bushels of apples picked in the graph below.

Apples Picked at the Orchard

Type	Number of Bushels Picked
Empire	
Gala	
Rome	
York	

Key: = 5 bushels

How many fewer bushels of Empire apples than York apples were picked?

Ⓐ 3

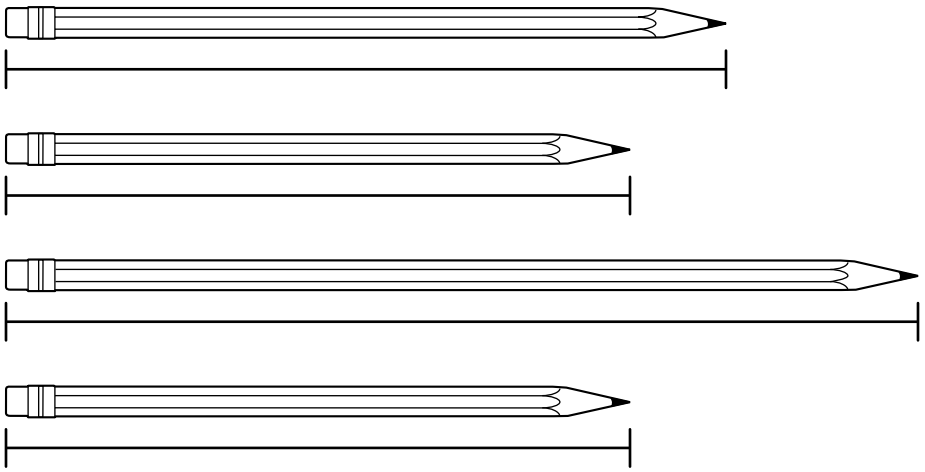
Ⓑ 5

Ⓒ 8

Ⓓ 15

Item Information	
Alignment	D-M.2.1.2
Answer Key	D
Depth of Knowledge	2
p-value A	24%
p-value B	9%
p-value C	5%
p-value D	62% (correct answer)
Option Annotations	A. finds the difference between the number of “apples” but does not apply the key B. does not apply the key and counts the “apples” for Empire C. does not apply the key and counts the “apples” for York D. Correct: applies the key to determine the number of bushels of Empire apples (5 × 5 = 25) and subtracts that value from the number of bushels of York apples (8 × 5 = 40) OR finds the difference between the number of “apples” (8 – 5 = 3) and applies the key to the difference (3 × 5 = 15)

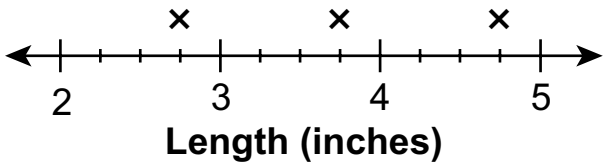
14. Jonathan measured the lengths of his pencils.



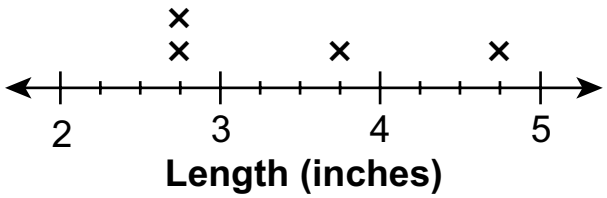
Use your ruler to measure the lengths, in inches, of the pencils.

Which line plot shows the lengths of Jonathan's pencils?

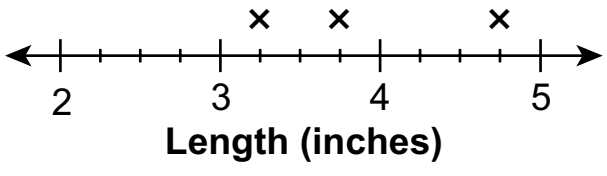
Ⓐ



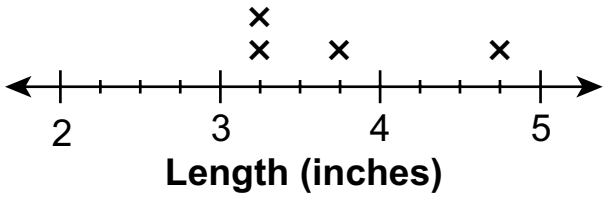
Ⓑ



Ⓒ



Ⓓ



Item Information	
Alignment	D-M.2.1.3
Answer Key	D
Depth of Knowledge	2
p-value A	11%
p-value B	23%
p-value C	14%
p-value D	52% (correct answer)
Option Annotations	A. marks $3\frac{1}{4}$ as $2\frac{3}{4}$, does not include the second pencil of this length B. marks $3\frac{1}{4}$ as $2\frac{3}{4}$ C. does not include the second $3\frac{1}{4}$-inch pencil D. Correct: measures the shortest pencils as $3\frac{1}{4}$ inches and includes both measurements

15. The tally chart below shows the number of students who chose each type of seed for a science experiment.

Science Experiment

Type of Seed	Number of Students
bean	𝍸
mustard	𝍸
sunflower	𝍸 |

Which pictograph also shows the number of students who chose each type of seed for the science experiment?

Ⓐ

Science Experiment

Type of Seed	Number of Students
bean	3
mustard	1
sunflower	2

Key: = 2 students

Ⓑ

Science Experiment

Type of Seed	Number of Students
bean	2
mustard	1
sunflower	3

Key: = 2 students

Ⓒ

Science Experiment

Type of Seed	Number of Students
bean	4
mustard	3
sunflower	6

Key: = 2 students

Ⓓ

Science Experiment

Type of Seed	Number of Students
bean	2
mustard	1
sunflower	3

Key: = 2 students

Item Information	
Alignment	D-M.2.1.4
Answer Key	B
Depth of Knowledge	2
p-value A	3%
p-value B	62% (correct answer)
p-value C	33%
p-value D	2%
Option Annotations	A. switches amounts for bean and sunflower B. Correct: applies the key to each row, using a half figure for the odd tally C. does not apply key (uses 1 figure = 1 student) D. uses only whole figures (does not use the half figure for mustard)

16. Jill's driveway is in the shape of the rectangle shown below.

Jill's Driveway

What is the perimeter of Jill's driveway?

Ⓐ 29 feet

Ⓑ 58 feet

Ⓒ 180 feet

Ⓓ 360 feet

Item Information	
Alignment	D-M.4.1.1
Answer Key	B
Depth of Knowledge	1
p-value A	26%
p-value B	60% (correct answer)
p-value C	12%
p-value D	2%
Option Annotations	A. adds the side lengths that are labeled but does not double the sum B. Correct: adds all four side lengths (20 + 9 + 20 + 9) OR adds the side lengths that are labeled and then doubles the sum C. multiplies the side lengths that are labeled OR confuses the rules for area and for perimeter D. uses multiplication (instead of addition) before doubling the result

OPEN-ENDED QUESTION

17. Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

A. **LIST** the weights, in pounds, of the animals in order from **lightest** to **heaviest**.

_____ _____ _____

lightest **heaviest**

Together, the sloth bear and the panda weigh less than the polar bear.

B. How many pounds less is their combined weight than the polar bear's weight?

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

SHOW or **EXPLAIN** all your work.

_____

_____

Answer: _____ pounds

Go to the next page to finish question 17.

GO ON

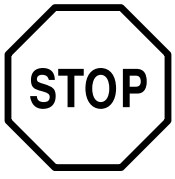
17. ***Continued***. Please refer to the previous page for task explanation.

Ms. Baker asked her students to round the polar bear's weight to the greatest place value.

One student explained that the polar bear's weight rounds to 900 because in the number 849, the 9 is bigger than 5, and if a number is 5 or bigger, then the number should be rounded up.

C. **EXPLAIN** the mistake this student made.

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

#17 Item Information

Alignment	A-T.1	**Depth of Knowledge**	2	**Mean Score**	1.79

Assessment Anchor this item will be reported under:

M03.A-T.1—Use place-value understanding and properties of operations to perform multi-digit arithmetic.

Specific Anchor Descriptor addressed by this item:

M03.A-T.1.1—Apply place-value strategies to solve problems.

Scoring Guide

Score	In this item, the student . . .
4	Demonstrates a thorough understanding of how to use place-value understanding and properties of operations to perform multi-digit arithmetic by computing accurately and fluently and making reasonable estimates.
3	Demonstrates a general understanding of how to use place-value understanding and properties of operations to perform multi-digit arithmetic by computing accurately and fluently and making reasonable estimates.
2	Demonstrates a partial understanding of how to use place-value understanding and properties of operations to perform multi-digit arithmetic by computing accurately and fluently and making reasonable estimates.
1	Demonstrates minimal understanding of how to use place-value understanding and properties of operations to perform multi-digit arithmetic by computing accurately and fluently and making reasonable estimates.
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 use place-value understanding and properties of operations to perform multi-digit arithmetic.
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?
275 291 849	

Part B (2 points):

1 point for correct answer

1 point for correct support

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

What?	Why?
283 (pounds)	**Sample Work:** 291 + 275 = 566 849 – 566 = 283 **OR** **Sample Explanation:** First I found the combined weight of the sloth bear and the panda by adding their weights (291 + 275). To find how much less they weigh than the polar bear, I subtracted the combined weight (566) from the polar bear's weight (849) to get 283 pounds.

Part C (1 point):

1 point for complete explanation

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

What?	Why?
	Sample Explanation: The student looked at the 9, which is in the ones place. To round to the greatest place value, the student needs to look at the 4, which is in the tens place. Since 4 is smaller than 5, the number rounds to 800 and not 900.

STUDENT RESPONSE

Response Score: 4 points

PART A

Question 17
Page 1 of 3

Line Guide | Item ID | ?

Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

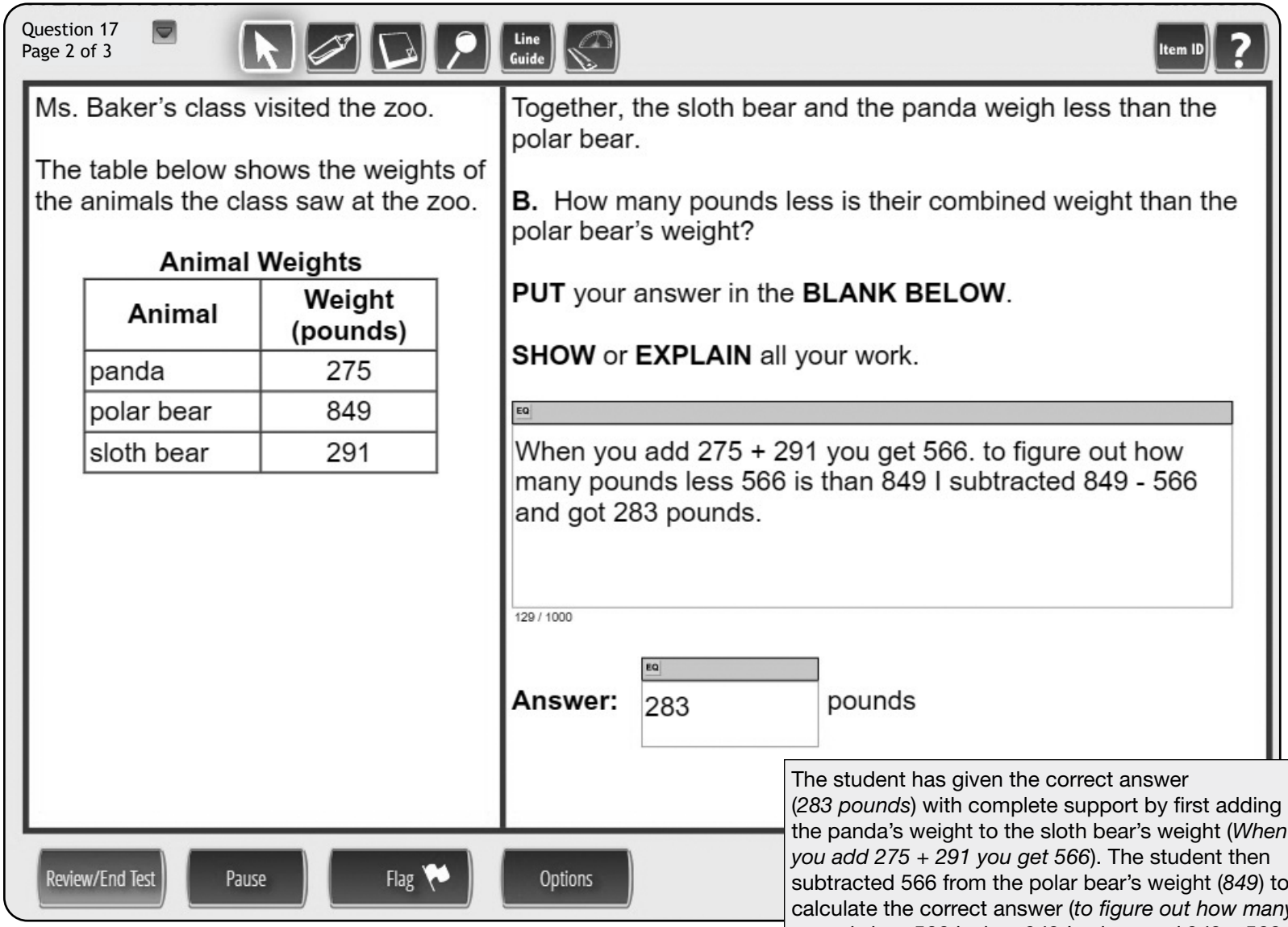
Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

A. LIST the weights, in pounds, of the animals in order from **lightest** to **heaviest**.

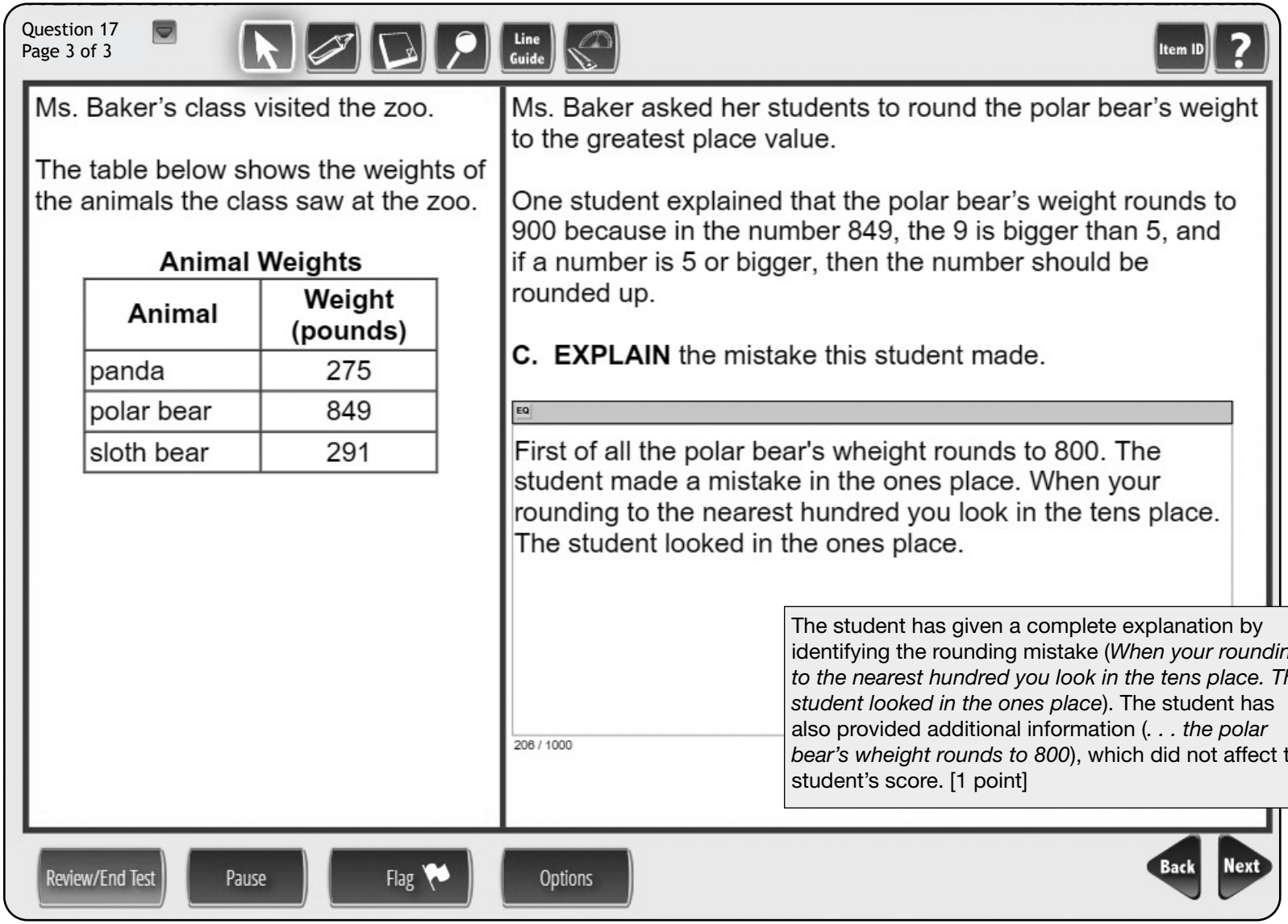
EQ	EQ	EQ
275	291	849
lightest		**heaviest**

The student has given the correct answer by correctly comparing the three weights. The student correctly placed 849 as the heaviest weight by looking at the hundreds place and seeing that 8 is larger than 2. The student also correctly compared the other two weights by looking at the tens place to determine that 7 is less than 9, so 275 is the lightest weight and 291 is between 275 and 849. [1 point]

Review/End Test | Pause | Flag | Options | Next



The student has given the correct answer (*283 pounds*) with complete support by first adding the panda's weight to the sloth bear's weight (*When you add 275 + 291 you get 566*). The student then subtracted 566 from the polar bear's weight (*849*) to calculate the correct answer (*to figure out how many pounds less 566 is than 849 I subtracted 849 – 566 and got 283 pounds*). [2 points]



The student has given a complete explanation by identifying the rounding mistake (*When your rounding to the nearest hundred you look in the tens place. The student looked in the ones place*). The student has also provided additional information (*. . . the polar bear's wheight rounds to 800*), which did not affect the student's score. [1 point]

STUDENT RESPONSE

Response Score: 3 points

17. Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

A. **LIST** the weights, in pounds, of the animals in order from **lightest** to **heaviest**.

275 291 849

lightest **heaviest**

The student has given the correct answer by correctly comparing the three weights. [1 point]
Please see annotation A on page 35 for complete details.

Together, the sloth bear and the panda weigh less than the polar bear.

B. How many pounds less is their combined weight than the polar bear's weight?

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

SHOW or **EXPLAIN** all your work.

$$\begin{array}{r} 275 \\ +291 \\ \hline 566 \end{array} \qquad \begin{array}{r} \overset{1}{\cancel{8}}\overset{14}{\cancel{4}}9 \\ -566 \\ \hline 283 \end{array}$$

It is less than because 849-566=283 so the polar bear weighs more.

Answer: 283 pounds

The student has given the correct answer (*283 pounds*) with complete support by showing work adding the panda's weight (*275*) to the sloth bear's weight (*291*) to get a total of 566. [2 points]
Please see annotation B on page 35 for complete details.

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

Ms. Baker asked her students to round the polar bear's weight to the greatest place value.

One student explained that the polar bear's weight rounds to 900 because in the number 849, the 9 is bigger than 5, and if a number is 5 or bigger, then the number should be rounded up.

C. **EXPLAIN** the mistake this student made.

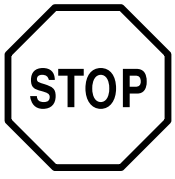
The mistake is that it is not 4 it is 5 so it should be rounded to 850 not 900.

A: The student has given the correct answer by correctly comparing the three weights. The student correctly placed 849 as the heaviest weight by looking at the digits in the hundreds place and seeing that 8 is larger than 2. The student also correctly compared the other two weights by looking at the digits in the tens place to determine that 7 is less than 9, so 275 is the lightest weight and 291 is between 275 and 849. [1 point]

B: The student has given the correct answer (*283 pounds*) with complete support by showing work adding the panda's weight (*275*) to the sloth bear's weight (*291*) to get a total of 566. The student then subtracted 566 from the polar bear's weight (*849*) to calculate the correct answer of 283 pounds. The student also included an explanation (*It is less than because 849 – 566 = 283 so the polar bear weighs more*), however, the explanation alone would have been considered incomplete support, since it does not also address how 566 was derived. [2 points]

C: The student has given an incorrect explanation by not rounding to the correct greatest place value. The student incorrectly rounded to the tens place instead of the hundreds place (*it is not 4 it is 5 so it should be rounded to 850 not 900*). [0 points]

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: 2 points

PART A

Question 17
Page 1 of 3

Line Guide | Item ID | ?

Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

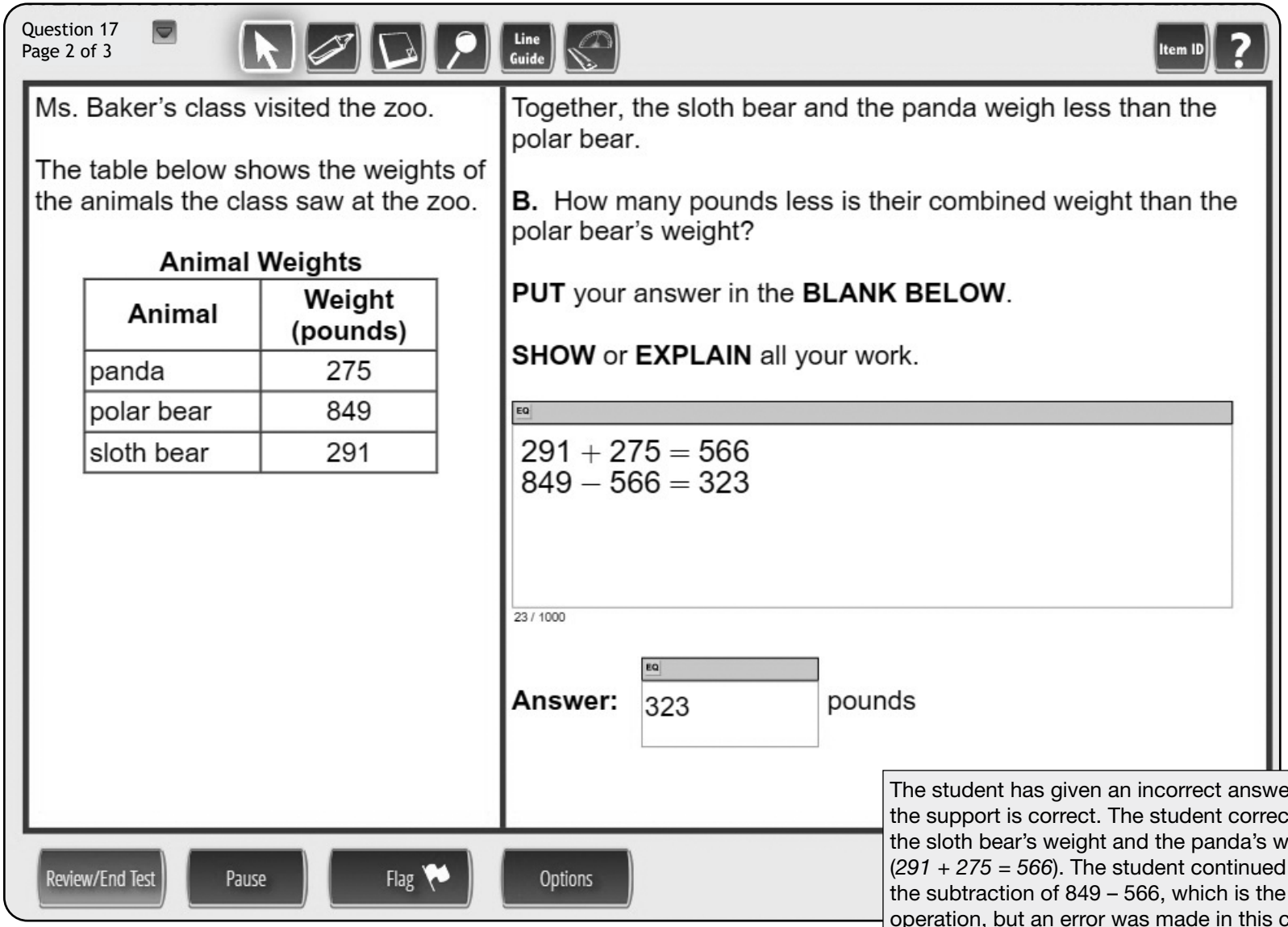
Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

A. LIST the weights, in pounds, of the animals in order from **lightest** to **heaviest**.

EQ	EQ	EQ
275	291	849
lightest		**heaviest**

The student has given the correct answer by correctly comparing the three weights. The student correctly placed 849 as the heaviest weight by looking at the digits in the hundreds place and seeing that 8 is larger than 2. The student also correctly compared the other two weights by looking at the digits in the tens place to determine that 7 is less than 9, so 275 is the lightest weight and 291 is between 275 and 849. [1 point]

Review/End Test | Pause | Flag | Options | Next



The student has given an incorrect answer (*323*) but the support is correct. The student correctly added the sloth bear's weight and the panda's weight (*291 + 275 = 566*). The student continued with the subtraction of 849 – 566, which is the correct operation, but an error was made in this calculation, resulting in an incorrect answer (*323*). [1 point]

Question 17
Page 3 of 3

Line Guide | Item ID | ?

Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

Ms. Baker asked her students to round the polar bear's weight to the greatest place value.

One student explained that the polar bear's weight rounds to 900 because in the number 849, the 9 is bigger than 5, and if a number is 5 or bigger, then the number should be rounded up.

C. EXPLAIN the mistake this student made.

EQ

The student is wrong because it said round to the greatest place value and he rounded to the nearest hundred ho could of rounded to the nearest tens.

The student has given an incorrect explanation by suggesting Ms. Baker's student round to the nearest ten instead of the nearest hundred. [0 points]

149 / 1000

Review/End Test | Pause | Flag | Options | Back | Next

STUDENT RESPONSE

Response Score: 1 point

17. Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

A. **LIST** the weights, in pounds, of the animals in order from **lightest** to **heaviest**.

275 291 849

lightest **heaviest**

The student has given the correct answer by correctly comparing the three weights. [1 point]
Please see annotation A on page 41 for complete details.

Together, the sloth bear and the panda weigh less than the polar bear.

B. How many pounds less is their combined weight than the polar bear's weight?

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

SHOW or **EXPLAIN** all your work.

$$\begin{array}{r} {}^{1}275 \\ +\ 291 \\ \hline 566 \end{array}$$

Answer: 666 pounds

The student has given an incorrect answer (*666 pounds*) with correct but incomplete support. [0.5 points]
Please see annotation B on page 41 for complete details.

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

Ms. Baker asked her students to round the polar bear's weight to the greatest place value.

One student explained that the polar bear's weight rounds to 900 because in the number 849, the 9 is bigger than 5, and if a number is 5 or bigger, then the number should be rounded up.

C. EXPLAIN the mistake this student made.

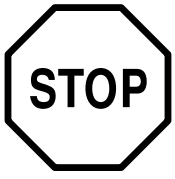
because ther are is no 5 in 849 there is a 8 in 849 but no 5.

A: The student has given the correct answer by correctly comparing the three weights. The student correctly placed 849 as the heaviest weight by looking at the digits in the hundreds place and seeing that 8 is larger than 2. The student also correctly compared the other two weights by looking at the digits in the tens place to determine that 7 is less than 9, so 275 is the lightest weight and 291 is between 275 and 849. [1 point]

B: The student has given an incorrect answer (*666 pounds*) with correct but incomplete support. The student's support shows a correct first step for Part B by adding the weights of the panda and the sloth bear (*275 + 291 = 566*). The student does not go on to subtract the combined weights (*566*) from the polar bear's weight (*849*). [0.5 points]

C: The student has given an incorrect explanation that does not explain the mistake made by Ms. Baker's student. [0 points]

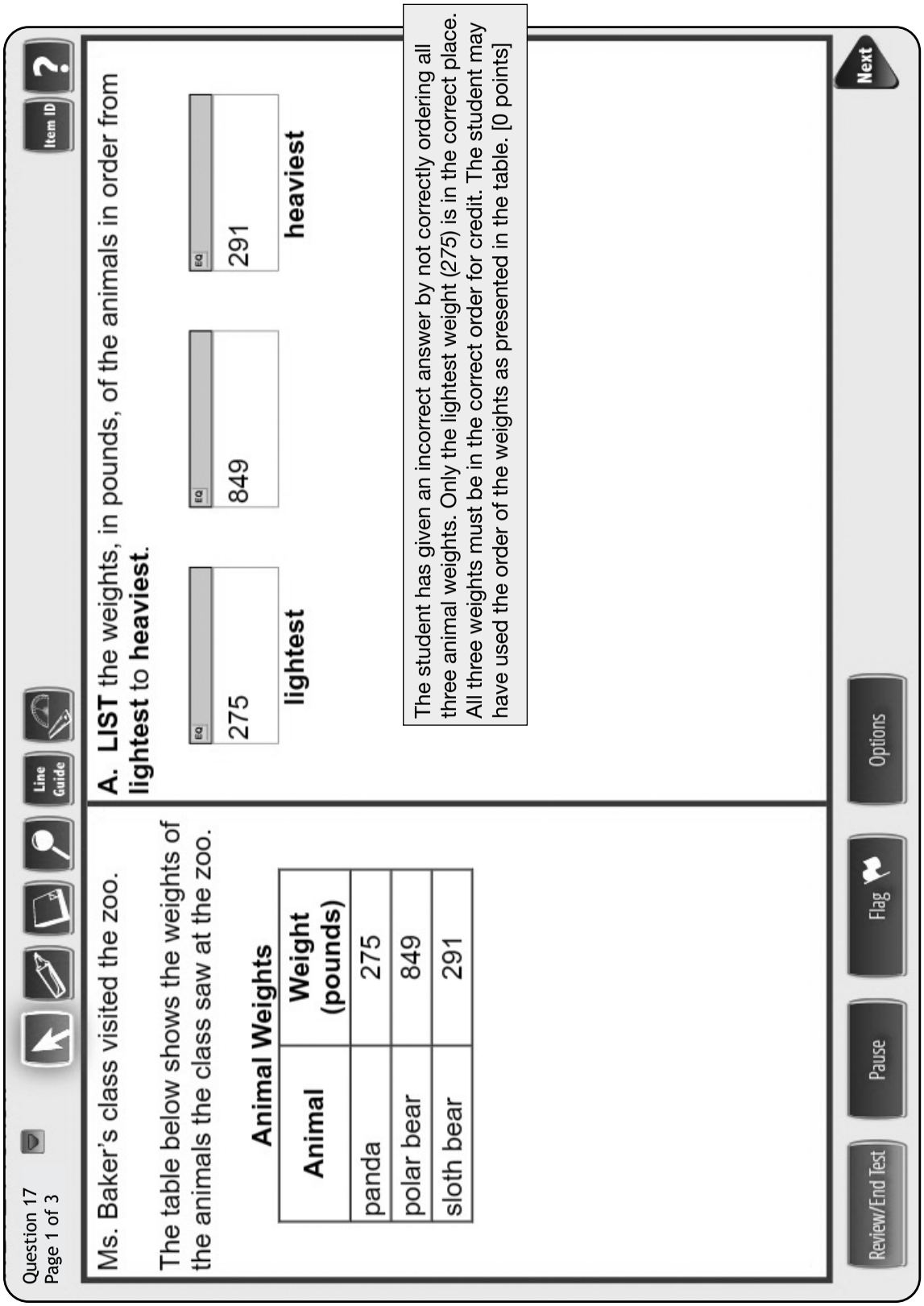
After you have checked your work, close your answer booklet and test booklet so your teacher will know you are finished.

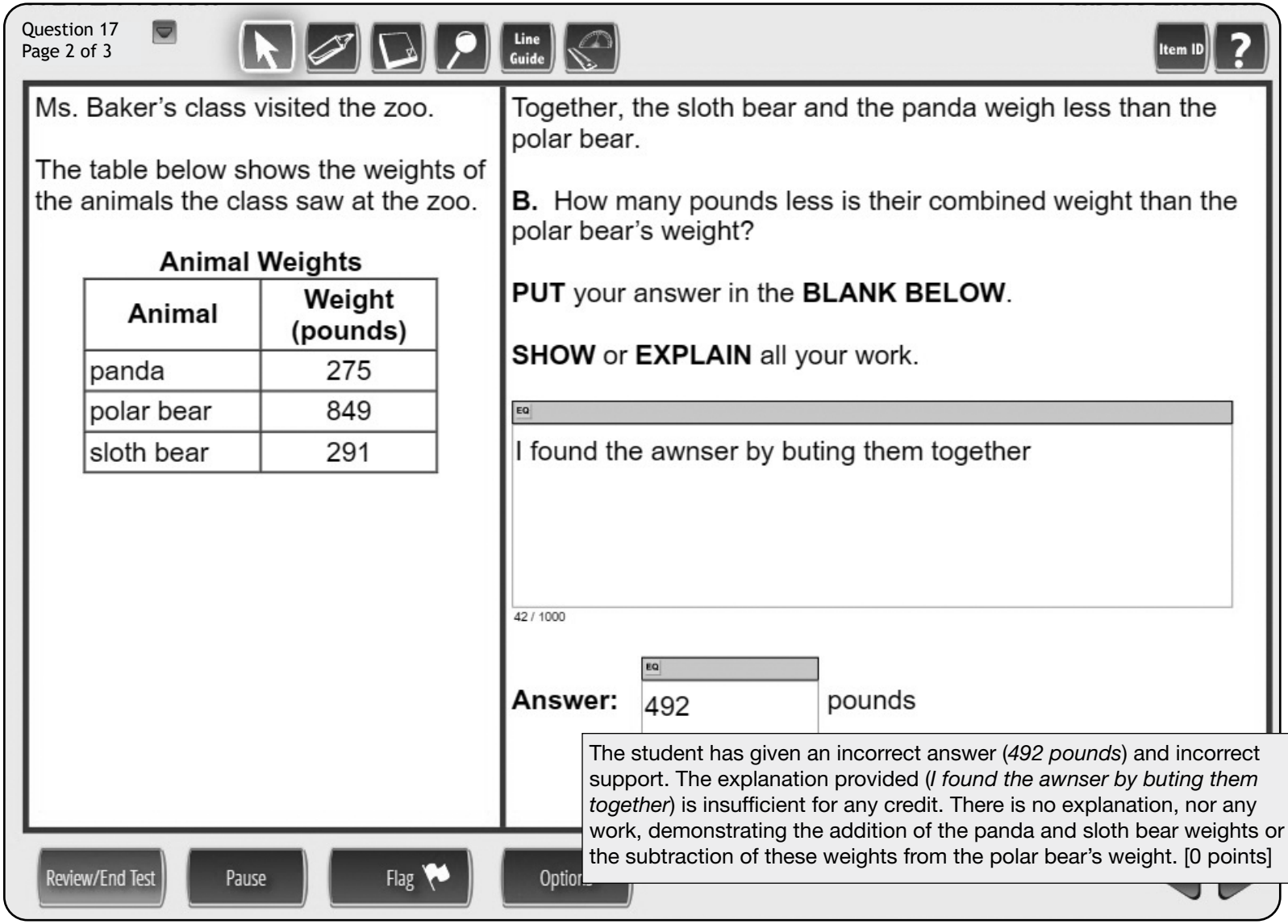


STUDENT RESPONSE

Response Score: 0 points

PART A





The student has given an incorrect answer (*492 pounds*) and incorrect support. The explanation provided (*I found the awnser by buting them together*) is insufficient for any credit. There is no explanation, nor any work, demonstrating the addition of the panda and sloth bear weights or the subtraction of these weights from the polar bear's weight. [0 points]

Question 17
Page 3 of 3

Line Guide | Item ID | ?

Ms. Baker's class visited the zoo.

The table below shows the weights of the animals the class saw at the zoo.

Animal Weights

Animal	Weight (pounds)
panda	275
polar bear	849
sloth bear	291

Ms. Baker asked her students to round the polar bear's weight to the greatest place value.

One student explained that the polar bear's weight rounds to 900 because in the number 849, the 9 is bigger than 5, and if a number is 5 or bigger, then the number should be rounded up.

C. EXPLAIN the mistake this student made.

EQ

he did the laest number

The student has given an incorrect explanation that does not explain the mistake made by Ms. Baker's student. [0 points]

23 / 1000

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MATHEMATICS—SUMMARY DATA

Multiple-Choice

Sample Number	Alignment	Answer Key	Depth of Knowledge	*p*-value A	*p*-value B	*p*-value C	*p*-value D
1	A-F.1.1.1 A-F.1.1.5	A	2	68%	16%	10%	6%
2	A-F.1.1.2 A-F.1.1.3	D	1	15%	16%	10%	59%
3	A-F.1.1.3	A	1	41%	22%	20%	17%
4	B-O.1.1.2	D	1	15%	4%	6%	75%
5	B-O.1.2	C	1	15%	4%	78%	3%
6	B-O.2.1.1	B	1	14%	79%	6%	1%
7	B-O.2.2.1 B-O.1.2	D	1	6%	4%	10%	80%
8	B-O.3.1.1	D	2	17%	16%	9%	58%
9	B-O.3.1.6	C	2	24%	5%	67%	4%
10	D-M.1.1.2	C	1	8%	13%	67%	12%
11	D-M.1.2.3	C	1	6%	3%	49%	42%
12	D-M.1.3.3	B	2	13%	61%	16%	10%
13	D-M.2.1.2	D	2	24%	9%	5%	62%
14	D-M.2.1.3	D	2	11%	23%	14%	52%
15	D-M.2.1.4	B	2	3%	62%	33%	2%
16	D-M.4.1.1	B	1	26%	60%	12%	2%

Open-Ended

Sample Number	Alignment	Points	Depth of Knowledge	Mean Score
17	A-T.1	4	2	1.79