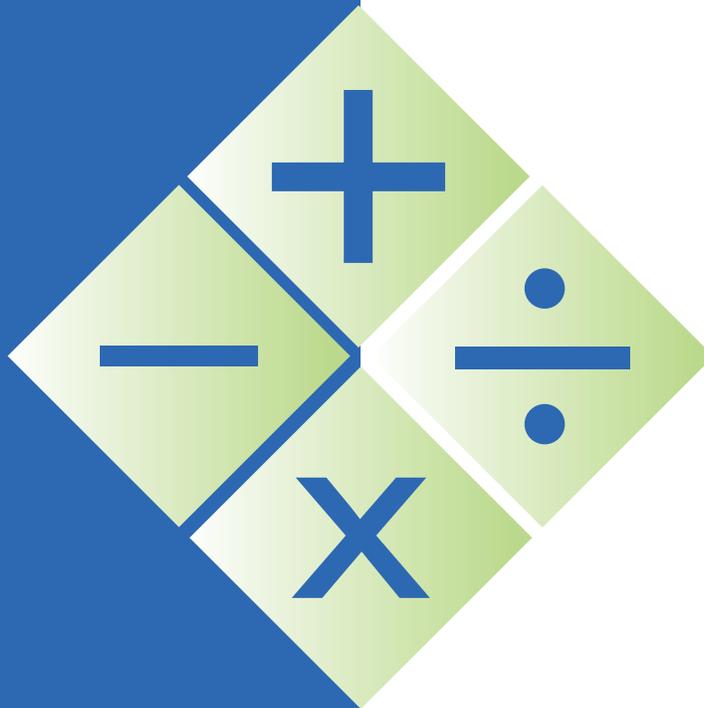


# Mathematics

## Forward Exam Practice Test Grade 5



WISCONSIN DEPARTMENT OF  
**Public Instruction**



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## Table of Contents

MATHEMATICS ITEMS—SESSION 1 .....	1
MATHEMATICS ITEMS—SESSION 2 .....	10
MATHEMATICS—APPENDIX .....	18



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**MATHEMATICS ITEMS—SESSION 1**

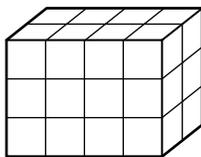
1. Hannah has  $\frac{1}{2}$  ounce of T-shirt dye. She puts the same amount of the dye into each of 4 containers of water. Write a number or operator from the list in each box to create an expression that represents the amount of the dye, in ounces, Hannah puts in each container.

1   2   4    $\frac{1}{2}$     $\frac{1}{4}$    +   -   ×   ÷

2. The distance from Earth to the Moon is approximately  $2.389 \times 10^5$  kilometers. Which statement describes how to write the distance from Earth to the Moon in standard form?
- A. Shift every digit five places to the left because  $10^5$  is multiplying by 10 five times.
  - B. Shift every digit five places to the right because  $10^5$  is multiplying by 10 five times.
  - C. Shift every digit six places to the left because  $10^5$  is six digits.
  - D. Shift every digit six places to the right because  $10^5$  is six digits.

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3. A rectangular prism made from unit cubes is shown.

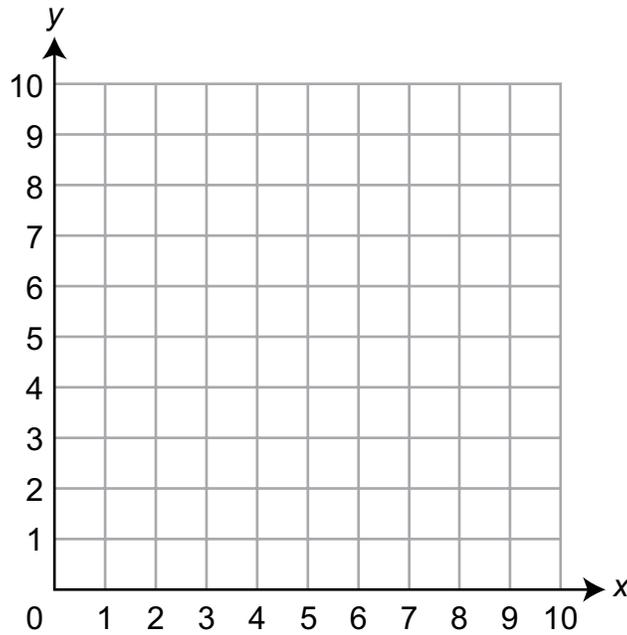


What is the volume, in cubic units, of the rectangular prism?

- A. 7
- B. 12
- C. 24
- D. 26
4. Greta buys 60 ounces of raisins. She separates the raisins into 8 bags. What fraction of the raisins does Greta put in each bag?
- A.  $\frac{1}{8}$
- B.  $\frac{1}{60}$
- C.  $\frac{8}{60}$
- D.  $\frac{60}{8}$

Go on to the next page.

5. Plot the points  $(3, 7)$ ,  $(6, 1)$ , and  $(5, 4)$  on the graph.



6. The Janis School District ordered 27 cases of dry-erase markers. Each case contains 48 boxes of dry-erase markers. How many boxes of dry-erase markers did the Janis School District order?
- A. 856
  - B. 1,250
  - C. 1,296
  - D. 1,500

Go on to the next page.

7. A new restaurant received 4 boxes filled with plates. Each box had 15 small plates and 8 large plates. Write an expression that uses the numbers 4, 8, and 15 exactly one time each to show the total number of plates the restaurant received in the boxes.

8. Silvia bought a rectangular piece of land that is  $2\frac{1}{3}$  miles long and  $\frac{3}{4}$  mile wide. How many square miles of land did Silvia buy?

- A.  $1\frac{3}{4}$   
 B.  $2\frac{1}{4}$   
 C.  $3\frac{1}{12}$   
 D.  $6\frac{1}{6}$

9. A student has 3 rocks that weigh a total of 1.05 pounds. Each rock weighs the same amount. What is the weight, in pounds, of one of the rocks?

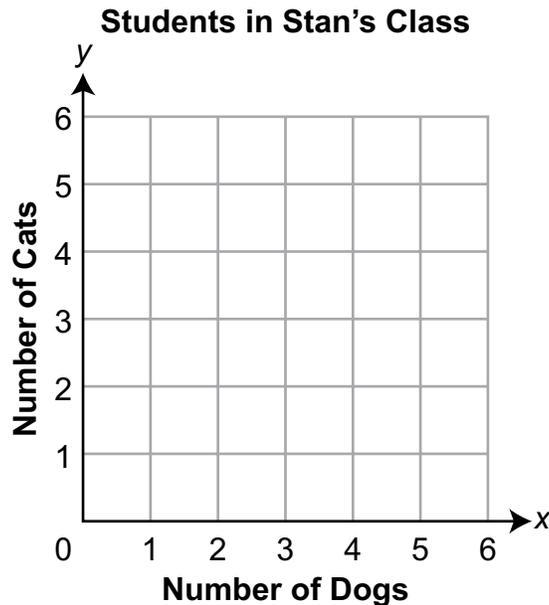
Go on to the next page.

10. Select the **two** statements that are true.

Select **two** options.

- A. Volume can be measured with unit cubes.
- B. Volume can be measured with unit squares.
- C. A cube with an edge length of 1 unit has a volume of 1 cubic unit.
- D. A cube with an edge length of 1 unit has a volume of 6 cubic units.
- E. A cube with an edge length of 1 unit has a volume of 12 cubic units.

11. Stan plots points on the coordinate grid shown to represent the number of dogs and the number of cats each student in his class owns.



Laura has 2 dogs and 1 cat. Where should Stan plot a point to represent Laura's dogs and cats?

- A. (0, 3)
- B. (2, 1)
- C. (1, 2)
- D. (3, 0)

Go on to the next page.

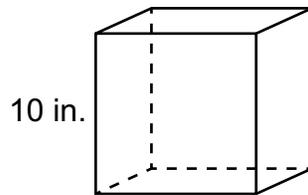
12. What is the value of  $\frac{1}{4} + 1\frac{1}{8}$ ?



13. Which comparison is true?

- A.  $5.79 < 5.789$
- B.  $6.317 = 6.137$
- C.  $7.85 > 7.588$
- D.  $8.983 < 8.893$

14. Amanda has the fish tank shown.



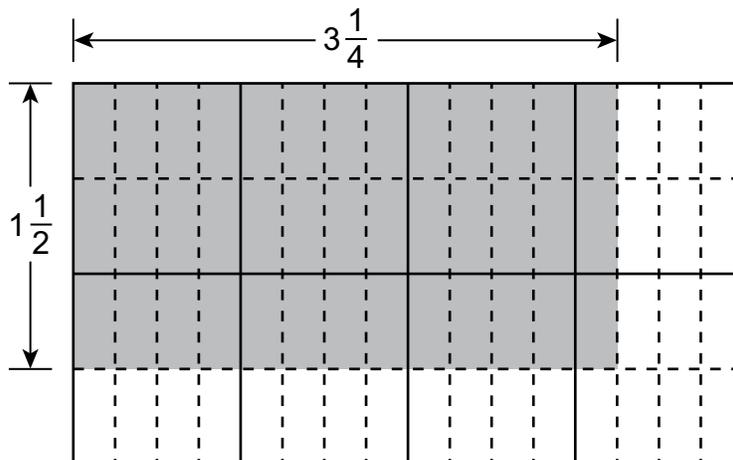
The fish tank has a volume of 300 cubic inches. Use the lengths below the blank lines to complete the statement.

The base of the fish tank could have edge lengths of \_\_\_\_\_ and \_\_\_\_\_.

- |           |           |
|-----------|-----------|
| 1 inch    | 1 inch    |
| 2 inches  | 2 inches  |
| 3 inches  | 3 inches  |
| 4 inches  | 4 inches  |
| 7 inches  | 7 inches  |
| 8 inches  | 8 inches  |
| 9 inches  | 9 inches  |
| 10 inches | 10 inches |

**Go on to the next page.**

15. To find the area of a rectangle that has a length of  $3\frac{1}{4}$  inches and a width of  $1\frac{1}{2}$  inches, Greg draws the model shown.



Which statement about the area of the rectangle is correct?

- A. The area is  $3\frac{1}{8}$  square inches because  $3 \times 1 = 3$  and  $\frac{1}{4} + \frac{1}{2} = \frac{1}{8}$ .
- B. The area is  $3\frac{1}{8}$  square inches because  $3 \times 1 = 3$  and  $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ .
- C. The area is  $\frac{39}{8}$  square inches because  $3 \times 13 = 39$  and there are  $2 \times 4$  equal parts in 1 whole.
- D. The area is  $\frac{39}{8}$  square inches because  $42 - 3 = 39$  and there are  $4 \times 16$  equal parts in 1 whole.



**STOP.**



**MATHEMATICS ITEMS—SESSION 2**

1. Tori uses a painting canvas that is 48 inches tall and has an area of 1,344 square inches. She uses the expression shown to find the width of the canvas.

$$1,344 \div 48$$

What is the width, in inches, of Tori's painting canvas?

2. A shaded fraction model is shown.



Which word problem can be represented by the shaded part of the fraction model?

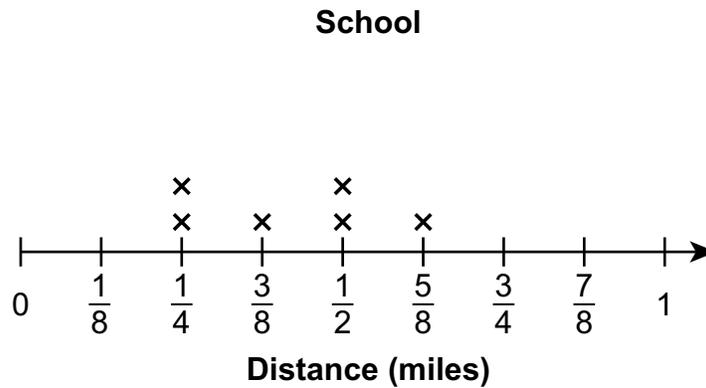
- A. Nari ate  $\frac{1}{4}$  of a pizza 4 days in a row. How much pizza did Nari eat in total?
- B. Marissa ate  $\frac{1}{3}$  of an orange 4 days in a row. How many oranges did Marissa eat in total?
- C. Ryan ate  $\frac{3}{1}$  sandwiches 4 days in a row. How many sandwiches did Ryan eat in total?
- D. Trevonte ate  $\frac{3}{4}$  of a protein bar 4 days in a row. How many protein bars did Trevonte eat in total?

**Go on to the next page.**

3. Keshawn is creating a line plot of the distance each of 8 friends lives from a school.

- The total distance all 8 friends live from the school is  $3\frac{1}{2}$  miles.
- He marks the distances that 6 of the friends live from the school on the line plot.

Complete Keshawn’s line plot by adding possible distances of the remaining 2 friends.



4. A number is shown in expanded form.

$$4 \times 100 + 3 \times 1 + 6 \times \frac{1}{10} + 9 \times \frac{1}{1,000}$$

What is the decimal form of the number shown?

Go on to the next page.

5. The table shows some of the numbers in pattern B and pattern N.

Pattern B	4	8	12	?	20
Pattern N	?	12	18	24	30

Which statement correctly describes the relationship between the corresponding numbers in pattern B and pattern N?

- A. Each number in pattern N is 3 times the corresponding number in pattern B.
- B. Each number in pattern B is 4 less than the corresponding number in pattern N.
- C. Each number in pattern B divided by the corresponding number in pattern N is equivalent to  $\frac{2}{3}$ .
- D. Each number in pattern B divided by the corresponding number in pattern N is equivalent to  $1\frac{1}{2}$ .
6. Which situation can be represented by the expression  $\frac{1}{5} \div 3$ ?
- A. A board is 3 feet long. The board is cut into 5 equal pieces.
- B. A block of metal weighs 5 pounds. The block is divided into 3 equal pieces.
- C. A bottle contains  $\frac{1}{5}$  liter of water. The water is poured equally into 3 containers.
- D. A running track is  $\frac{1}{5}$  kilometer in length. A runner runs the length of the track 3 times.

Go on to the next page.

7. A crate will be filled with small cubes. The crate has a length of 4 feet, a width of 3 feet, and a height of 2 feet. Each small cube has a side length of 1 foot. Which set of small cubes will completely fill the crate?
- A. 2 layers of cubes with 12 cubes in each layer
  - B. 4 layers of cubes with 5 cubes in each layer
  - C. 6 layers of cubes with 12 cubes in each layer
  - D. 12 layers of cubes with 5 cubes in each layer
8. Which statement is true?
- A. A rhombus is always a square.
  - B. A rectangle is always a rhombus.
  - C. A square is always a quadrilateral.
  - D. A parallelogram is always a rectangle.
9. Match each expression to the equivalent number.

$$3.6 + 2.25$$

$$1.35$$

$$3.6 - 2.25$$

$$1.6$$

$$3.6 \times 2.25$$

$$5.85$$

$$3.6 \div 2.25$$

$$8.1$$

Go on to the next page.

10. On Monday, Margaret walked  $\frac{5}{8}$  mile to a park. Then, she walked  $\frac{9}{10}$  mile back home along a different path. Which number is the **most reasonable** estimate of the total distance, in miles, that Margaret walked to the park and back on Monday?

- A. 1
- B.  $1\frac{1}{2}$
- C. 4
- D. 14

11. An expression is shown.

$$5 \times (8 + 15 \div 3) + 7$$

What is the value of the expression?

Go on to the next page.

12. A study showed that there were 51,118 people using the public transportation system in a city. Select the **two** statements that are true about the number of people using the public transportation system in the city.

Select **two** options.

- A. The value of the 1 in the hundreds place is  $\frac{1}{10}$  the value of the 1 in the tens place.
  - B. The value of the 1 in the tens place is  $\frac{1}{10}$  the value of the 1 in the hundreds place.
  - C. The value of the 1 in the thousands place is  $\frac{1}{10}$  the value of the 1 in the hundreds place.
  - D. The value of the 1 in the thousands place is 10 times the value of the 1 in the hundreds place.
  - E. The value of the 1 in the hundreds place is 10 times the value of the 1 in the thousands place.
13. Stan participated in a long jump contest. His first jump was 5.96 **meters**. His second jump was 9 **centimeters** farther than his first jump. How far, in **meters**, was Stan's second jump?
- A. 5.969
  - B. 6.05
  - C. 6.86
  - D. 14.96

Go on to the next page.

14. Jeremy bought 10 packages of rice. The amount of rice in each package was the same. The total amount of rice was greater than 10 cups. For each amount in the table, in cups, determine whether it could be or could not be the amount of rice in 1 package.

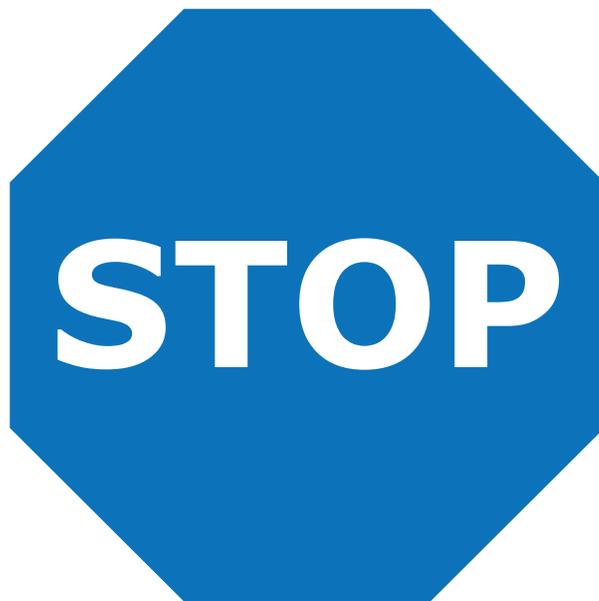
	Could Be	Could Not Be
$\frac{7}{8}$		
$1\frac{1}{3}$		
$\frac{5}{4}$		
$\frac{1}{2}$		

15. Andre is running in a relay race on a team with 3 other people.

- Andre runs his part of the race in 12.46 seconds.
- Each of the other runners completes a part in a time a little faster than Andre.

Which number is the **best** estimate of the total amount of time, in seconds, it takes Andre's team to complete the race?

- A. 12
- B. 36
- C. 48
- D. 52



MATHEMATICS—APPENDIX

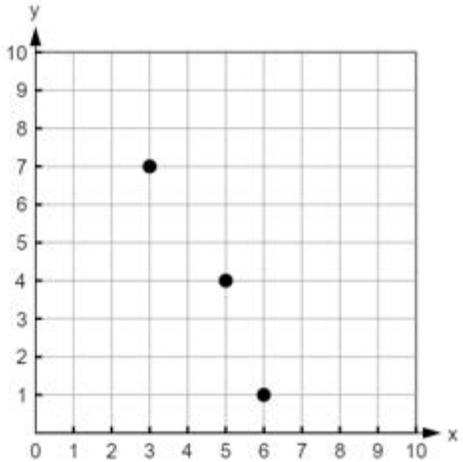
SUMMARY DATA—GRADE 5, SESSION 1

Number 1	
Alignment	M.5.NF.B.7b
Depth of Knowledge	2
Key(s)	See Annotations
Points	1
Annotations	<p>The question asks the student to represent division of a unit fraction by a whole number.</p> <p>To receive full credit, the student must drag the correct items into the boxes, as shown.</p> 

Number 2	
Alignment	M.5.NBT.A.2
Depth of Knowledge	2
Key(s)	A
Points	1
Annotations	<p>The question asks the student to explain patterns in the placement of the decimal point when a decimal is multiplied by a power of 10.</p> <p>A. Correct. Multiplying by a power of 5 would shift the digits to the left five places.</p> <p>B. Incorrect. The student thinks the digits would shift to the right instead of the left.</p> <p>C. Incorrect. The student thinks the digits would shift six places because the student uses the 1 as a place.</p> <p>D. Incorrect. The student thinks the digits would shift to the right instead of the left and would shift six places because the student uses the 1 as a place.</p>

Number 3	
Alignment	M.5.MD.C.4
Depth of Knowledge	1
Key(s)	C
Points	1
Annotations	<p>The question asks the student to find the volume of a rectangular prism by counting unit cubes.</p> <p>A. Incorrect. The student adds 3 and 4, which are the dimensions of the front of the prism.</p> <p>B. Incorrect. The student counts only the front of the prism, forgetting to add the back of the prism.</p> <p>C. Correct. One way to count the cubes is to see the rectangular prism as a front and a back. The front is 3 cubes by 4 cubes, for a total of 12 cubes. The back has the same number of cubes, so <math>12 + 12</math> equals 24.</p> <p>D. Incorrect. The student adds the visible faces on the front, the side, and the top.</p>

Number 4	
Alignment	M.5.NF.B.3
Depth of Knowledge	2
Key(s)	D
Points	1
Annotations	<p>The question asks the student to interpret a real-world fraction problem as an equal sharing division situation where a quantity is divided into equal parts.</p> <p>A. Incorrect. The student uses the 8 as the denominator but does not use the 60 ounces of raisins.</p> <p>B. Incorrect. The student uses the 60 as the denominator, does not use it correctly, and does not use the 8 bags.</p> <p>C. Incorrect. The student reverses the numerator and denominator.</p> <p>D. Correct. The 60 ounces of raisins is being divided equally into 8 bags, creating the fraction <math>\frac{60}{8}</math>.</p>

<b>Number 5</b>	
<b>Alignment</b>	M.5.G.A.1
<b>Depth of Knowledge</b>	1
<b>Key(s)</b>	See Annotations
<b>Points</b>	1
<b>Annotations</b>	<p>The question asks the student to plot points on a graph by understanding the first number indicates how far to travel from the origin in the direction of the x-axis and the second number indicates how far to travel in the direction of the y-axis.</p> <p>To receive full credit, the student must plot all the points correctly on the graph, as shown.</p> 

<b>Number 6</b>	
<b>Alignment</b>	M.5.NBT.B.5
<b>Depth of Knowledge</b>	2
<b>Key(s)</b>	C
<b>Points</b>	1
<b>Annotations</b>	<p>The question asks the student to flexibly and efficiently multiply multi-digit whole numbers.</p> <p>A. Incorrect. The student multiplies the ones digits to get 56 and the tens digits to get 8, then uses the 8 and 56 to create the number 856.</p> <p>B. Incorrect. The student rounds 27 to 25 and 48 to 50, then multiplies 25 and 50.</p> <p>C. Correct. When 27 and 48 are multiplied, the result is 1,296.</p> <p>D. Incorrect. The student rounds 27 to 30 and 48 to 50, then multiplies 30 and 50.</p>

Number 7	
Alignment	M.5.OA.A.2
Depth of Knowledge	1
Key(s)	See Annotations
Points	1
Annotations	<p>The question asks the student to write a simple expression interpreted from a problem.</p> <p>To receive full credit, the student must enter the expression <math>4(8 + 15)</math> or an equivalent expression.</p>

Number 8	
Alignment	M.5.NF.B.6
Depth of Knowledge	2
Key(s)	A
Points	1
Annotations	<p>The question asks the student to solve a real-world problem involving multiplication of a fraction and a mixed number.</p> <p>A. Correct. The mixed number is equivalent to the improper fraction <math>\frac{7}{3}</math>. Multiplying <math>\frac{7}{3}</math> and <math>\frac{3}{4}</math> gives <math>\frac{21}{12}</math>, which can be simplified to <math>1\frac{3}{4}</math>.</p> <p>B. Incorrect. The student multiplied <math>\frac{1}{3}</math> and <math>\frac{3}{4}</math>, then added the whole number to the product.</p> <p>C. Incorrect. The student added the fractions rather than multiplying them.</p> <p>D. Incorrect. The student multiplied <math>2\frac{1}{3}</math> by 3 but changed <math>\frac{3}{3}</math> to <math>\frac{1}{6}</math> rather than a whole number.</p>

Number 9	
Alignment	M.5.NBT.B.7
Depth of Knowledge	2
Key(s)	0.35
Points	1
Annotations	<p>The question asks the student to divide a decimal to the hundredths place by a whole number.</p> <p>To receive full credit, the student must enter 0.35 or an equivalent value.</p> <p>The solution can be found by dividing 1.05 by 3.</p>

Number 10	
Alignment	M.5.MD.C.3a
Depth of Knowledge	1
Key(s)	A, C
Points	2
Annotations	<p>The question asks the student to recognize that a cube with side lengths of 1 unit can be used to measure volume.</p> <p>To receive full credit, the student must select choices A and C. To receive partial credit, the student must select choice A or choice C.</p> <p>A. Correct. Unit cubes can be used to measure volume.</p> <p>B. Incorrect. The student confuses volume with surface area.</p> <p>C. Correct. A cube with an edge length of 1 would have a volume of 1 cubic unit because <math>1 \times 1 \times 1</math> equals 1.</p> <p>D. Incorrect. The student finds the number of faces on the cube rather than finding the volume.</p> <p>E. Incorrect. The student finds the number of edges on the cube rather than finding the volume.</p>

Number 11	
Alignment	M.5.G.A.2
Depth of Knowledge	1
Key(s)	B
Points	1
Annotations	<p>The question asks the student to interpret the coordinate values of a point in the context of a real-world problem and determine where to graph the point in the first quadrant of the coordinate plane.</p> <p>A. Incorrect. The student adds 2 and 1 and uses the sum as the y-coordinate.</p> <p>B. Correct. Laura has 2 dogs, and the number of dogs is along the x-axis, so 2 is the value of the x-coordinate. Laura has 1 cat, and the number of cats is along the y-axis, so 1 is the value of the y-coordinate.</p> <p>C. Incorrect. The student reverses the coordinates.</p> <p>D. Incorrect. The student adds 2 and 1 and uses the sum as the x-coordinate.</p>

Number 12	
Alignment	M.5.NF.A.1
Depth of Knowledge	2
Key(s)	$1\frac{3}{8}$
Points	1
Annotations	<p>The question asks the student to add a fraction and a mixed number to find the value of the sum.</p> <p>To receive full credit, the student must enter <math>1\frac{3}{8}</math> or an equivalent value.</p> <p>To find the sum, the student must first find a common denominator then add the fractions together.</p>

Number 13	
Alignment	M.5.NBT.A.3b
Depth of Knowledge	1
Key(s)	C
Points	1
Annotations	<p>The question asks the student to compare decimals to the thousandths place.</p> <p>A. Incorrect. The student compares the number of places after the decimal point.</p> <p>B. Incorrect. The student does not consider the placement of the digits.</p> <p>C. Correct. The correct symbol is used because 8 tenths is greater than 5 tenths.</p> <p>D. Incorrect. The student compares the decimals by starting from the rightmost place value.</p>

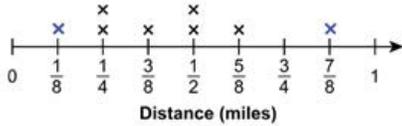
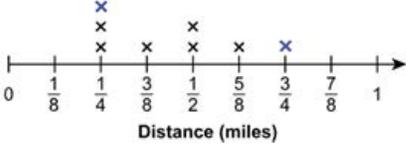
Number 14	
Alignment	M.5.MD.C.5b
Depth of Knowledge	2
Key(s)	See Annotations
Points	1
Annotations	<p>The question asks the student to apply the formula for volume (<math>V = B \times h</math>) for a rectangular prism to find whole number edge lengths in the context of solving a real-world problem.</p> <p>To receive full credit, the student must choose 3 for the first drop-down menu and 10 for the second drop-down menu or choose 10 for the first drop-down menu and 3 for the second drop-down menu.</p>

Number 15	
Alignment	M.5.NF.B.4b
Depth of Knowledge	2
Key(s)	C
Points	1
Annotations	<p>The question asks the student to find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths.</p> <p>A. Incorrect. The student multiplied the whole numbers and incorrectly added the fractions rather than multiplying the complete numbers.</p> <p>B. Incorrect. The student multiplied the whole numbers together and the fractions together rather than multiplying the complete numbers.</p> <p>C. Correct. The number of tiles in the shaded area would be <math>3 \times 13 = 39</math>. Because each whole is divided into 8 smaller rectangles, the denominator is 8.</p> <p>D. Incorrect. The student thinks the total number of smaller rectangles in the original rectangle is the number of smaller rectangles that make up one whole.</p>

SUMMARY DATA—GRADE 5, SESSION 2

Number 1	
Alignment	M.5.NBT.B.6
Depth of Knowledge	1
Key(s)	28
Points	1
Annotations	<p>The question asks the student to find a whole-number quotient of a whole number with a four-digit dividend and two-digit divisor.</p> <p>To receive full credit, the student must enter 28 or an equivalent value.</p> <p>When 1,344 is divided by 48, the quotient is 28.</p>

Number 2	
Alignment	M.5.NF.B.4a
Depth of Knowledge	2
Key(s)	D
Points	1
Annotations	<p>The question asks the student to identify a word problem involving multiplication of fractions that can be represented by a given visual model.</p> <p>A. Incorrect. The student reverses the meaning of the shading to find the answer.</p> <p>B. Incorrect. The student incorrectly compares the unshaded part to the shaded parts of each rectangle.</p> <p>C. Incorrect. The student thinks the three shaded parts of each rectangle are wholes rather than parts of a whole.</p> <p>D. Correct. Each model shows <math>\frac{3}{4}</math> of a bar shaded. Four of them can represent 4 days in a row.</p>

<b>Number 3</b>	
<b>Alignment</b>	M.5.MD.B.2
<b>Depth of Knowledge</b>	2
<b>Key(s)</b>	See Annotations
<b>Points</b>	1
<b>Annotations</b>	<p>The question asks the student to use operations on fractions to solve a problem involving information presented in line plots and then complete the line plot.</p> <p>To receive full credit, the student needs to put 2 x's on the line plot. The sum of the values of those two x's must be 1. For example:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>School</p>  <p>Distance (miles)</p> </div> <div style="text-align: center;"> <p>OR</p> </div> <div style="text-align: center;"> <p>School</p>  <p>Distance (miles)</p> </div> </div>

<b>Number 4</b>	
<b>Alignment</b>	M.5.NBT.A.3a
<b>Depth of Knowledge</b>	1
<b>Key(s)</b>	403.609
<b>Points</b>	1
<b>Annotations</b>	<p>The question asks the student to write a decimal number to the thousandths place when the expanded form is given.</p> <p>To receive full credit, the student must enter 403.609 or an equivalent value.</p>

Number 5	
Alignment	M.5.OA.B.3
Depth of Knowledge	2
Key(s)	C
Points	1
Annotations	<p>The question asks the student to identify a relationship between corresponding terms of two patterns.</p> <p>A. Incorrect. The student uses the first term of pattern B with the first known term of pattern N, which is the second term of pattern N.</p> <p>B. Incorrect. The student finds a relationship between the second term of both patterns, but that relationship isn't true for any of the other terms.</p> <p>C. Correct. The relationships between the known terms in the two patterns are <math>\frac{8}{12}</math>, <math>\frac{12}{18}</math>, and <math>\frac{20}{30}</math>, which are all equivalent to <math>\frac{2}{3}</math>.</p> <p>D. Incorrect. The student finds a possible relationship but reverses the patterns.</p>

Number 6	
Alignment	M.5.NF.B.7a
Depth of Knowledge	2
Key(s)	C
Points	1
Annotations	<p>The question asks the student to interpret division of a unit fraction by a nonzero whole number as an equal sharing division situation.</p> <p>A. Incorrect. The student reverses the dividend and divisor.</p> <p>B. Incorrect. The student uses the reciprocal of <math>\frac{1}{5}</math>, then divides by 3.</p> <p>C. Correct. Pouring a fixed amount of water equally into 3 containers can be represented by a division expression.</p> <p>D. Incorrect. The student misinterprets a multiplication situation as a division situation.</p>

Number 7	
Alignment	M.5.MD.C.5a
Depth of Knowledge	2
Key(s)	A
Points	1
Annotations	<p>The question asks the student to find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes.</p> <p>A. Correct. The height of the crate can be thought of as 2 layers. Each layer would have <math>4 \times 3 = 12</math> cubes.</p> <p>B. Incorrect. The student uses the length of the crate, 4, as the number of layers, but incorrectly adds 3 and 2 to get 5 cubes for each layer.</p> <p>C. Incorrect. The student multiplies 2 by 3 to get 6 layers and then multiplies 4 by 3 to get 12 cubes in each layer.</p> <p>D. Incorrect. The student multiplies 4 by 3 to get 12 layers and then adds 3 and 2 to get 5 cubes in each layer.</p>

Number 8	
Alignment	M.5.G.B.3
Depth of Knowledge	1
Key(s)	C
Points	1
Annotations	<p>The question asks the student to understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p> <p>A. Incorrect. The student recognizes that both polygons would have four equal sides, but that does not mean all rhombuses are squares.</p> <p>B. Incorrect. The student recognizes that both polygons have four sides but forgets that rectangles must have four right angles.</p> <p>C. Correct. All squares have four sides, which makes them quadrilaterals.</p> <p>D. Incorrect. The student reverses the connection between rectangles and parallelograms.</p>

Number 9	
Alignment	M.5.NBT.B.7
Depth of Knowledge	1
Key(s)	See Annotations
Points	1
Annotations	<p>The question asks the student to add, subtract, multiply, and divide decimals to the hundredths to find an equivalent decimal number.</p> <p>To receive full credit, the student needs to match all the expressions to the equivalent decimal numbers, as shown.</p>

Number 10	
Alignment	M.5.NF.A.2
Depth of Knowledge	2
Key(s)	B
Points	1
Annotations	<p>The question asks the student to solve a word problem involving addition of fractions by using benchmark fractions and number sense to estimate and assess the reasonableness of an answer.</p> <p>A. Incorrect. The student uses <math>\frac{9}{10}</math> as being close to one but does not add the first part of the walk.</p> <p>B. Correct. A good benchmark fraction for <math>\frac{5}{8}</math> is <math>\frac{1}{2}</math>, and a good benchmark fraction for <math>\frac{9}{10}</math> is 1. Adding <math>\frac{1}{2}</math> and 1 results in <math>1\frac{1}{2}</math>.</p> <p>C. Incorrect. The student subtracts the numerators.</p> <p>D. Incorrect. The student adds the numerators.</p>

Number 11	
Alignment	M.5.OA.A.1
Depth of Knowledge	1
Key(s)	72
Points	1
Annotations	<p>The question asks the student to evaluate a numeric expression by using the order of operations.</p> <p>To receive full credit, the student must enter 72 or an equivalent value.</p> <p>The first step in evaluating the expression is to evaluate the operations inside the parentheses by dividing 15 by 3 and then adding that value to 8. Next, the value of the parentheses, 13, is multiplied by 5 and then 7 is added to get the value of 72.</p>

Number 12	
Alignment	M.5.NBT.A.1
Depth of Knowledge	1
Key(s)	B, D
Points	2
Annotations	<p>The question asks the student to recognize that a digit in a multidigit number represents 10 times as much as it represents in the place to its right and <math>\frac{1}{10}</math> of what it represents in the place to its left.</p> <p>To receive full credit, the student must select choices B and D. To receive partial credit, the student must select choice B or choice D.</p> <p>A. Incorrect. The student reverses the relationship.</p> <p>B. Correct. The tens digit is to the right of the hundreds digit, which means it is <math>\frac{1}{10}</math> of the value.</p> <p>C. Incorrect. The student reverses the relationship.</p> <p>D. Correct. The thousands digit is to the left of the hundreds digit, which means it is 10 times the value.</p> <p>E. Incorrect. The student reverses the relationship.</p>

Number 13	
Alignment	M.5.MD.A.1
Depth of Knowledge	2
Key(s)	B
Points	1
Annotations	<p>The question asks the student to convert within a given measurement system to solve a real-world problem.</p> <p>A. Incorrect. The student converts 9 cm to 0.009 m.</p> <p>B. Correct. There are 100 cm in 1 m, so to convert 9 cm to meters, the student can divide 9 by 100 to get 0.09. The sum of 0.09 and 5.96 is 6.05.</p> <p>C. Incorrect. The student converts 9 cm to 0.9 m.</p> <p>D. Incorrect. The student adds 5.96 and 9, not considering that the units are different.</p>

Number 14																
Alignment	M.5.NF.B.5a															
Depth of Knowledge	2															
Key(s)	See Annotations															
Points	1															
Annotations	<p>The question asks the student to interpret multiplication as a scaling (resizing) by estimating whether a product will be larger or smaller than a given factor.</p> <p>To receive full credit, the student needs to complete the table correctly, as shown.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Could Be</th> <th>Could Not Be</th> </tr> </thead> <tbody> <tr> <td><math>\frac{7}{8}</math></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><math>1\frac{1}{3}</math></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><math>\frac{5}{4}</math></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><math>\frac{1}{2}</math></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>		Could Be	Could Not Be	$\frac{7}{8}$	<input type="checkbox"/>	<input checked="" type="checkbox"/>	$1\frac{1}{3}$	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$\frac{5}{4}$	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$\frac{1}{2}$	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<b>Number 15</b>	
<b>Alignment</b>	M.5.NBT.A.4
<b>Depth of Knowledge</b>	1
<b>Key(s)</b>	C
<b>Points</b>	1
<b>Annotations</b>	<p>The question asks the student to use place value understanding to generate estimates for problems in a real-world situation.</p> <p>A. Incorrect. The student rounds Andre’s time and does not add the rest of the team’s times.</p> <p>B. Incorrect. The student rounds Andre’s time and then multiplies by 3, not realizing there are 4 people total.</p> <p>C. Correct. Rounding Andre’s time to 12 and then multiplying by 4 team members results in 48.</p> <p>D. Incorrect. The student rounds Andre’s time to 13 and then multiplies by 4, confusing the teammates’ times as being greater than Andre’s time rather than smaller.</p>

# Mathematics Practice Test Grade 5

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