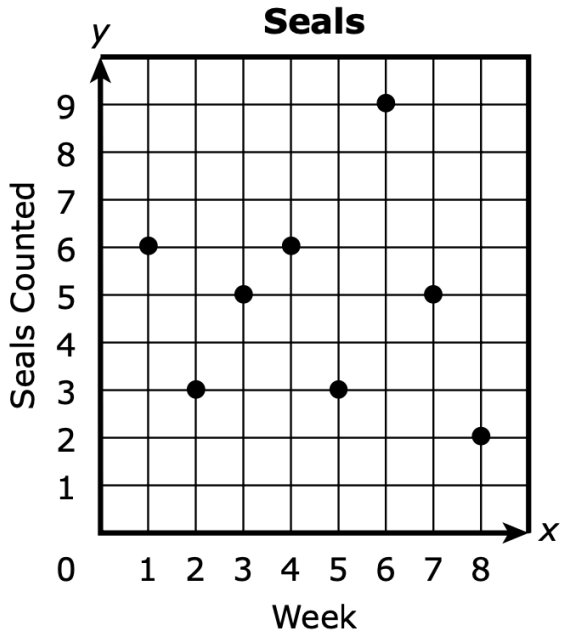
2025 Mathletes Challenge - Round 1 - Test 2

1.

Maria counted the number of seals she sees every Saturday morning for 8 weeks. The points shown on the coordinate plane represent her results.



What does the point (7, 5) mean in terms of the graph?

A Maria counted 5 times the number of seals in week 7.

B Maria counted 7 times the number of seals in week 5.

C Maria counted 5 seals on Saturday morning in week 7.

D Maria counted 7 seals on Saturday morning in week 5.

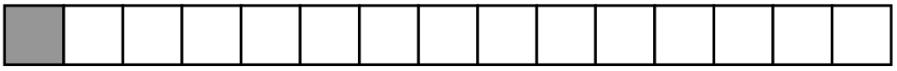
2.

A baker needs 5 cups of flour to make pancakes. He only has a $\frac{1}{3}$-cup measuring spoon. Which fraction model is shaded to show the number of $\frac{1}{3}$-cup measuring spoons of flour the baker will need to make the pancakes?

A

B

C



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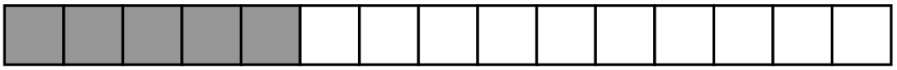
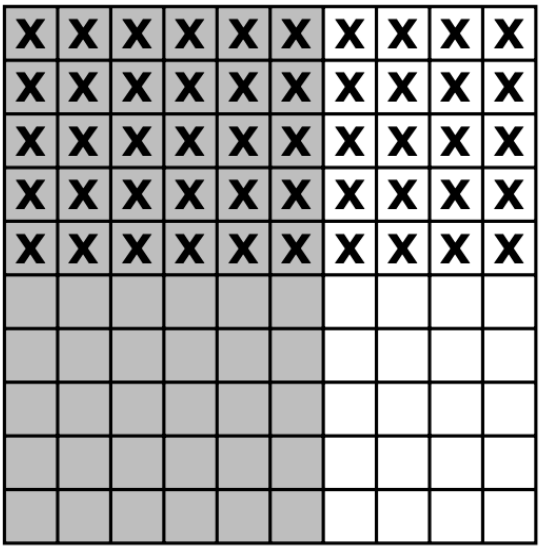


3.

A student used the model shown to find the product of two factors. The student used shaded squares to represent the first factor and Xs to represent the second factor.



Which expression can be used to represent the student's model?

A 0.06×0.05

B 0.06×0.5

C 0.6×0.05

D 0.6×0.5

4.

Austin uses the length of his steps to measure distances. The table shows the distance Austin walks in certain numbers of steps.

Austin's Steps

Number of Steps	Distance (inches)
2	48
3	72
4	96
6	144

Which ordered pair represents a number of steps, x, and a distance, y, in inches, that Austin takes?

A (8, 168)

B (11, 264)

C (12, 150)

D (15, 300)

5.

Maggie saves the same amount of money each week. She saves some of it for a new pair of shoes and some of it for new art supplies. The table represents how much money Maggie has saved for her new shoes and art supplies.

Maggie's Savings Each Week (dollars)

Week	0	1	2	3
New Shoes (x)	0	3	6	9
Art Supplies (y)	0	6	12	18

What rule could be used to describe the relationship between the week number and the money Maggie has saved for new art supplies, y?

A The value for y is 2 times the value of the week number.

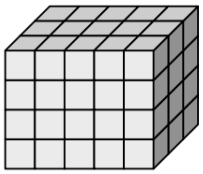
B The value for y is 5 more than the value of the week number.

C The value for y is 6 times the value of the week number.

D The value for y is 3 more than the value of the week number.

6.

A student made a solid rectangular prism using 1-inch cubes, as shown.



The student removed the top layer of cubes. The student used the remaining cubes to create a new prism with different dimensions. What is the volume, in cubic inches, of the new prism?

A 15

B 20

C 21

D 45

7.

A teacher asked a group of 6th-grade students and a group of 7th-grade students how many books they read over the summer. She determined the median and the interquartile range of each group. She concludes that it is easier to predict the number of books a 6th-grade student read over the summer than a 7th-grade student. Which statement supports her conclusion?

A The median of the 6th-grade data is less than median of the 7th-grade data.

B The median of the 6th-grade data is greater than the median of the 7th-grade data.

C The interquartile range of the 6th-grade data is less than the interquartile range of the 7th-grade data.

D The interquartile range of the 6th-grade data is greater than the interquartile range of the 7th-grade data.

8.

Cruz designs a rectangular frame. He plots $(^{-}4, ^{-}3)$ and $(^{-}4, 2)$ on a coordinate plane to draw the frame. The frame has a total area of 45 square units. Which ordered pairs could represent the other two vertices of the frame?

A $(4, ^{-}3)$ and $(4, 2)$

B $(5, ^{-}3)$ and $(5, 2)$

C $(^{-}3, 4)$ and $(2, 4)$

D $(^{-}3, 5)$ and $(2, 5)$

9.

A chemical's temperature is 121.346° Fahrenheit. Rounded to the nearest tenth in degrees Fahrenheit, which measure represents the temperature of the chemical?

A. 121.0°

B. 121.3°

C. 121.4°

D. 122.0°

10.

An equation is shown.

$$3\frac{1}{5} - \frac{9}{20} = \square$$

Which mixed number makes the equation true?

A. $1\frac{1}{4}$

B. $2\frac{8}{15}$

C. $2\frac{3}{4}$

D. $3\frac{5}{20}$

11.

What is the value of $1\frac{4}{5} + 3\frac{1}{3}$?

A. $4\frac{2}{15}$

B. $4\frac{5}{8}$

C. $5\frac{2}{15}$

D. $5\frac{5}{8}$

12.

Andrea runs a half marathon. She runs for $1\frac{4}{5}$ hours and she walks for $\frac{3}{4}$ hour. How many hours does it take Andrea to complete the half marathon?

A. $1\frac{7}{9}$

B. $1\frac{11}{20}$

C. $2\frac{7}{9}$

D. $2\frac{11}{20}$

13.

Taj has 3 ounces of salt to make different recipes. He puts $\frac{1}{4}$ ounce of the salt in each recipe. If Taj uses all of the salt, how many recipes can he make?

A. $\frac{1}{12}$

B. $\frac{3}{4}$

C. $3\frac{1}{4}$

D. 12

14.

A teacher uses $\frac{1}{5}$ of the students in a class to make 3 equal groups. What fraction of the students in the class is in each group the teacher made?

A. $\frac{1}{15}$

B. $\frac{1}{8}$

C. $\frac{3}{5}$

D. $\frac{5}{3}$

15.

Rachel wrote the two number patterns shown.

- Pattern X starts with the number 3 and follows the rule “Add 5.”
- Pattern Y starts with the number 9 and follows the rule “Add 5.”

Which statement is true about Rachel’s two number patterns?

A. The number in Pattern X will always be 6 less than the corresponding number in Pattern Y.

B. The number in Pattern X will always be 6 more than the corresponding number in Pattern Y.

C. The number in Pattern X will always be 5 more than the corresponding number in Pattern Y.

D. The number in Pattern X will always be 3 times more than the corresponding number in Pattern Y.

16.

Richard and Sebastian each make a number pattern. The table shows the first four numbers in Richard's and Sebastian's number patterns.

Two Number Patterns

Term	Richard's Pattern	Sebastian's Pattern
1	7	1
2	10	6
3	13	11
4	16	16

Which two sets of ordered pairs correctly show Richard's and Sebastian's number patterns?

A. Richard's number pattern: (1, 7) (2, 10) (3, 13) (4, 16)
Sebastian's number pattern: (1, 1) (2, 6) (3, 11) (4, 16)

B. Richard's number pattern: (7, 1) (10, 6) (13, 11) (16, 16)
Sebastian's number pattern: (1, 7) (6, 10) (11, 13) (16, 16)

C. Richard's number pattern: (7, 3) (10, 3) (13, 3) (16, 3)
Sebastian's number pattern: (1, 5) (6, 5) (11, 5) (16, 5)

D. Richard's number pattern: (1, 7) (2, 17) (3, 30) (4, 46)
Sebastian's number pattern: (1, 1) (2, 7) (3, 18) (4, 34)

17.

Which statement explains how to begin to plot the point at (5, 9) on a coordinate plane?

A. Start at the origin and move 5 units up.

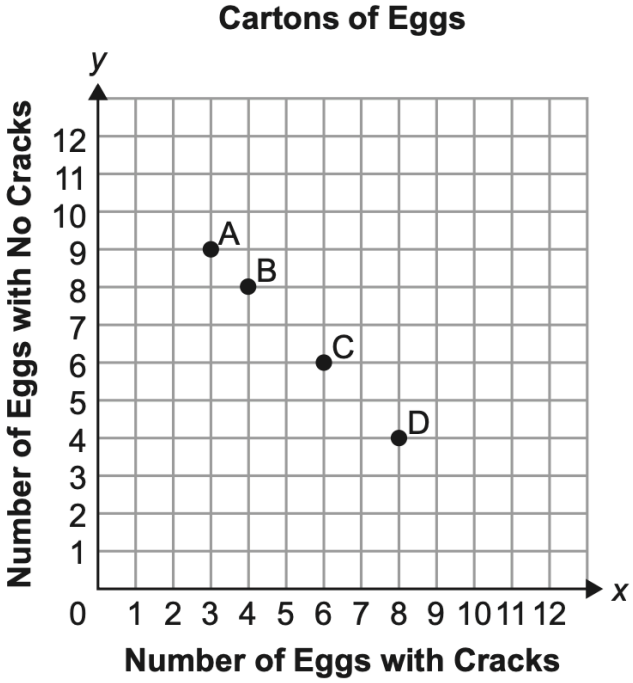
B. Start at the origin and move 5 units to the right.

C. Start at the origin and move 9 units to the right.

D. Start at the origin and move 9 units to the left.

18.

The coordinate grid shows four points that represent egg cartons at a grocery store.



Which point represents the egg carton with the highest number of eggs with cracks?

A. point A

B. point B

C. point C

D. point D

19.

A parallelogram has 4 sides and each pair of opposite sides are parallel. A rhombus is a parallelogram in which all the sides are equal in length.

Which statement must be true?

A. All parallelograms are also rhombuses.

B. Some rhombuses are not parallelograms.

C. Each pair of opposite sides of a rhombus are parallel.

D. All the sides of a parallelogram are equal in length.

20.

Ramona throws a baseball as far as she can a number of times. All of Ramona's attempts are between 114 and 120 feet. Which possible distance, in **yards**, can Ramona throw a baseball?

A. 10

B. 39

C. 117

D. 228

END OF ROUND 1 - TEST 2