2025 Mathletes Challenge - Round 2 - Test 1

1.

Karissa's puppy weighs 6 pounds. How many **ounces** does Karissa's puppy weigh?

A. 10

B. 16

C. 22

D. 96

2.

A school builds a fence around all of the sides of a playground. Which measurement represents the amount of fence around the playground?

A. area

B. perimeter

C. mass

D. volume

3.

Sabrina fills her fish tank with water. Which type of measurement can be used to describe the amount of water in the fish tank?

A. volume

B. mass

C. perimeter

D. area

4.

A stadium has 8,436 seats that are divided into 12 different sections. Each section has the same number of seats. How many seats are in each of the 12 sections?

A. 73

B. 74

C. 703

D. 704

5.

What is the value of 24,093 ÷ 3?

A. 831

B. 8,031

C. 8,301

D. 8,310

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6.

Karen says $\frac{4}{5}$ is equal to 80%. Which statement explains whether Karen is correct?

A. Karen is correct because $\frac{4}{5}$ is equivalent to $\frac{10}{8}$.

B. Karen is correct because $\frac{4}{5}$ is equivalent to $\frac{80}{100}$.

C. Karen is incorrect because $\frac{4}{5}$ is less than 1 and 80% is greater than 1.

D. Karen is incorrect because $\frac{4}{5}$ is not a whole number and 80 is a whole number.

7.

Which fraction is equivalent to 0.17?

A. $\frac{1}{17}$

B. $\frac{1}{7}$

C. $\frac{17}{100}$

D. $\frac{17}{10}$

8.

In Jeremiah's class, $\frac{2}{5}$ of the students are boys. What percent of the students in Jeremiah's class are boys?

A. 2.5%

B. 4%

C. 25%

D. 40%

9.

An airplane flies at a speed of 460 miles per hour. How many miles does the airplane fly in 3.5 hours?

A. 463.5

B. 690.0

C. 1,380.5

D. 1,610.0

10.

A car service charges $2.40 for driving 1 mile. How much does the company charge for driving 12.45 miles?

A. $14.85

B. $24.85

C. $27.48

D. $29.88

11.

Birdseed costs $1.25 per pound. How much does 6 pounds of birdseed cost?

A. $4.75

B. $6.85

C. $7.50

D. $8.75

12.

Which expression is equivalent to $3x + 2.5(4x + 2)$?

A. $13x + 2$

B. $13x + 5$

C. $22x + 2$

D. $22x + 5$

13.

Janet buys 4 bags of potatoes.

- The first bag has 8 potatoes in it.
- The second bag has 6 potatoes in it.
- The third bag has 10 potatoes in it.
- She has not yet counted the number of potatoes in the fourth bag.

To represent the total number of potatoes she has, Janet writes $(8 + 6 + 10) + x$, where x is the number of potatoes in the fourth bag. Which expression also represents the total number of potatoes Janet has?

A. $2(4 + 3 + 5 + x)$

B. $2(6 + 4 + 8) + x$

C. $(8 + 6)(10 + x)$

D. $(8 + 6) + (10 + x)$

14.

Lara writes the expression $1.5x + 2.75y + 3$.
Maria writes the expression $3 + 1.5x + 2.75y$.

Which property can be used to prove the two expressions are equivalent?

A. additive property

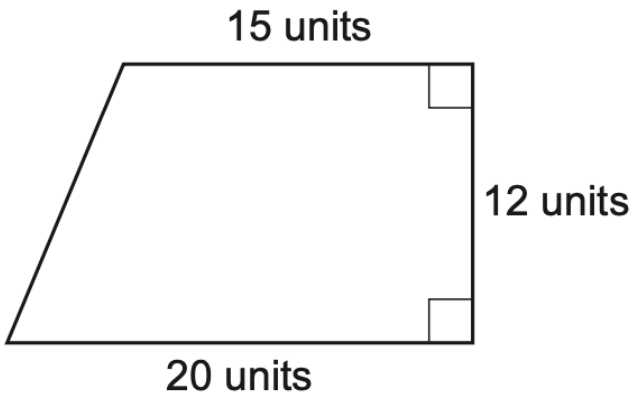
B. associate property

C. commutative property

D. distributive property

15.

A trapezoid is shown.



What is the area, in square units, of the trapezoid?

A. 180

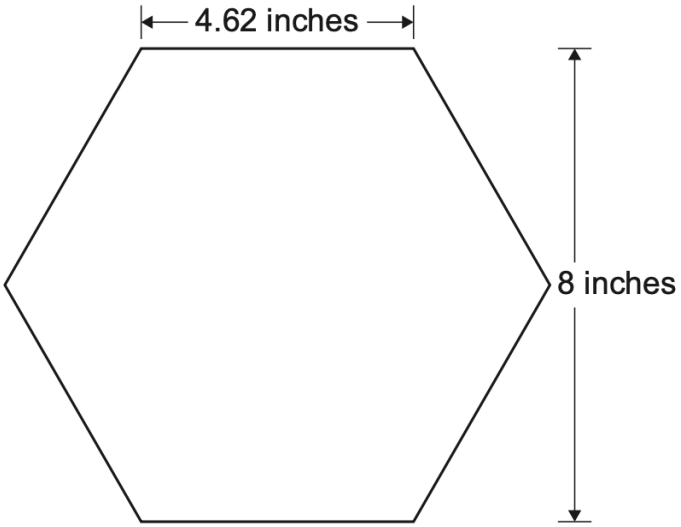
B. 210

C. 240

D. 420

16.

Jamie is finding the area of the hexagon shown.



Each side of the hexagon is the same length. Which statement **best** explains how Jamie can find the area of the hexagon?

A. Add the areas of six congruent triangles, each with a base of 4.62 inches and a height of 4 inches.

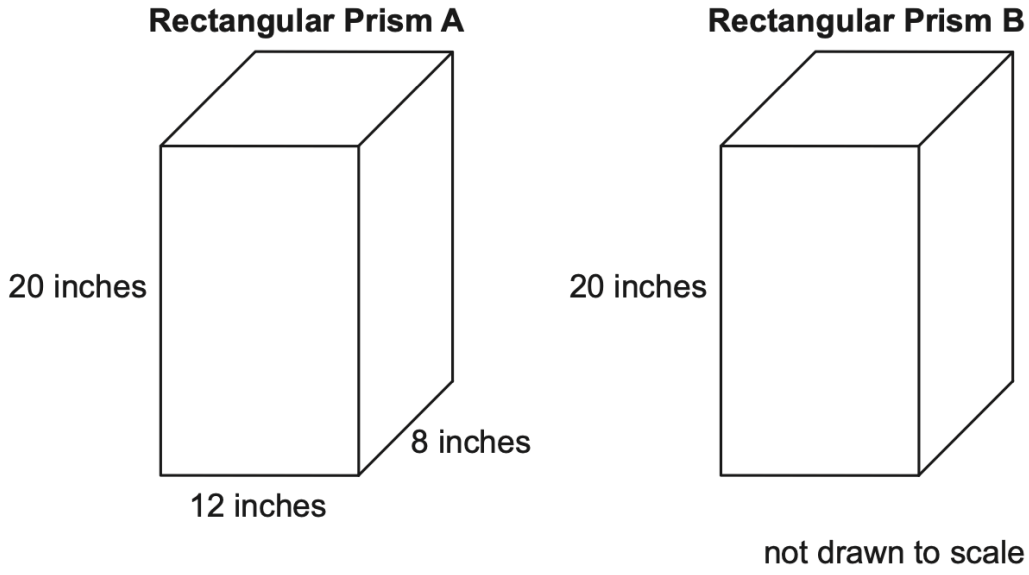
B. Add the areas of six congruent triangles, each with a base of 4.62 inches and a height of 8 inches.

C. Add the areas of two congruent rectangles, each with a length of 4.62 inches and a height of 4 inches.

D. Add the areas of two congruent rectangles, each with a length of 4.62 inches and a height of 8 inches.

17.

Two right rectangular prisms are shown, with some dimensions labeled.



not drawn to scale

The area of the base of prism B is 84 square units. Which statement best compares the volumes of the two prisms?

A. The volume of prism A is equal to the volume of prism B.

B. The volume of prism A is greater than the volume of prism B.

C. The volume of prism B is greater than the volume of prism A.

D. It is impossible to determine the volume of prism B with the information given.

18.

A right rectangular prism has a height of 17.5 centimeters. The area of the base of the prism is 18 square centimeters.

What is the volume, in cubic centimeters, of the right rectangular prism?

A. 35.5

B. 71

C. 157.5

D. 315

19.

Two right rectangular prisms, prism A and prism B, have the same height. The volume of prism A is half the volume of prism B. The base of prism A has an area of 40 square inches. What is the area, in square inches, of the base of prism B?

A. 20

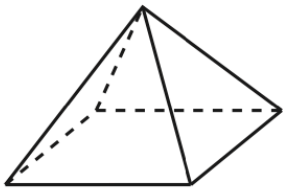
B. 40

C. 60

D. 80

20.

Malik wants to find the surface area of the square pyramid shown.



Which statement describes how Malik can calculate the surface area of the square pyramid?

A. Add the area of 3 identical triangles.

B. Add the area of 4 identical triangles.

C. Add the area of 1 square and 3 identical triangles.

D. Add the area of 1 square and 4 identical triangles.

END OF ROUND 2 - TEST 1