

AREA (A) FORMULAS

square $A = s^2$

rectangle $A = bh$

OR

$$A = lw$$

parallelogram $A = bh$

triangle $A = \frac{1}{2}bh$

trapezoid $A = \frac{1}{2}h(b_1 + b_2)$

circle $A = \pi r^2$

CIRCLE FORMULAS

area $A = \pi r^2$

circumference $C = 2\pi r$

OR

$$C = \pi d$$

VOLUME (V) FORMULAS

cube $V = s^3$

(s = length of an edge)

right prism $V = Bh$

TOTAL SURFACE AREA (SA) FORMULAS

right rectangular prism $SA = 2(hw) + 2(hw) + 2(hh)$

sphere $SA = 4\pi r^2$

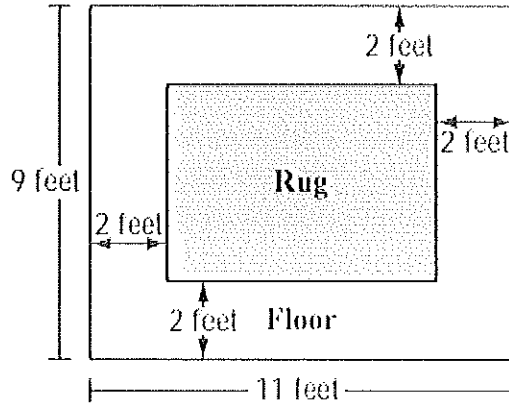
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Geometry MCAS Practice

1)

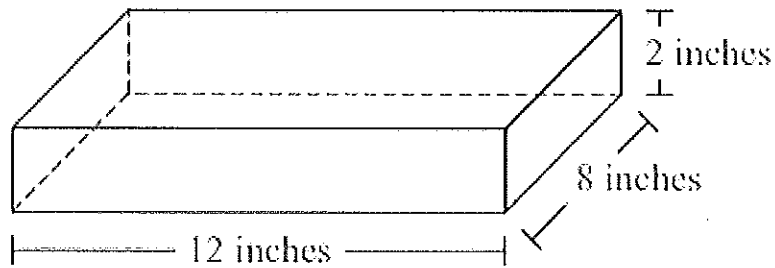
Kelsey has a rug in the center of her bedroom floor. Both the floor and the rug are in the shape of a rectangle. The rug, the floor, and some of their dimensions are shown in the diagram below.



- What is the area, in square feet, of the entire floor? Show or explain how you got your answer.
- What is the perimeter, in feet, of the rug? Show or explain how you got your answer.
- What is the area, in square feet, of the part of the floor that is **not** covered by the rug? Show or explain how you got your answer.

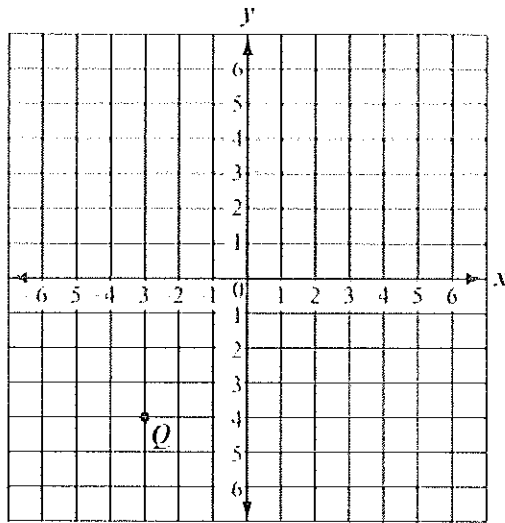
2)

A rectangular prism and its dimensions are shown below.



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

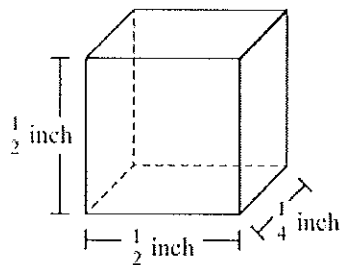
- 3) On the grid in your Student Answer Booklet, copy the x -axis, the y -axis, and point Q , as shown below.



- What are the coordinates of point Q ?
- On your grid, plot and label points $S(-5, 0)$ and $R(-3, 0)$.
- On your grid, plot and label a point T so that quadrilateral $QRST$ is a rectangle. What are the coordinates of point T ?
- On your grid, draw a second rectangle that meets the following requirements:
 - It is congruent to rectangle $QRST$.
 - The coordinates of each vertex are positive numbers.
 - The vertices are labeled U , V , W , and X .
- What are the coordinates of each vertex of rectangle $UVWX$?

4)

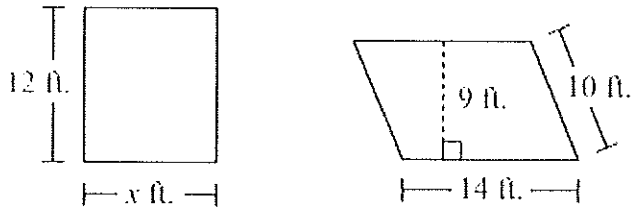
A rectangular prism and its dimensions are shown below.



What is the volume, in cubic inches, of the prism?

5)

A rectangle and a parallelogram have the same area. The rectangle, the parallelogram, and some of their dimensions are shown below.



Based on the dimensions shown, what is the value of x ?

- A. 7.5
- B. 10.5
- C. 11.7
- D. 16.8

6)

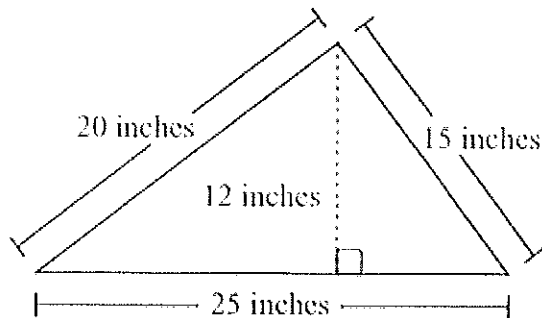
The expression 5^3 represents the volume, in cubic centimeters, of a cube that has an edge length of 5 centimeters.

What is the volume of the cube?

- A. 15 cubic centimeters
- B. 25 cubic centimeters
- C. 125 cubic centimeters
- D. 625 cubic centimeters

7)

Kwame drew the triangle shown in the diagram below.

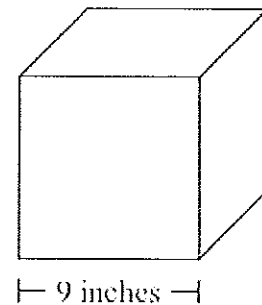


Based on the dimensions in the diagram, what is the area of Kwame's triangle?

- A. 150 square inches
- B. 250 square inches
- C. 300 square inches
- D. 375 square inches

8)

Matthew made a wooden cube that has an edge length of 9 inches, as shown below.

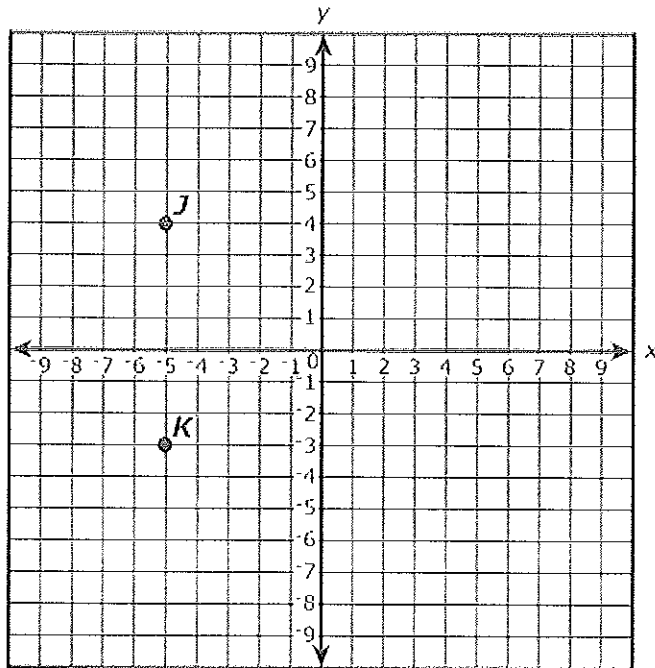


He painted half the faces of the cube red and the remaining faces yellow.

What is the surface area of the faces Matthew painted red?

- A. 162 square inches
- B. 243 square inches
- C. 365 square inches
- D. 486 square inches

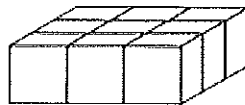
- 9) Wendy plotted points J and K on a coordinate plane, as shown.



Wendy will plot point L so that when connected, points J , K , and L will form a right triangle. Which of the following could be the location of point L ?


- A. $(-7, 1)$
- B. $(-1, 7)$
- C. $(2, 4)$
- D. $(4, 2)$

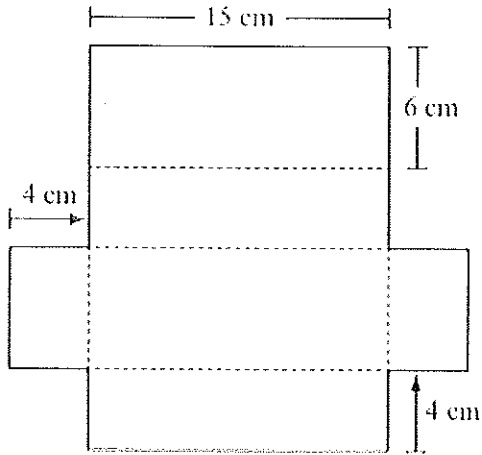
- 10) A figure is built out of 9 cubes, as shown.



The edge length of each cube is $\frac{1}{2}$ foot. What is the volume of the figure?

- A. $1\frac{1}{8}$ cubic feet
- B. $2\frac{1}{4}$ cubic feet
- C. $3\frac{1}{2}$ cubic feet
- D. $4\frac{1}{2}$ cubic feet

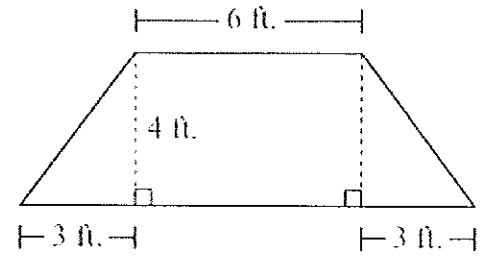
- 11)  The net of a rectangular prism and some of its dimensions are shown in the diagram below.



What is the total surface area, in square centimeters, of the rectangular prism?

- A. 174
- B. 258
- C. 348
- D. 360

- 12) Mr. Walsh has a sign that is in the shape of a trapezoid. Some of the dimensions of Mr. Walsh's sign are shown below.

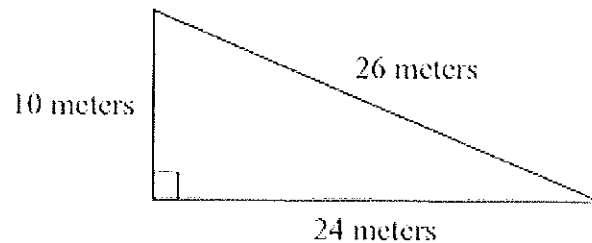


What is the area of Mr. Walsh's sign?

- A. 24 sq. ft.
- B. 36 sq. ft.
- C. 42 sq. ft.
- D. 48 sq. ft.

- 13)

A right triangle and its dimensions are shown in the diagram below.



What is the area, in square meters, of the triangle?