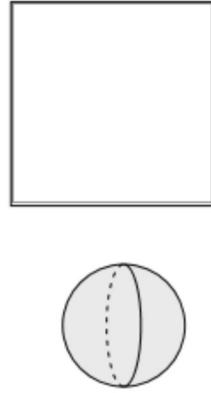
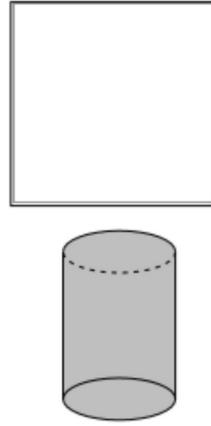
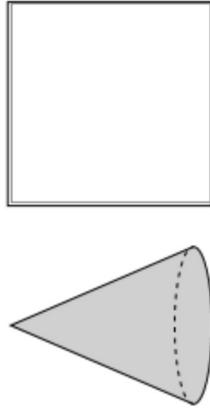
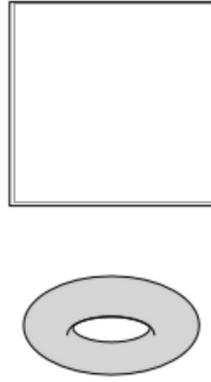
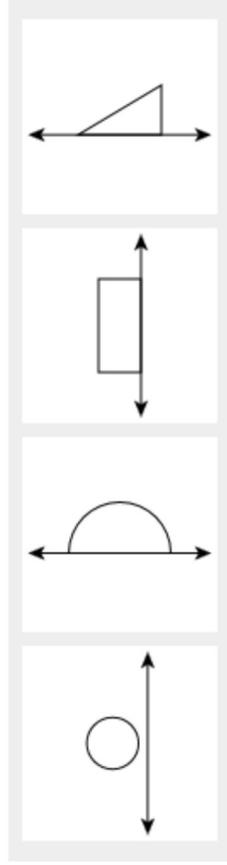
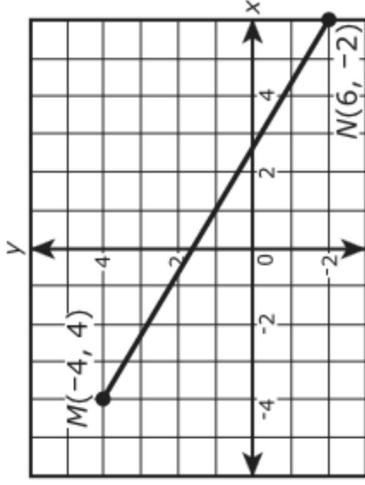


11. Each of the two-dimensional figures shown will be rotated  $360^\circ$  about the respective line, creating a three-dimensional figure.

Drag the appropriate two-dimensional figure to identify the correct representation of the resulting three-dimensional figure.



12. The diagram shows  $\overline{MN}$  graphed on a coordinate plane.



Point  $P$  lies on  $\overline{MN}$  and is  $\frac{3}{4}$  of the way from  $M$  to  $N$ . What are the coordinates of point  $P$ ?

Enter your answer in the space provided. Enter **only** your answer.

(  ,  )

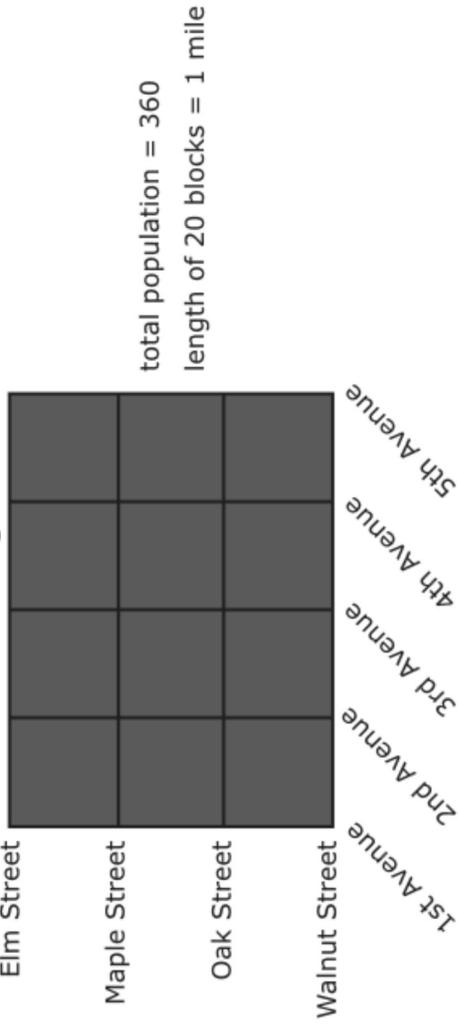
$\leftarrow$	$\rightarrow$	$\times$	$\div$	$\frac{\square}{\square}$
$y^x$	$\sqrt{\quad}$	$-$	$\sqrt[3]{\quad}$	$\square$
$\frac{\square}{\square}$	$\sqrt{\quad}$	$+$	$=$	$\%$
$\leftarrow$	$\rightarrow$	$\leftarrow$	$\rightarrow$	$\blacktriangleright$

**13. Part A**

The number of people who live in a unit of area is called the *population density* of the area. It is usually given as people "per square mile" or "per square kilometer."

A map of the Orchard Hill Neighborhood is shown. The population of the Orchard Hill Neighborhood is 360 people. The length of each block is the same and the length of 20 blocks is 1 mile.

**The Orchard Hill Neighborhood**



What is the area in square miles of Orchard Hill?

- A. 0.03 square mile
- B. 0.15 square mile
- C. 0.35 square mile
- D. 0.60 square mile

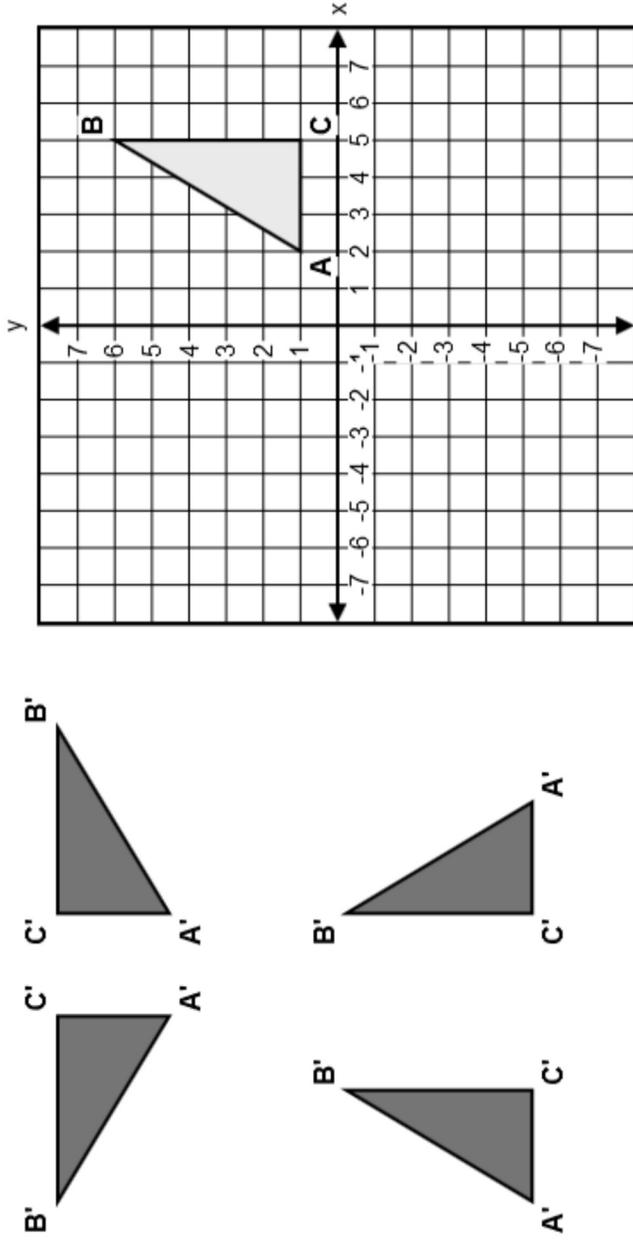
**Part B**

What is the population density of the Orchard Hill Neighborhood, given as a number of people per square mile?

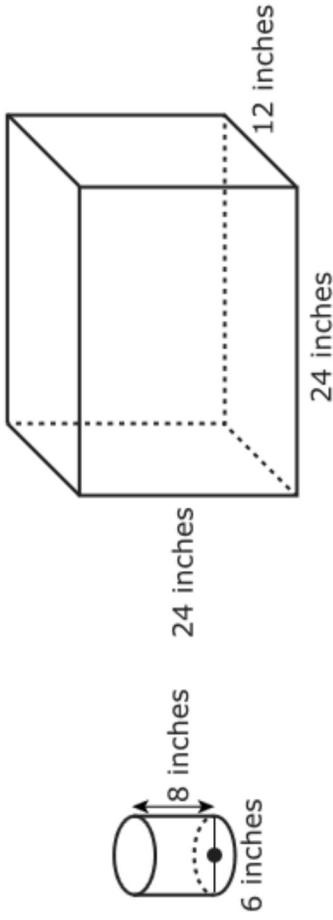
Enter your answer in the box.

14. The right triangle in the coordinate plane is rotated  $270^\circ$  clockwise about the point  $(2, 1)$  and then reflected across the  $y$ -axis to form triangle  $A'B'C'$ .

Drag and drop the appropriate orientation for triangle  $A'B'C'$  into the correct position on the coordinate plane.



15. The given cylindrical container is used to fill the rectangular prism fish tank with water.



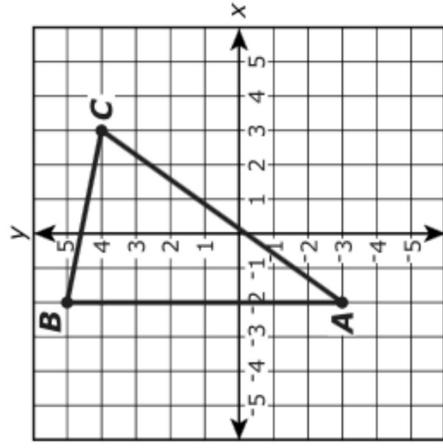
What is the **least** number of full cylindrical containers needed to completely fill the fish tank?

Enter your answer in the box.

 containers

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16. Triangle  $APQ$  is the image of  $\triangle ABC$  under a dilation centered at vertex  $A$  with scale factor  $\frac{1}{2}$ . Triangle  $RBT$  is the image of  $\triangle ABC$  under a dilation centered at vertex  $B$  with scale factor  $\frac{3}{4}$ . Which statement about  $\triangle ABC$ ,  $\triangle APQ$ , and  $\triangle RBT$  is correct?
- A. All three triangles are similar.
  - B. None of the triangles are similar.
  - C. Triangles  $APQ$  and  $RBT$  are not similar because they were dilated using different scale factors.
  - D. Triangles  $APQ$  and  $RBT$  are not similar because they were dilated with different centers of dilation.



Triangle  $ABC$  is shown in the  $xy$ -coordinate plane. The triangle will be translated 2 units down and 3 units right to create triangle  $A'B'C'$ . Indicate whether each of the listed parts of the image will or will not be the same as the corresponding part in the preimage (triangle  $ABC$ ) by selecting the appropriate box in the table.

	Will be the Same	Will Not be the Same
The coordinates of $A'$	<input type="checkbox"/>	<input type="checkbox"/>
The coordinates of $C'$	<input type="checkbox"/>	<input type="checkbox"/>
The perimeter of $\triangle A'B'C'$	<input type="checkbox"/>	<input type="checkbox"/>
The area of $\triangle A'B'C'$	<input type="checkbox"/>	<input type="checkbox"/>
The measure of $\angle B'$	<input type="checkbox"/>	<input type="checkbox"/>
The slope of $\overline{A'C'}$	<input type="checkbox"/>	<input type="checkbox"/>