Name _____

2

134080064_1

G

A sequence of transformations was applied to an equilateral triangle in a coordinate plane. The transformations used were rotations, reflections, and translations. Which statement about the resulting figure is true?

A It must be an equilateral triangle with the same side lengths as the original triangle.

B It must be an equilateral triangle, but the side lengths may differ from the original triangle.

C It may be a scalene triangle, and all the side lengths may differ from the original triangle.

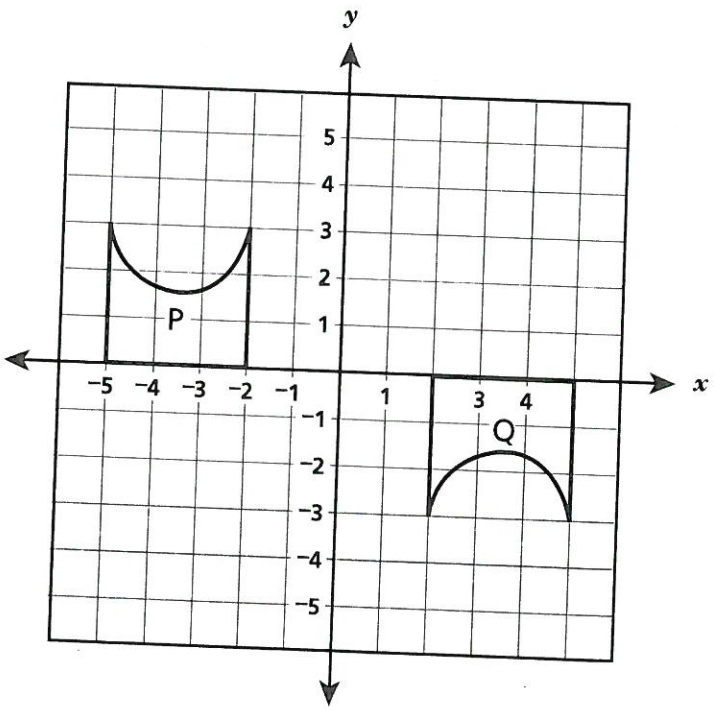
D It may be an obtuse triangle with at least one side the same length as the original triangle.

3

134080067_1

G

Figure Q was the result of a sequence of transformations on figure P, both shown below.



Which sequence of transformations could take figure P to figure Q?

A reflection over the *x*-axis and translation 7 units right

B reflection over the *y*-axis and translation 3 units down

C translation 1 unit right and 180° rotation about the origin

D translation 4 units right and 180° rotation about the origin

124080041_2

Rectangle R undergoes a dilation with scale factor 0.5 and then a reflection over the y-axis. The resulting image is Rectangle S. Which statement about Rectangles R and S is true?

A They are congruent and similar.

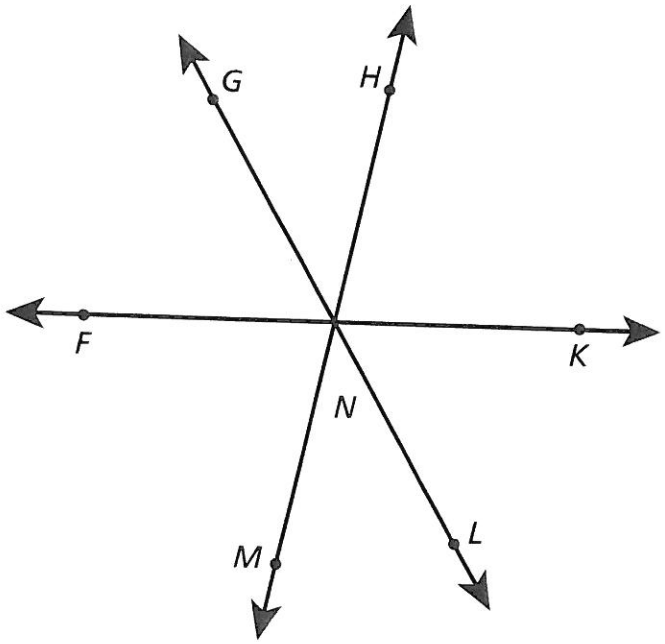
B They are similar but not congruent.

C They are congruent but not similar.

D They are neither congruent nor similar.

124070047_3

In the diagram below, three lines intersect at N. The measure of $\angle GNF$ is 60°, and the measure of $\angle MNL$ is 47°.



What is the measure of $\angle HNK$?

A 47°

B 60°

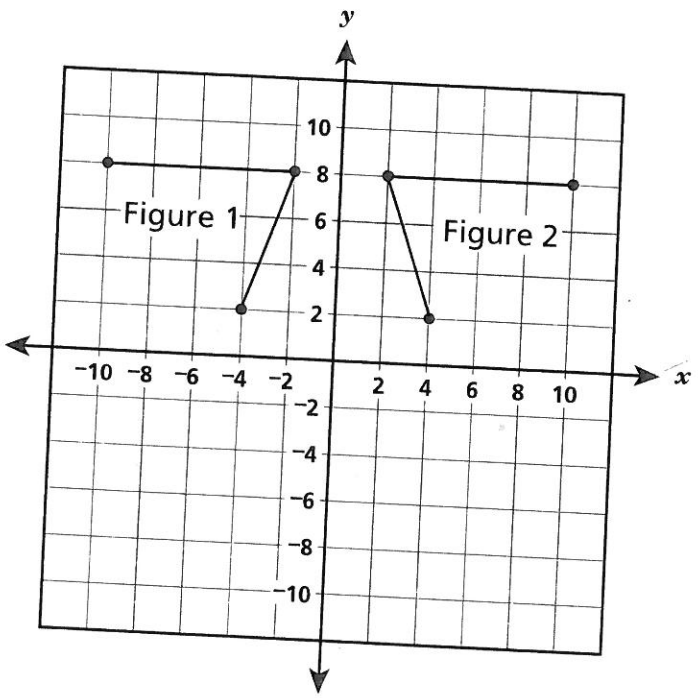
C 73°

D 107°

16

134080418_3

Figure 1 can be transformed to create Figure 2 using a single transformation.



Which transformation can be used to accomplish this?

A dilation

B rotation

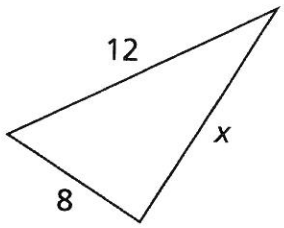
C reflection

D translation

17

134070025_4

Which number could **not** be a value of x?



[not drawn to scale]

A 8

B 9

C 12

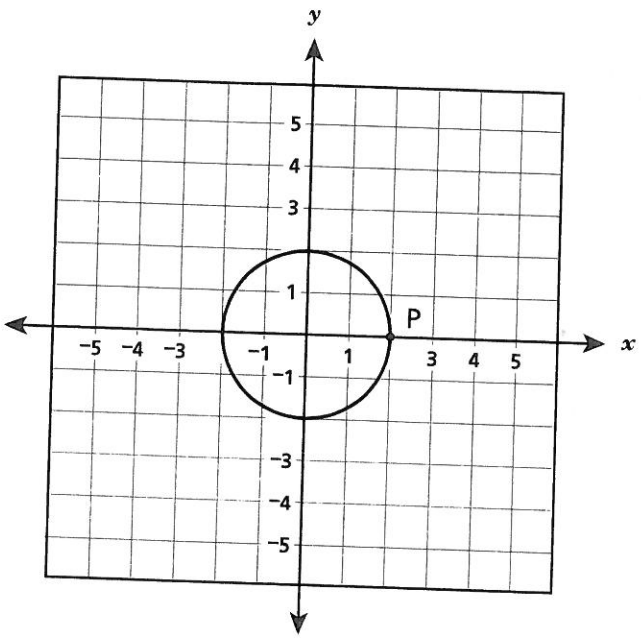
D 21

26

134080072_2

G

The circle shown below is centered at (0, 0) and passes through point P located at (2, 0).



The circle is dilated with the center of dilation at the origin and a scale factor of 0.5 and then translated up 3 units. What are the coordinates of the image of point P after this transformation?

A (4, 3)

B (1, 3)

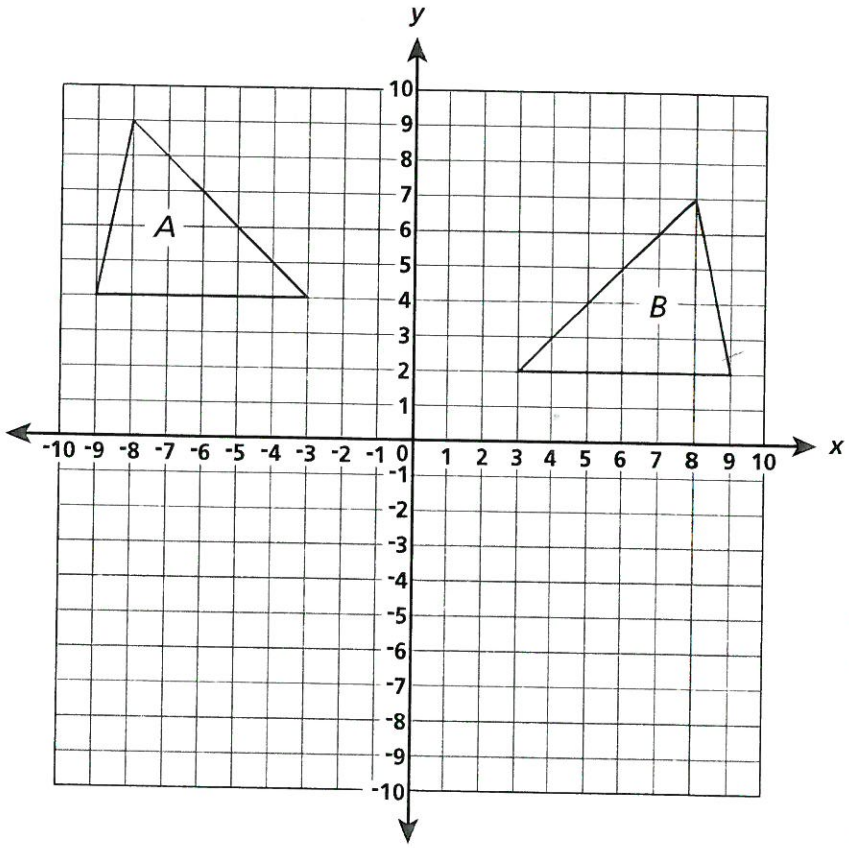
C (1, 1.5)

D (0.5, 3)

37

124080038_2

Which sequence of transformations takes $\triangle A$ to its image, $\triangle B$?



A reflection over the x-axis and translation 2 units down

B reflection over the y-axis and translation 2 units down

C translation 2 units down and 90° rotation about the origin

D translation 12 units right and 90° rotation about the origin

38

124080050_3

A water tank is in the shape of a right circular cylinder with a height of 20 feet and a volume of 320π cubic feet. What is the diameter, in feet, of the water tank?

A 16

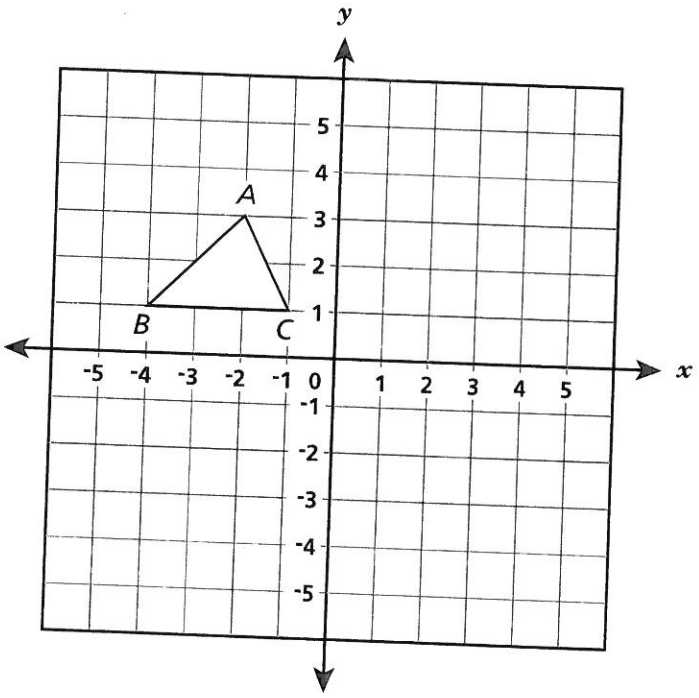
B 10

C 8

D 4

124080615_2

If $\triangle ABC$ is rotated 90° clockwise about the origin, what will be the new coordinates of vertex B?



A $(-1, -4)$

B $(1, 4)$

C $(4, 1)$

D $(4, -1)$