All Transformations Class Practice

Name: _____ **Date:** _____

1. Which of the following transformations always preserves the dimensions of a figure?

   I. translation

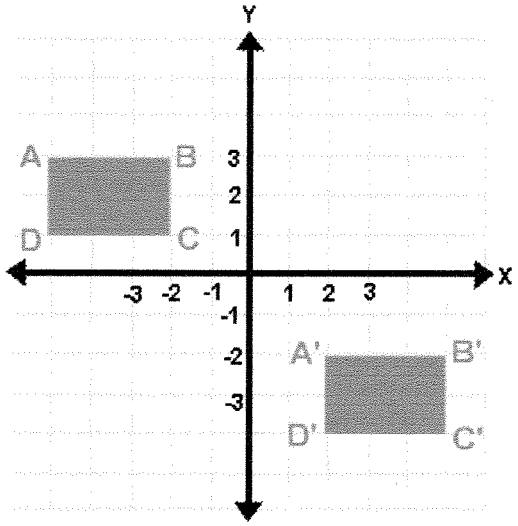
   II. rotation

   III. reflection

   IV. dilation

   A. I, II, and III B. I, II, and IV C. I, III, and IV D. II, III, and IV

2. This graph below illustrates a translation of rectangle *ABCD* to rectangle *A'B'C'D'*.



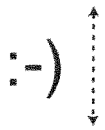
Which of the following explains what happens to ■ *ABCD*?

A. Each vertex is translated +3 units in the *x*-direction and −2 units in the *y*-direction.

B. Each vertex is translated −4 units in the *x*-direction and +5 units in the *y*-direction.

C. Each vertex is translated +7 units in the *x*-direction and −5 units in the *y*-direction.

D. Each vertex is translated −7 units in the *x*-direction and +5 units in the *y*-direction.

3. 

Which of the following shows the image above reflected over the dotted line?

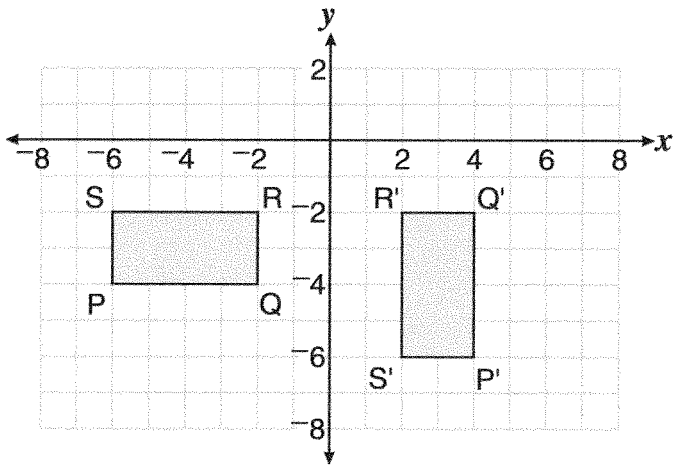
A. 

B. 

C. 

D. 

4. The figure below depicts a coordinate plane, rectangle PQRS, and the image of rectangle PQRS after a transformation. Point P' is the image of point P, Q' is the image of Q, R' is the image of R, and S' is the image of S.



Which transformation produced the image P'Q'R'S'?

A. a 180-degree counterclockwise rotation about the point (0, 0)

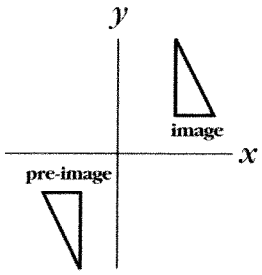
B. a translation of four units to the right

C. a 90-degree counterclockwise rotation about the point (0, 0)

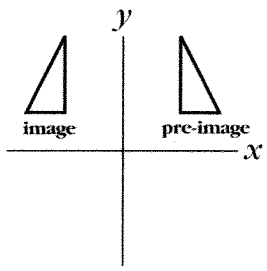
D. a reflection over the *y*-axis

5. Which diagram below best shows a *rotation* of the pre-image to the image?

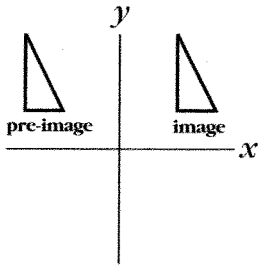
A.



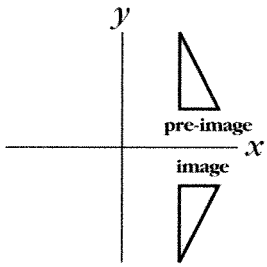
B.



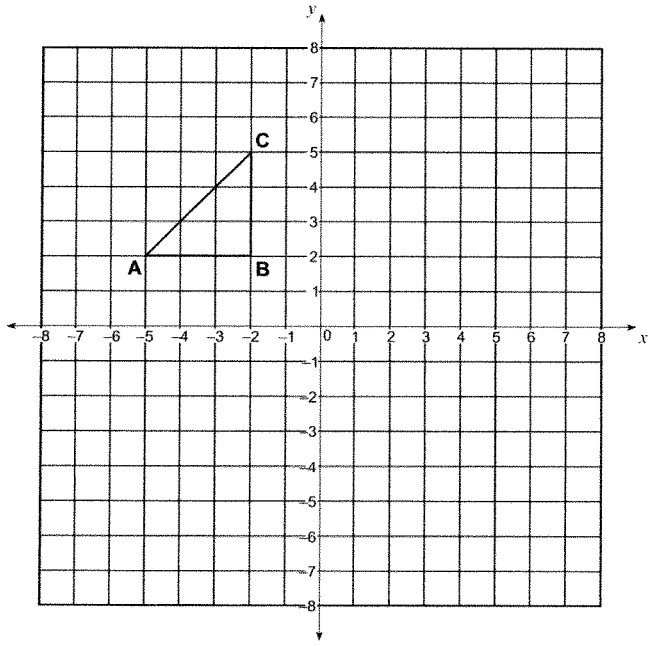
C.



D.



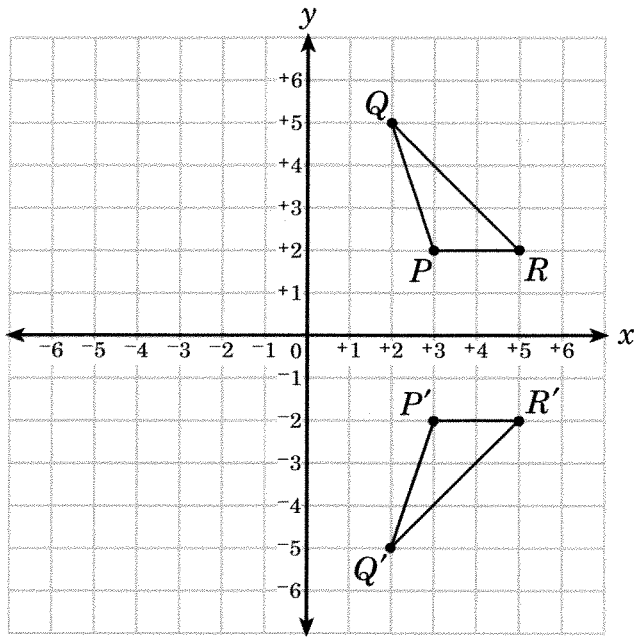
6. Use the graph below to answer the following question(s).



Suppose that $\triangle ABC$ is reflected over the x-axis. What are the coordinates of the image of point C?

A. $(2, 5)$ B. $(-2, 5)$ C. $(2, -5)$ D. $(-2, -5)$

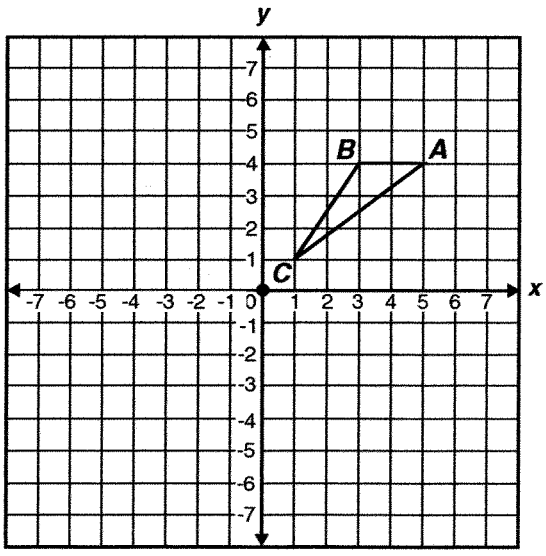
7. In the graph below, $\triangle P'Q'R'$ is the image produced by applying a transformation to $\triangle PQR$.



Which rule describes the transformation?

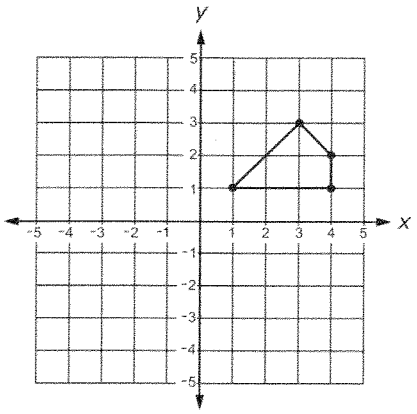
A. $(x', y') = (x, y)$ B. $(x', y') = (-x, -y)$ C. $(x', y') = (-x, y)$ D. $(x', y') = (x, -y)$

8. If triangle ABC is rotated 180 degrees about the origin, what are the coordinates of A'?



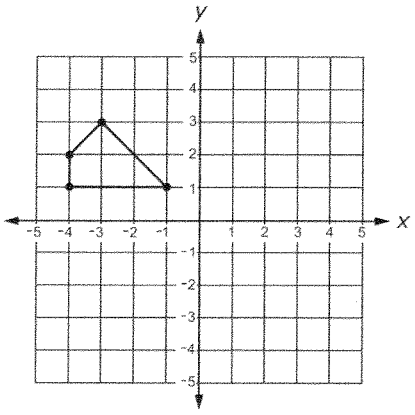
A. $(-5, -4)$ B. $(-5, 4)$ C. $(-4, 5)$ D. $(-4, -5)$

9. Use the quadrilateral on the grid to answer the question.

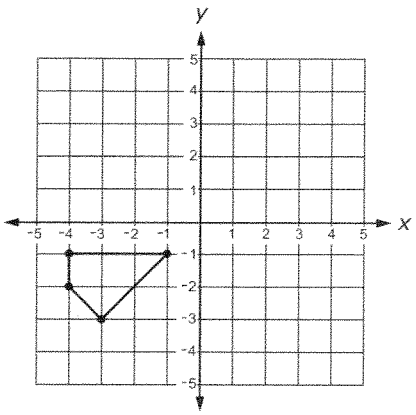


Which grid shows the transformation of the quadrilateral using the rule $(-x, y)$?

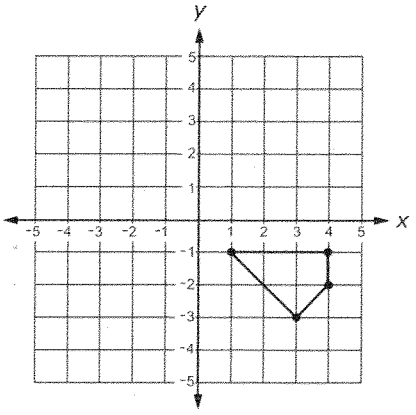
A.



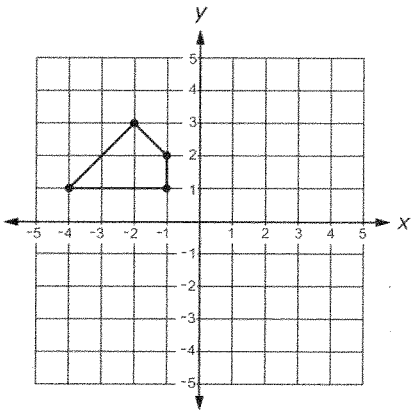
B.



C.



D.



10. Point P has coordinates $(2, 5)$. After a translation, the coordinates of its image P' are $(4, -1)$.

Which of the following best describes the translation?

A. right 1 unit, down 4 units

B. right 2 units, down 4 units

C. right 2 units, down 6 units

D. right 4 units, down 1 unit

11. Which of the following explains how to create a translation?

A. Move the figure in a specified direction.

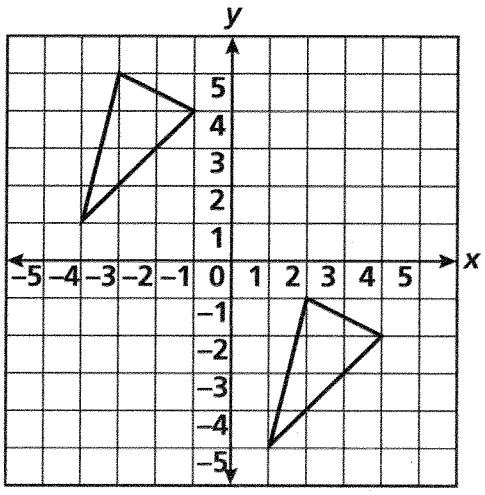
B. Enlarge or reduce the figure.

C. Flip the figure across a line.

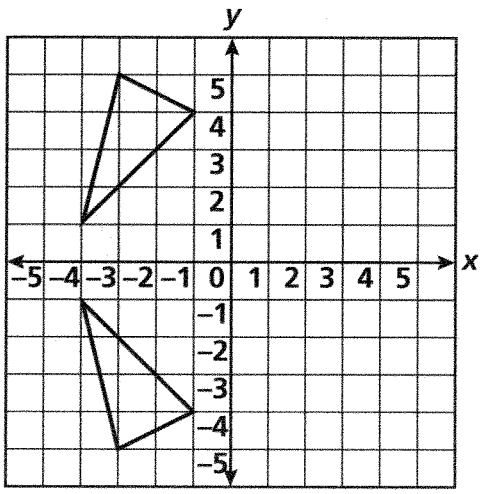
D. Turn the figure about a point.

12. Which of the following shows a triangle and the 180° rotation of the triangle about the origin?

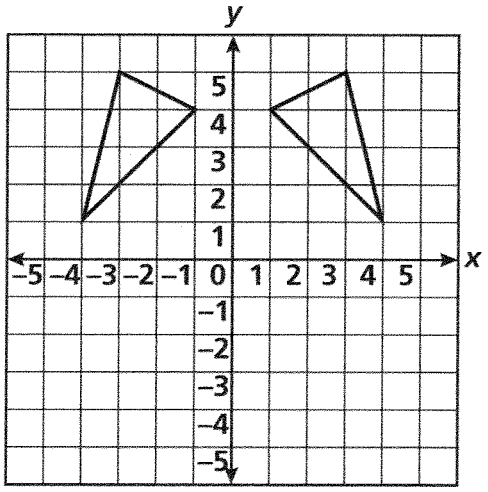
A.



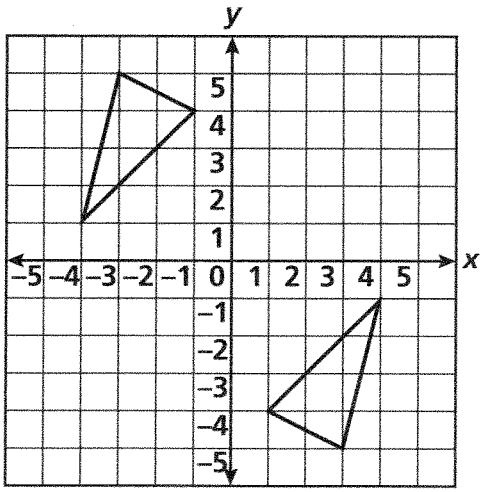
B.



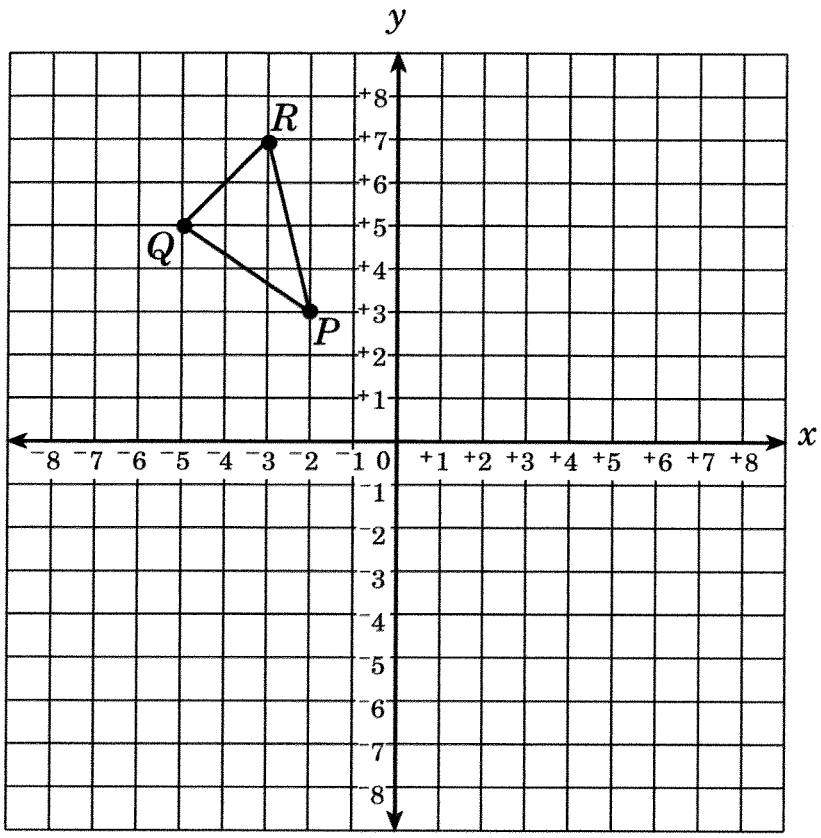
C.



D.



13. $\triangle PQR$ will be reflected across the y-axis.



What will be the coordinates of R'?

A. $(-3, -7)$ B. $(3, 7)$ C. $(3, 5)$ D. $(5, 5)$

14. Adam used graph paper to plot the vertices of quadrilateral *STOP*: $S(-5, -2)$, $T(-4, 1)$, $O(-1, -2)$, and $P(-3, -5)$. Under the translation $(x, y) \rightarrow (x + 6, y - 2)$, what will be the new coordinates for S_1, T_1, O_1, and P_1

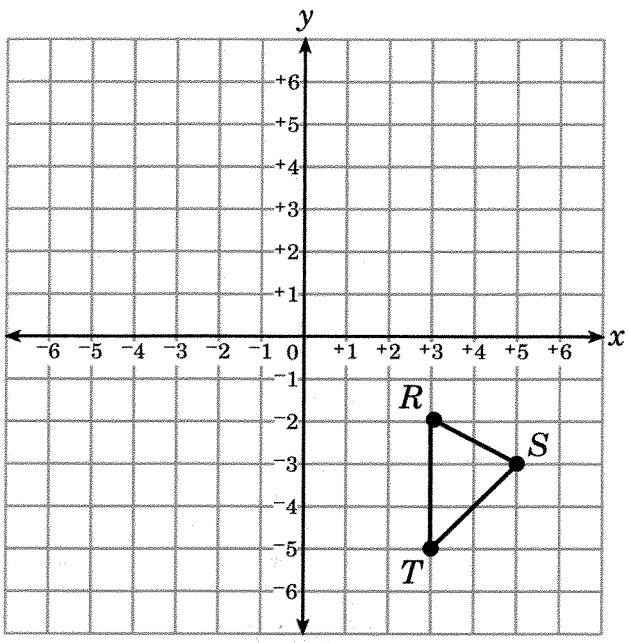
A. $S_1(-5, -1)$, $T_1(-4, 0)$, $O_1(-1, 3)$, $P_1(-3, 1)$

B. $S_1(-9, 4)$, $T_1(-8, 3)$, $O_1(-4, 0)$, $P_1(-7, -3)$

C. $S_1(1, -4)$, $T_1(2, -1)$, $O_1(5, -4)$, $P_1(3, -7)$

D. $S_1(-1, -3)$, $T_1(0, 1)$, $O_1(-3, 0)$, $P_1(1, 7)$

15. $\triangle RST$ has vertices $R(3,-2)$, $S(5,-3)$, $T(3,-5)$. The triangle will be rotated about the origin so that T' has coordinates $(-5,-3)$.



What will be the coordinates of R'?

A. $(-3, 2)$ B. $(-2, -3)$ C. $(2, 3)$ D. $(3, -2)$

16. A triangle has the following vertices: $(-1, 1)$, $(6, -2)$, and $(3, 5)$. If the triangle undergoes a dilation with a scale factor of 3, what will be the vertices of the image?

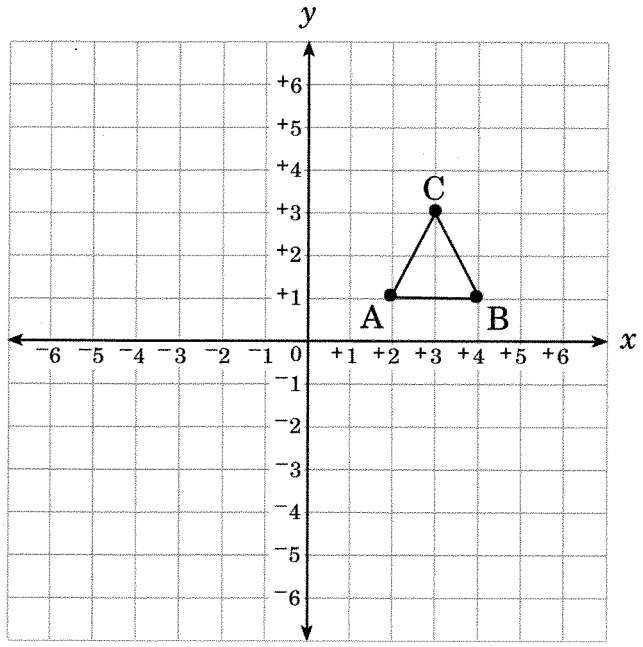
A. $(-3, 3)$, $(18, -6)$, $(9, 15)$

B. $(3, 3)$, $(18, 6)$,$(9, 15)$

C. $(-3, 3)$, $(18, 6)$, $(9, 15)$

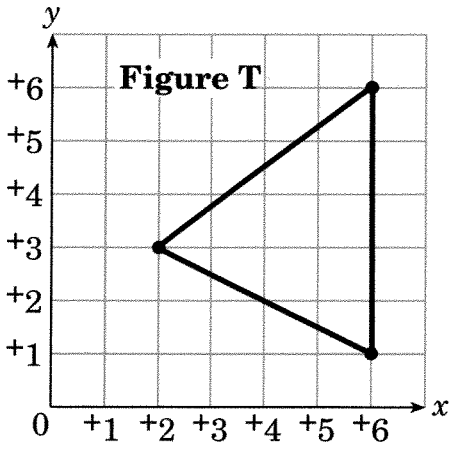
D. $(3, 3)$, $(18, -6)$, $(9, 15)$

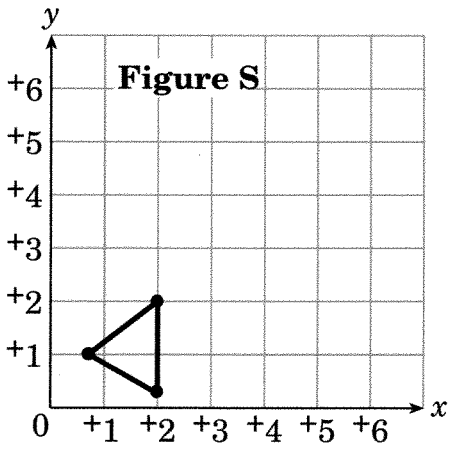
17. If triangle ABC were rotated 90° counterclockwise about the origin, what would be the coordinates of B'?



A. (4, 1) B. (0, 4) C. (−1, −4) D. (−1, 4)

18. Figure S is the result of a dilation of Figure T.

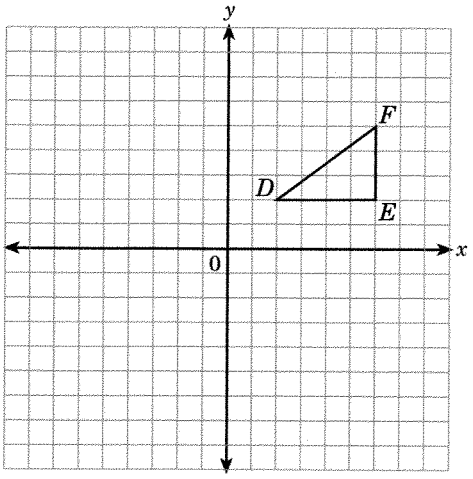




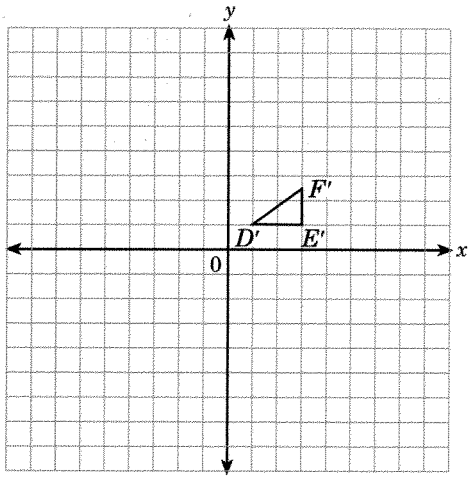
What is the scale factor of the dilation?

A. $\frac{1}{3}$ B. $\frac{1}{2}$ C. 2 D. 3

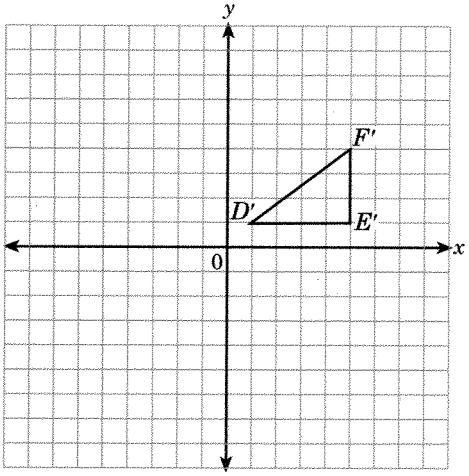
19. Given $\triangle DEF$, which figure illustrates a dilation with a scale factor of $\frac{1}{2}$?



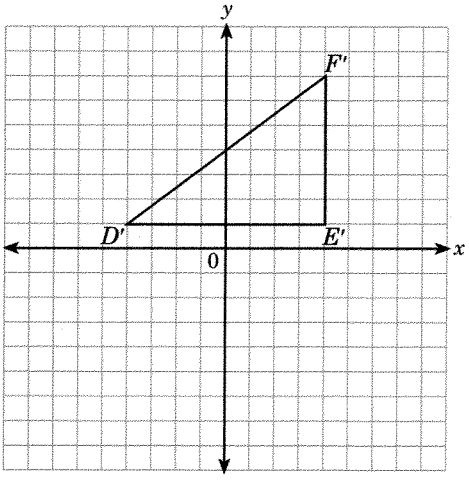
A.



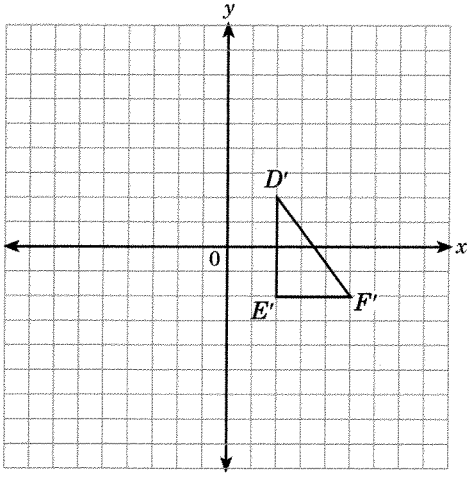
B.



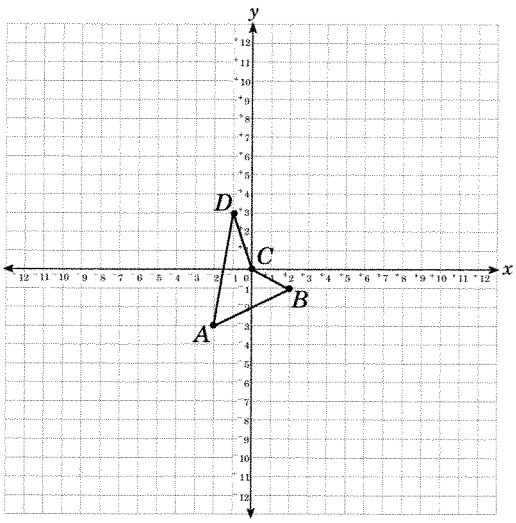
C.



D.

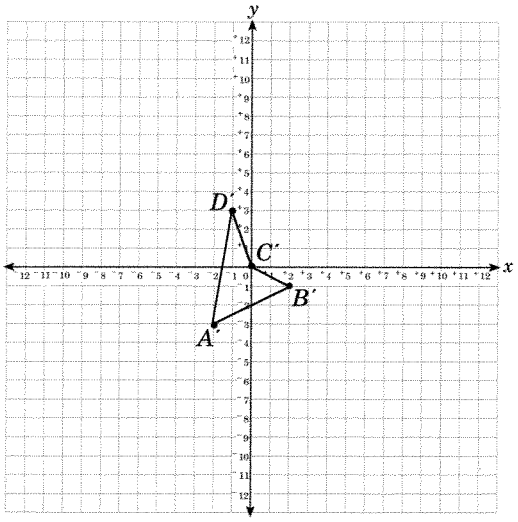


20. If quadrilateral $ABCD$ is dilated with a scale factor of 3, which of the following would be the result?

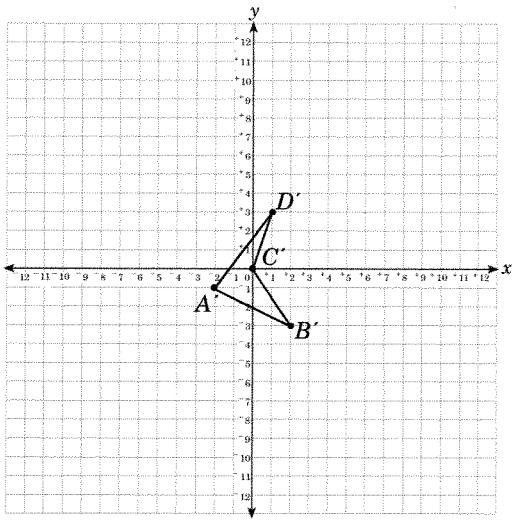


$(x, y) \longrightarrow (3x, 3y)$

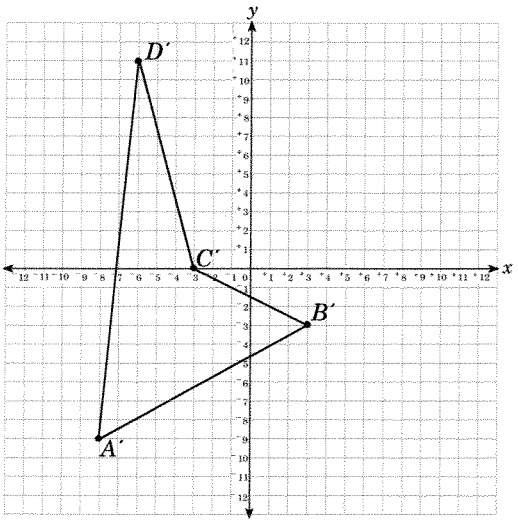
A.



B.



C.



D.