
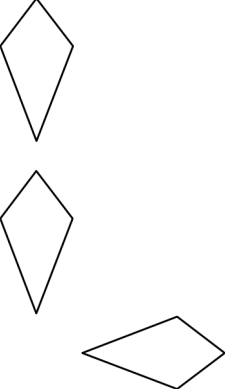
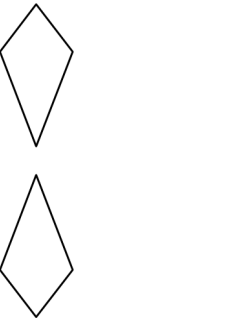
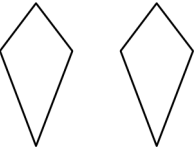


Unit 2: Transformations

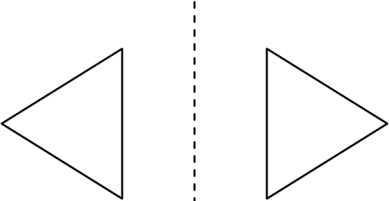
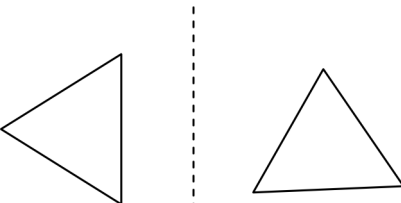
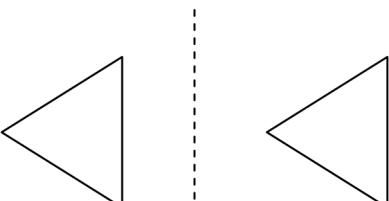
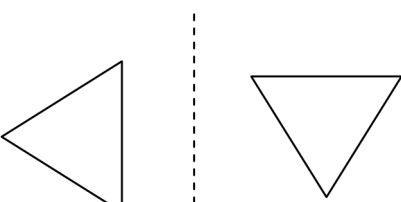
Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. Which of the following best represents only a translation (slide) up?

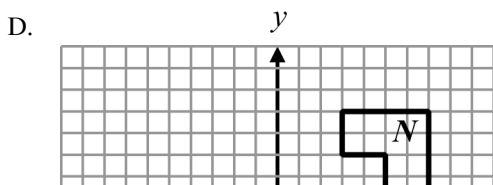
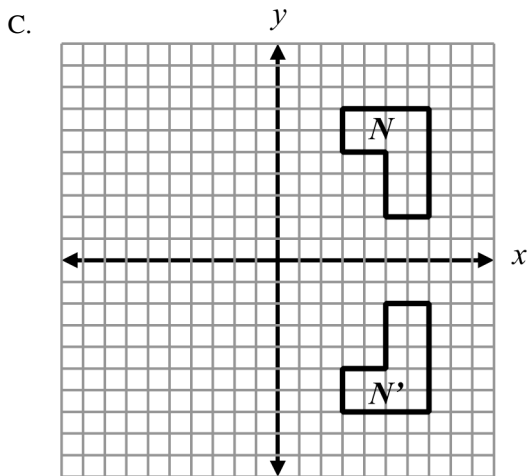
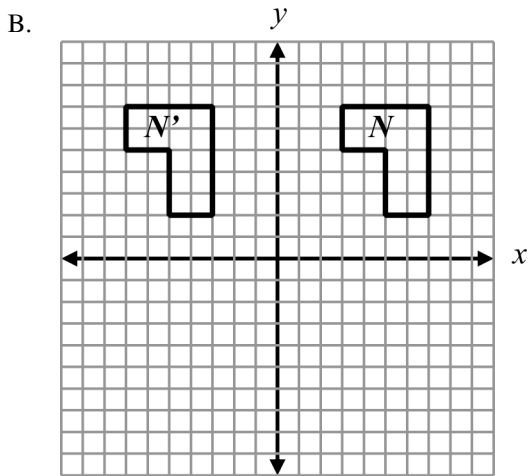
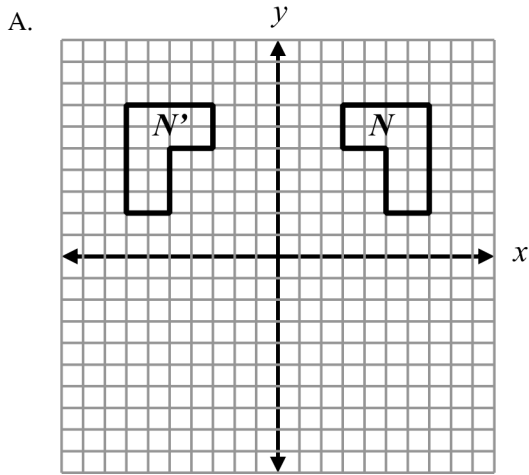
- A. 
- B. 
- C. 
- D. 

2. Which of the following best shows a reflection (flip) of the shaded shape across the dashed line?

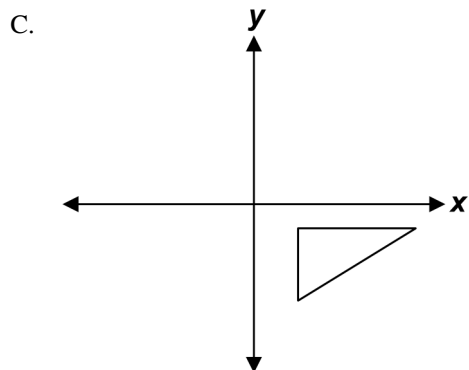
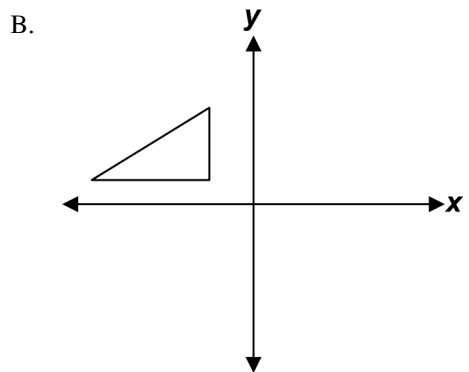
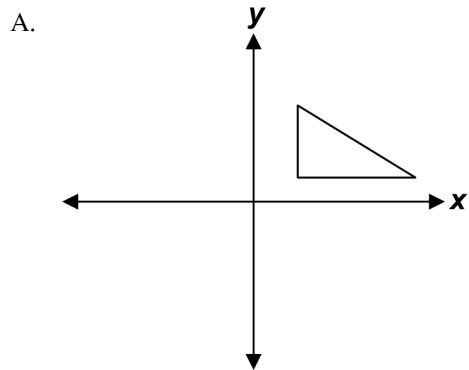
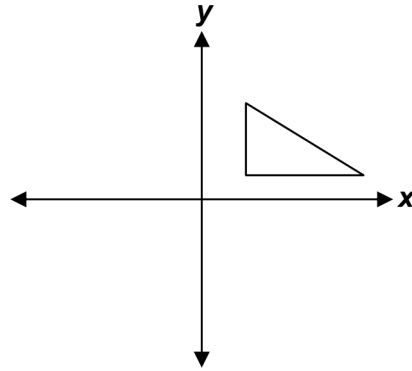
- A. 
- B. 
- C. 
- D. 

Unit 2: Transformations

3. Which of the following is a single reflection of figure  $N$  over the  $y$ -axis to form  $N'$ ?

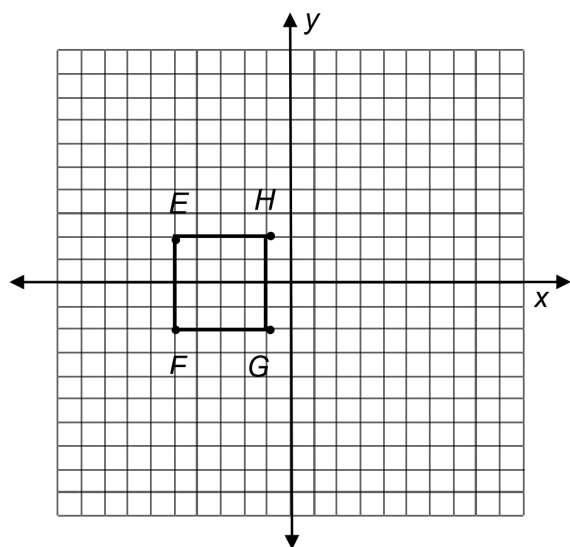


4. Which figure shows the triangle below reflected over the  $x$ -axis, then reflected over the  $y$ -axis?



Unit 2: Transformations

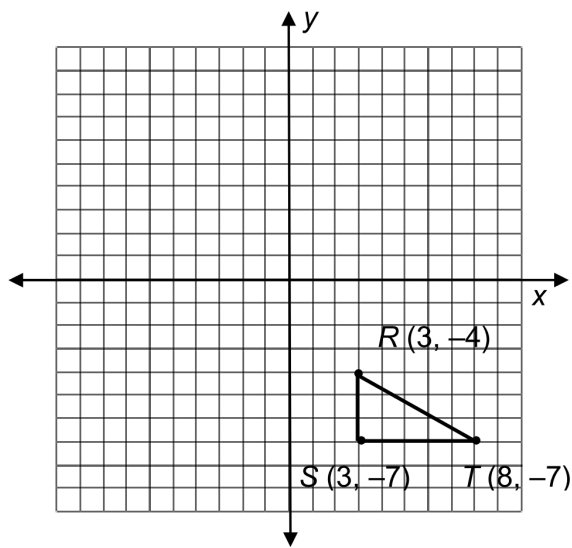
5. Figure  $EFGH$  in the coordinate plane has vertices at  $(-5, 2)$ ,  $(-5, -2)$ ,  $(-1, -2)$ , and  $(-1, 2)$ .



If the figure is translated 5 units to the right and 2 units up, what are the coordinates of the  $E'F'G'H'$ ?

- A.  $(0, 4)$ ,  $(0, 0)$ ,  $(4, 0)$ ,  $(4, 4)$
- B.  $(-3, 7)$ ,  $(-3, 3)$ ,  $(1, 3)$ ,  $(1, 7)$
- C.  $(-10, 0)$ ,  $(-10, 4)$ ,  $(-6, -4)$ ,  $(-6, 0)$
- D.  $(-7, -3)$ ,  $(-7, -7)$ ,  $(-3, -7)$ ,  $(-3, -3)$

6. Triangle  $RST$  is shown in the coordinate plane.

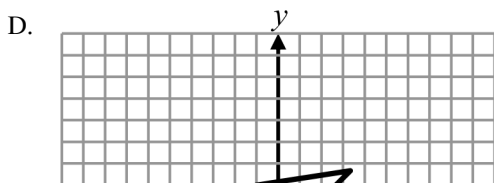
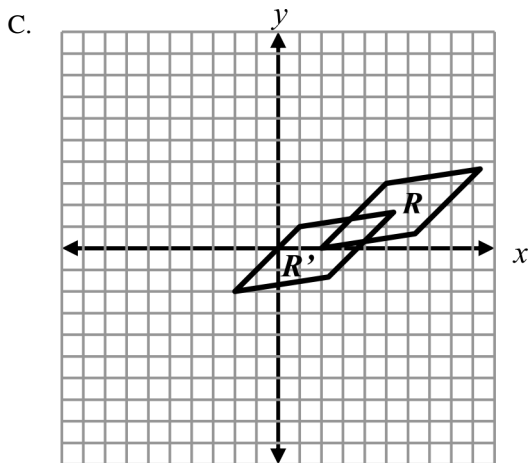
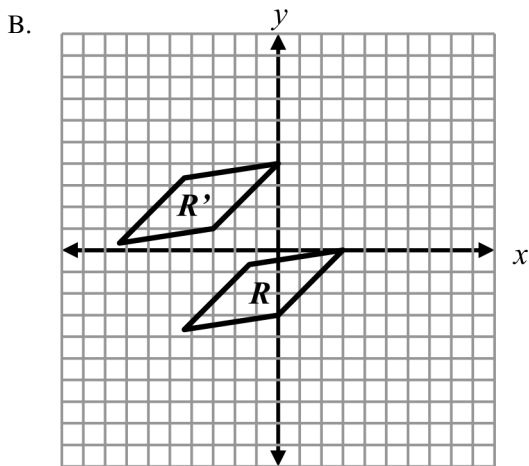
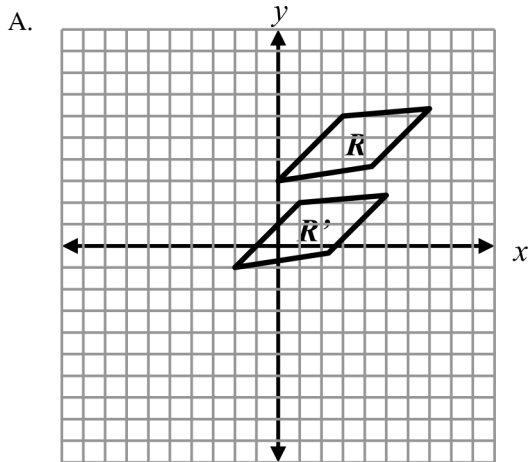


What are the coordinates of  $R'S'T'$  if the figure is reflected over the  $x$ -axis and translated down two units?

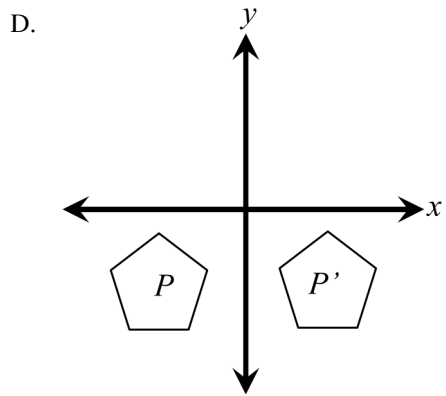
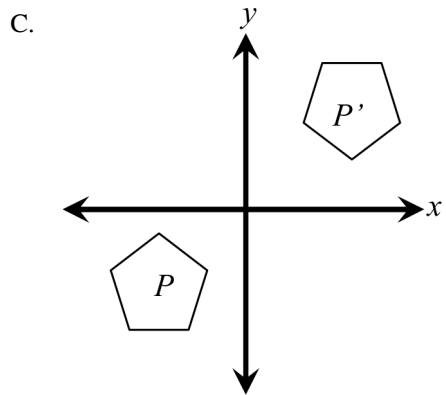
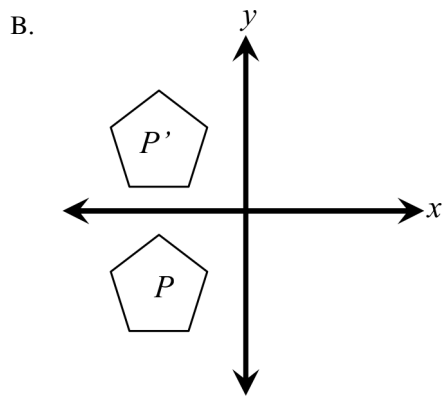
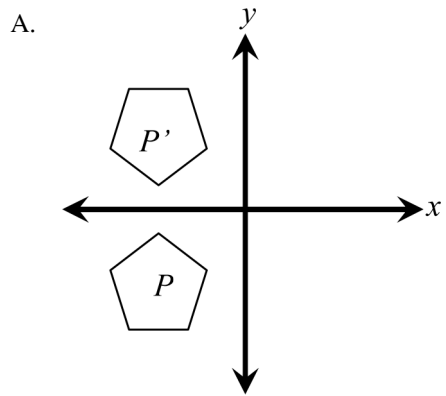
- A.  $(1, -6)$ ,  $(1, -9)$ ,  $(6, -9)$
- B.  $(3, 4)$ ,  $(3, 7)$ ,  $(8, 7)$
- C.  $(1, 2)$ ,  $(1, 5)$ ,  $(6, 5)$
- D.  $(3, 2)$ ,  $(3, 5)$ ,  $(8, 5)$

Unit 2: Transformations

7. A figure on the graph is translated down 4 units and left 2 units. Which of the following represents this single transformation?

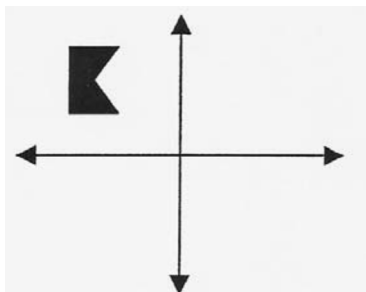


8. Which figure is a reflection of figure  $P$  in respect to the  $x$ -axis?

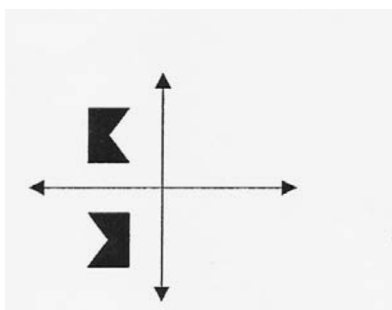


## Unit 2: Transformations

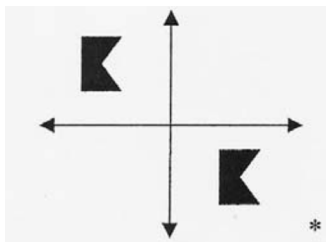
9. Which of the following represents a translation of the figure?



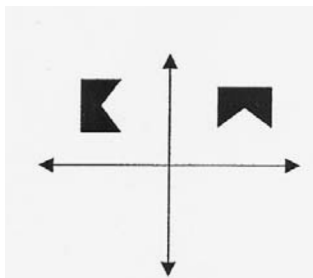
A.



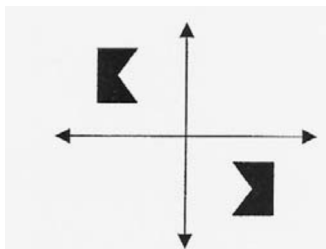
B.



C.



D.

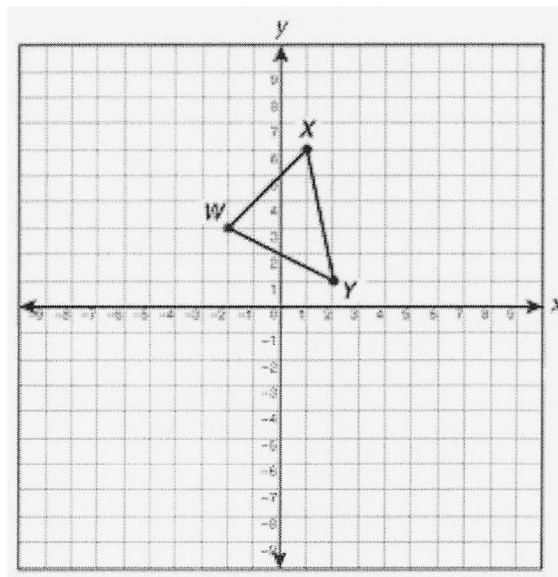


10. Which of the following transformations always preserves the dimensions of a figure?

- 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

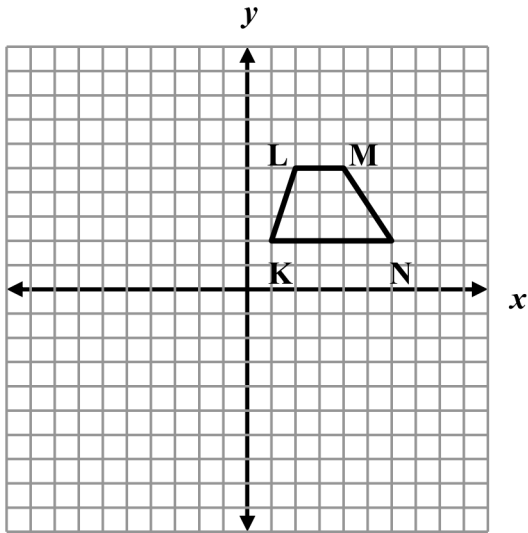
11. What is the apparent image of  $X$  when triangle  $WXY$  is translated 2 units down and 5 units right?



- A. (1, 3)    B. (3, 1)    C. (4, 6)    D. (6, 4)

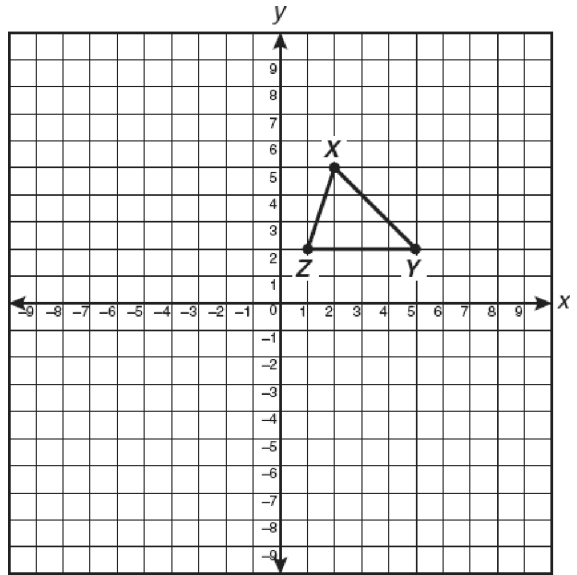
Unit 2: Transformations

12. If trapezoid  $KLMN$  shown below is reflected across the  $x$ -axis to form trapezoid  $K'L'M'N'$ , what are the apparent coordinates of  $M'$ ?



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

13.  $\triangle XYZ$  is translated 3 units to the right and 2 units down.

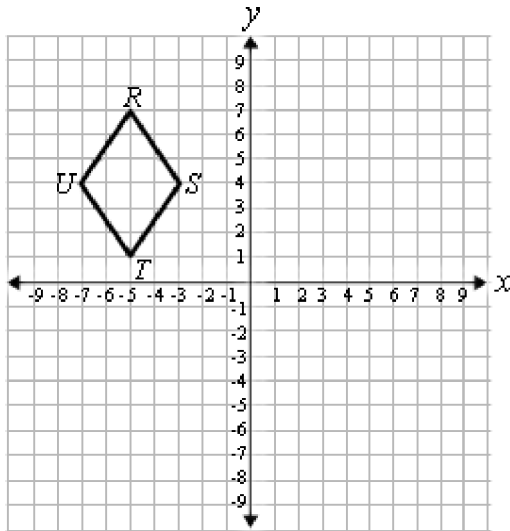


What will be the apparent coordinates of the image of point  $X$ ?

- A.  $(0, 8)$     B.  $(3, 5)$     C.  $(5, 3)$     D.  $(8, 0)$

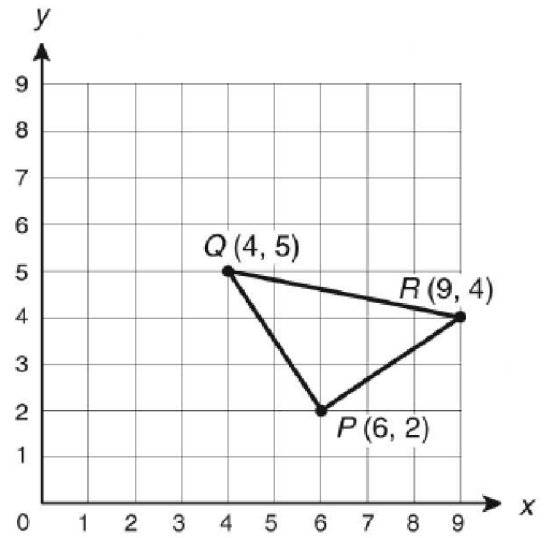
Unit 2: Transformations

14. What is the image of  $R$  when  $RSTU$  is translated 3 units down and 6 units right?



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

15. Triangle  $PQR$  is shown.

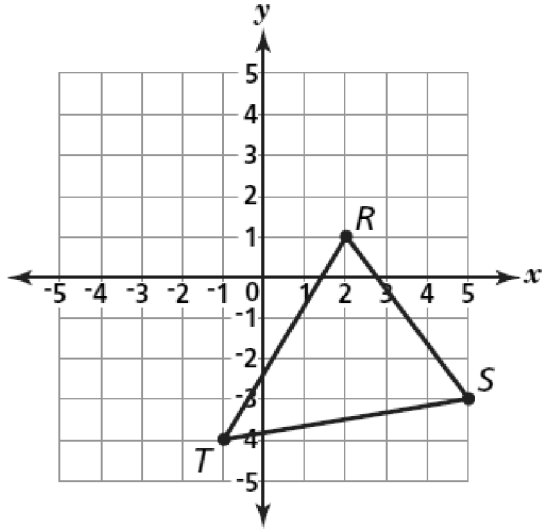


What are the coordinates of  $P'$  when  $\triangle PQR$  is dilated by a scale factor of 3 using the origin as the center?

- A.  $(6, 18)$                       B.  $\left(3, \frac{2}{3}\right)$   
 C.  $\left(\frac{2}{3}, 3\right)$                     D.  $(18, 6)$

Unit 2: Transformations

16. Study  $\triangle RST$  on the grid below.



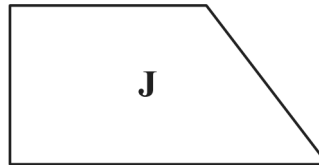
When  $\triangle RST$  is translated 4 units down, what are the apparent coordinate of  $T'$ ?

- A.  $(-8, -1)$                       B.  $(-4, -1)$   
 C.  $(-1, -8)$                         D.  $(0, -4)$
17. A polygon has been rotated about the origin. Which statement must be true?
- A. The lengths of the sides are doubled.  
 B. The area of the polygon did not change.  
 C. The coordinates of the vertices did not change.  
 D. The area of the polygon is 4 Times its original area.

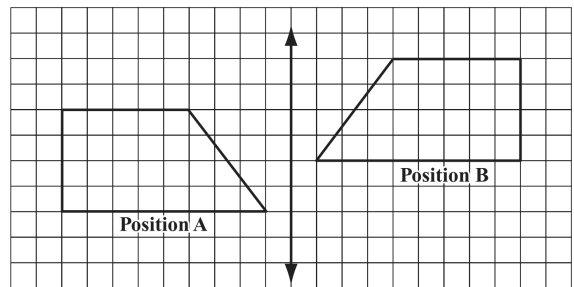
18. Three transformations will be performed on triangle  $ABC$ . Which set of transformations will always produce a congruent triangle?

- A. dilation, rotation, translation  
 B. reflection, dilation, translation  
 C. rotation, reflection, dilation  
 D. rotation, translation, reflection

19. Use shape  $J$  to answer the following question



A shape was moved from Position A to Position B, as shown below.



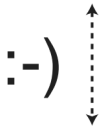
Which of the following best describes how the shape was moved from Position A to Position B?

- A. flipped over the line, then slid up  
 B. flipped over the line, then slid down  
 C. flipped over the line, then turned  $90^\circ$  clockwise  
 D. flipped over the line, then turned  $90^\circ$  counterclockwise



Unit 2: Transformations

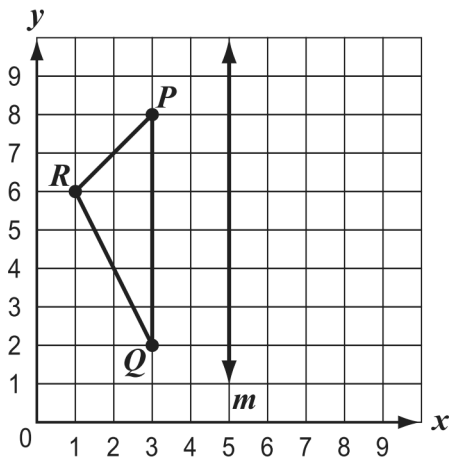
20.



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

- A. B. C. D.

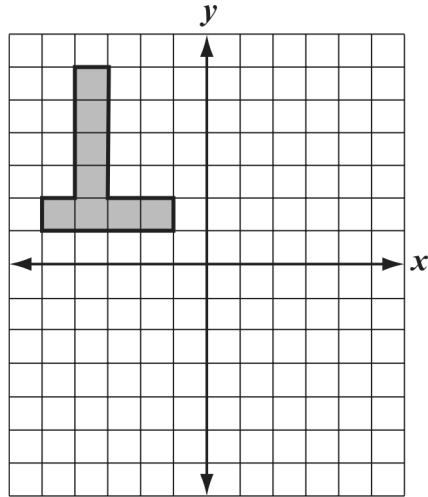
21. Sherry drew  $\triangle PQR$  and line  $m$ , as shown on the grid below.



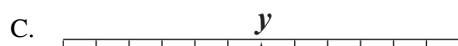
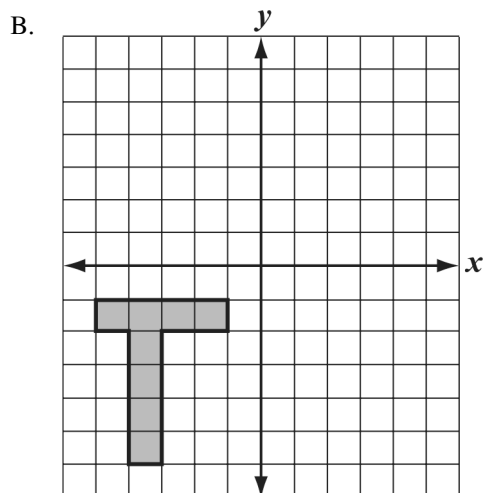
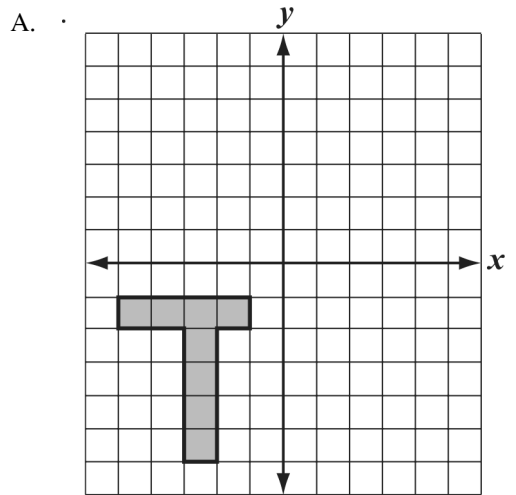
Sherry will reflect  $\triangle PQR$  over line  $m$ . What will be the coordinates of the image of point  $R$  after  $\triangle PQR$  is reflected over line  $m$ ?

- A. (5, 6) B. (6, 9) C. (7, 6) D. (9, 6)

22. Angelie shaded a figure on a coordinate plane, as shown below.

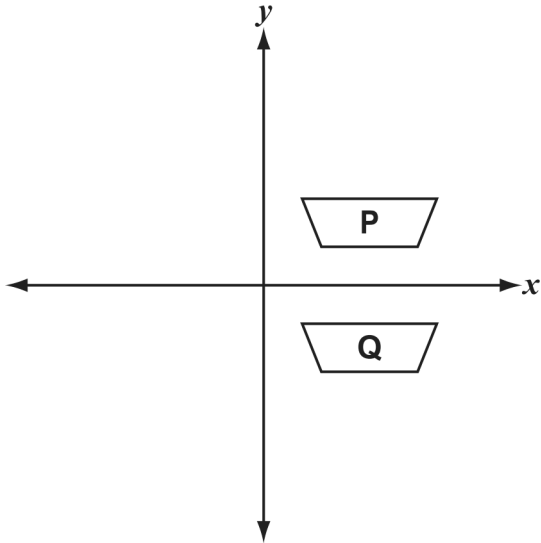


Which of the following best represents the reflection of Angelie's figure across the  $y$ -axis?



Unit 2: Transformations

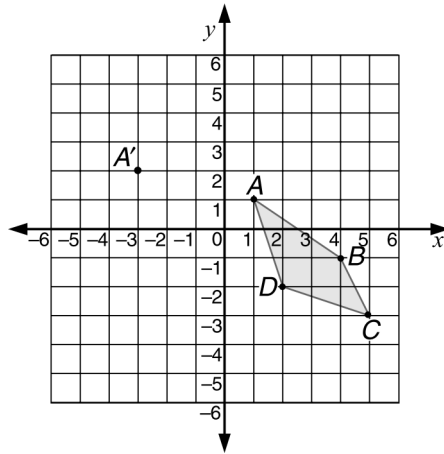
23. Karin used a single transformation of trapezoid P to create the image Q on the coordinate plane shown below.



Which of the following could describe the transformation that Karin used?

- A. reflection over the  $x$ -axis
- B. reflection over the  $y$ -axis
- C. translation down
- D. translation up

- 24.

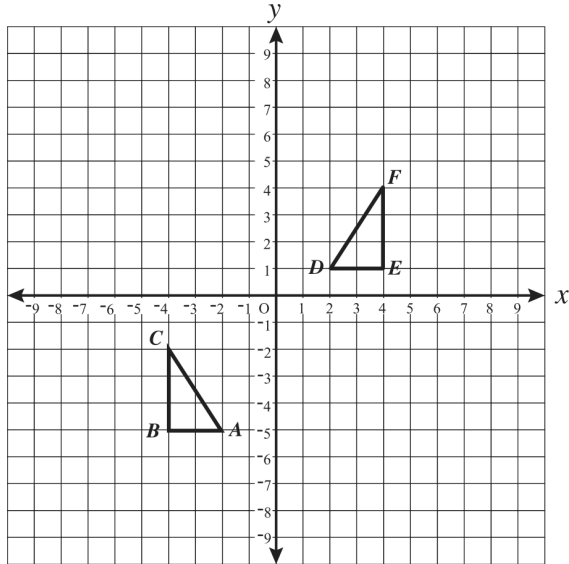


If Figure  $ABCD$  is translated so that the image of  $A$  is  $A'$  at  $(-3, 2)$ , then the coordinates of the image of point  $B$  will be

- A.  $(0, 0)$ .
- B.  $(-1, 4)$ .
- C.  $(-2, -1)$ .
- D.  $(-3, 1)$ .

Unit 2: Transformations

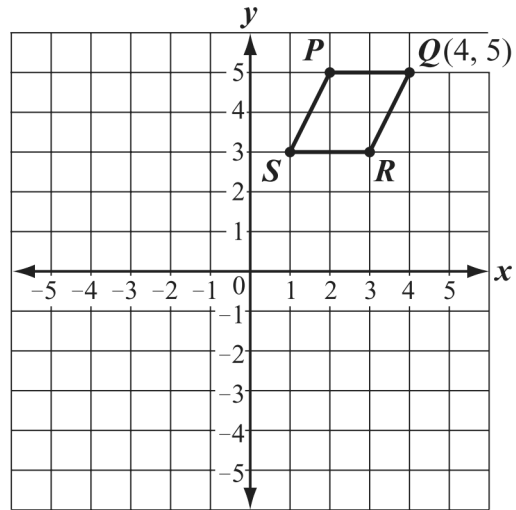
25.  $\triangle ABC$  and  $\triangle DEF$  are shown on the grid below.



Which of the following transformations will map  $\triangle ABC$  onto  $\triangle DEF$ ?

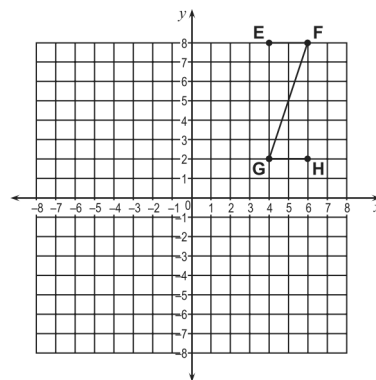
- A. Reflect  $\triangle ABC$  over the  $y$ -axis and shift up 6 spaces.
- B. Reflect  $\triangle ABC$  over the  $x$ -axis and shift up 6 spaces.
- C. Reflect  $\triangle ABC$  over the  $y$ -axis and shift down 6 spaces.
- D. Reflect  $\triangle ABC$  over the  $y$ -axis, reflect over the  $x$ -axis, and shift down 4 spaces.

26. Parallelogram  $PQRS$  and the coordinates of point  $Q$  are shown on the coordinate plane below.



What are the coordinates of the image of point  $Q$  after parallelogram  $PQRS$  is translated 6 units to the left?

27. Use the diagram to answer the following question.

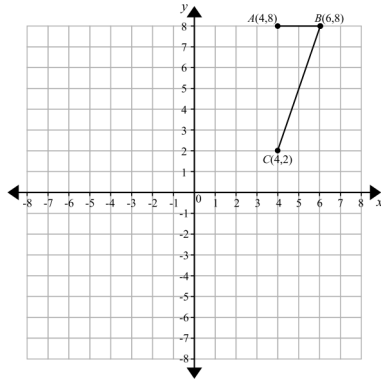


If the figure  $EFGH$  is translated 10 units down, what are the new coordinates of the image of point  $F$ ?

- A.  $(6, -2)$
- B.  $(-4, 8)$
- C.  $(8, 6)$
- D.  $(-4, -2)$

Unit 2: Transformations

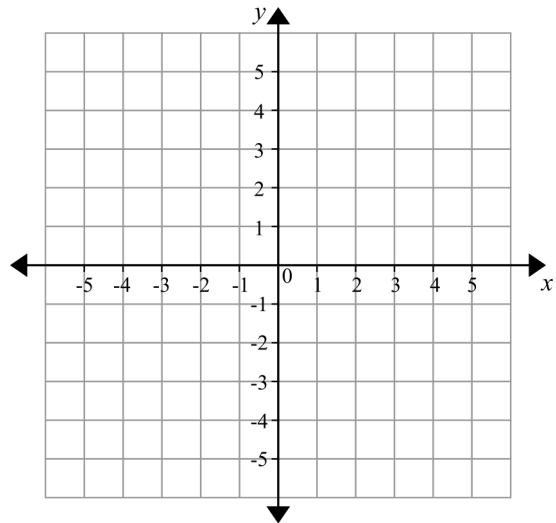
28. Use the diagram to answer the question.



Suppose that the figure  $ABC$  is reflected over the  $y$ -axis. What are the coordinates of the image of point  $A$ ?

- A.  $(4, -8)$
- B.  $(-4, 8)$
- C.  $(-8, 4)$
- D.  $(8, -4)$

29. You may want to use the following coordinate plane to help you answer the following question(s).

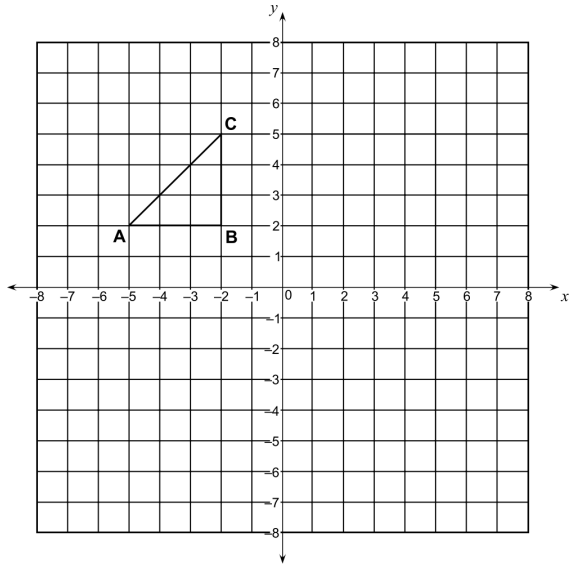


As the result of a transformation, the image of the point  $(-1, 3)$  is  $(-3, 1)$ . This is an example of a reflection across the

- A. line  $y = x$ .
- B. line  $y = -x$ .
- C.  $x$ -axis.
- D.  $y$ -axis.

Unit 2: Transformations

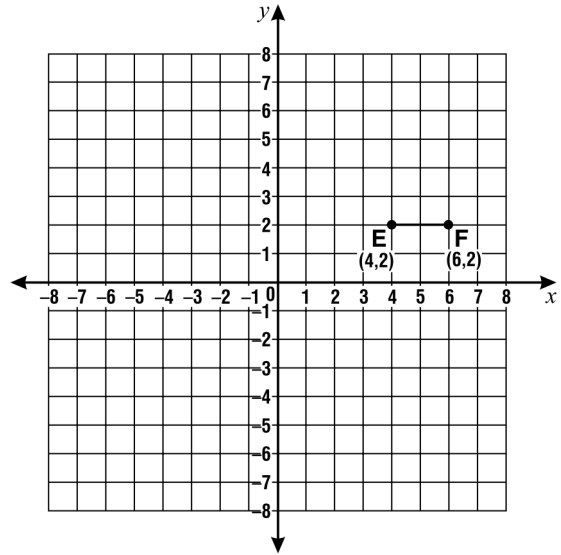
30. Use the graph below to answer the following question(s).



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)

31. The diagram below shows the location of  $\overline{EF}$  on a coordinate plane.

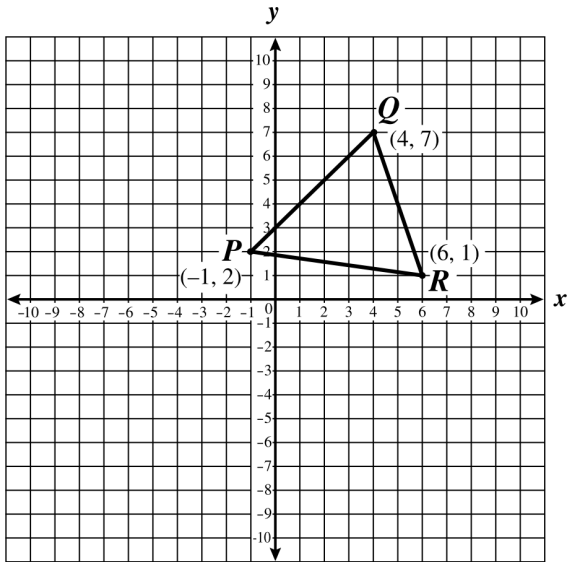


Suppose that  $\overline{EF}$  is rotated clockwise about the origin. What are the coordinates of the image of point  $E$ ?

- A. (4, -2)                      B. (-4, -2)  
 C. (-2, -4)                     D. (-4, 2)

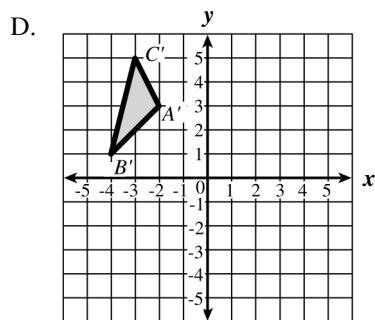
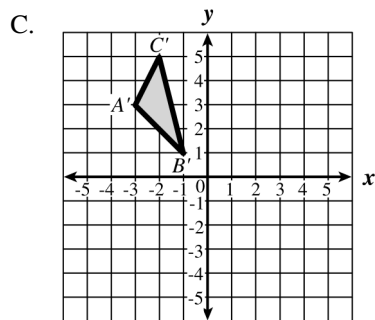
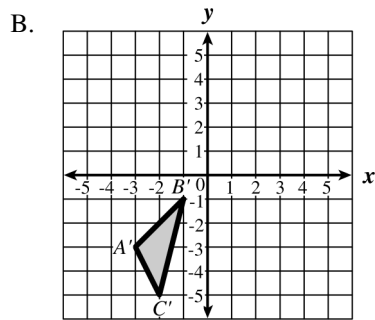
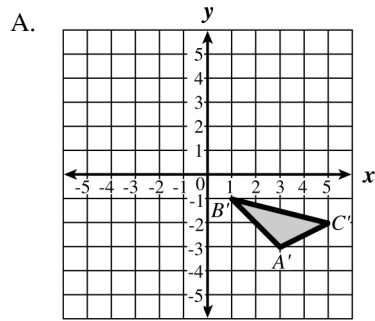
Unit 2: Transformations

32. Triangle  $PQR$  is shown on the coordinate grid below.



Sydney accurately sketched  $\triangle P'Q'R'$ , the reflection of  $\triangle PQR$  across the  $x$ -axis. What are the coordinates of point  $Q'$  in  $\triangle P'Q'R'$ ?

33. Triangle  $ABC$  has vertices at  $A(3, 3)$ ,  $B(1, 1)$ , and  $C(2, 5)$ . In which of the graphs below is triangle  $A'B'C'$  a reflection of triangle  $ABC$  over the  $y$ -axis?



## Unit 2: Transformations

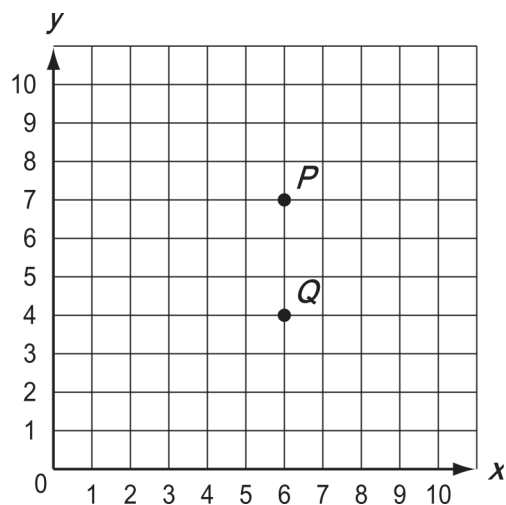
34. The coordinates of four points are given below.

$$A(3, 3) \quad A'(-3, 3) \quad B(4, -4) \quad B'(4, 4)$$

Which of the following transformations maps  $\overline{AB}$  to  $\overline{A'B'}$ ?

- A. reflection across the x-axis
- B. reflection across the y-axis
- C.  $90^\circ$  counterclockwise rotation about the origin
- D.  $180^\circ$  counterclockwise rotation about the origin

35. Point  $P(6, 7)$  and point  $Q(6, 4)$  are plotted on the coordinate grid below.



Point  $P$  is rotated  $180^\circ$  clockwise about point  $Q$ . What are the coordinates of the image of point  $P$  after this rotation?

- A. (3, 4)
- B. (6, 1)
- C. (6, 10)
- D. (9, 4)

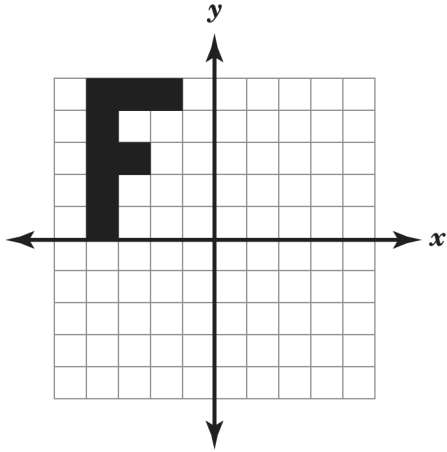
36. Point  $P$  has coordinates  $(2, 5)$ . After a translation, the coordinates of its image  $P'$  are  $(4, -1)$ .

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

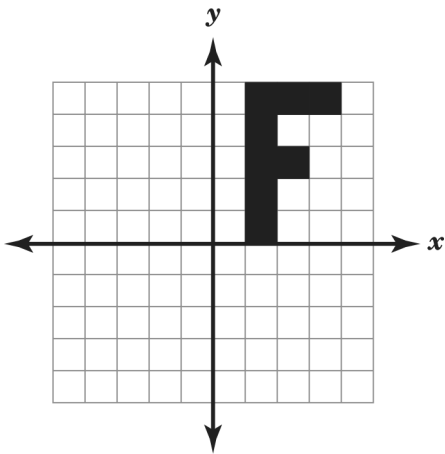
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37. Study the figure shown on the grid below.

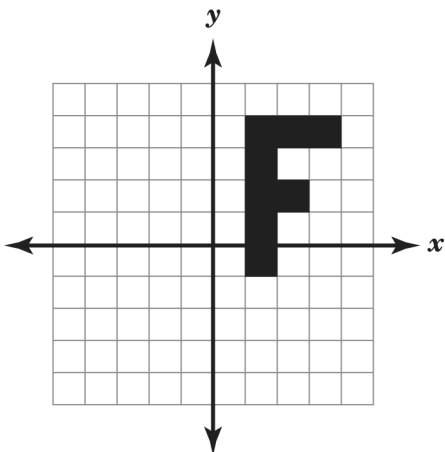


Which of these shows the figure reflected over the  $x$ -axis?

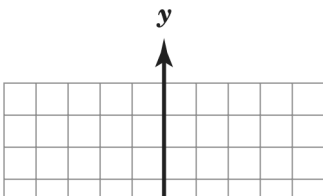
A.



B.



C.





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1.  
Answer:      A
2.  
Answer:      A
3.  
Answer:      A
4.  
Answer:      D
5.  
Answer:      A
6.  
Answer:      D
7.  
Answer:      A
8.  
Answer:      A
9.  
Answer:      B
10.  
Answer:      A
11.  
Answer:      D
12.  
Answer:      C
13.  
Answer:      C
14.  
Answer:      C
15.  
Answer:      D
16.  
Answer:      C
17.  
Answer:      B
18.  
Answer:      D
19.  
Answer:      A
20.  
Answer:      A

21.  
Answer:      D
- 22.
23.  
Answer:      C
24.  
Answer:      A
25.  
Answer:      A
26.  
Answer:       $(-2, 5)$
27.  
Answer:      A
28.  
Answer:      B
29.  
Answer:      B
30.  
Answer:      D
31.  
Answer:      B
32.  
Answer:       $(4, -7)$
33.  
Answer:      C
34.  
Answer:      C
35.  
Answer:      B
36.  
Answer:      C
- 37.