

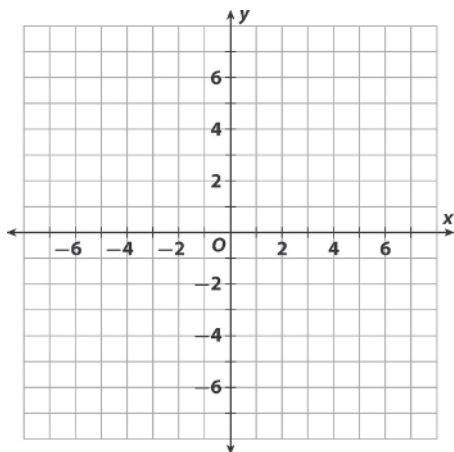
LESSON
9-2

Properties of Reflections

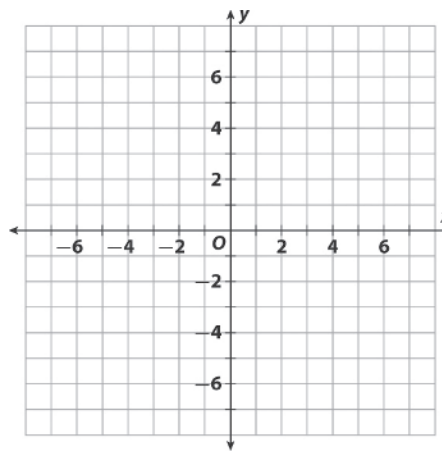
Practice and Problem Solving: C

The vertices of a figure are given. Draw the figure. Then draw its image after the described reflection.

1. $W(-5, 2)$, $X(3, 0)$, $Y(-2, -5)$
Reflect across the x -axis.



2. $G(3, -3)$, $H(-5, -1)$, $J(-4, 3)$, $K(2, 2)$
Reflect across the y -axis.



3. Triangle ABC is reflected across the y -axis to form triangle $A'B'C'$.
The coordinates of the vertices of the triangles are given below.

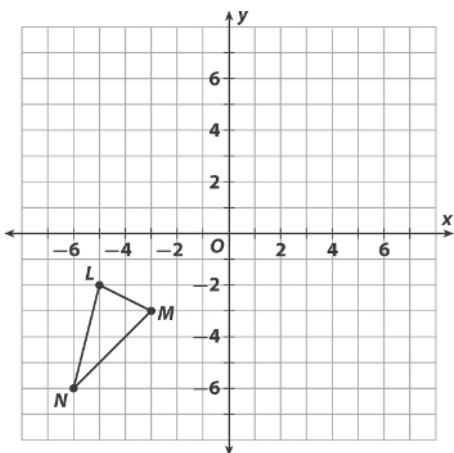
Triangle ABC : $A(2, 3)$ $B(6, 7)$ $C(4, 1)$

Triangle $A'B'C'$: $A'(-2, 3)$ $B'(-6, 7)$ $C'(-4, 1)$

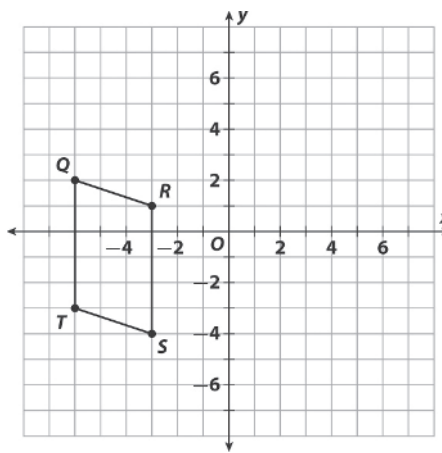
Make a conjecture about the coordinates of a figure and its image after a reflection across the y -axis.

Draw the image of the given figure after the two transformations.

4. Translate 8 units right and 1 unit up.
Reflect across the x -axis.



5. Reflect across the y -axis.
Translate 2 units left and 5 units up.



3. Yes; translations preserve the size and shape of a figure. Even after two translations, the resulting figure is congruent to the original figure.

Reading Strategies

1. Triangle $A'B'C'$
2. Triangle ABC
3. 3 vertices
4. Yes; a translation produces a figure (image) that is congruent to the original figure (preimage).
5. The translation moves the triangle 5 units left and 7 units up.
6. A transformation is an operation that changes the position, size, or shape of a figure. A translation is a type of transformation that changes only the position of a figure.

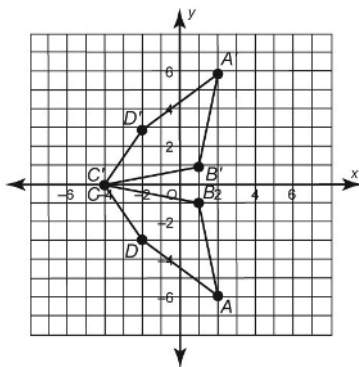
Success for English Learners

1. The translation moved the triangle 5 units to the right.
2. Yes; the new translation is the same as the one in Problem 2, except that the vertical movement is described first and the horizontal movement is second.

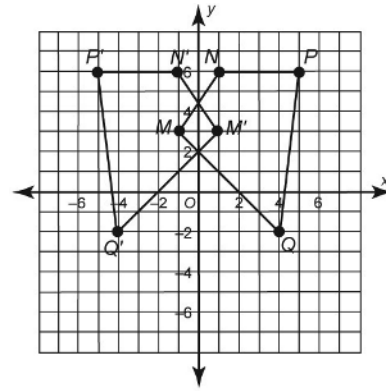
LESSON 9-2

Practice and Problem Solving: A/B

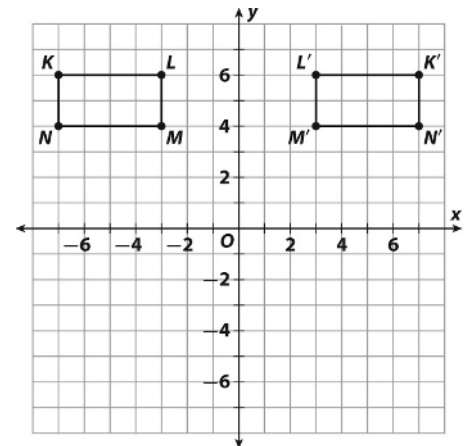
1. Quadrilateral G
2. Quadrilaterals F and G
3. One is a translation of the other.
- 4.



5.



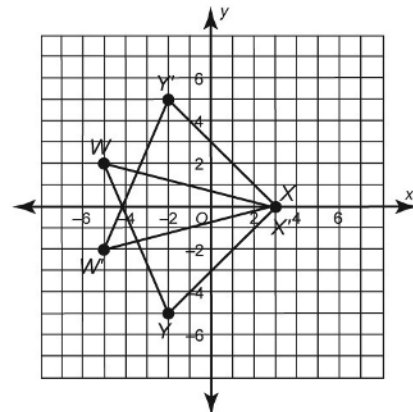
6. a.



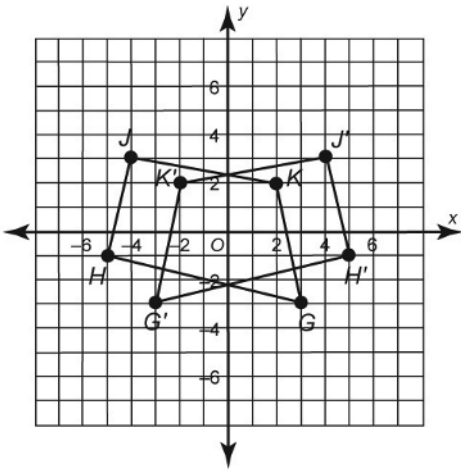
- b. Perimeter of $KLMN = 12$ units, perimeter of $K'L'M'N' = 12$ units
- c. No; the image and preimage are congruent, so they have the same size. This means that the perimeters are the same.

Practice and Problem Solving: C

1.

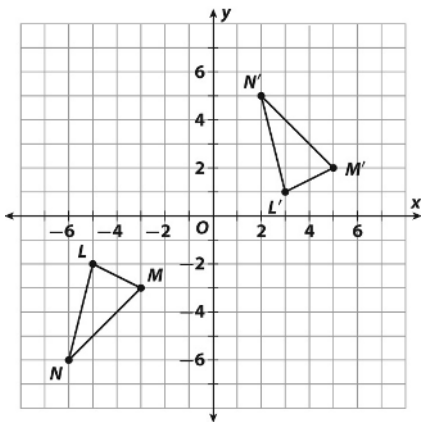


2.

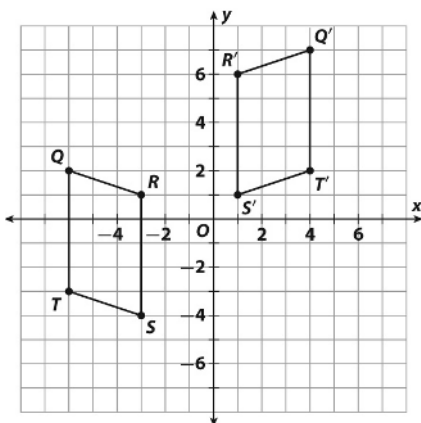


3. The x-coordinate for each point on the image is the opposite of the x-coordinate of the corresponding point on the figure. The y-coordinates stay the same.

4.



5.



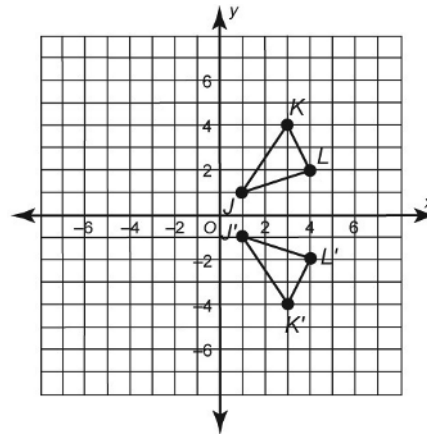
Practice and Problem Solving: D

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

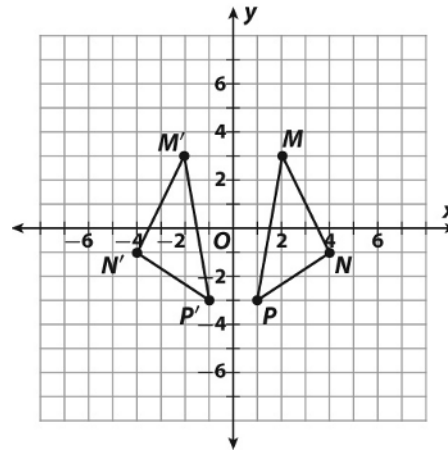
5. angle D'

6. a reflection across the y-axis

7.



8.



9. flips

10. always

11. y-coordinate

Reteach

1.

