

Reteaching 9-9 Symmetry and Reflections

Graph the polygon's image after a reflection over the line $x = 1$.
Name the coordinates of the image.

Graph $x = 1$.

Point A is 1 unit left of $x = 1$.

Plot A' with the same y -coordinate and 1 unit right of $x = 1$.

Point B is 3 units left of $x = 1$.

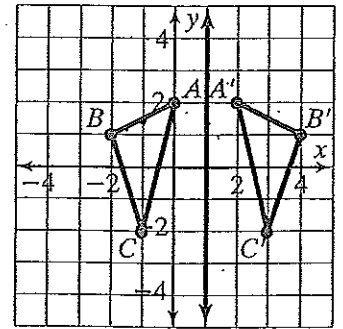
Plot B' 3 units right of $x = 1$.

Point C is 2 units left of $x = 1$.

Plot C' 2 units right of $x = 1$.

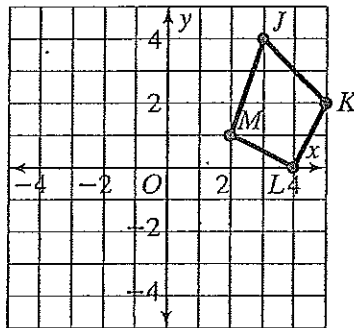
Read the coordinates.

$A'(2, 2)$, $B'(4, 1)$, $C'(3, -2)$



Graph each polygon's image after a reflection over the given line. Name the coordinates of the image.

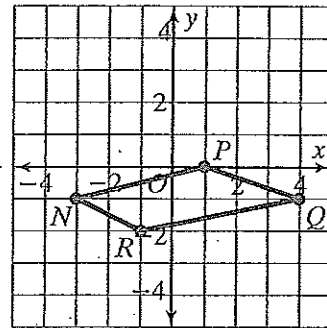
1. $x = 2$



J' _____ K' _____

L' _____ M' _____

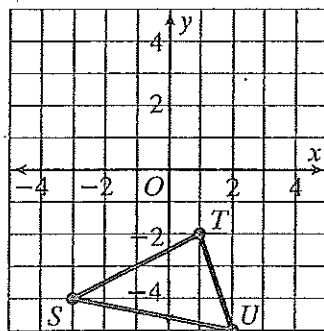
2. $y = 1$



N' _____ P' _____

Q' _____ R' _____

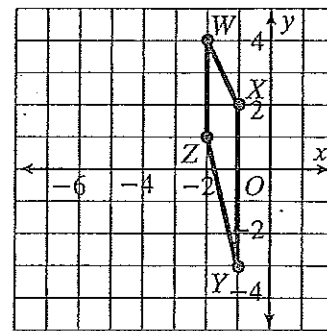
3. $y = -1$



S' _____ T' _____

U' _____

4. $x = -3$



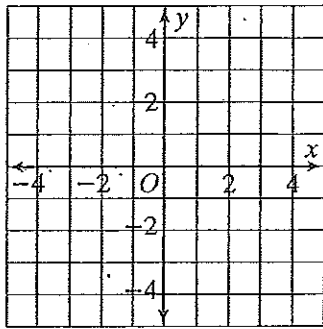
W' _____ X' _____

Y' _____ Z' _____

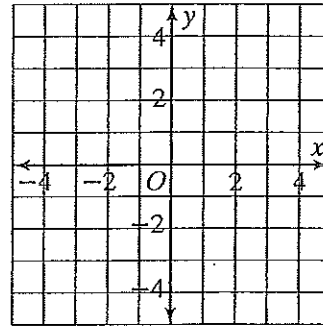
Practice 9-9 Symmetry and Reflections

The vertices of a polygon are listed. Graph each polygon and its image after a reflection over the given line. Name the coordinates of the image.

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



2. $J(-2, 1), K(1, 3), L(4, 2); y = -1$



A' _____ B' _____
 C' _____ D' _____

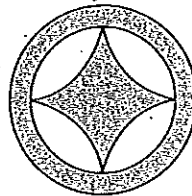
J' _____ K' _____
 L' _____

Draw all the lines of symmetry for each figure.

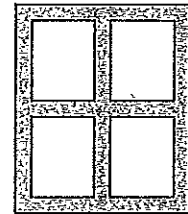
3.



4.

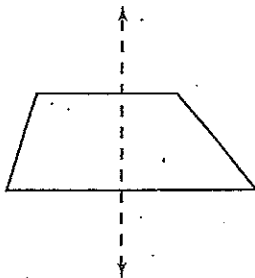


5.

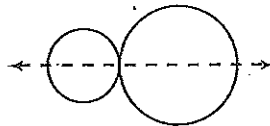


Is the dashed line a line of symmetry? Write yes or no.

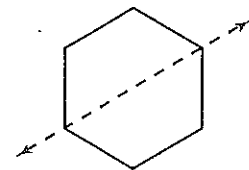
6. _____



7. _____



8. _____



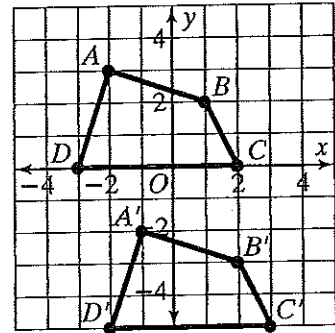
Reteaching 9-8 Translations

Write a rule to describe the translation.

Point A has coordinates $(-2, 3)$. Its image A' has coordinates $(-1, -2)$. To move from A to A' on the graph, we go right one unit $(+1)$ and down 5 units (-5) . So the rule is $(x, y) \rightarrow (x + 1, y - 5)$. We could also subtract coordinates:

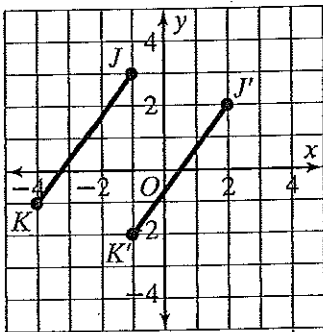
$$x: -1 - (-2) = -1 + 2 = 1$$

$$y: -2 - 3 = -2 + (-3) = -5$$

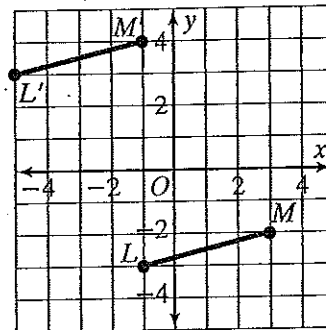


Write a rule to describe each translation.

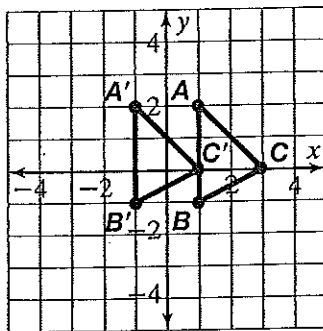
1. $(x, y) \rightarrow$ _____



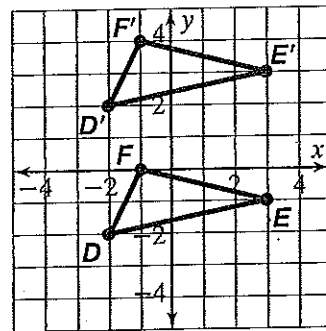
2. $(x, y) \rightarrow$ _____



3. $(x, y) \rightarrow$ _____



4. $(x, y) \rightarrow$ _____



5. The translation that takes $A(8, -6)$ to $A'(9, -3)$

$(x, y) \rightarrow$ _____

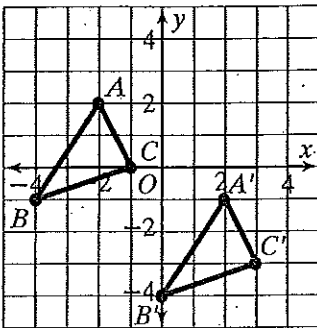
6. The translation that takes $B(2, -10)$ to $B'(-7, -12)$

$(x, y) \rightarrow$ _____

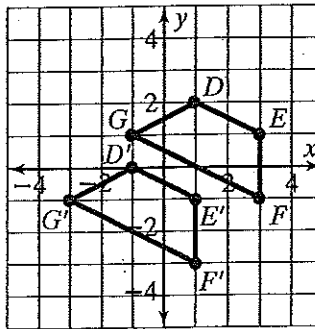
Practice 9-8 Translations

Write a rule to describe each translation.

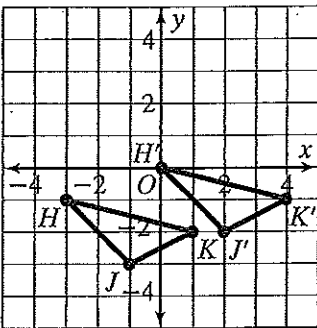
1. $(x, y) \rightarrow$ _____



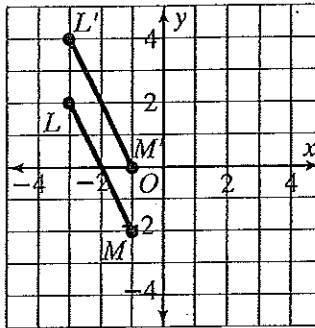
2. $(x, y) \rightarrow$ _____



3. $(x, y) \rightarrow$ _____

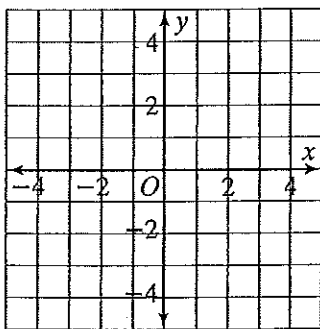


4. $(x, y) \rightarrow$ _____

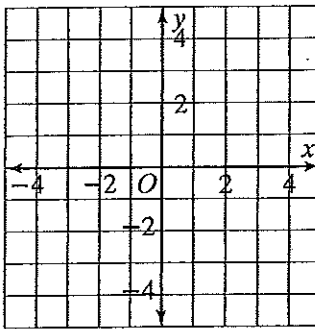


The vertices of a triangle and a translation are given. Graph each triangle and its image.

5. $G(-4, 4), H(-2, 3), J(-3, 0)$; right 5 and down 2



6. $K(0, -1), L(4, 2), M(3, -3)$; left 4 units and up 3 units



A point and its image after a translation are given. Write a rule to describe the translation.

7. $A(9, -4), A'(2, -1)$. $(x, y) \rightarrow$ _____

8. $B(-3, 5), B'(-5, -3)$. $(x, y) \rightarrow$ _____