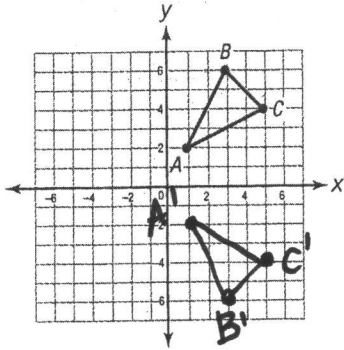


Practice

Draw each reflected image as described and name its vertices. Identify the coordinates of the vertices of the image.

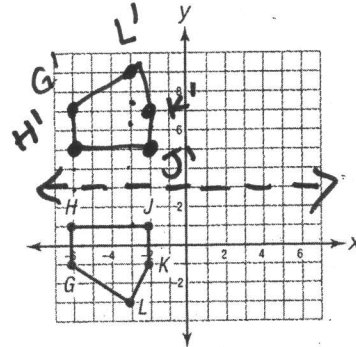
1. Reflect $\triangle ABC$ across the x-axis.



$A'(1, -2)$ $B'(3, -5)$ $C'(5, -4)$

REMEMBER When a point is reflected across the x-axis, the sign of its y-coordinate changes.

2. Reflect pentagon $GHJKL$ across the line $y = 3$.



$G'(-6, 7)$ $H'(-6, 5)$ $J'(-2, 5)$
 $K'(-2, 7)$ $L'(-3, 9)$

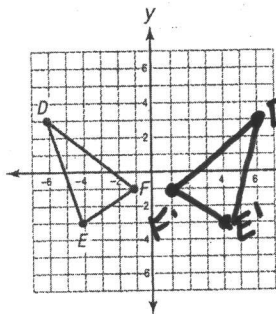
Fill in each blank with an appropriate word or phrase.

- A reflection results in two figures that look like mirror images of each other.
- Lines that meet and form right angles are called perpendicular lines.
- A point and its reflection are each the same distance from line of reflection.
- The path that a point takes across the line of reflection is perpendicular the line of reflection.

Use the given function to transform $\triangle DEF$. Then describe the transformation in words.

7. $R(x, y) = (-x, y)$

$D(-6, 3)$
 $E(-4, -3)$
 $F(-1, -1)$

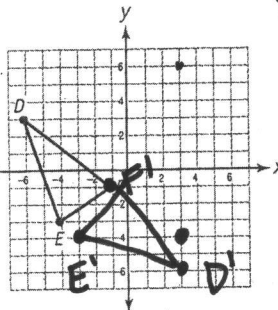


$D'(6, 3)$
 $E'(4, -3)$
 $F'(1, -1)$

reflect across y-axis

8. $R(x, y) = (y, x)$

$D(-6, 3)$
 $E(-4, -3)$
 $F(-1, -1)$



$D'(3, 6)$
 $E'(-3, -4)$
 $F'(-1, -1)$

reflect across $y=x$

Identify the coordinates of the image for each reflection as described.

9. Reflect $M(3, 4)$ across the x -axis.

$M'(\underline{3}, \underline{-4})$

10. Reflect $N(-2, -8)$ across the y -axis.

$N'(\underline{2}, \underline{-8})$

11. Reflect $P(-2, 0)$ across the line $y = x$.

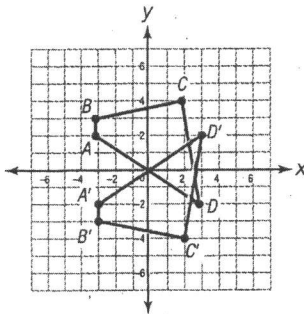
$P'(\underline{0}, \underline{-2})$

12. Reflect $Q(5, 10)$ across the line $y = x$.

$Q'(\underline{10}, \underline{5})$

Describe how quadrilateral $ABCD$ was reflected to form quadrilateral $A'B'C'D'$, using both words and function notation.

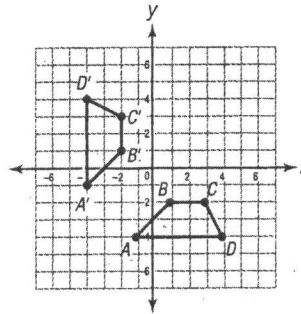
13.



Words: reflect across x-axis

Function: $R(x, y) = (x, -y)$

14.

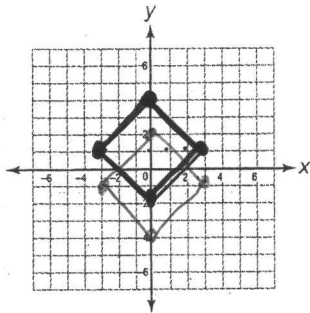


Words: reflect across $y=x$

Function: $R(x, y) = (y, x)$

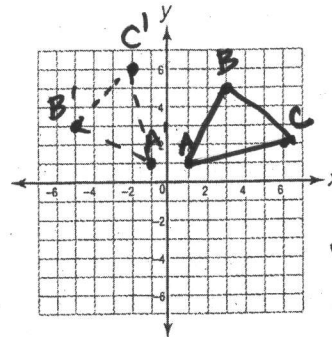
Solve.

15. **JUSTIFY** Camille drew the square below on a coordinate plane. She says that if she reflects the square over the x -axis it will look exactly the same as if she reflects it over the y -axis. Is she correct or incorrect? Use words, numbers and/or drawings to justify your answer.



incorrect. if she reflects over y-axis, it is the same. if she reflects over x-axis it looks different.

16. **DRAW** Patrick reflected a figure in two steps. The result was that each point (x, y) was transformed to the point $(-y, x)$. Draw a triangle (any triangle) on the plane below and transform it as described. Then describe what two reflections Patrick performed.



$A(1, 1)$
 $B(3, 5)$
 $C(6, 2)$

$A'(-1, 1)$
 $B'(-5, 3)$
 $C'(-2, 6)$

- ① reflect over x-axis
② reflect over $y=x$.