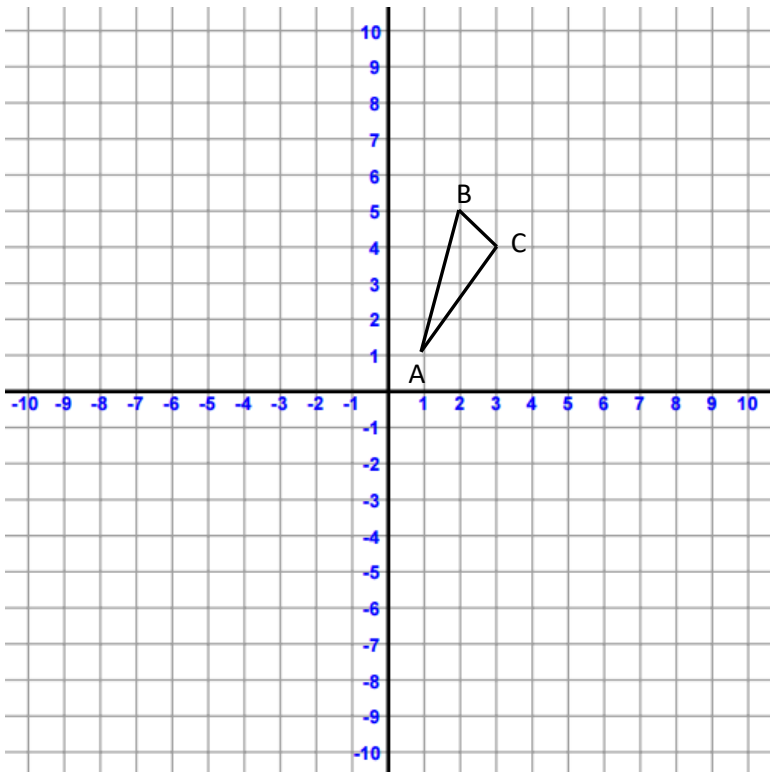


Name _____



Complete each of the following transformations, using the given $\triangle ABC$ as the preimage. Record the resulting coordinates of the image $\triangle A'B'C'$. As you are working, look for a pattern in each transformation.

Translation right 3

$A(1,1) \rightarrow A' (4 , 1)$
 $B(2,5) \rightarrow B' (5 , 5)$
 $C(3,4) \rightarrow C' (6 , 4)$

Reflect over x-axis

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

Rotate 90° Counter Clockwise

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

Translate left 6

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

Reflect over y-axis

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

Rotate 180°

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

Translate up 4

$A(1,1) \rightarrow A' (1 , 5)$
 $B(2,5) \rightarrow B' (2 , 9)$
 $C(3,4) \rightarrow C' (3 , 8)$

Reflect over y = x

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

Rotate 270° Counter Clockwise

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

Translate down 7

$A(1,1) \rightarrow A' (1 , -6)$
 $B(2,5) \rightarrow B' (2 , -2)$
 $C(3,4) \rightarrow C' (3 , -3)$

Reflect over y = -x

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

Rotate 360°

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

Now that you have found the image for each transformation, try to find a pattern called the generic coordinate or Coordinate Notation for each. Use the below example for help.

EXAMPLE

$$A(1,3) \rightarrow A'(-3,1)$$

Looking at the coordinates for the pre-image and image of each point .

$$B(4,5) \rightarrow B'(-5,4)$$

notice the pattern that the sign of the second value changes and the values also

$$C(2,-6) \rightarrow C'(6,2)$$

switch places. This would be written as $(a,b) \rightarrow (-b,a)$. This is the generic coordinate that will hold true for each of these points A, B and C to A', B' and C'.

Use your answers on the front to find a pattern write the Coordinate Notation for each of the following transformations.

Translate right 3: $(a,b) \rightarrow (a+3,b)$

Translate left 6: $(a,b) \rightarrow (a-6,b)$

Translate up 4: $(a,b) \rightarrow (a,b+4)$

Translate down 7: $(a,b) \rightarrow (a,b-7)$

Reflect over x-axis: $(a,b) \rightarrow (a,-b)$

Reflect over y-axis: $(a,b) \rightarrow (-a,b)$

Reflect over $y=x$: $(a,b) \rightarrow (b,a)$

Reflect over $y=-x$: $(a,b) \rightarrow (-b,-a)$

Rotate 90° CCW: $(a,b) \rightarrow (-b,a)$

Rotate 180° : $(a,b) \rightarrow (-a,-b)$

Rotate 270° CCW: $(a,b) \rightarrow (b,-a)$

Rotate 360° CCW: $(a,b) \rightarrow (a,b)$