

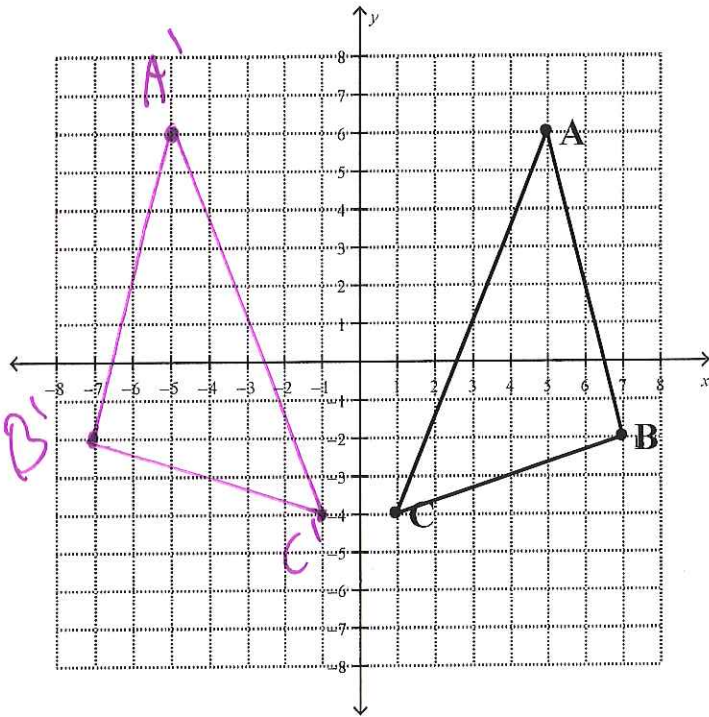
# Reflecting Figures

1. Create the class rule for reflecting a figure over the y-axis.

$$(x, y) \rightarrow (-x, y)$$

Reflect the following figures over the y-axis. List the coordinates of the pre-image and the coordinates of the image points.

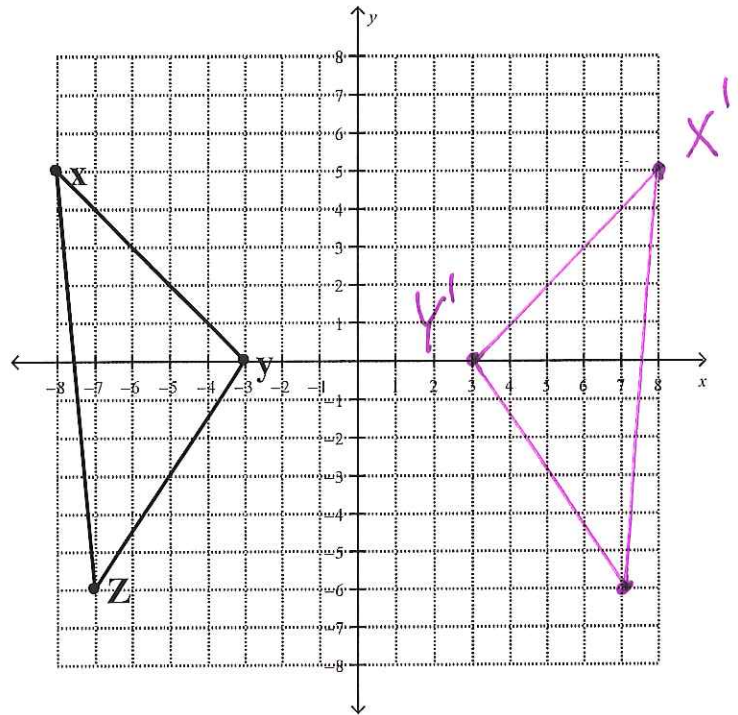
2.



Pre-Image Points:  $A(5, 6)$   
 $B(7, -2)$   
 $C(1, -4)$

Image Points:  $A'(-5, 6)$   
 $B'(-7, -2)$   
 $C'(-1, -4)$

3.



Pre-Image Points:  $X(-8, 5)$   
 $Y(-3, 0)$   
 $Z(-7, -6)$

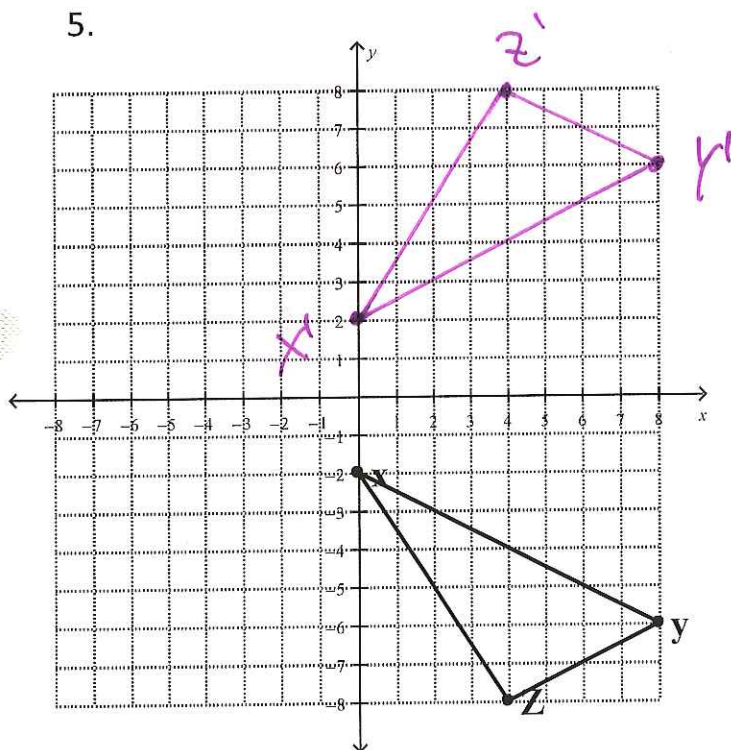
Image Points:  $X'(8, 5)$   
 $Y'(3, 0)$   
 $Z'(7, -6)$

4. Create the class rule for reflection a figure over the x-axis.

$$(x, y) \rightarrow (x, -y)$$

Reflect the following figures over the x-axis. List the coordinates of the pre-image and the coordinates of the image points.

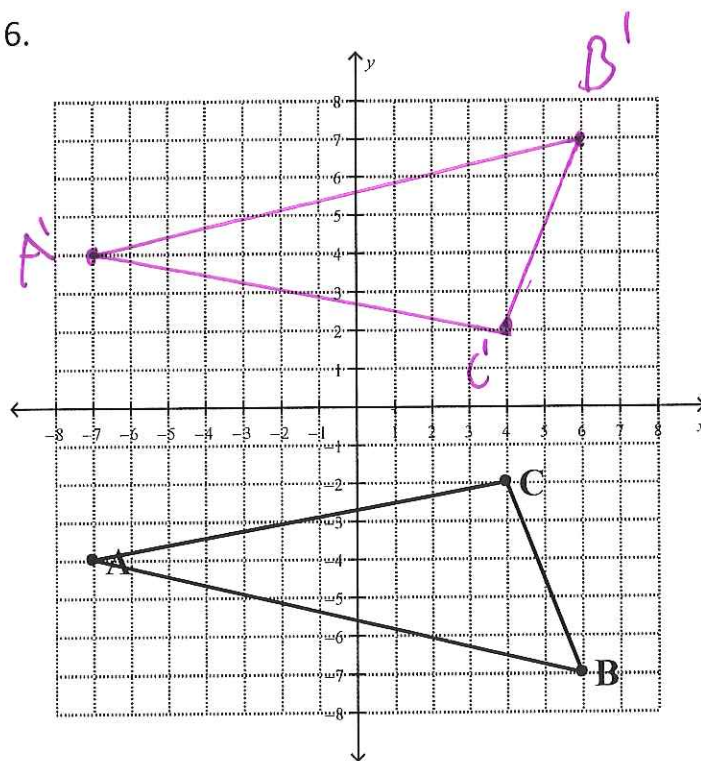
5.



Pre-Image Points:  
 $X(0, -2)$   
 $Y(8, -6)$   
 $Z(4, -8)$

Image Points:  
 $X'(0, 2)$   
 $Y'(8, 6)$   
 $Z'(4, 8)$

6.



Pre-Image Points:  
 $A(-7, -4)$   
 $B(6, -7)$   
 $C(4, -2)$

Image Points  
 $A'(-7, 4)$   
 $B'(6, 7)$   
 $C'(4, 2)$

# Rules for Reflections

## Reflection over the x-axis

Describe in words:

The x-coordinate remains the same. The y-coordinate becomes opposite.

Create using math symbols:

$$(x, y) \rightarrow (x, -y)$$

## Reflection over the y-axis

Describe in words:

The x-coordinate becomes opposite. The y-coordinate remains the same.

Create using math symbols:

$$(x, y) \rightarrow (-x, y)$$

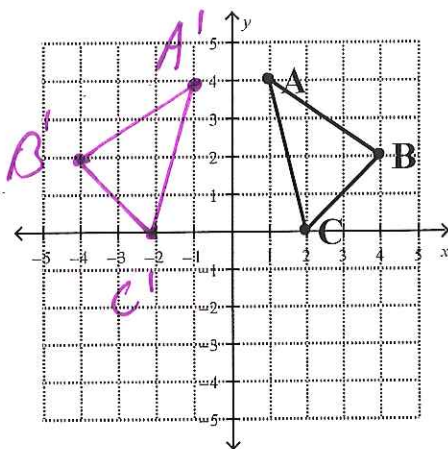
1. Triangle ABC is reflected over the x-axis. Apply the appropriate rules above or the graph to the right to give the image points for triangle A'B'C'.

I used the rule  
 $A'(1, -4)$     $B'(4, -2)$     $C'(2, 0)$

2. Triangle ABC is reflected over the y-axis. Apply the appropriate rule above or the graph to the right to give the image points for triangle A'B'C'.

I used the graph  
 $A'(-1, 4)$     $B'(-4, 2)$     $C'(-2, 0)$

$$A(1, 4) \quad B(4, 2) \quad C(2, 0)$$





In 3-10, pre-image coordinate points are given. Identify the image of each point under the given reflection.

Reflection over the x-axis.

3.  $(-1, -9) \rightarrow (-1, 9)$

4.  $(7, -6) \rightarrow (7, 6)$

5.  $(-2, 2) \rightarrow (-2, -2)$

6.  $(10, 3) \rightarrow (10, -3)$

$\rightarrow$

Reflection over the y-axis.

7.  $(5, -5) \rightarrow (-5, -5)$

8.  $(-1, -9) \rightarrow (1, -9)$

9.  $(-2, 2) \rightarrow (2, 2)$

10.  $(10, 3) \rightarrow (-10, 3)$