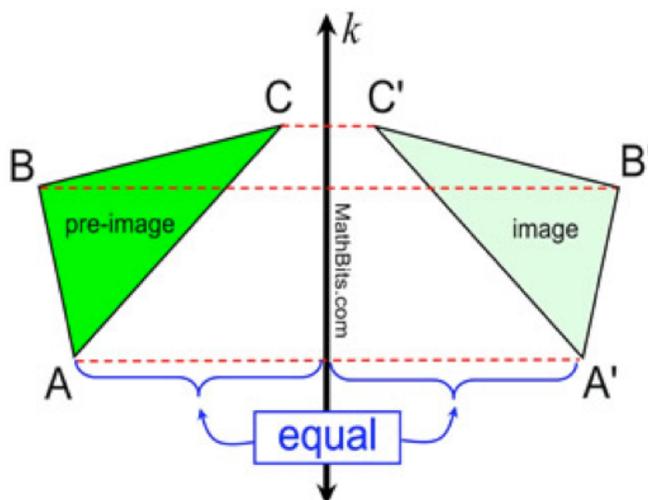


## Reflections - Notes

A **reflection** is a transformation which \_\_\_\_\_ the figure over a \_\_\_\_\_.

This line is called the \_\_\_\_\_.



### Rules for Reflections:

- Every point of the Image is moved to the other \_\_\_\_\_ of the \_\_\_\_\_ of \_\_\_\_\_.
- Each point in the Image is the \_\_\_\_\_ distance from the line of reflection as the corresponding point in the \_\_\_\_\_.
- The image is reflected at a \_\_\_\_\_ angle to the Line of Reflection.
- The image and the preimage are \_\_\_\_\_.

**Example 1:**

$\triangle ABC$  is being reflected over the  $x$ -axis.

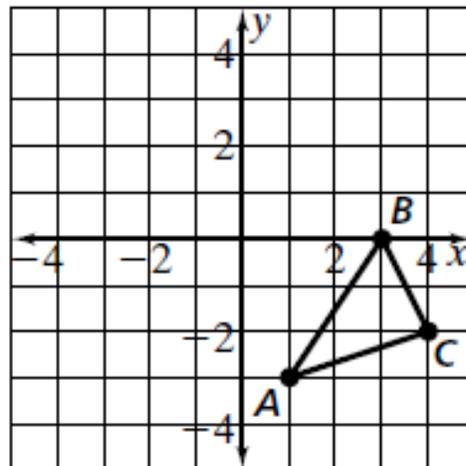
Draw and label the image  $\triangle A'B'C'$ .

What are the coordinates of:

$A$  \_\_\_\_\_  $\rightarrow$   $A'$  \_\_\_\_\_

$B$  \_\_\_\_\_  $\rightarrow$   $B'$  \_\_\_\_\_

$C$  \_\_\_\_\_  $\rightarrow$   $C'$  \_\_\_\_\_



Can you write a general rule for a reflection across the  $x$ -axis?

$(x, y) \rightarrow ( \text{_____} , \text{_____} )$ .

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**Example 2:**

$\triangle ABC$  is reflected over the  $y$ -axis.

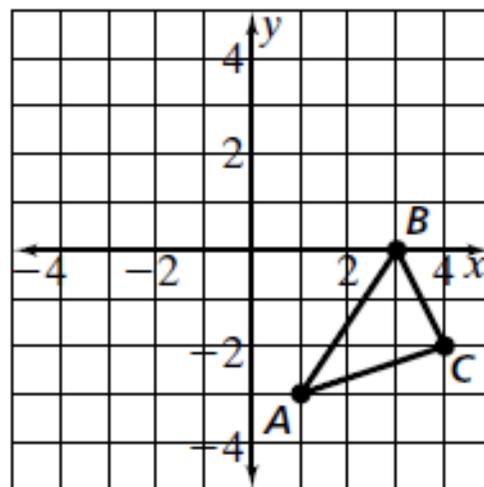
Draw the image  $\triangle A'B'C'$ .

What are the coordinates of:

$A$  \_\_\_\_\_  $\rightarrow$   $A'$  \_\_\_\_\_

$B$  \_\_\_\_\_  $\rightarrow$   $B'$  \_\_\_\_\_

$C$  \_\_\_\_\_  $\rightarrow$   $C'$  \_\_\_\_\_



Write a general rule for a reflection over the  $y$ -axis:

$(x, y) \rightarrow ( \text{_____} , \text{_____} )$ .

## Reflections can also be made over lines that are not the axes!

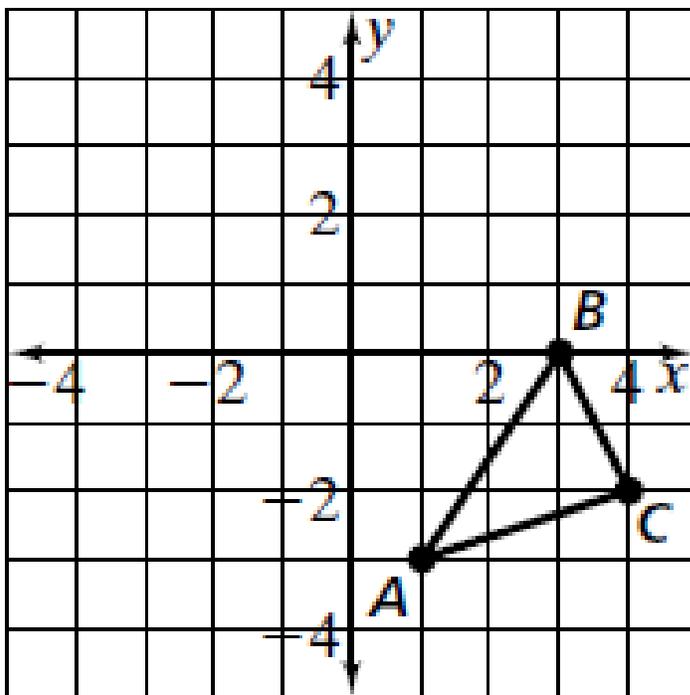
### Example 3:

$\triangle ABC$  is reflected over the line  $y = 1$ . Draw the image  $\triangle A'B'C'$ .

Steps to reflecting over a line that is not one of the axes:

1. Draw your line of reflection on the graph
2. Move each point perpendicular **across** the line so that the new point is the same distance from the line of reflection as the original point.

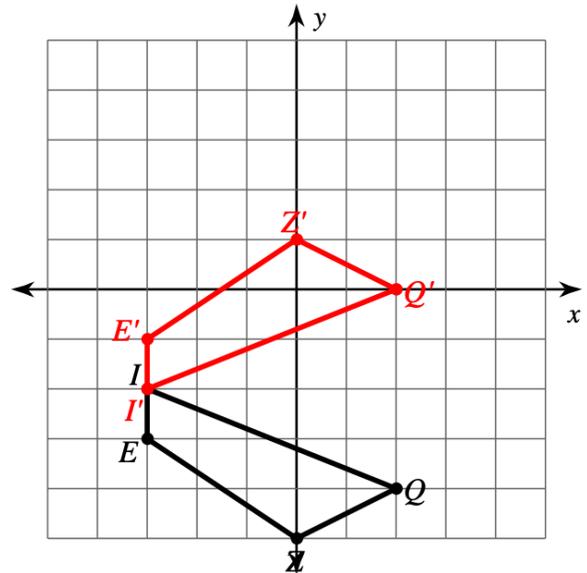
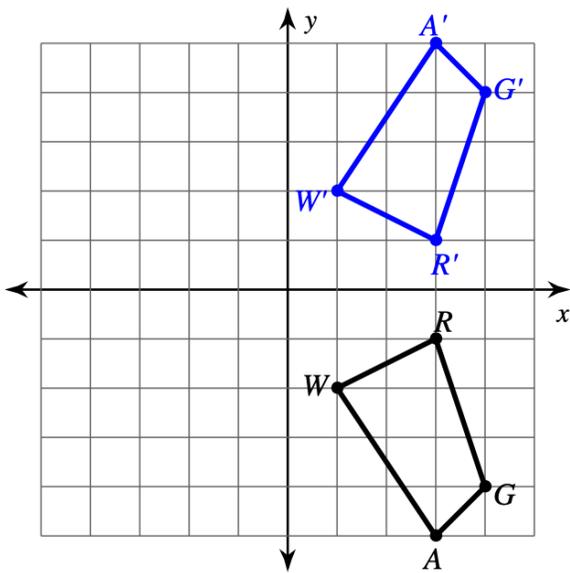
Reflect  $\triangle ABC$  over the line  $y = 1$



\*It is not expected that you can write and use rules for reflecting over lines other than the axes. It is best to draw.

**Example 4:**

Write the reflections that must have occurred.



**Example 5:**

Write the reflection that must have occurred.

