

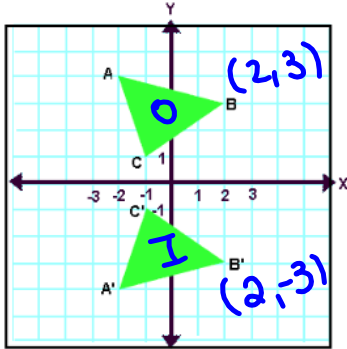
Honors Geometry
Class-Notes

Name _____
Date _____ Period _____

Transformations: Reflections **Flip**

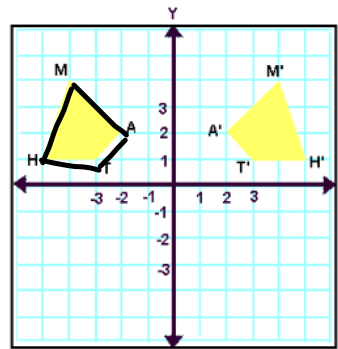
Reflection about an axis

Reflection about the x-axis



To find the image, triangle A'B'C', multiply the y-coordinate of the original triangle ABC by -1

Reflection about the y-axis



To find the image, quadrilateral M'A'T'H', multiply the x-coordinate of the original quadrilateral MATH by -1

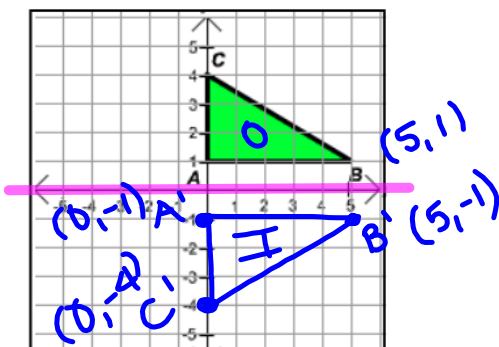
Write the rule for each of the above drawings.

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

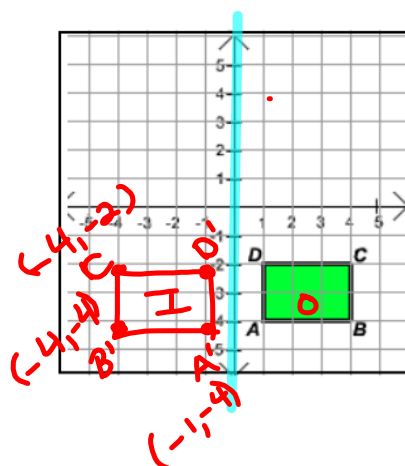
Rule: $(x, y) \rightarrow (-x, y)$

Example 1: Graph the image of the figure using the transformation given.

a. Translation: Reflect about the x-axis



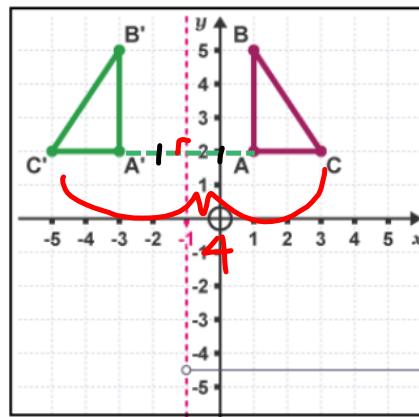
b. Reflect about the y-axis



Reflection about vertical $x=a$ and horizontal $y=a$ lines other than the x-axis or y-axis.

Each point of a reflected image is the Same distance from the line of reflection as the corresponding points of the original.

The line of reflection lies directly in the middle between the image and the original.



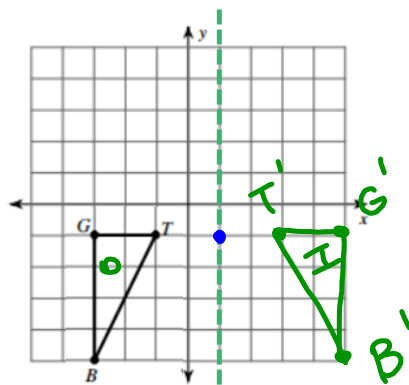
line of reflection

$x = -1$

The line of reflection is the perpendicular bisector of the segment joining any point to its image.

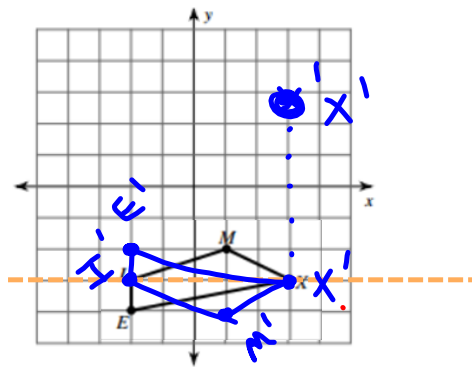
Example 2: Graph the image of the figure using the transformation given.

a. Reflect about the line $x = 1$.



$(x, y) \rightarrow (-x + 2, y)$

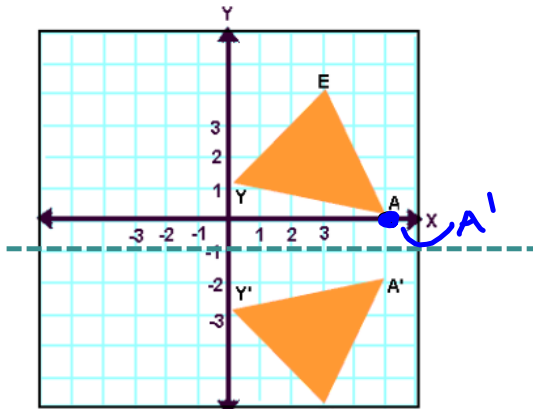
b. Reflect about the line $y = -3$.



$(x, y) \rightarrow (x, -y - 6)$

Example 3: Describe each transformation. Write a rule if possible,

a.

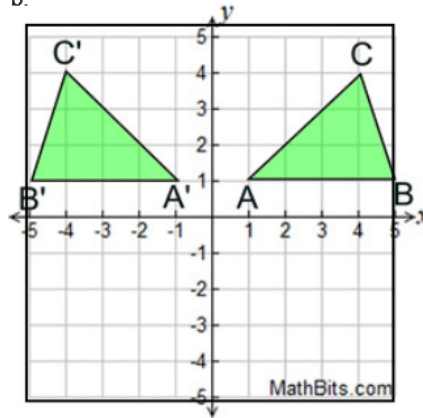


① reflected about $y = -1$

Description: or ② reflect about x -axis & down 2

Rule: $(x,y) \rightarrow (x, -y-2)$

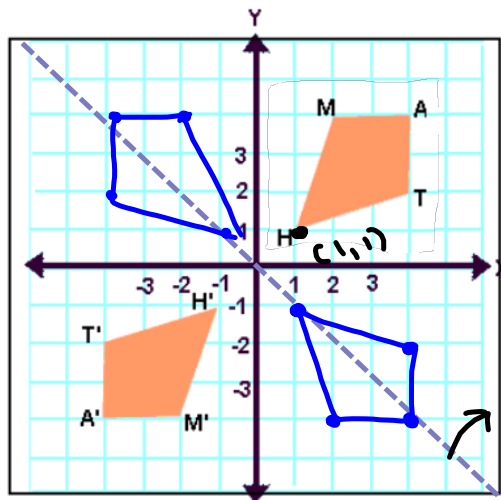
b.



Description: reflect about y -axis

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

Describe the following transformation. Can you write a rule for the following transformation?



① reflect over the line $y = -x$
 $(x,y) \rightarrow (-x,-y)$

Description:

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