

NAME: \_\_\_\_\_

Math \_\_\_\_\_, Period \_\_\_\_\_

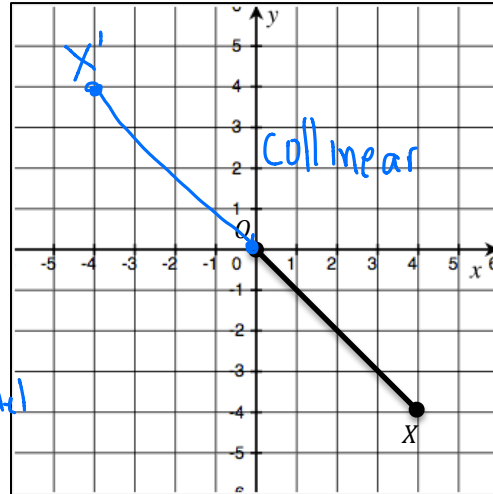
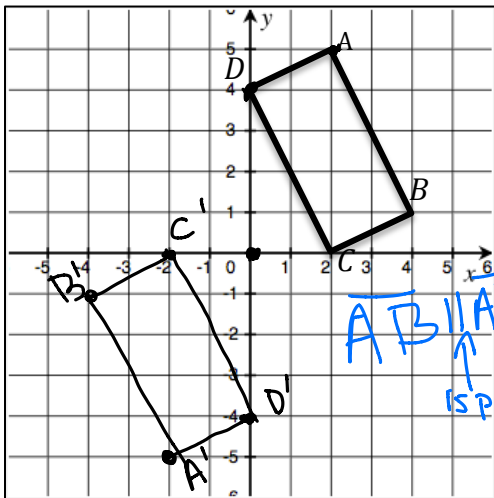
Mr. Rogove

Date: \_\_\_\_\_

**LEARNING OBJECTIVE:** We will graph rotations on a coordinate plane and rotate objects  $180^\circ$ . (G8M2L3)

**CONCEPT DEVELOPMENT:**

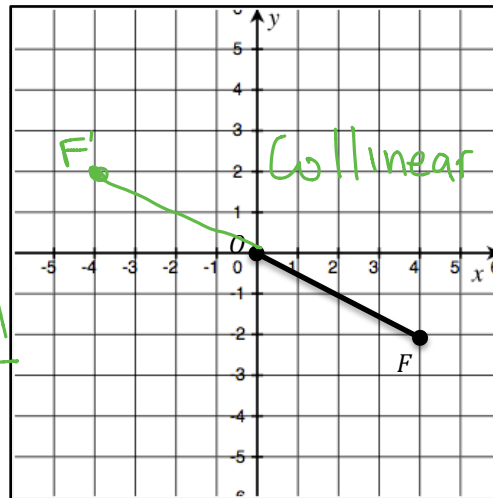
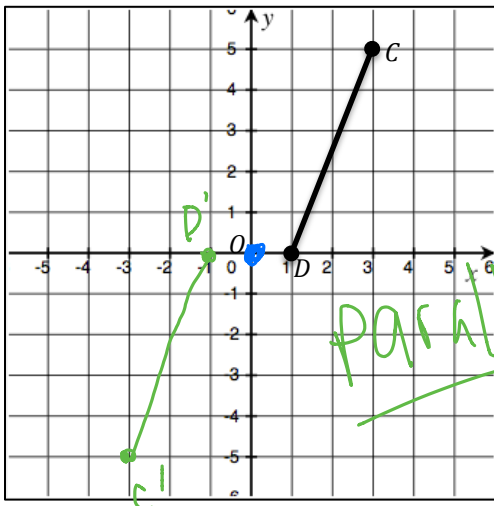
It can be easier to rotate objects if we use a **coordinate plane**.



A  $180^\circ$  rotation around the **origin** of a point with coordinates  $(a, b)$  is the point with coordinates  $(-a, -b)$ .

A  $180^\circ$  rotation of a line is either collinear (if the point of rotation is ON the line) or will create parallel lines (if the point of rotation is NOT on the line).

Examples:

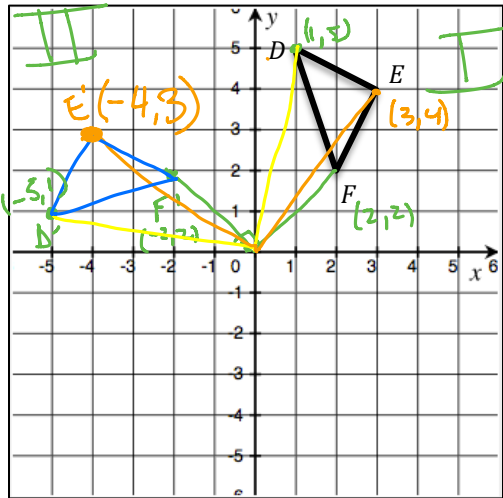


**GUIDED PRACTICE:**

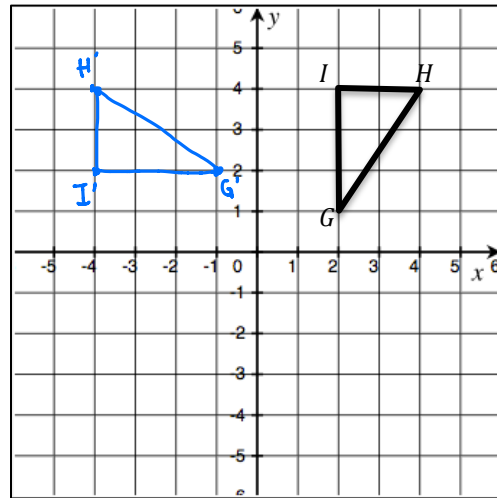
**Steps for Performing Rotations**

1. Identify the point of rotation.
2. Rotate the object, line, point, etc. by degrees as instructed.

Rotate the figure 90 degrees around the origin

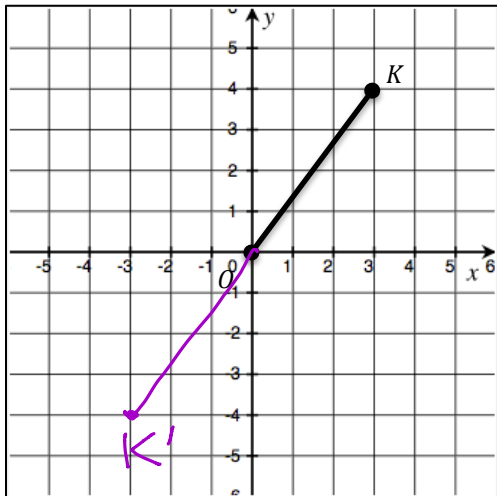


Rotate the figure 90 degrees around the origin.

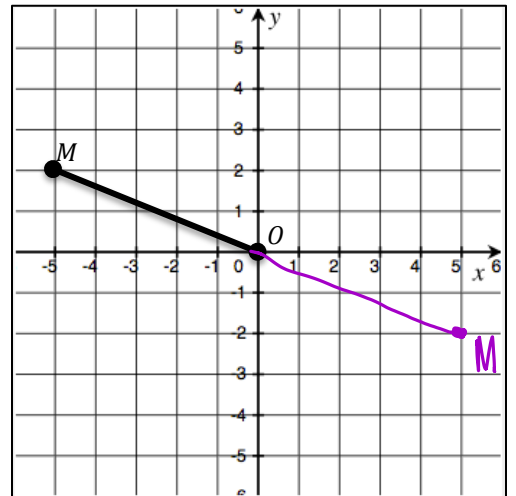


$(x,y)$   $90^\circ$  rotation around  $(0,0)$   $(-y,x)$

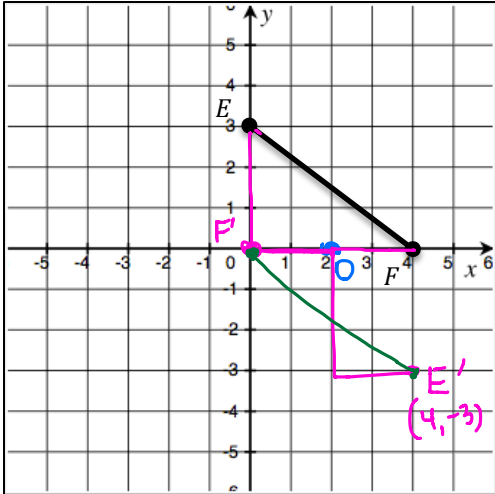
Rotate the figure 180 degrees around the origin.



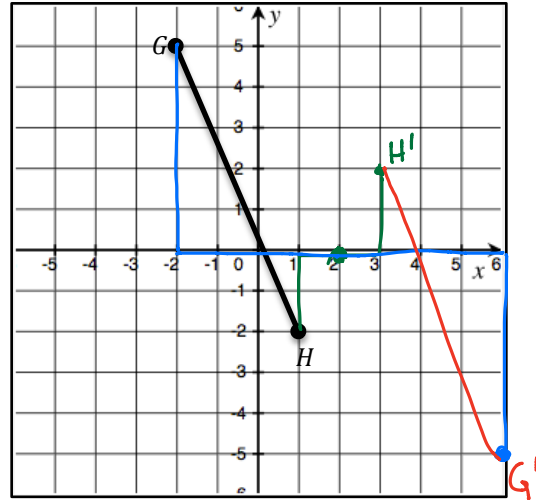
Rotate the figure 180 degrees around the origin.



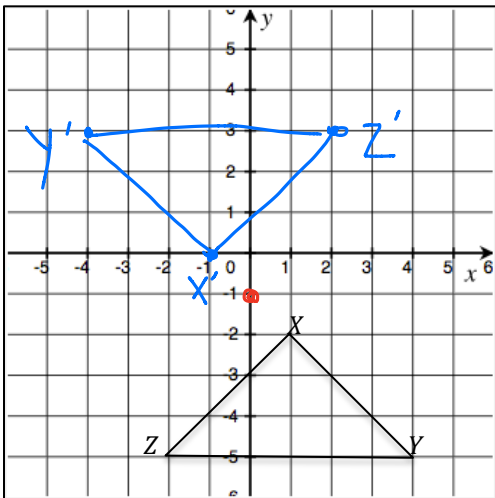
Rotate the line segment 180 degrees around the point (2,0)



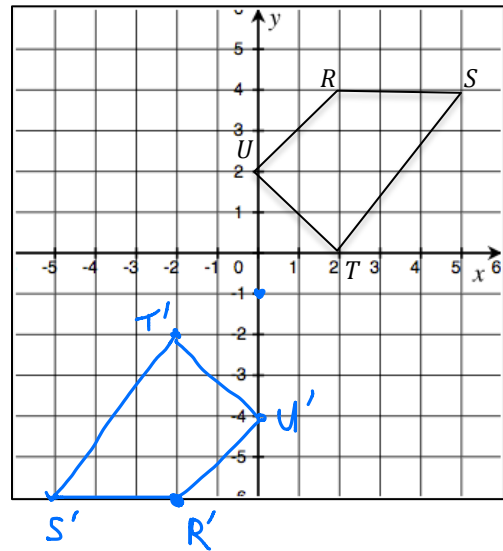
Rotate the line segment 180 degrees around the point (2,0)



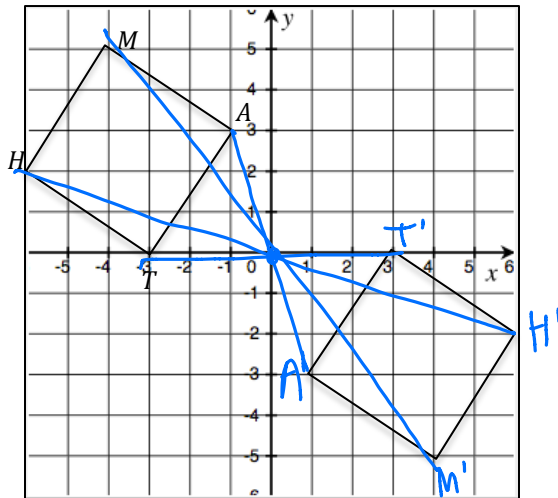
Rotate the triangle 180 degrees around the point (0, -1)



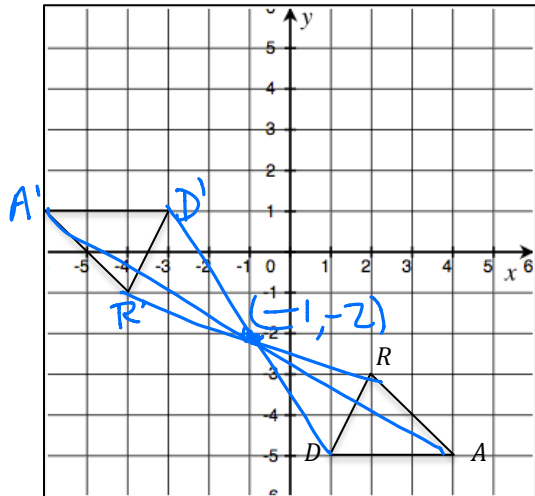
Rotate the quadrilateral 180 degrees around the point (0, -1)



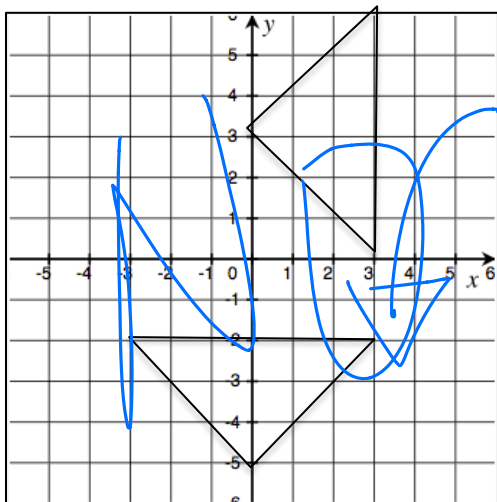
Could the following possibly be a 180 degree rotation? If so, around what point?



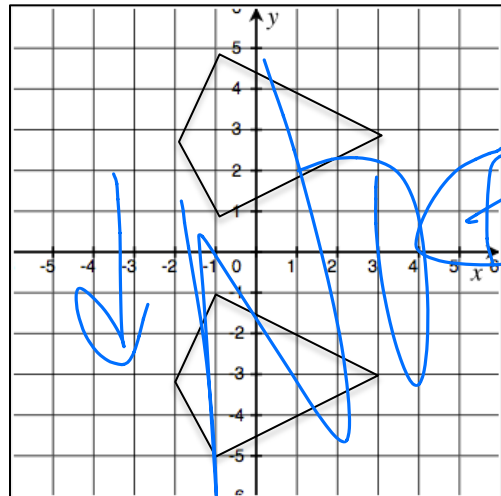
Could the following possibly be a 180 degree rotation? If so, around what point?



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**INDEPENDENT PRACTICE:**

Use reengagement lesson as practice...

**ACTIVATING PRIOR KNOWLEDGE:**

We know how to rotate an object around a point.

**CLOSURE:**

**TEACHER NOTES:**

Maps to lesson 6 from ENY Module 2 Grade 8

HW could possibly be from Illustrative Math: reflecting a rectangle over a diagonal