

7.1 Transformations
Pre-AP Geometry

Name _____
 Period _____ Date _____

Coordinate Notation:

1. If you followed the transformation rule below, where is the image of (4,3)?

$(x,y) \rightarrow (x+2, y-1)$ image: _____

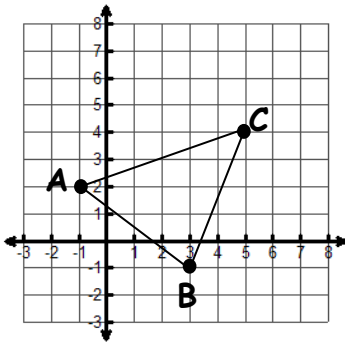
2. If you followed the transformation rule below, where is the image of (-1,3)?

$(x,y) \rightarrow (x-2, y-3)$ image: _____

Reflections:

For #1-3, graph the image. Show the mapping of ordered pairs by listing the pre-image and image points.

1. Find the image $\triangle A'B'C'$ in the line $x = 3$

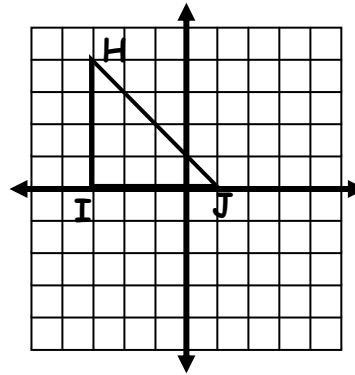


$A(-1, 2) \rightarrow$ _____

$B(3, -1) \rightarrow$ _____

$C(5, 4) \rightarrow$ _____

2. Reflect over $y = -x$.



$H(-3, 4) \rightarrow$ _____

$I(-3, 0) \rightarrow$ _____

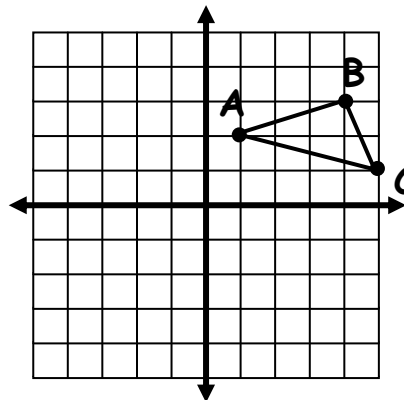
$J(1, 0) \rightarrow$ _____

3. Graph $A(1, 2)$, $B(4,3)$, $C(5, 1)$. Reflect across $y = 1$ and then $y = -2$.

a) graph the triangle and the lines of reflection

b) graph the image after each given reflection

c) list the coordinates of the each image



A' _____

B' _____

C' _____

A'' _____

B'' _____

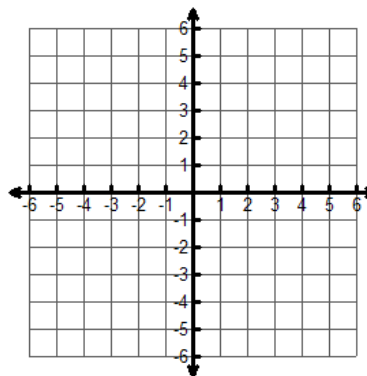
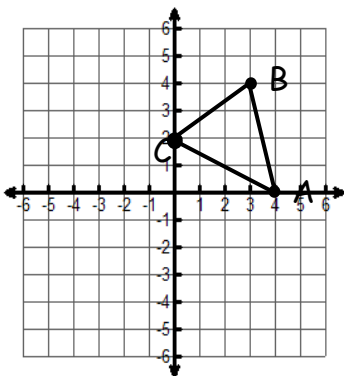
C'' _____

Rotations:

****When rotating, ALWAYS rotate in a _____ direction unless told otherwise.

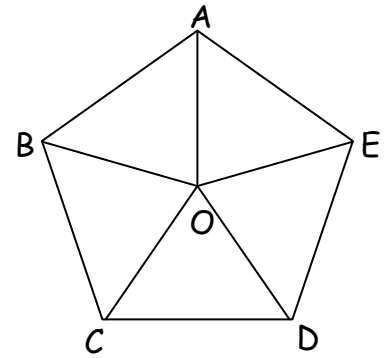
1. Rotate $\triangle ABC$ 90° about the origin.

2. Rotate $B(3, 4)$ 180° about the origin



Another way to do rotations is to use regular polygons.

3. Find the mapped point from the given point and angle of rotation about O. The pentagon is regular (all sides and angles are equal) How do you find the measure of $\angle AOB$ (the angle of rotation)? _____



- A) Point A rotated 72° is point _____
- B) Point C rotated 216° is point _____
- C) Segment AE rotated 144° is segment _____
- D) Angle BCD rotated 288° is angle _____

Symmetry:

Reflectional Symmetry - when you can draw a line so that the figure on one side of the line is a reflection of the figure on the other side of the line.

Rotational Symmetry - if you can rotate the figure less than or equal to 180 degrees and the resulting figure is the same as the original figure.

1) Which of following shapes have reflectional symmetry? Which have rotational symmetry?



Composition of Transformations:

1. Plot the points A (1, 6) B(3, 8) C(2, 10) to form triangle ABC. Then perform the following transformations:
 - a) rotate 90° counterclockwise
 - b) translate down 3 units

