Geometry DAY 1.5
Video Notes – Rotations

Name: _____
Date: _____

ROTATION: A ___transformation___ that turns a figure about a fixed point through a given angle and given direction. The amount of rotation is called the ___degree___ of ___rotation___ and it is measured in degrees. Figures can be rotated ___clockwise (cw)___ or ___counterclockwise (ccw)___. The rotations we are going to focus on are 90 degrees clockwise, 90 degrees counterclockwise, and 180 degrees around the origin.
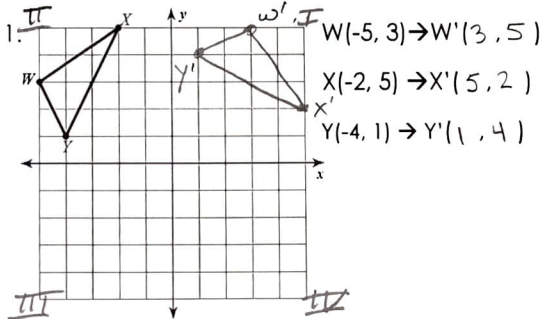
> ### ROTATIONS:
> 90 degrees clockwise: $(x, y) \rightarrow (y, -x)$
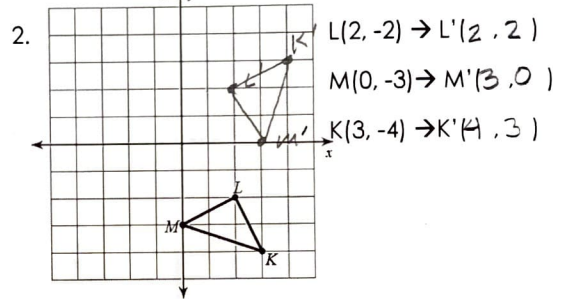> 90 degrees counterclockwise: $(x, y) \rightarrow (-y, x)$
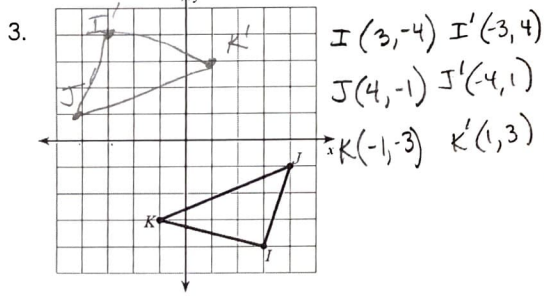> 180 degree rotation: $(x, y) \rightarrow (-x, -y)$

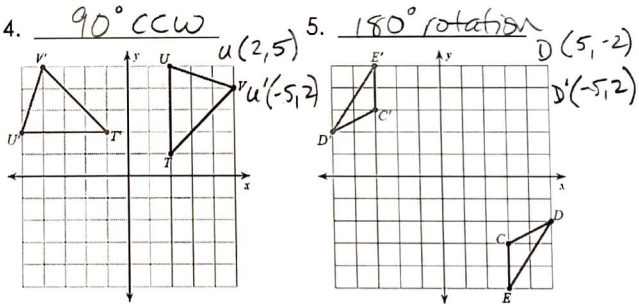**Let's Try!** ROTATE 90 DEGREES CLOCKWISE about the origin! (270 degrees CCW)

1.

W(-5, 3) → W'(3 , 5)
X(-2, 5) → X'(5 , 2)
Y(-4, 1) → Y'(1 , 4)

ROTATE 90 DEGREES COUNTERCLOCKWISE about the origin! (270 degrees CW)

2.

L(2, -2) → L'(2 , 2)
M(0, -3) → M'(3 , 0)
K(3, -4) → K'(4 , 3)

Let's Try! ROTATE 180 DEGREES about the origin!

3.

I (3, -4) I'(-3, 4)
J(4, -1) J'(-4, 1)
K(-1, -3) K'(1, 3)

Write the degree and direction of the rotation below!

4. ___90° CCW___

U(2, 5)
U'(-5, 2)

5. ___180° rotation___

D(5, -2)
D'(-5, 2)

If the vertices of ΔABC are A(0, 5), B(-4, 2), and C(10, -6), find the vertices of ΔA'B'C' after each of the ~~translations~~ rotations below.

a. $(x, y) \rightarrow (-y, x)$ A' = (-5, 0) B' = (-2, -4) C' = (6, 10) Transformation: ___90° CCC rotation___

b. $(x, y) \rightarrow (y, -x)$ A' = (5, 0) B' = (2, 4) C' = (-6, -10) Transformation: ___90° cw rotation___

c. $(x, y) \rightarrow (-x, -y)$ A' = (0, -5) B' = (4, -2) C' = (-10, 6) Transformation: ___180° rotation___