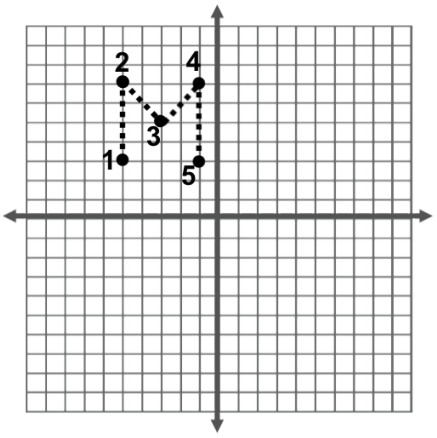
Geometry Honors
Unit 2: Transformations
2.2B Rotations of Segments and Figures

Mathematician: _____
Period:_____

LEVEL: EMERGING

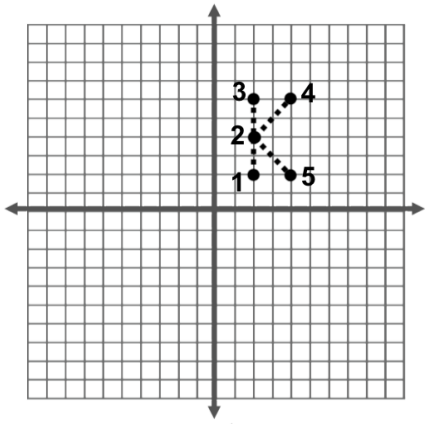
1) Directions: Rotate the image with the given angle of rotation about the origin.

a) 180° Clockwise



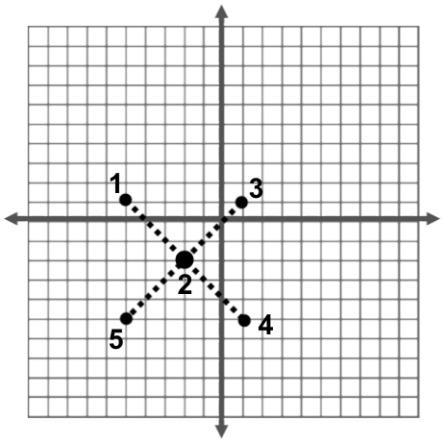
Pre-image	Image
1 ( )	1' ( )
2 ( )	2' ( )
3 ( )	3' ( )
4 ( )	4' ( )
5 ( )	5' ( )

b) 90° Counterclockwise



Pre-image	Image
1 ( )	1' ( )
2 ( )	2' ( )
3 ( )	3' ( )
4 ( )	4' ( )
5 ( )	5' ( )

c) 270° Counterclockwise



Pre-image	Image
1 ( )	1' ( )
2 ( )	2' ( )
3 ( )	3' ( )
4 ( )	4' ( )
5 ( )	5' ( )s

LEVEL: PROFICIENT

2) Directions: Determine the coordinates of the indicated vertices of the triangle rotated 180˚ clockwise about the origin.

a) A(-7,9), B (9,-9) , C (6,7)

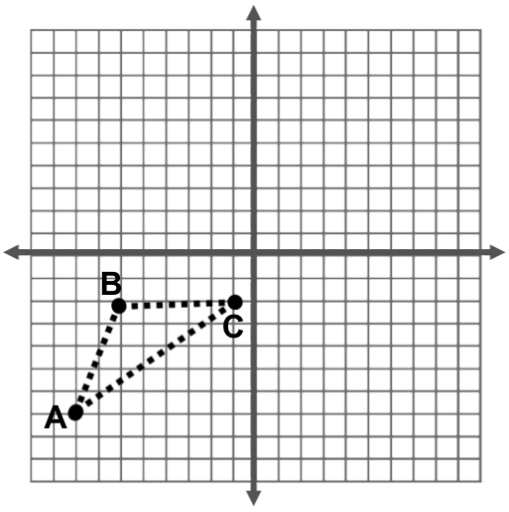
b) A(-3,5), B (5,-5) , C (0,7)

3) Directions: Determine the coordinates of the indicated vertices of the triangle rotated 90˚ counterclockwise about the origin.

a) A(-10,-8), B (-4,7) , C (-1,-6)

b) A(4,-6), B (-3,8) , C (-5,-4)

4) Directions: Sketch the resulting triangle after the indicated rotation about the point (2,1). Then list the new vertices.



a) Rotation 180°

A'(____ , ____) B'(____ , ____) C'(____ , ____)

b) 90° counterclockwise

A'(____ , ____) B'(____ , ____) C'(____ , ____)

c) 90° clockwise

A'(____ , ____) B'(____ , ____) C'(____ , ____)

5) Describe **<u>in your own words</u>** what a "rotation" is.

6) Describe **<u>in your own words</u>** what the "center of rotation" is.

7) Which of the following coordinates describes a 180° clockwise rotation of the point $(-a, b)$ about the origin?

(a) $(-a, -b)$
(b) $(a, -b)$
(c) $(-a, b)$
(d) (a, b)

8) Which of the following coordinates describes a 90° counterclockwise rotation of the point $(-a, b)$ about the origin?

(a) $(-a, -b)$
(b) $(-b, -a)$
(c) (a, b)
(d) (b, a)

9) Rotate $\overline{ML}$ 90° counterclockwise about the origin. The coordinates are $M(-4,2)$ and $L(2, -7)$. Which of the following statements are true.

(a) M' will be located in quadrant III
(b) L' will be located in quadrant II
(c) The slope of $\overline{M'L'}$ is positive
(d) The slope of $\overline{M'L'}$ is negative
(e) All points are positive

10) A point $B(-1, -2)$ is being rotated 180 ° clockwise about the origin. What are the coordinates of the image of B?

x −coordinate: _____ y −coordinate: _____

Sum: _____