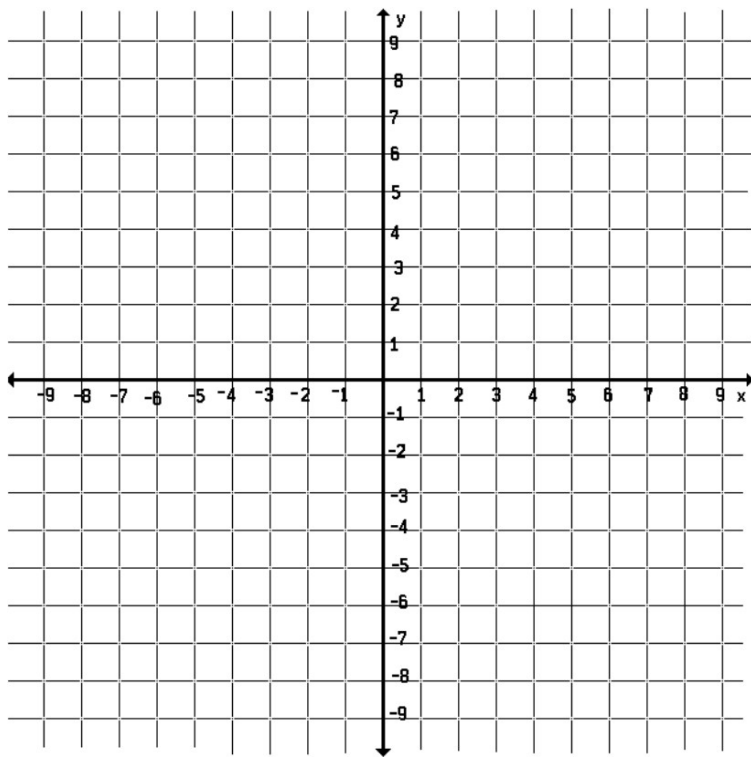# Module 1: Topic 1 Lesson 5 Assignment

1. A **ROTATION** is a rigid motion transformation that _____ a figure about a point

2. Anytime a **rotation** is performed, the pre-image and image **will always** be_____.

Use the graph below to answer question 3.

3. **Use ΔJKL and the coordinate plane to answer each question**
   a. Plot the coordinates on the graph to the left.

   J (5, 5)   K (6, 9)   L (8, 7)

   b. Rotate the figure **90° counterclockwise** about the origin.

Coordinates of triangle	Coordinates after rotation
J(5, 5)	J'
K(6, 9)	K'
L(8, 7)	L'

   c. Write the rule for the **rotation**.

   (x, y)----> _____

4. Use the coordinates of the pre-image to determine how the trapezoid was rotated.

Pre-image	Image
A (-2,5)	A' (5, 2)
B (3,-8)	B' (-8, -3)
C (6, 8)	C' (8, -6)
D (-9, 5)	D' (5, 9)

The pre-image was rotated (circle one)
   (a) 90° counterclockwise
   (b) 90° clockwise
   (c) 180°

5. Without graphing, determine the coordinates of the image after a **rotation of 180°**.

Pre-image	Image
X (7, 2)	X'
Y (3,-5)	y'
Z (-6, 0)	Z'

Write the rule for the **rotation**.

   (x, y)----> _____

6. Determine the coordinates of each triangle **without** graphing (use the rules).

A) Triangle ABC with coordinates A(3, 4) B(7, 7) C(8, 1) is **rotated 90° counterclockwise.**

   A' _____ B' _____ C' _____

B) Triangle ABC with coordinates A(3, 4) B(7, 7) C(8, 1) is **rotated 90° clockwise.**

   A'' _____ B'' _____ C'' _____

C) Triangle ABC with coordinates A(3, 4) B(7, 7) C(8, 1) is **rotated 180°.**

   A''' _____ B''' _____ C''' _____

REVIEW

1. The _____ is the original figure.

2. The _____ is the figure after the transformation.

Determine the coordinates of the image following each given translation <u>without</u> graphing.

3. Triangle ABC with coordinates   A(2, -4)   B(-3, 6)   C(5, -1) **is <u>translated 6 units to the left and 5 units up</u>.**

   A' (_____, _____) B' (_____, _____) C' (_____, _____)

4. Triangle XYZ with coordinates   X(-2, 2)   Y(1, 5)   Z(0, -1) **is <u>translated 2 units to the right and 7 units down</u>.**

   X' (_____, _____) Y' (_____, _____) Z' (_____, _____)

5. Parallelogram DEFG with coordinates   D(0, 2) E(1, 5) F(6, 5) and G(5,2) is **<u>reflected over the y-axis</u>.**

   D' (_____, _____) E' (_____, _____)   F' (_____, _____) G' (_____, _____)

6. Quadrilateral ABCD with coordinates   A(-5, 1) B(0, -3) C(6, 2) and D(-4, -2) is **<u>reflected over the x-axis</u>.**

   A' (_____, _____) B' (_____, _____)   C' (_____, _____) D' (_____, _____)