Geometry CC – Mr. Valentino
Unit 4 Lesson 5: Rotations

Name: _____
Date: _____ Period: _____

Aim: What are rotations?

Do Now:

a) $r_{x\text{-axis}}(-4, 5.5) =$

b) $r_{y\text{-axis}}(-4, -6) =$

c) $T_{3, -5}(4, 5) =$

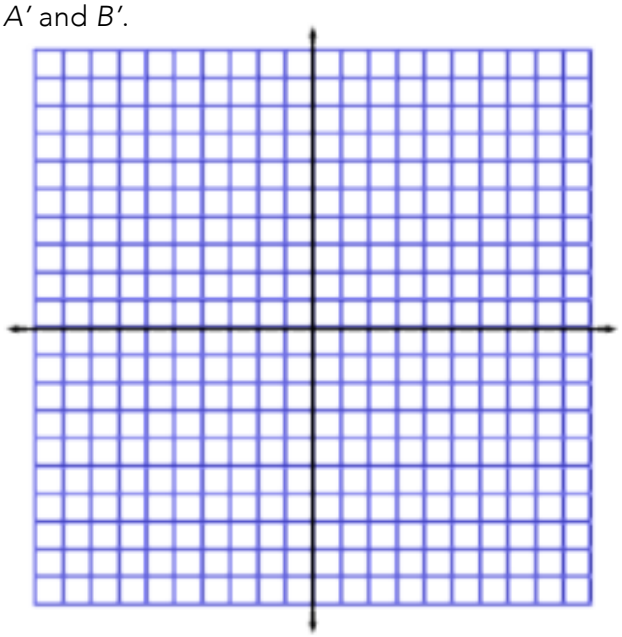
d) $T_{-4, -8}(-2, -7) =$

Rotation -

1. Graph the segment with endpoints $A(2, 1)$ and $B(6, 3)$. Rotate this line segment about the origin by 90°. Call this new line segment $A'B'$, and state the coordinates of A' and B'.

Under a rotation of 90° counterclockwise about the **origin**

$R_{O, 90°}(x, y) = (\_\_\_, \_\_\_)$



Under a rotation of 180° counterclockwise about the **origin**

$R_{O, 180°}(x, y) = (\_\_\_, \_\_\_)$

Under a rotation of 270° counterclockwise about the **origin**

$R_{O, 270°}(x, y) = (\_\_\_, \_\_\_)$

What do you think you should do if you were given this transformation?

$$R_{O,\,-90^\circ}$$

Let's Practice!

a] $R_{O,90^\circ}(4,7) =$

b] $R_{O,90^\circ}(-3,11) =$

c] $R_{O,90^\circ}(13,-9.6) =$

e] $R_{O,180^\circ}(2,8) =$

f] $R_{O,180^\circ}(-5,-99) =$

g] $R_{O,180^\circ}(-7,4.3) =$

i] $R_{O,270^\circ}(-5,-2) =$

j] $R_{O,270^\circ}(3,-86) =$

k] $R_{O,270^\circ}(-6,0) =$

Let's do some practice. It's graphing time!

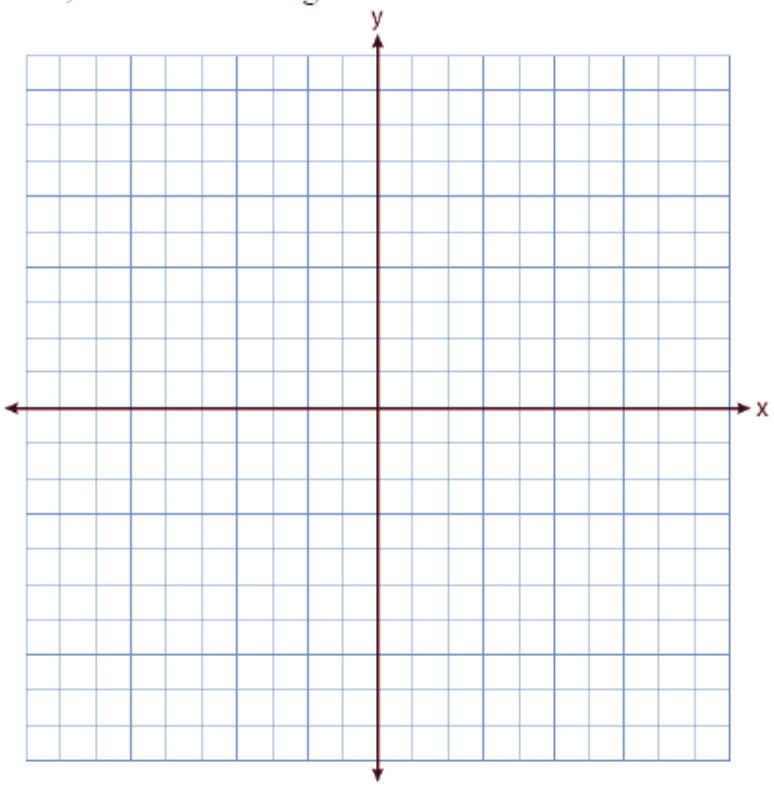
1)

Triangle ABC has coordinates: $A(-6, 2)$ $B(-7, 5)$ $C(-1,3)$

a] On the grid, graph ΔABC, and then graph $\Delta A'B'C'$, which is the image of ΔABC after $R_{O,90^\circ}$.

b] On the same grid, graph triangle $\Delta A''B''C''$, which is the image of ΔABC after $R_{O,180^\circ}$

c] On the same grid, graph triangle $\Delta A'''B'''C'''$, which is the image of ΔABC after $R_{O,270^\circ}$



2)

Triangle ABC has coordinates: $D(1, -2)$ $E(8, -3)$ $F(9, -7)$

a] On the grid, graph ΔDEF , and then graph $\Delta D'E'F'$, which is the image of ΔDEF after $R_{O,90°}$.

b] On the same grid, graph triangle $\Delta D''E''F''$, which is the image of ΔDEF after $R_{O,180°}$

c] On the same grid, graph triangle $\Delta D'''E'''F'''$, which is the image of ΔDEF after $R_{O,270°}$