6.3 Rotations Homework **Name:**
Geometry **Date:** **Period:**

1. Quadrilateral *ABCD* is plotted on the graph below. Determine the coordinates of each of the following rotations and then graph each image.

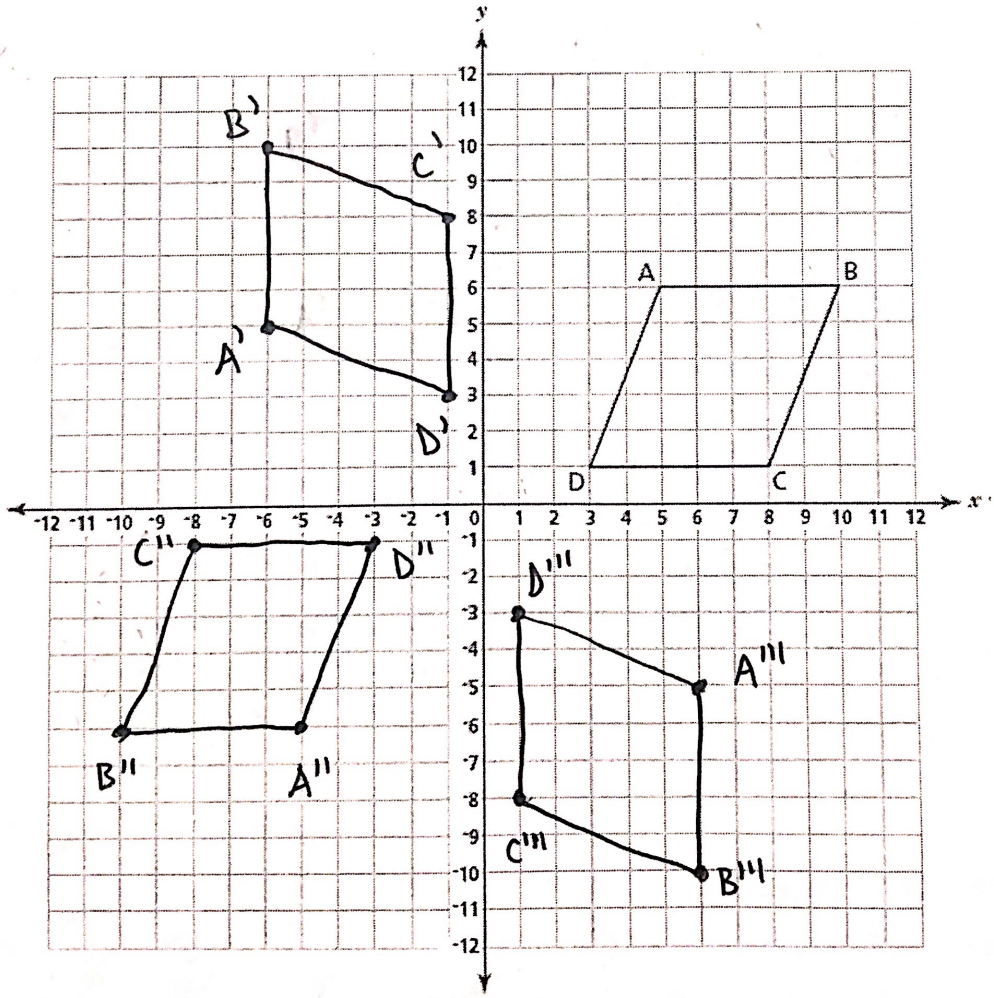
a) Rotate Quadrilateral ABCD 90°. (-y, x)
Label the quadrilateral A′ B′ C′D′.

b) Rotate Quadrilateral ABCD 180°. (-x, -y)
Label the quadrilateral *A″ B″ C″D″*.

A	(5, 6)	→	*A′*	(-6, 5)	*A* (5, 6)	→	*A″* (-5, -6)
B	(10, 6)	→	*B′*	(-6, 10)	*B* (10, 6)	→	*B″* (-10, -6)
C	(8, 1)	→	*C′*	(-1, 8)	*C* (8, 1)	→	*C″* (-8, -1)
D	(3, 1)	→	*D′*	(-1, 3)	*D* (3, 1)	→	*D″* (-3, -1)

c) Rotate Quadrilateral ABCD 270°. (y, -x)
Label the quadrilateral *A‴ B‴ C‴ D‴*.

A	(5, 6)	→	*A‴*	(6, -5)	*C* (8, 1)	→	*C‴* (1, -8)
B	(10, 6)	→	*B‴*	(6, -10)	*D* (3, 1)	→	*D‴* (1, -3)



2. Using your transformation rules, determine the coordinates of the images of each of the following pre-images using the given rotations.

a) Pre-Image: (3 , -6)
(-y, x) 90° Rotation: (6 , 3)
(-x, -y) 180° Rotation: (-3 , 6)
(y, -x) 270° Rotation: (-6 , -3)

b) Pre-Image: (-1 , 4)
(-y, x) 90° Rotation: (-4 , -1)
(-x, -y) 180° Rotation: (1 , -4)
(y, -x) 270° Rotation: (4 , 1)

3. Draw the final image created by rotating polygon *ABCD* 90° counterclockwise about the origin.

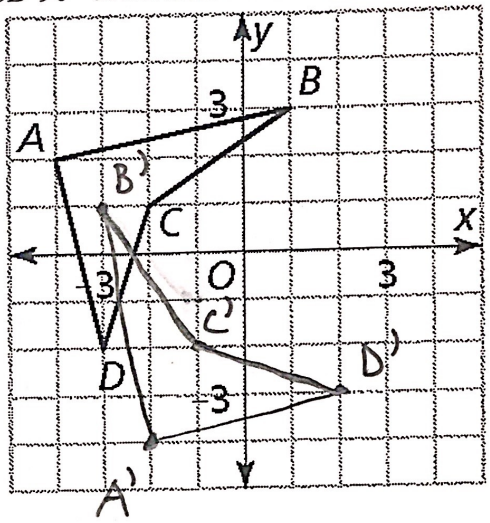
(-y, x)

A (-4, 2) → *A'* (-2, -4)

B (1, 3) → *B'* (-3, 1)

C (-2, 1) → *C'* (-1, -2)

D (-3, -2) → *D'* (2, -3)



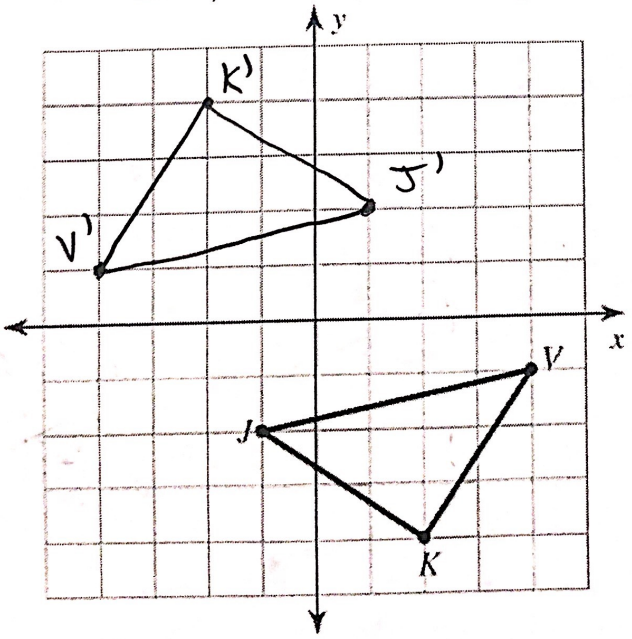
4. Determine the coordinates of each of the following rotations and then graph each image.

a) Rotate 180° counterclockwise. (-x, -y)

J (-1, -2) → *J'* (1, 2)

V (4, 1) → *V'* (-4, -1)

K (2, -4) → *K'* (-2, 4)



b) Rotate 270° counterclockwise. (y, -x)

J (-1, -2) → *J'* (-2, 1)

V (4, -1) → *V'* (-1, -4)

K (2, -4) → *K'* (-4, -2)