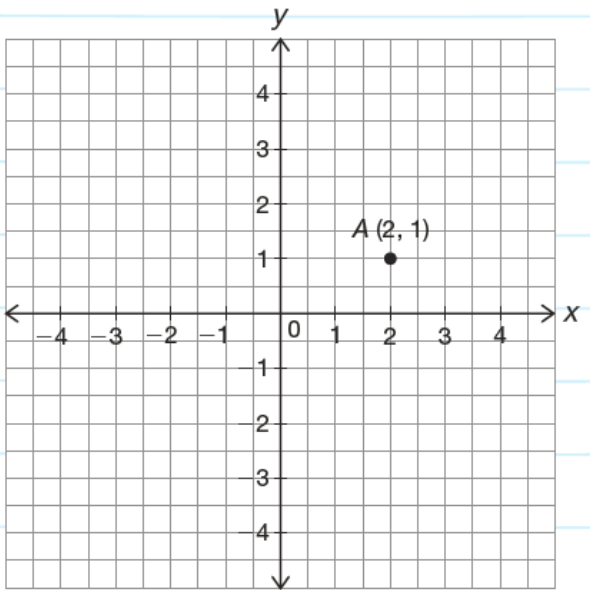We have translated and rotated figures so far this week, what is the last transformation we will discuss?

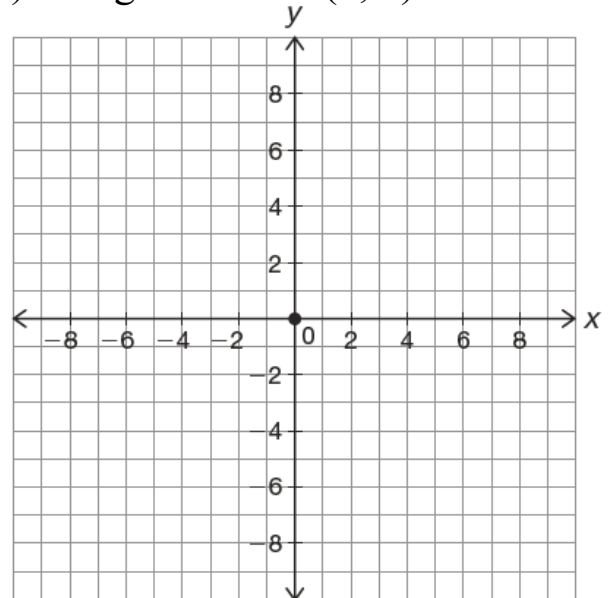To rotate a figure, you must have a _____ and _____. A figure can be rotated _____ or _____.

For today's lesson, we are focusing on rotations of 90, 180, and 270 degrees about the origin.

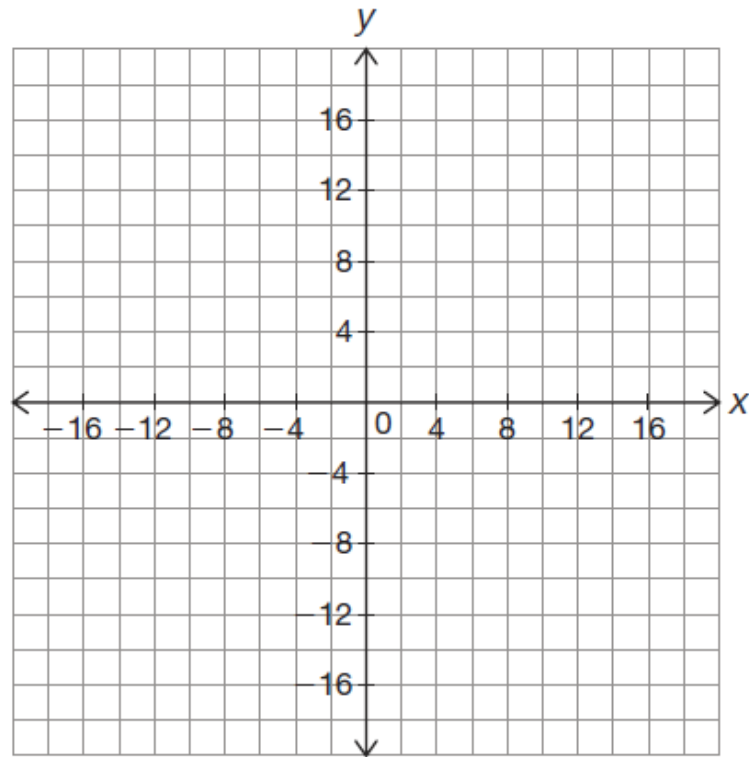Rotate the given point 90, 180, and 270 degrees counter-clockwise about the origin.

Ex 1).

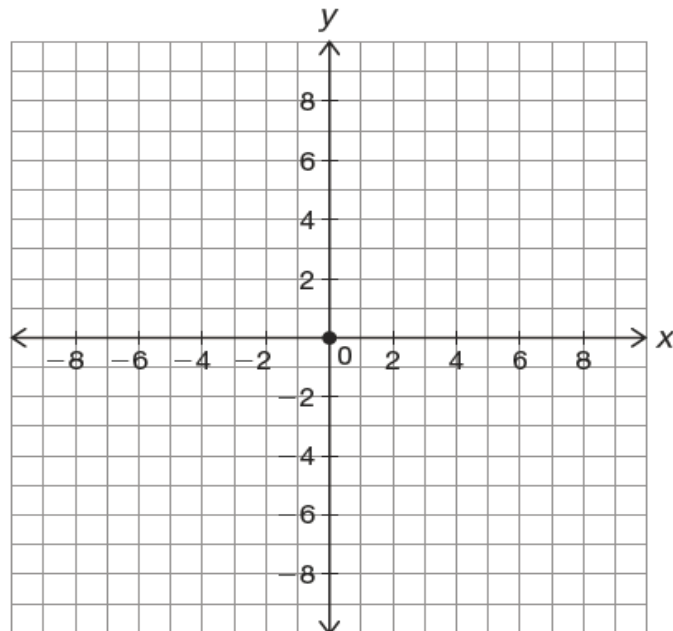Ex 2). Original Point: (5, 7)

Let's fill out this table using what we found from the examples.

	Original Point	90	180	270
Example 1				
Example 2				
	(x, y)			

Ex 3). Graph quadrilateral *ABCD* by plotting the points *A* (-12, 9), *B* (-12, 4),
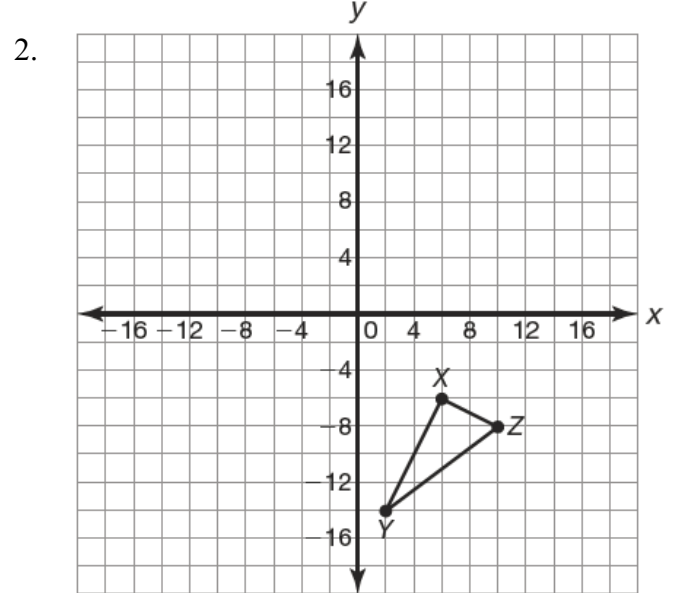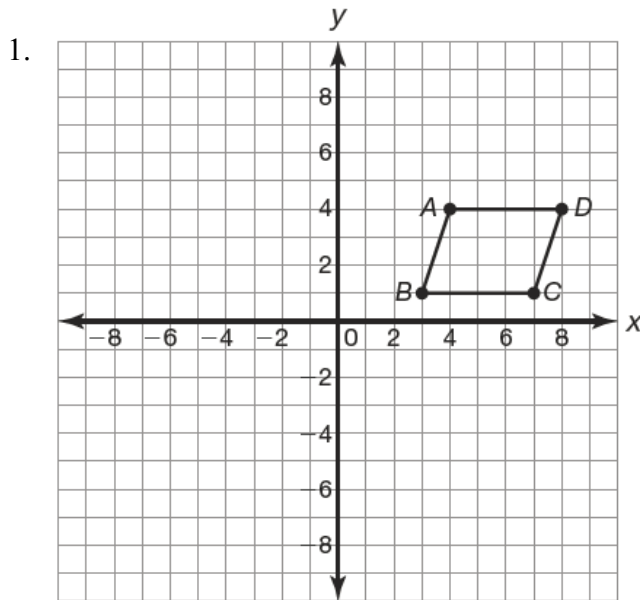C (-4, 4), and *D* (-4, 10). Rotate the figure 90, 180, and 270 degrees about
the origin.

Ex 4). △*JKL* has vertices J(2, 6), K(5, 2), and L(7, 5). Rotate the figure 90, 180,
and 270 degrees about the origin.

Coordinate Algebra   _____

Assignment: Rotations   _____

For #1-2, rotate each figure 90, 180, and 270 degrees about the origin.

1.

2.

3. Quadrilateral WXYZ has vertices W(-3,4), X(0,7), Y(3,4), and Z(0,1). $W'X'Y'Z'$ is produced by rotating WXYZ 90 degrees counter-clockwise about the origin. Give the vertex coordinates for $W'X'Y'Z'$.

4. Triangle RST has vertices R(-6,-1), S(-4,-5), and T(-2,-1). Triangle $R'S'T'$ is produced by rotating triangle RST 180 degrees about the origin. Give the vertex coordinates for $R'S'T'$.

5. Triangle FGH has vertices F(2,4), G(5,6), and H(7,2). What would be the new vertex coordinates if triangle FGH was rotated 270 degrees **CLOCKWISE**?

Challenge: A weathervane is used to indicate the direction of the wind. If the vane is pointing northeast and rotates 270°, what is the new wind direction?