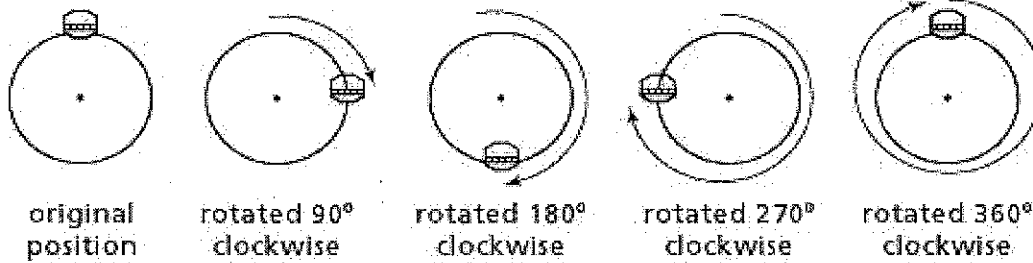Name: _Key_   Date: _____   Period: _____

In a Spin 1.2 ADV

A **rotation** is a transformation that turns a figure around a fixed point called the **center of rotation**. A rotation is **clockwise** if its direction is the same as that of a clock hand. A rotation in the other direction is called **counterclockwise**. A complete rotation is 360°.

A Ferris wheel makes a 90° rotation with every $\frac{1}{4}$ turn.

original position	rotated 90° clockwise	rotated 180° clockwise	rotated 270° clockwise	rotated 360° clockwise

1. Plot the following points on the coordinate plane. Then, rotate each point 90° clockwise about the origin. Label the new points A', B', and C' and list their coordinates below.
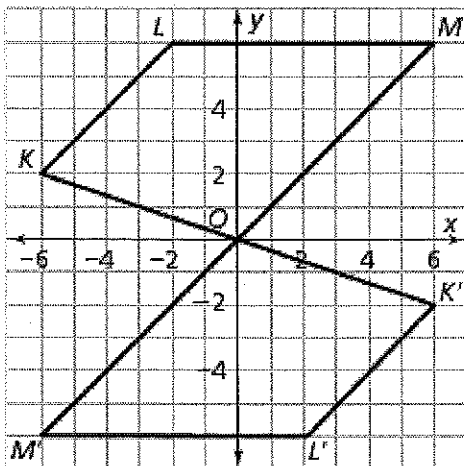
   Center of Rotation.

   A (1,1)   A' $(1, -1)$

   B (1,3)   B' $(3, -1)$

   C (3,1)   C' $(1, -3)$
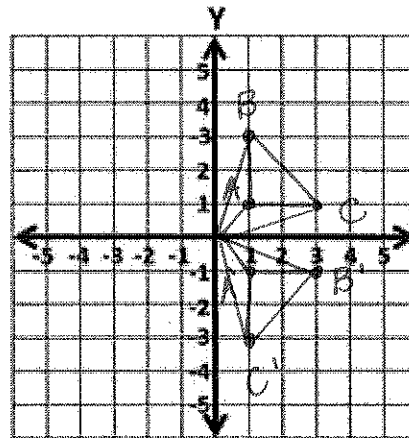
   * each point forms a 90° angle clockwise using the C.O.R as the vertex.
   X The point & its corresponding point are equal in distance to the C.O.R.

The rotation of figure KLMO 180° about (0,0) is shown. In K'L'M'O, point K' is the rotation of point K, point L' is the rotation of point L, and point M' is the rotation of point M.

2. Using a ruler, compare the lengths of segment OM and segment OM'. What do you notice?

   $\overline{OM} = 3.6$ cm $\overline{OM'} = 3.6$ cm

   They are equal.

3. What other pairs of side lengths have the same relationship as OM and OM'?

   $\overline{OK}$ & $\overline{OK'}$
   $\overline{LK}$ & $\overline{L'K'}$
   $\overline{LM}$ & $\overline{L'M'}$

4. Measure each corresponding angle. What do you notice about the angle pairs?

   m ∠K __65°__   m ∠L __135°__   m ∠M __45°__   m ∠O __115°__

   m ∠K' __65°__   m ∠L' __135°__   m ∠M' __45°__   m ∠O' __115°__

   Corresponding angles are congruent.

5. When a point is rotated, how does its distance from the center of rotation change?

It remains the same.

6. Describe the movement of the point at the center of rotation. What happens to point O when the figure is rotated?

It does not move. It is fixed.

7. When you rotate a figure 180°, does it matter whether you rotate it clockwise or counterclockwise? Explain.

No, both directions would end up in the same place. ccw 〈 〉 cw

8. When **rotating** a figure, what can you summarize about each of the following?

The corresponding angles _are congruent_

The corresponding side lengths _are congruent_