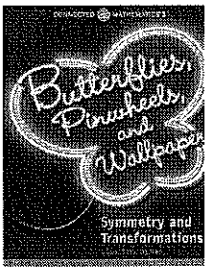
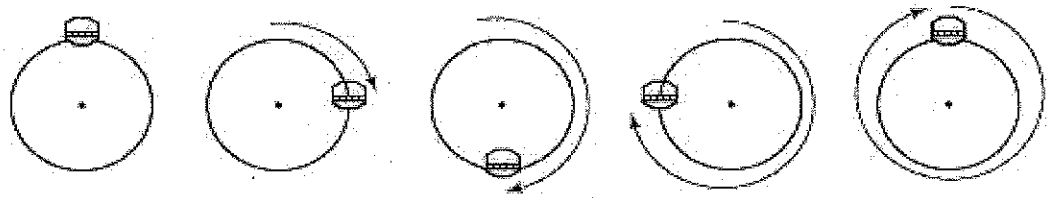
Name: Key Date: _____ Period: _____



In a Spin 1.2 OL

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°.

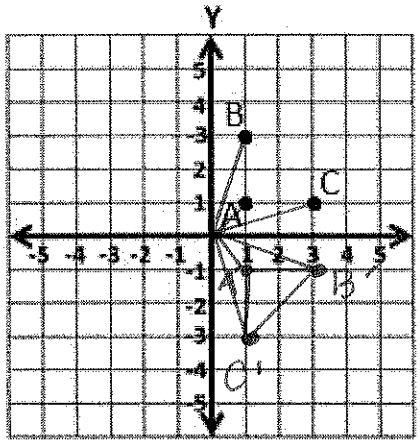
A Ferris wheel makes a 90° rotation with every $\frac{1}{4}$ turn.



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

center of rotation.

1. Points A, B, and C are plotted to the right. Imagine rotating each point 90° clockwise about the origin. What would be the new coordinates A′, B′, and C′?



*each point forms a 90° clockwise angle with the center of rotation as the vertex. The point & its corresponding point are equal in distance to center of rotation.

a. A′ (-1, 1) B′ (-3, 1) C′ (-1, 3)

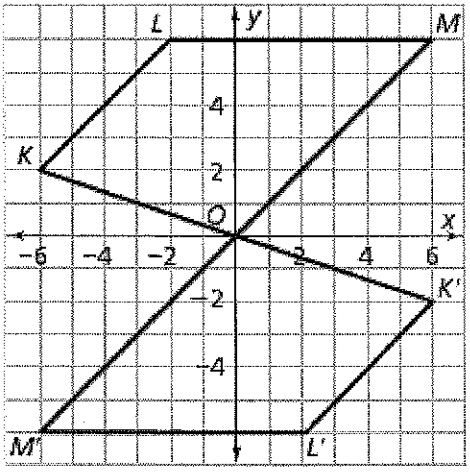
b. A′ (1, 1) B′ (-2, 1) C′ (1, 3)

c. A′ (1, -1) B′ (3, -1) C′ (1, -3)

d. A′ (-1, -1) B′ (-3, -1) C′ (-1, -3)

*hint: Think about which quadrant you would be in after rotation.

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

They are equal.

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

$\overline{OK}$ & $\overline{OK'}$ $\quad \overline{LK}$ & $\overline{L'K'}$

$\overline{LM}$ & $\overline{L'M'}$

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.

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 location.

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