

## 8.3 Rotations Day 1

TSW understand concept of rotation

\*drawing images after rotation

\*find coordinates of points after rotation

### Vocabulary

Clockwise

Counter clockwise

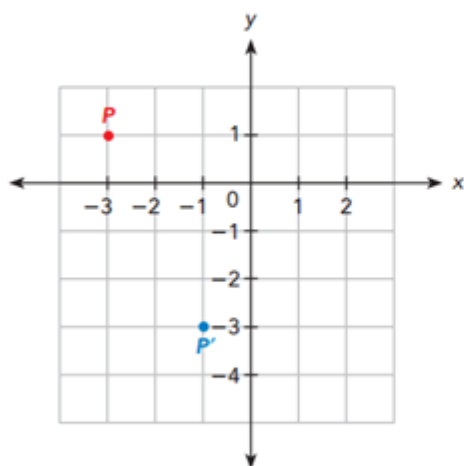
Take out Math book and Turn to Example 10. You will also need to take out a protractor.

### Guided Practice

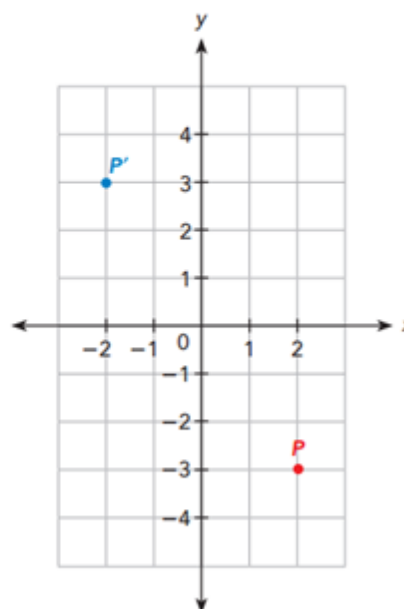
Solve. Show your work.

- 1  $P$  is rotated counterclockwise to  $P'$  about the origin. Copy each graph onto a coordinate plane. State the angle of rotation.

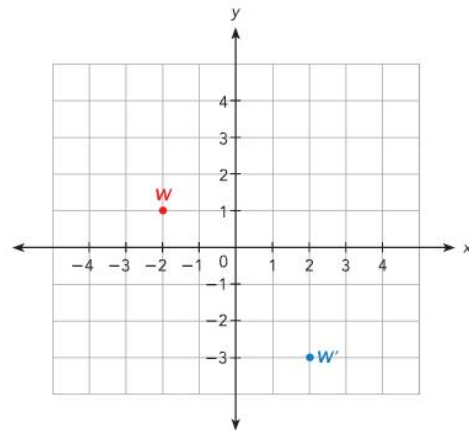
a)



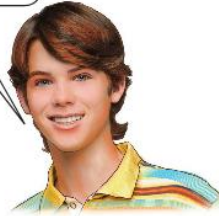
b)



- 2 The tip of a fan blade for a ceiling fan rotates from position  $W$  to  $W'$ . The angle of rotation is  $180^\circ$ .



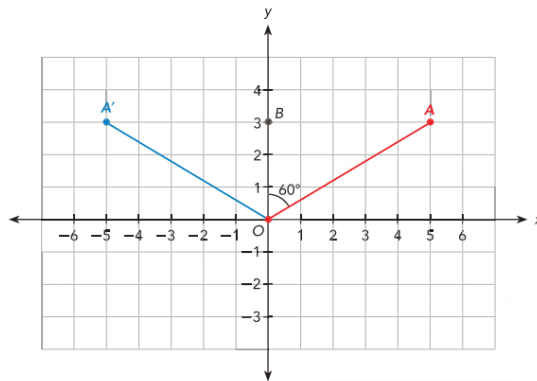
A  $180^\circ$  rotation is also called a **half turn**. You do not have to include the direction of rotation for half turn, because  $180^\circ$  clockwise is the same as  $180^\circ$  counterclockwise.



- a) On a copy of the graph, mark and label the center of rotation as  $T$ .
- b)  $W'$  is rotated  $90^\circ$  clockwise to  $W''$  about the center  $T$ . Label  $W''$  on the graph in a).

**Example 11 Rotate a line segment.**

The windshield wiper on a car is swept through a counterclockwise rotation from  $A$  to  $A'$  about the origin,  $O$ .  $B$  is the point at  $(0, 3)$ . If  $m\angle AOB = 60^\circ$ , what is the angle of rotation?



**Guided Practice**

Complete.

- 3 The hour hand of a clock turns through an angle from 12 noon to 4 P.M. State the following.
- a) The center of rotation
- b) The angle and direction of rotation

