

## 9.3 Properties of Rotations

**Essential Question:** How do you describe the properties of rotation and their effect on the congruence and orientation of figures?

**Learning Goal:** Students will be able to verify experimentally the properties of rotations. **MAFS.8.G.1.1a, MAFS.8.G.1.1b, MAFS.8.G.1.1c, and MAFS.8.G.1.3**

**Questions:**

**Notes:**

### Exploring Rotations

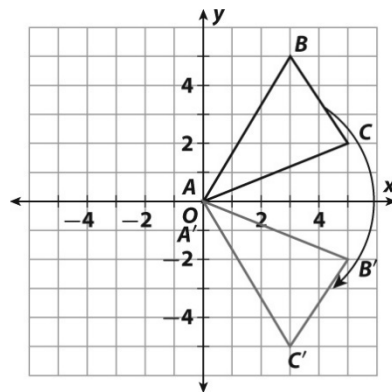
A rotation is a transformation that turns a figure around a given point called the center of rotation. The image has the same size and shape as the preimage.



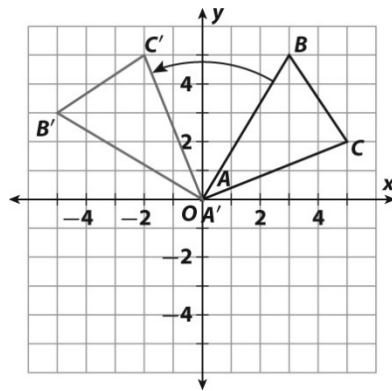
### Graphing Rotations

To rotate a figure in the coordinate plane, rotate each of its vertices. Then connect the vertices to form the image.

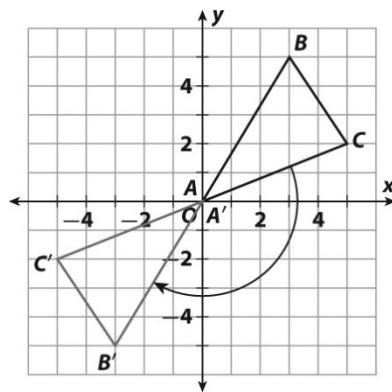
At the right, triangle  $ABC$  has been rotated  $90^\circ$  clockwise. The resulting figure is triangle  $A'B'C'$ .



Below are two more rotations of triangle  $ABC$ .



90° counterclockwise rotation



180° clockwise rotation