Objective 1  Draw and Identify Rotation Images of Figures

Rotation About a Point
A rotation of $x^\circ$ about a point $R$, called the _______ of ________, is a transformation with these two properties:
- The image of $R$ is itself (that is, $R' = _______)$.
- For any other point $V$, $RV' = RV$ and $m\angle VRV' = x^\circ$.

The positive number of degrees a figure rotates is the _______ of ________. A rotation about a point is an isometry.

Work Video Exercise 1 with me.
1. Draw the image of the figure for a $60^\circ$ rotation about $P$. Use prime notation to label the vertices of the image.
Section 8.4 Rotations

**Pause and work Video Exercise 2.**

2. Draw the image of $JK$ for a 180° rotation about $P$. Use prime notation to label the vertices of the image.

![Diagram of J, K, and P]

**Play and check.**

**Pause and work Video Exercise 3.**

3. Point $O$ is the center of regular hexagon $HEXAGN$. Find the image of $NG$ for a 240° rotation about $O$.

![Diagram of a regular hexagon with points H, E, X, N, G, A, and O]

**Play and check.**
4. Find the angle of rotation about $C$ that (a) maps $Q$ to $X$ and (b) maps $X$ to $Q$. Use counterclockwise rotation.

5. Draw the image of $\triangle XYZ$ for a rotation of $135^\circ$, then $180^\circ$ about point $Y$.

6. Find the angle of rotation about $C$ that maps the figure with solid lines to the figure with dotted lines.

Play and check.
Objective 2  Identify Rotational Symmetry

A figure has _______ symmetry if there is a rotation of 180° or less for which the figure is its own image. The angle of rotation for this is the smallest angle for the figure to rotate onto itself.

Pause and work Video Exercise 7.

7. If the figure has rotational symmetry, tell the angle of rotation.

Play and check.