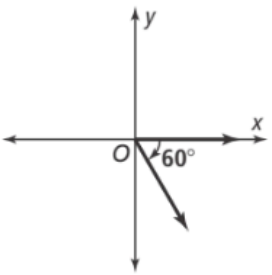
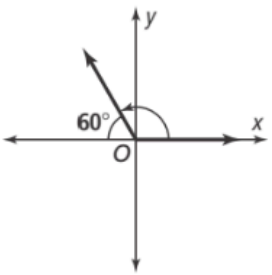
Answer Key

Angles and the Unit Circle

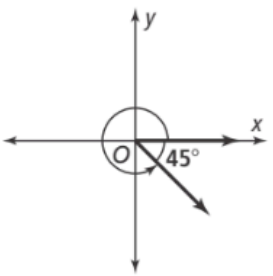
Find the measure of each angle as a positive angle measure, a negative angle measure, and an angle measure that is greater than 360°.

1. 

300°, −60°, 660°

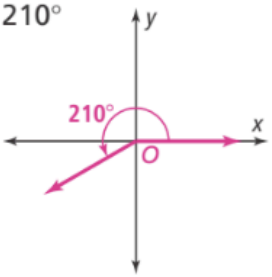
2. 

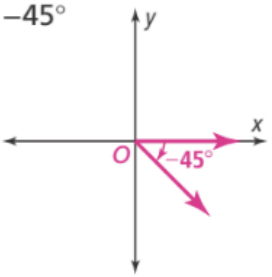
120°, −240°, 480°

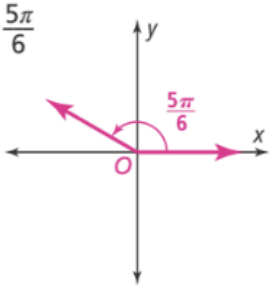
3. 

315°, −45°, 675°

Sketch each angle in standard position.

4. 210° 

5. −45° 

6. $\frac{5\pi}{6}$ 

Find the measure of an angle in standard position for each reference angle.

7. 10° in Quadrant II **170°** 8. 35° in Quadrant IV **325°** 9. 34° in Quadrant III **214°**

Convert each angle to degrees.

10. $\frac{3\pi}{2}$ = **270°** degrees 11. $-\frac{6\pi}{5}$ = **144°** degrees 12. $\frac{7\pi}{4}$ = **315°** degrees

Convert each angle to radians.

13. 140° degrees = $\frac{7\pi}{9}$ 14. −160° degrees = $-\frac{8\pi}{9}$ 15. 330° degrees = $\frac{11\pi}{6}$

16. A Ferris wheel rotates $\frac{9\pi}{8}$ radians prior to making a stop. The total height of the Ferris wheel is 246 ft. How far around did the Ferris wheel travel? Round to the nearest whole foot. **435 ft**

17. How does the formula for the circumference of a circle relate to one rotation around the unit circle?

You multiply the radius of a circle by 2π to find its circumference. One rotation around the unit circle is 2π radians.