Review Exercise Set 1

Exercise 1: Convert the given degree measurement into radians. Leave your answer as a multiple of π.

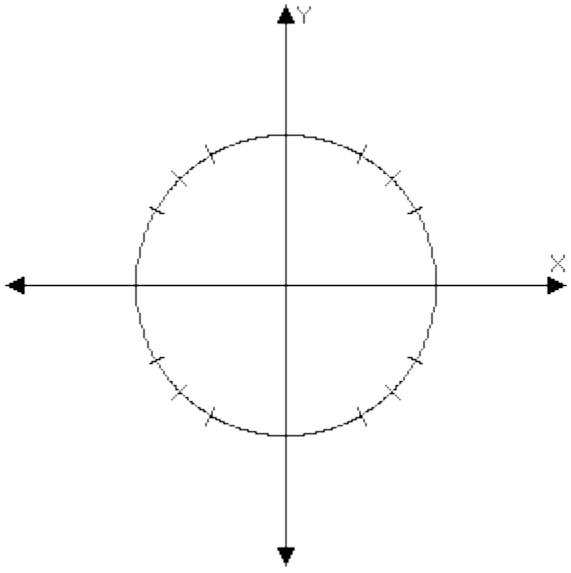
120°

Exercise 2: Convert the given radian measurement into degrees.

$$\frac{9\pi}{4}$$

Exercise 3: Use graph below to draw the given angle in standard position and state the quadrant in which the angle lies.

-195°



Exercise 4: Find a positive angle less than 360° or 2π that is coterminal with the given angle.

$$\frac{11\pi}{3}$$

Exercise 5: Find the length of the arc on a circle with the given radius and intercepted by the given central angle. Express the answer in both terms of π and in decimal form rounded off to two places.

r = 4 and $\theta = \frac{5\pi}{3}$

Review Exercise Set 1 Answer Key

Exercise 1: Convert the given degree measurement into radians. Leave your answer as a multiple of π.

120°

Multiply the given degree measurement by $\frac{\pi}{180^\circ}$ and reduce

$$120^\circ \times \frac{\pi}{180^\circ} = \frac{120\pi}{180}$$
$$= \frac{2\pi}{3}$$

Exercise 2: Convert the given radian measurement into degrees.

$$\frac{9\pi}{4}$$

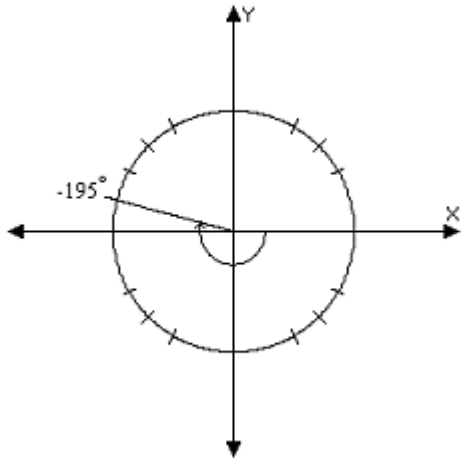
Multiply the given radian measurement by $\frac{180^\circ}{\pi}$ and reduce

$$\frac{9\pi}{4} \times \frac{180^\circ}{\pi} = \frac{1620^\circ\pi}{4\pi}$$
$$= 405^\circ$$

Exercise 3: Use graph below to draw the given angle in standard position and state the quadrant in which the angle lies.

-195°

Since the angle measurement is negative it would be graphed going in a clockwise rotation placing it in the second quadrant.



Exercise 4: Find a positive angle less than 360° or 2π that is coterminal with the given angle.

$$\frac{11\pi}{3}$$

Subtract 2π from the given angle

$$\frac{11\pi}{3} - 2\pi = \frac{11\pi}{3} - \frac{6\pi}{3}$$
$$= \frac{5\pi}{3}$$

Exercise 5: Find the length of the arc on a circle with the given radius and intercepted by the given central angle. Express the answer in both terms of π and in decimal form rounded off to two places.

r = 4 and $\theta = \frac{5\pi}{3}$

Since the angle measurement is already in radians, substitute r and θ into the formula for arc length

$$s = r\theta$$
$$= 4\,cm \times \frac{5\pi}{3}$$
$$= \frac{20\pi}{3}\,cm$$
$$\approx 20.94\,cm$$