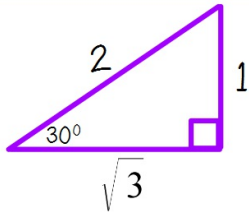


Spiral Review

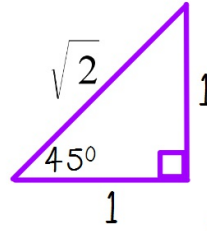
1.



a.) $\sin 30^\circ = \frac{O}{H} = \frac{1}{2}$

b.) $\cos 30^\circ = \frac{A}{H} = \frac{\sqrt{3}}{2}$

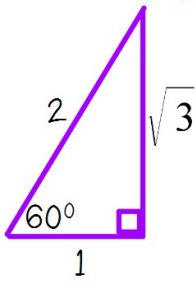
2.



a.) $\sin 45^\circ = \frac{O}{H} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

b.) $\cos 45^\circ = \frac{A}{H} = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

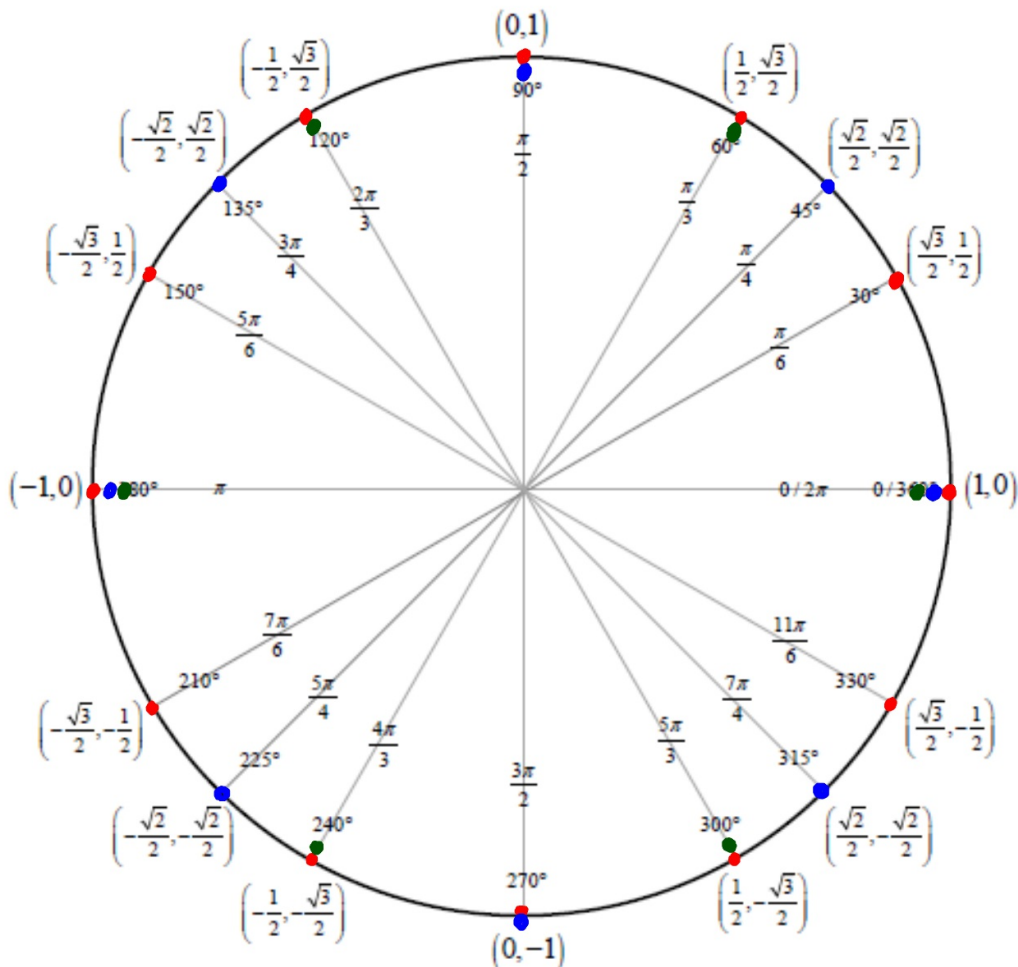
3.



a.) $\sin 60^\circ = \frac{O}{H} = \frac{\sqrt{3}}{2}$

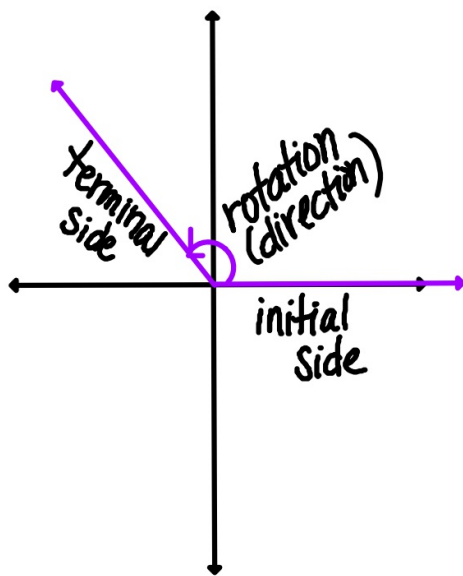
b.) $\cos 60^\circ = \frac{A}{H} = \frac{1}{2}$

4. Now let's look at the unit circle, do we see any patterns?



$\sin \theta = y$
 $\cos \theta = x$

p.254 4.1 Radian and Degree Measure



standard position: initial side is along the positive part of x -axis

coterminal angles: more than one angle with the same initial and terminal side but different amounts of rotation

Positive angle: counter clockwise

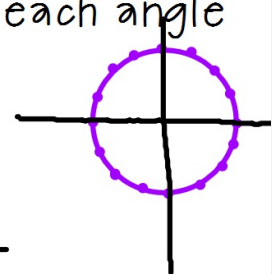
Negative angle: clockwise

Student will be able to determine the quadrant the angle is in.

Example 1: Determine which quadrant in which each angle lies.

a.) $\frac{5\pi}{6}$ II

b.) $-\frac{5\pi}{3}$ I

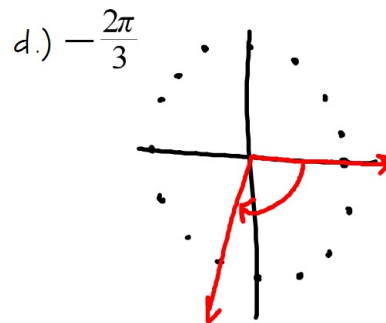
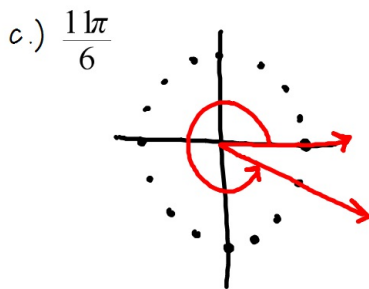
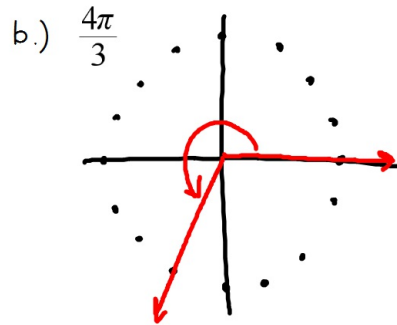
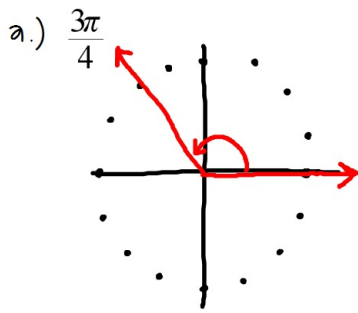


c.) $\frac{11\pi}{4}$ II

d.) 3.5 III ^{p.255}

Student will be able to sketch each angle in standard position.

Example 2: Sketch each angle in standard position.



Student will be able to find a positive and negative coterminal angle.

Example 3: Determine two coterminal angles in radian measure (one positive and one negative) for each angle.

a.) $\frac{7\pi}{6}$

(+)
• add 2π (or 360°)

$$\frac{7\pi}{6} + 2\pi = \boxed{\frac{19\pi}{6}}$$

(-)
• subtract 2π (or 360°)

$$\frac{7\pi}{6} - 2\pi = \boxed{-\frac{5\pi}{6}}$$

b.) $\frac{\pi}{12}$

(+)
 $\frac{\pi}{12} + 2\pi = \boxed{\frac{25\pi}{12}}$

(-)
 $\frac{\pi}{12} - 2\pi = \boxed{-\frac{23\pi}{12}}$

Student will be able to convert angle from degrees to radians without a calculator.

Example 4: Convert angle from degrees to radians without a calculator. (multiply by $\frac{\pi}{180}$)

a.) 120°

$$\begin{aligned} 120 \cdot \frac{\pi}{180} &= \frac{120\pi}{180} \\ &= \frac{12\pi}{18} \\ &= \boxed{\frac{2\pi}{3}} \end{aligned}$$

b.) -270°

$$\begin{aligned} -270 \cdot \frac{\pi}{180} &= \frac{-270\pi}{180} \\ &= \frac{-27\pi}{18} \\ &= \boxed{\frac{-3\pi}{2}} \end{aligned}$$

c.) 144°

$$\begin{aligned} \frac{144\pi}{180} &= \frac{12\pi}{15} \\ &= \boxed{\frac{4\pi}{5}} \end{aligned}$$

d.) 20°

$$\begin{aligned} \frac{20\pi}{180} &= \frac{2\pi}{18} \\ &= \boxed{\frac{\pi}{9}} \end{aligned}$$

Student will be able to convert angle from radians to degrees without a calculator.

Example 5: Convert angle from radians to degrees without a calculator. (multiply by $\frac{180}{\pi}$)

a.) 4π

$$\begin{aligned} 4\pi \cdot \frac{180}{\pi} &= 4 \cdot 180 \\ &= \boxed{720^\circ} \end{aligned}$$

b.) $\frac{2\pi}{3}$

$$\begin{aligned} \frac{2\pi}{3} \cdot \frac{180}{\pi} &= \frac{2}{3} \cdot 180 \\ &= \boxed{120^\circ} \end{aligned}$$

c.) $\frac{28\pi}{15}$

$$\begin{aligned} \frac{28\pi}{15} \cdot \frac{180}{\pi} &= \frac{28}{15} \cdot 180 \\ &= \boxed{336^\circ} \end{aligned}$$

d.) $-\frac{7\pi}{2}$

$$\begin{aligned} -\frac{7\pi}{2} \cdot \frac{180}{\pi} &= -\frac{7}{2} \cdot 180 \\ &= \boxed{-630^\circ} \end{aligned}$$

Turn-in: p. 261 (24, 28)

HW: p.261 (13-27,37-41,47-53 odds)