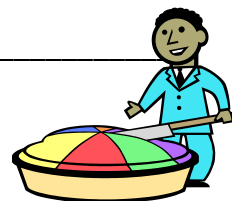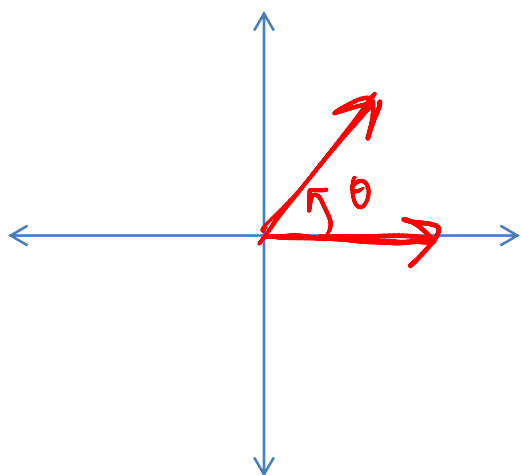Name **key**　　　　　　　　　　　　Date_____　Hour_____

Section 13.2 – day 1
Alg 2 Trig G

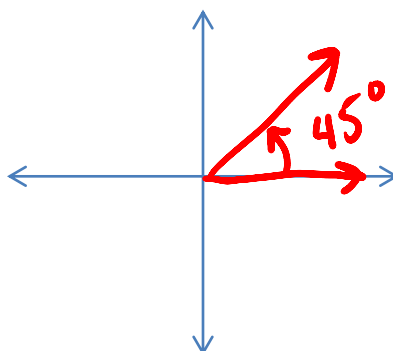**Standard Position of an Angle-**
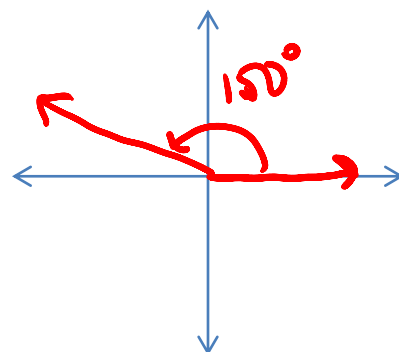vertex is the origin, the initial side is along the positive x-axis

Radian-
measure of an angle (θ) in standard position whose rays intercept an arc length of 1 unit on the unit circle

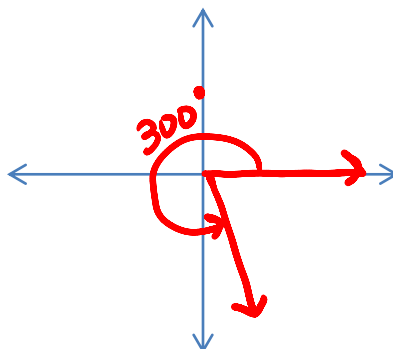## **Drawing an angle in standard position**-

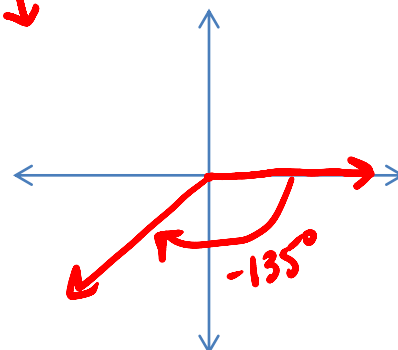1. Draw the angle 45° in standard position.

2. Draw the angle 150° in standard position.

3. Draw the angle 300° in standard position.

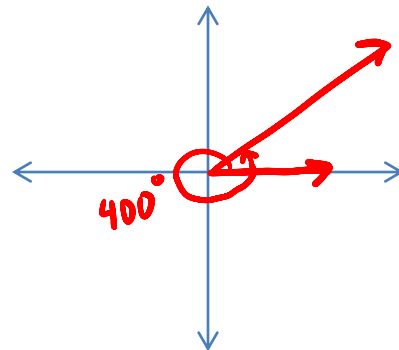4. Draw the angle -135° in standard position.

<u>**Terminal Side of an Angle**</u>- the side of the angle that is not the initial side

<u>**Coterminal Angles**</u>- two angles in standard position that have the same terminal side
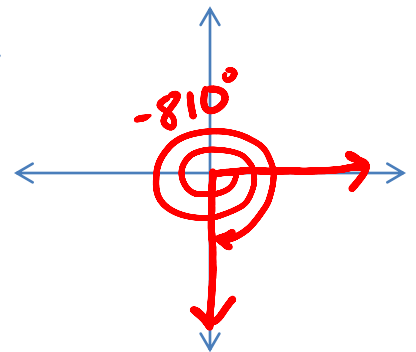
<u>**Drawing an angle in standard position**</u>-

1. Draw the angle 400° in standard position.
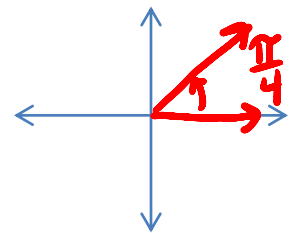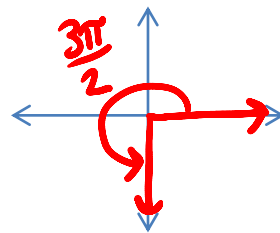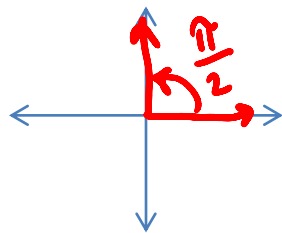
400° and 40° are coterminal

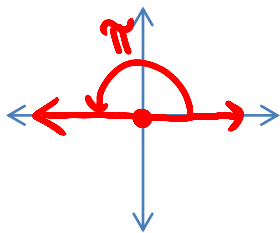2. Draw the angle -810° in standard position.

-810° and -90° and 270° are coterminal

★ ★ ★ π radians = 180° ★ ★ ★

To go from <u>radians→ degrees</u>: multiply by $\frac{180}{\pi}$

a) $\frac{\pi}{2} \cdot \frac{180}{\pi} = \frac{180}{2} = \boxed{90°}$

b) $5\pi \cdot \frac{180}{\pi} = \boxed{900°}$

To go from <u>degrees→ radians</u>: multiply by $\frac{\pi}{180}$

a) $140° \cdot \frac{\pi}{180} = \boxed{\frac{7\pi}{9}}$

b) $-690° \cdot \frac{\pi}{180} = \boxed{-\frac{23\pi}{6}}$

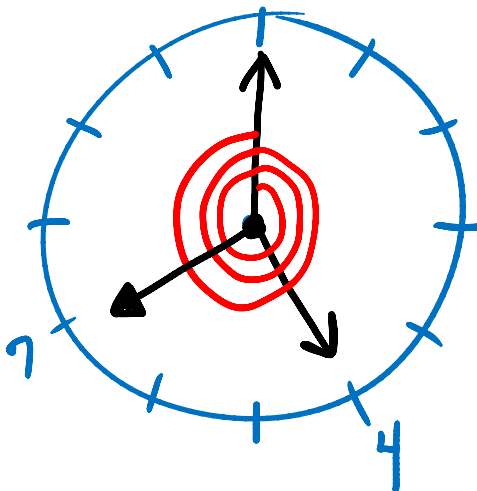## Find one angle with positive measure and one angle with negative measure coterminal with each angle:

a) $60°$ $+360 = \boxed{420°}$

$-360 = \boxed{-300°}$

b) $\dfrac{\pi}{6}$ $+2\pi = \dfrac{\pi}{6} + \dfrac{12\pi}{6} = \boxed{\dfrac{13\pi}{6}}$

$-2\pi = \dfrac{\pi}{6} - \dfrac{12\pi}{6} = \boxed{\dfrac{-11\pi}{6}}$

c) $-135°$ $+360 = \boxed{225°}$

$-360 = \boxed{-495°}$

d) $\dfrac{5\pi}{2}$ $+2\pi = \dfrac{5\pi}{2} + \dfrac{4\pi}{2} = \boxed{\dfrac{9\pi}{2}}$

$-2\pi = \dfrac{5\pi}{2} - \dfrac{4\pi}{2} = \dfrac{5\pi}{2} - \dfrac{4\pi}{2} = \boxed{\dfrac{-3\pi}{2}}$

Through what angle, in degrees and radians, does the minute hand rotate between 4pm and 7pm?

3 full rotations

$\boxed{1080°}$

$1080 \cdot \dfrac{\pi}{180} = \boxed{6\pi \text{ radians}}$