Bellwork

• Given the point (-2, -3) is on the terminal side of an angle. Find \( \sec \theta \).

\[
\sin t = \frac{y}{r} \\
\cos t = \frac{x}{r} \\
\tan t = \frac{y}{x} \\
\cos^{-1} \left( \frac{\sqrt{2}}{2} \right) = 2 \cdot 7\frac{3}{4} \pi \\
1) \quad 45^\circ \\
2) \quad 315^\circ \\
1) \quad \frac{\pi}{4} \\
2) \quad 7\frac{3}{4} \pi \\
\]

(Hint: find the angles where \( \cos = \left( \frac{\sqrt{2}}{2} \right) \))
Section 4.3: Reference Angles

Objective: SWBAT find the reference angle of a given angle.
Reference Angles

• The acute angle $\theta'$ formed by the terminal side of $\theta$ and the horizontal x-axis.

• Use for angles greater than 90° (angles in Quadrants II, III, and IV).

Objective: SWBAT find the reference angle of a given angle.
Find the reference angle $\theta'$ and sketch $\theta$ and $\theta'$ in standard position.

Ex. 1  \[ \theta = 101^\circ \]

Ex. 2  \[ \theta = \frac{4\pi}{3} \]

Objective: SWBAT find the reference angle of a given angle.
Find the reference angle $\theta'$ and sketch $\theta$ and $\theta'$ in standard position.

Ex. 3  
$\theta = -225^\circ$  
\[
\frac{180 - 135}{135} = 45^\circ
\]

Ex. 4  
$\theta = \frac{17\pi}{3} - \frac{6\pi}{3} = \frac{\pi}{3}$  
\[
\frac{6\pi}{3} - \frac{5\pi}{3} = \frac{\pi}{3}
\]
Summary:
In what quadrant would you NOT find a reference angle?

Homework: Page 251 #’s 17-24

Quiz Today!!!

Objective: SWBAT find the reference angle of a given angle.
Objective: SWBAT find trig ratio of a given angle greater than 360° or 2π.