Day 1

# 5.5

I can evaluate inverse trigonometric functions.

## Warm Up

Find the exact trig value for the following.

**1.)** $\sin 120°$ = $\frac{\sqrt{3}}{2}$

**2.)** $\cos \frac{5\pi}{4}$ = $-\frac{\sqrt{2}}{2}$

**3.)** $\tan \frac{5\pi}{3}$

$\frac{y}{x}$

$\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$ → $\frac{-\sqrt{3}}{1}$

**4.)** $\csc 210°$

$\sin 210° = -\frac{1}{2}$

$-2$

**Find $\theta$ for the special trig value for the interval $[0^0, 360^0)$.**

**1.)** $\sin\theta = -\frac{1}{2}$

$\theta = 210^\circ, 330^\circ$

**2.)** $\cot\theta = 1$

$\theta = 45^\circ, 225^\circ$

**3.)** $\cos\theta = -\frac{\sqrt{3}}{2}$

$\theta = 150^\circ, 210^\circ$

**4.)** $\tan\theta = \text{undefined}$

$\theta = 90^\circ, 270^\circ$

$(0,1)$ $(0,-1)$

**Find $\theta$ for the special trig value for the interval $[0, 2\pi)$.**

**5.)** $\sec\theta = -\frac{2\sqrt{3}}{3}$

$\cos\theta = -\frac{3}{2\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{-3\sqrt{3}}{6} = -\frac{\sqrt{3}}{2}$

$\theta = 5\pi/6, \frac{7\pi}{6}$

**6.)** $\sin\theta = \frac{\sqrt{2}}{2}$

$\theta = \pi/4, 3\pi/4$

**7.)** $\csc\theta = -2$

$\sin\theta = -\frac{1}{2}$

$\theta = \frac{11\pi}{6}, \frac{7\pi}{6}$

**8.)** $\tan\theta = \sqrt{3}$