Today's Plan:

Learning Target (standard): I will simplify inverse trigonometric expressions and solve trigonometric equations.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work and take a quiz.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, and provide assessment problems.

Assessment: Board work, homework check and quiz

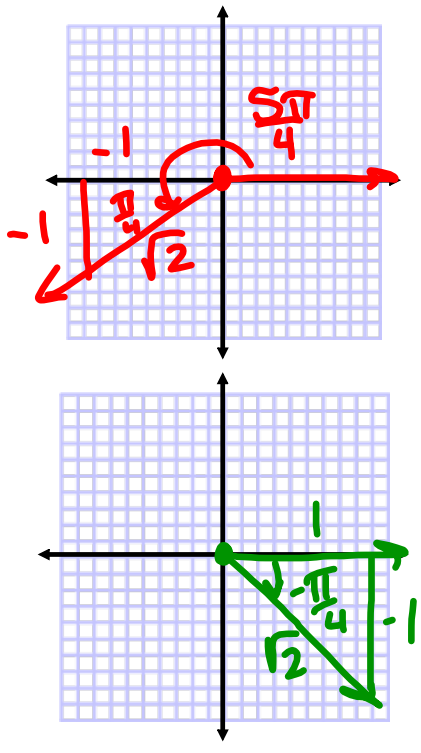
Differentiation: Students will work at the board, go over and correct homework at their seats, and actively engage in assessment problems.

Find the exact value of the expression.

$$\sin^{-1}\left(\cos\frac{5\pi}{4}\right)$$

$= \sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)$

$= -\frac{\pi}{4}$



Solve the equation for $0 \le \theta \le 2\pi$.

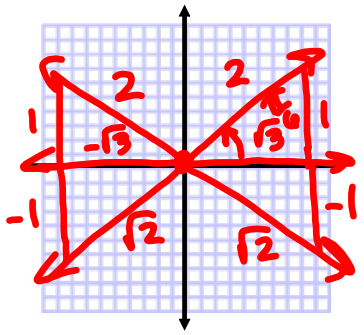
$$4\cos^2\theta - 3 = 0$$

$4\cos^2\theta = 3$

$\cos^2\theta = \pm\sqrt{\frac{3}{4}}$

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

$\theta = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$

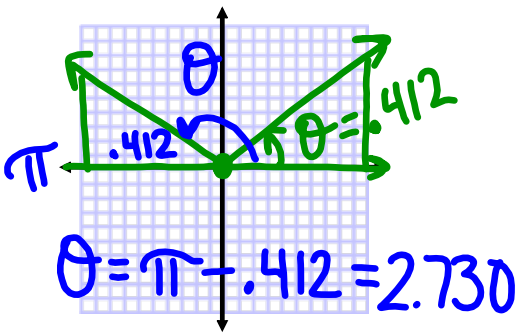


Solve the equation for $0 \le \theta \le 2\pi$.

$$\sin\theta = 0.4$$

$\sin^{-1}(0.4) = \theta$

$\theta = 0.412, 2.730$



Solve the equation for $0 \le \theta \le 2\pi$.

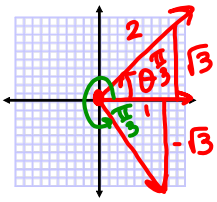
$$\tan\theta = 2\sin\theta$$

$\frac{\sin\theta}{\cos\theta} = 2\sin\theta$

$\frac{1}{\cos\theta} = 2$

$\sec\theta = 2 = \frac{r}{x}$

$\theta = \frac{\pi}{3}, \frac{5\pi}{3}$

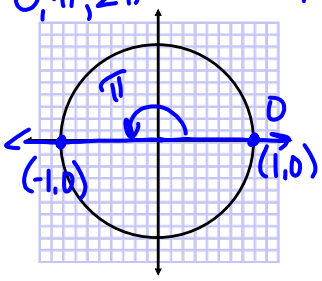


$\frac{\sin\theta}{\cos\theta} - 2\sin\theta = 0$

$\sin\theta\left(\frac{1}{\cos\theta} - 2\right) = 0$

$\sin\theta = 0 = \frac{y}{r}$ $y=0$ $r=1$ $x=1,-1$

$\theta = 0, \pi, 2\pi$



$\theta = 0, \frac{\pi}{3}, \pi, \frac{5\pi}{3}, 2\pi$