

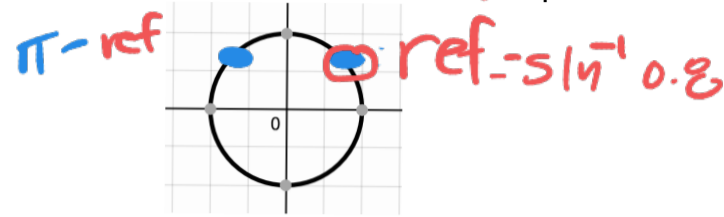
Recall, there are other equivalent answers

Trig Equations - Using the Inverse Trig Functions

⊗ To be a reference angle, it must be inverse of a positive #

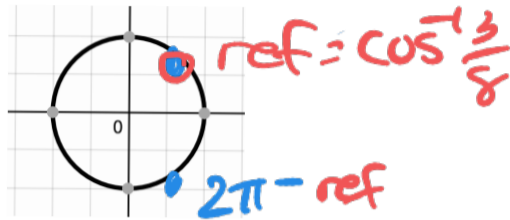
Solve for $0 \leq x < 2\pi$

(1) $\sin x = 0.8$



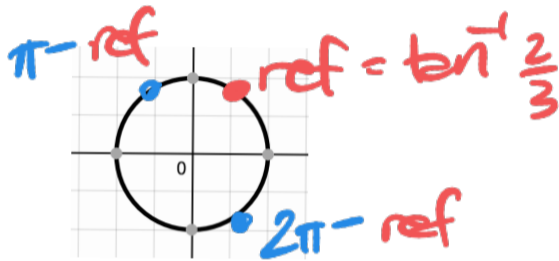
$$x = \sin^{-1} 0.8, \pi - \sin^{-1} 0.8$$

(2) $\cos(x) = \frac{3}{8}$



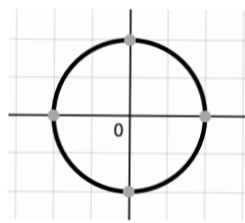
$$x = \cos^{-1} \frac{3}{8}, 2\pi - \cos^{-1} \frac{3}{8}$$

(3) $\tan x = -\frac{2}{3}$



$$x = \pi - \tan^{-1} \frac{2}{3}, 2\pi - \tan^{-1} \frac{2}{3}$$

(4) $\cos(x) = 3$

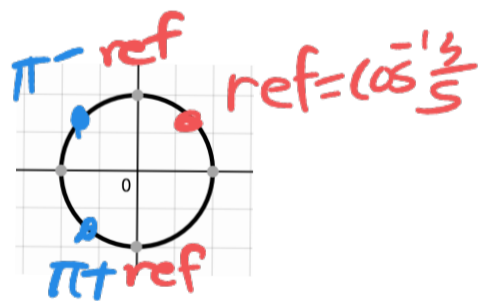


no solution

Find all solutions:

(5) $5\cos(x) = -3$

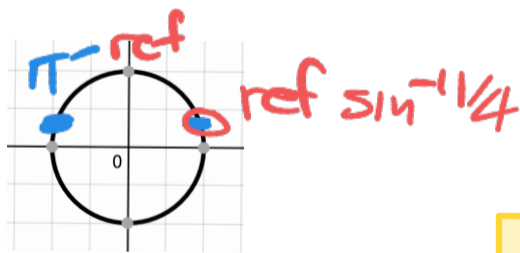
$\cos x = -\frac{3}{5}$



$$x = \left\{ \begin{array}{l} \pi - \cos^{-1} \frac{3}{5} + 2\pi k \\ \pi + \cos^{-1} \frac{3}{5} + 2\pi k \end{array} \right.$$

(6) $4\sin 3x - 1 = 0$

$\sin 3x = \frac{1}{4}$

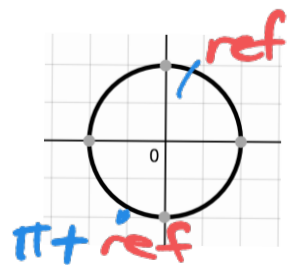


$$3x = \left\{ \begin{array}{l} \sin^{-1} \frac{1}{4} + 2\pi k \\ \pi - \sin^{-1} \frac{1}{4} + 2\pi k \end{array} \right.$$

$$x = \left\{ \begin{array}{l} \frac{1}{3} \sin^{-1} \frac{1}{4} + \frac{2\pi}{3} k \\ \frac{1}{3} \pi - \frac{1}{3} \sin^{-1} \frac{1}{4} + \frac{2\pi}{3} k \end{array} \right.$$

(7) $9 - \tan x = 7$

$\tan x = 2$



$$x = \tan^{-1} 2 + \pi k$$