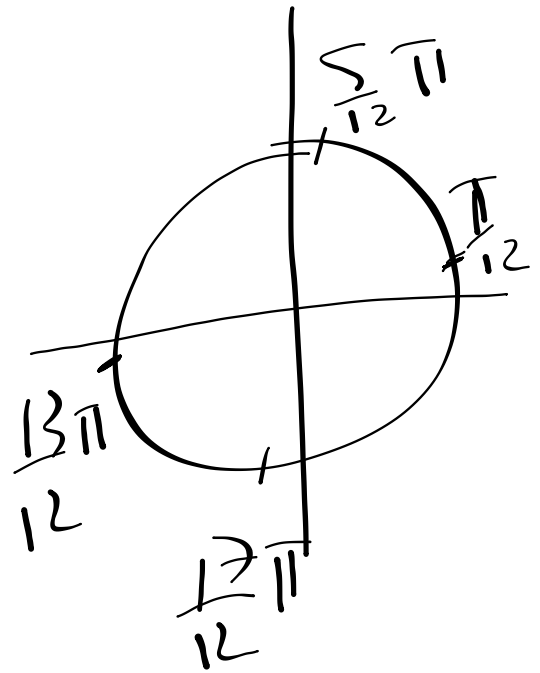


$$\sin 2x = \frac{1}{2} \quad \text{per } \sin x = \frac{1}{2}$$

$$\frac{\pi}{6} + k\pi$$

$$2x = \frac{\pi}{6} + k\pi$$

$$x = \left\{ \begin{array}{l} \frac{\pi}{12} + k\pi \\ \frac{5\pi}{12} + k\pi \end{array} \right.$$



#82

$$\left| \cos\left(x - \frac{\pi}{4}\right) \right| = \frac{\sqrt{2}}{2}$$

$$\cos\left(x - \frac{\pi}{4}\right) = \pm \frac{\sqrt{2}}{2}$$

$$\cos\left(x - \frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$$

$$x - \frac{\pi}{4} = \frac{\pi}{4} + k2\pi$$

$$x = \frac{\pi}{4} + \frac{\pi}{4} + k2\pi = \frac{\pi}{2} + k2\pi$$

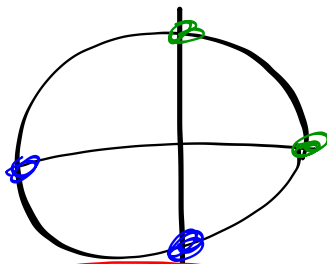
$$\cos\left(x - \frac{\pi}{4}\right) = -\frac{\sqrt{2}}{2}$$

$$x - \frac{\pi}{4} = \frac{3\pi}{4} + k2\pi$$

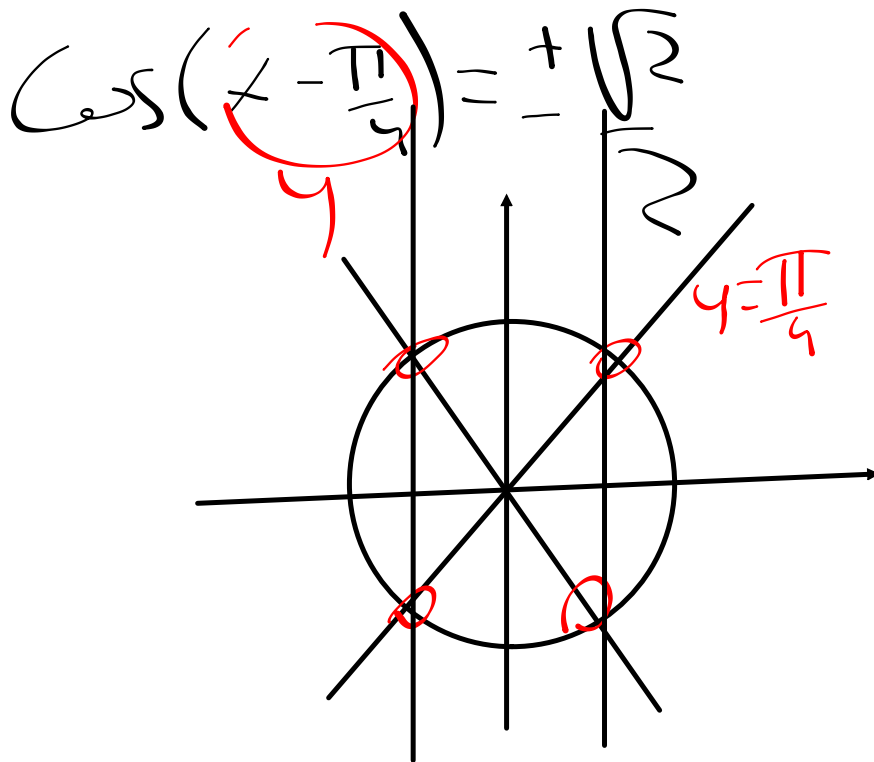
$$x = \frac{3\pi}{4} + \frac{\pi}{4} + k2\pi = \pi + k2\pi$$

$$x - \frac{\pi}{4} = -\frac{\pi}{4} + k2\pi$$

$$x = -\frac{\pi}{4} + \frac{\pi}{4} + k2\pi = k2\pi$$



$$x = k\frac{\pi}{2} \quad (k \in \mathbb{Z})$$



$$y = \frac{\pi}{4} + k\frac{\pi}{2}$$

$$x - \frac{\pi}{4} = \frac{\pi}{4} + k\frac{\pi}{2} \qquad x = \frac{\pi}{2} + k\frac{\pi}{2}$$

$$2 \sin x + 3 \cos x = 0$$

cost

$$2 \tan x + 3 = 0 \quad \tan x = -\frac{3}{2}$$

$$x = \arctan\left(-\frac{3}{2}\right) + k\pi$$

$$\frac{3 \sin^2 x + 2 \sin x \cos x + \cos^2 x}{\cos^2 x} = 0$$

$$3 \tan^2 x + 2 \tan x + 1 = 0$$

→ NO SOLUTIONS!

$$3 \sin^2 x + 2 \sin x \cos x + 5 = 0$$

$$3 \sin^2 x + 2 \sin x \cos x - 15 \sin^2 x + 5 \cos^2 x = 0$$

$$\sin x + \cos x - 1 = 0$$