

$$\text{الف)} \quad \cos^2 x = \cos^2 x - \frac{\sin^2 x}{1 - \cos^2 x} = \frac{\cos^2 x - 1}{1 - \sin^2 x} = \frac{1 - \sin^2 x}{1 - \sin^2 x}$$

$$\sin^2 x - 1 = 1 - \sin^2 x$$

$$\sin^2 x + \sin^2 x - 2 = 0 \rightarrow \sin^2 x + \sin^2 x - 2 = 0$$

$$\sin x = \frac{1}{2} \rightarrow \sin x = \frac{1}{2} \rightarrow \sin x = \frac{1}{2} \rightarrow \sin x = \frac{1}{2}$$

$$\text{ب)} \quad \cos^2 x - 1 + \cos x - 2 = 0$$

$$\cos^2 x + \cos x - 2 = 0$$

$$\cos x = 1$$

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$$(\sin^2 x - \cos^2 x)(\sin^2 x - \cos^2 x) = 2 \sin^2 x \cos^2 x$$

$$\text{الف)} \quad -1$$

$$\frac{-1}{2} = \sin^2 x$$

$$\sin^2 x = \frac{1}{2} \rightarrow \sin x = \pm \frac{1}{\sqrt{2}} \rightarrow \sin x = \pm \frac{1}{\sqrt{2}}$$

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$$\text{ب)} \quad \cos^2 x - 1 = \cos^2 x$$

$$\cos^2 x - 1 = \cos^2 x$$

$$\cos^2 x + \sin^2 x = 0 \rightarrow \cos^2 x = -\sin^2 x$$

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$$x = 2k\pi + \pi - x - \pi/4 \rightarrow x = 2k\pi + \pi/4$$

$$x = 2k\pi + \pi/4 \rightarrow x = 2k\pi + \pi/4$$

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$$\frac{\cos^2 x + \cos x}{\sin x} - 1 = \frac{(\cos x + 1)(\cos x - 1)}{\sin x} = 0$$

$$\cos x = -1 \rightarrow 2k\pi + \pi = x$$

$$\cos x = 1/2 \rightarrow 2k\pi + \pi/3 = x$$

$$\cos x = 1/2 \rightarrow 2k\pi + \pi/3 = x$$

$$\text{ب)} \quad \frac{1}{2}(\sin^2 x \cos x) + \frac{\cos^2 x - 1}{2} + \cos^2 x = 0$$

$$\sin^2 x \cos x + \cos^2 x - 1 + 2\cos^2 x = 0$$

$$\sin^2 x + \cos^2 x = 1$$

$$\sin^2 x + \cos^2 x = 1$$

$$\sin^2 x + \cos^2 x = 1$$

$$\sin^2 x + \cos^2 x = 1$$

$$\text{الف)} \quad \cos\left(\frac{\pi}{2} - x\right) \sin\left(\frac{\pi}{2} - x + \frac{\pi}{4}\right)$$

$$\text{ب)} \quad \cos\left(x + \frac{\pi}{4} + \frac{\pi}{4}\right) = \sin\left(\frac{\pi}{4} - x - \frac{\pi}{4}\right) = \sin(x + \pi)$$

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

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

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

$$\frac{\sin^2 x + \sin^2 x}{\sin^2 x} = 1$$

$$\frac{\sin^2 x}{\sin^2 x} + 1 = 1$$

$$\sin^2 x = 0$$

$$\sin^2 x = 0$$

$$\sin^2 x = 0$$

$$\sin^2 x = 0$$

$$\sin^2 x = 0$$

$$x = 2k\pi$$

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

$$\frac{\cos x/y + 1}{\sin x/y} = \frac{\sin x/y}{1 + \cos x/y}$$

$$-\frac{\pi}{y}$$

$$1 + \cos^y \frac{x}{y} = \sin^y \frac{x}{y} \rightarrow 1 - \cos^y \frac{x}{y}$$

$$y \cos^y \frac{x}{y} = 0$$

$$\cos \frac{x}{y} = 0$$

$$\frac{x}{y} = \frac{\pi}{2}$$

$$x = \frac{\pi y}{2}$$

$$x = \frac{\pi y}{2}$$



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$$\sin^y x \cos^y x = \sin^y x \rightarrow -1 = \cos^y x$$



$$yK\pi + \pi = yx$$

$$x = \frac{yK\pi}{y} + \frac{\pi}{y}$$

$$\frac{y}{y}, \frac{3\pi}{y}, \pi, \frac{\pi}{y}$$

$$x = \frac{yK\pi}{y} + \frac{\pi}{y}$$

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$$\frac{1 - \tan x - 1}{\tan x + 1} = \tan(x - \frac{\pi}{y})$$

$$\tan x + 1$$

$$\tan x \neq -1$$

$$\tan x = -1$$

$$x = \frac{yK\pi}{y} - \frac{\pi}{y}$$

$$K\pi - \frac{\pi}{y} = yx$$

$$\tan^y x = \tan(x - \frac{\pi}{y})$$

$$K\pi + x - \frac{\pi}{y} = yx$$

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$$\sqrt{(\sin x + \cos x)^y} = \sqrt{y} (\cos^y x - \sin^y x)$$

$$y \cos^y x = \sin^y x + 1$$

$$y \cos^y x - 1 = \sin^y x$$

$$\sin(x + \frac{\pi}{y}) = \sin^y x$$

$$-x + \frac{\pi}{y} = yx + yK\pi$$

$$-x + \frac{\pi}{y} = yK\pi + \pi - yx$$

$$yK\pi - \frac{\pi}{y} = 2x$$

$$x = \frac{yK\pi}{y} - \frac{\pi}{y}$$

$$x = K\pi + \frac{\pi}{y}$$

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$$\frac{\sin^y x - \cos^y x}{1 - \cos^y x} = 1$$

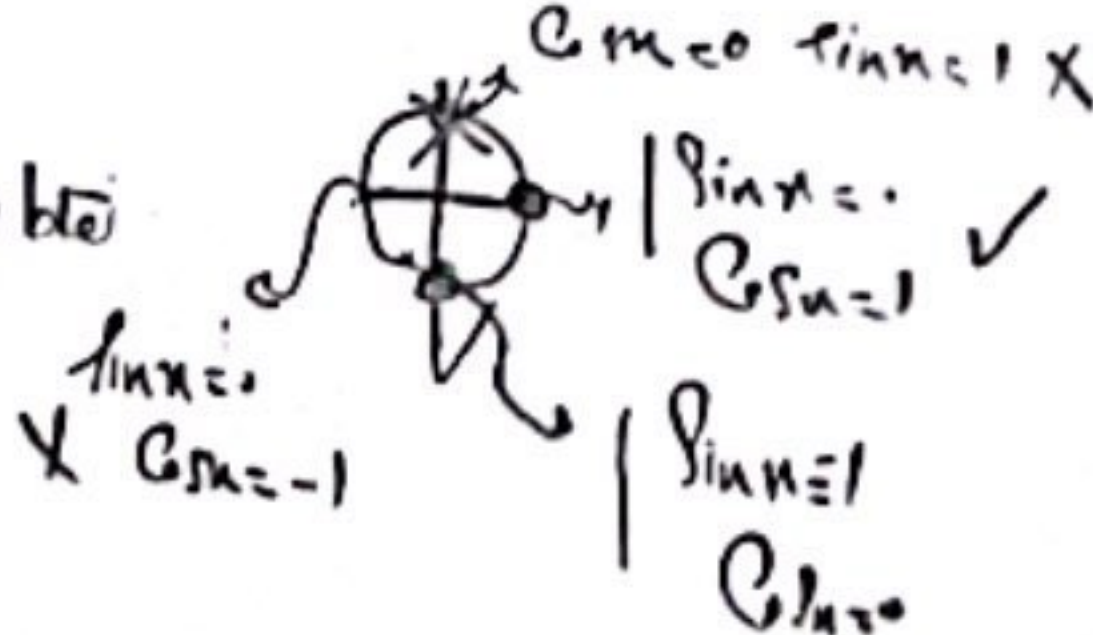
$$1 - y \cos^y x = 1$$

$$\cos x = 0$$



$$x = K\pi + \frac{\pi}{y}$$

$$\frac{\sin^y x - \cos^y x}{1 - \cos^y x} = -1$$



$$x = yK\pi, yK\pi - \frac{\pi}{y}$$

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