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15/12/2020

$$\frac{1}{\cos^2 \theta} - \tan^2 \theta = 1 \Rightarrow \frac{1}{\cos^2 \theta} - \frac{\sin^2 \theta}{\cos^2 \theta} = 1 \Rightarrow \frac{1 - \sin^2 \theta}{\cos^2 \theta} = 1 \Rightarrow \frac{\cos^2 \theta}{\cos^2 \theta} = 1$$

$$\cos^2 \theta = 1$$

$$\cos \theta = \pm 1$$

$$\cos \theta = 1$$



$$\sin^2 \theta + \cos^2 \theta = 1 \Rightarrow \sin^2 \theta - \cos^2 \theta = 1 - \cos^2 \theta = 0$$

$$\sin^2 \theta - \cos^2 \theta = 0 \Rightarrow \sin^2 \theta = \cos^2 \theta \Rightarrow \sin \theta = \pm \cos \theta$$

$$\sin \theta = \cos \theta \Rightarrow \theta = \frac{\pi}{4}$$

$$\sin \theta = -\cos \theta \Rightarrow \theta = \frac{3\pi}{4}$$

$$\sin \theta = \cos \theta \Rightarrow \theta = \frac{\pi}{4}$$

$$\sin^2 \theta + \cos^2 \theta = 1 \Rightarrow \sin^2 \theta (1 + \cos^2 \theta) = 1 \Rightarrow \sin^2 \theta (1 + \cos^2 \theta) = 1$$

$$\Rightarrow \sin^2 \theta = \frac{1}{1 + \cos^2 \theta} \Rightarrow \sin^2 \theta = \frac{1}{1 + \cos^2 \theta} \Rightarrow \sin^2 \theta = \frac{1}{1 + \cos^2 \theta}$$

$$\Rightarrow \theta = \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \Rightarrow \frac{\pi}{4}$$

$$\frac{1}{\sin^2 \theta} + \frac{1}{\cos^2 \theta} = 0 \Rightarrow \frac{1}{\sin^2 \theta} + \frac{1}{\cos^2 \theta} = 0$$

$$\frac{1}{\sin^2 \theta} + \frac{1}{\cos^2 \theta} = 0 \Rightarrow \frac{1}{\sin^2 \theta} + \frac{1}{\cos^2 \theta} = 0 \Rightarrow \frac{1}{\sin^2 \theta} + \frac{1}{\cos^2 \theta} = 0$$

$$\sin^2 \theta = 1$$

$$\sin \theta = \pm 1 \Rightarrow \theta = \frac{\pi}{2}$$

$$\theta = \frac{3\pi}{2}$$

$$\Rightarrow \frac{3\pi}{2} = \frac{\pi}{2} \Rightarrow \frac{3\pi}{2} = \frac{\pi}{2}$$

$$\tan \theta = 1 \Rightarrow \theta = \frac{\pi}{4}$$

$$\Rightarrow \theta = \frac{\pi}{4}$$

$$\sin(\cos^2 \theta - \sin^2 \theta) = \cos^2 \theta \sin \theta = \frac{1}{4}$$

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Aman

$$\sin\left(\pi + \frac{\pi}{4}\right) \cos\left(\pi - \frac{\pi}{4}\right) = 1 \rightarrow \sin\left(\pi + \frac{\pi}{4}\right) \cos\left(\pi - \frac{\pi}{4}\right) = 1 \rightarrow \cos\left(\frac{\pi}{4} - \pi\right) = 1 \quad 4$$

$$\cos\left(\pi + \frac{\pi}{4}\right) = 1 \rightarrow \pi - \frac{\pi}{4} = \pi + \frac{\pi}{4} \rightarrow \pi = \pi + \frac{\pi}{4} \quad [\cos \theta] \rightarrow \frac{1}{\cos \theta} = \frac{1}{\cos \theta} \quad 5$$

$$\sin \pi + \frac{\pi}{4} \cos \pi + \frac{\pi}{4} \rightarrow \sin \pi + \frac{\pi}{4} \cos \pi + \frac{\pi}{4} \rightarrow \sin \pi \cos \frac{\pi}{4} + \cos \pi \sin \frac{\pi}{4} = \sin \frac{\pi}{4} \quad 6$$

$$\sin\left(\pi + \frac{\pi}{4}\right) = \sin \frac{\pi}{4} \rightarrow \pi + \frac{\pi}{4} = \pi + \frac{\pi}{4} \rightarrow \pi = \pi + \frac{\pi}{4} \rightarrow \pi = \frac{\pi}{4} \quad 7$$

$$\pi + \frac{\pi}{4} = \pi + \frac{\pi}{4} \rightarrow \pi = \pi + \frac{\pi}{4} \rightarrow \pi = \frac{\pi}{4} \quad 8$$

$$\frac{-\pi + \pi + \frac{\pi}{4}}{1} = \frac{\pi}{4} = \frac{\pi}{4} \quad 9$$

$$\sin \pi \sin\left(\frac{\pi}{4} - \pi\right) = 1 \rightarrow -\sin \pi \sin \pi = 1 \rightarrow -\sin \pi = 1 \rightarrow \sin \pi = \frac{1}{\pi} \quad 10$$

$$\sin \pi = \sin \frac{\pi}{4} \rightarrow \pi = \pi + \frac{\pi}{4} \rightarrow \pi = \frac{\pi}{4} \rightarrow \pi = \frac{\pi}{4} \quad 11$$

$$\frac{(1 + \cos \frac{\pi}{4})(1 + \cos \frac{\pi}{4})(1 + \cos \frac{\pi}{4})}{\cos \frac{\pi}{4} \cos \frac{\pi}{4} \cos \frac{\pi}{4}} = \frac{1}{\pi} \quad 12$$

$$\frac{1}{\sin \frac{\pi}{4}} \times \frac{1}{\sin \frac{\pi}{4}} \times \frac{1}{\sin \frac{\pi}{4}} = \frac{1}{\pi} \rightarrow \sin \frac{\pi}{4} = \sin \frac{\pi}{4} \rightarrow \sin \frac{\pi}{4} = \sin \frac{\pi}{4} \rightarrow \pi = \pi + \frac{\pi}{4} \rightarrow \pi = \frac{\pi}{4} \quad 13$$

$$\pi = \pi + \frac{\pi}{4} \rightarrow \pi = \frac{\pi}{4} \quad 14$$

$$\pi = \frac{\pi}{4} \quad 15$$

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$$\tan(15^\circ) + \tan(45^\circ) = 1 \Rightarrow \tan \alpha = \frac{1}{\tan 45^\circ} = \cot 45^\circ \Rightarrow \tan \alpha = \cot(45^\circ - 15^\circ)$$

1.0

$$\Rightarrow \alpha = 45^\circ + \frac{\pi}{4} - \pi \Rightarrow \alpha = 45^\circ + \frac{\pi}{4} \Rightarrow \alpha = \frac{\pi}{4} + \frac{\pi}{4} \Rightarrow \alpha = \frac{\pi}{2} + \frac{\pi}{4} \Rightarrow \alpha = \frac{3\pi}{4}$$

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