

تکلیف ۱۸

النادی و الفیاض ۱۹۲۵

$$\tan \frac{11\pi}{6} + \sin \frac{10\pi}{6} \times \cos \frac{13\pi}{6} = -1 \quad \left(-\frac{\sqrt{3}}{2} \times -\frac{\sqrt{3}}{2} \right) \rightarrow -1 + \frac{3}{4} = -\frac{1}{4} = -\frac{1}{4}$$

$$\frac{11\pi}{6} = 11 \times \frac{\pi}{6} = 11 \times 30^\circ = 330^\circ \rightarrow 330^\circ - 360^\circ = -30^\circ \rightarrow \tan -30^\circ = -\frac{1}{\sqrt{3}}$$

$$\sin \frac{10\pi}{6} = 10 \times \frac{\pi}{6} = 10 \times 30^\circ = 300^\circ \rightarrow 300^\circ - 360^\circ = -60^\circ \rightarrow \sin -60^\circ = -\frac{\sqrt{3}}{2}$$

$$\cos \frac{13\pi}{6} = 13 \times \frac{\pi}{6} = 13 \times 30^\circ = 390^\circ \rightarrow 390^\circ - 360^\circ = 30^\circ \rightarrow \cos 30^\circ = \frac{\sqrt{3}}{2}$$

$$\tan \frac{14\pi}{6} \sin \frac{11\pi}{6} + \cos \frac{10\pi}{6} = \frac{\sqrt{3}}{2} \times -\frac{\sqrt{3}}{2} - \frac{1}{2} = -\frac{3}{4} - \frac{1}{2} = -\frac{5}{4}$$

$$14 \times 30^\circ = 420^\circ \rightarrow 420^\circ - 360^\circ = 60^\circ \rightarrow \tan 60^\circ = \sqrt{3}$$

$$11 \times 30^\circ = 330^\circ \rightarrow 330^\circ - 360^\circ = -30^\circ \rightarrow \sin -30^\circ = -\frac{1}{2}$$

$$10 \times 30^\circ = 300^\circ \rightarrow 300^\circ - 360^\circ = -60^\circ \rightarrow \cos -60^\circ = \frac{1}{2}$$

$$\frac{\cos x}{\sin x} = \frac{1}{2} \rightarrow \cos x = \frac{1}{2} \sin x \rightarrow \frac{3 \times \frac{1}{2} \sin x - \sin x}{\frac{1}{2} \sin x + \sin x} = \frac{1}{2}$$

$$\sin^2 x + \cos^2 x = 1 \rightarrow \frac{1}{4} \cos^2 x + \cos^2 x = 1 \rightarrow \frac{5}{4} \cos^2 x = 1 \rightarrow \cos^2 x = \frac{4}{5} \rightarrow \cos x = \pm \frac{2}{\sqrt{5}}$$

موجب و سالب

$$\sin^2 x + \cos^2 x = 1 \rightarrow \frac{1}{4} + \cos^2 x = 1 \rightarrow \cos^2 x = \frac{3}{4} \rightarrow \cos x = \pm \frac{\sqrt{3}}{2}$$

موجب و سالب

$$\frac{11\pi}{6} = 330^\circ \rightarrow \sin 330^\circ = -\frac{1}{2}, \cos 330^\circ = \frac{\sqrt{3}}{2}$$

$$\cos(a+b) = \cos a \cos b - \sin a \sin b \rightarrow \left(-\frac{\sqrt{3}}{2} \times -\frac{\sqrt{3}}{2} \right) - \left(\frac{1}{2} \times \frac{1}{2} \right) = \frac{3}{4} - \frac{1}{4} = \frac{2}{4} = \frac{1}{2}$$

$$1 - \tan^2 x = \frac{1}{\cos^2 x} \rightarrow 1 + \frac{1}{9} = \frac{10}{9} = \frac{\sqrt{10}}{3} = \frac{1}{\cos} \rightarrow \cos = \frac{3}{\sqrt{10}} \rightarrow \sin^2 = 1 - \frac{9}{10} = \frac{1}{10} \rightarrow \sin = \pm \frac{1}{\sqrt{10}}$$

$$\frac{13\pi}{6} = 390^\circ \rightarrow \sin 390^\circ = \frac{1}{2}, \cos 390^\circ = \frac{\sqrt{3}}{2}$$

$$-\frac{\sqrt{3}}{2} \times \frac{1}{2} - \left(-\frac{\sqrt{3}}{2} \times \frac{1}{2} \right) = -\frac{\sqrt{3}}{4} + \frac{\sqrt{3}}{4} = 0$$

