

Ques1. Evaluate $\cos \left[\cos^{-1} \left(\frac{-\sqrt{3}}{2} \right) + \frac{\pi}{6} \right]$.

(Sec 2.3 Q2)

Sol.

$$\begin{aligned} & \cos \left[\cos^{-1} \left(\frac{-\sqrt{3}}{2} \right) + \frac{\pi}{6} \right] \\ &= \cos \left[\cos^{-1} \left(\cos \frac{5\pi}{6} \right) + \frac{\pi}{6} \right] \quad \left(\because \cos \frac{5\pi}{6} = \frac{-\sqrt{3}}{2} \right) \\ &= \cos \left(\frac{5\pi}{6} + \frac{\pi}{6} \right) \quad \left(\because \cos^{-1} \cos x = x; x \in [0, \pi] \right) \\ &= \cos (\pi) = -1 \end{aligned}$$