

INVERSE TRIGONOMETRIC FUNCTIONS**PROPERTIES OF INVERSE TRIGONOMETRIC FUNCTIONS****EXERCISE**

Q.1 Determine the value of $\cos \left\{ \sin \left(\sin^{-1} \frac{\pi}{6} \right) \right\}$

Q.2 Calculate the value of $\sin \left\{ \cos \left(\cos^{-1} \frac{3\pi}{4} \right) \right\}$

Q.3 Calculate the value of $\cos^{-1} (\cos 13)$

Q.4 Evaluate $\sin^{-1} (\sin \theta)$, $\cos^{-1} (\cos \theta)$, $\tan^{-1} (\tan \theta)$, $\cot^{-1} (\cot \theta)$ for $\theta \in \left(\frac{5\pi}{2}, 3\pi \right)$

Q.5 Find the value of $\sin \left\{ \frac{1}{2} \cot^{-1} \left(\frac{-3}{4} \right) \right\}$

Q.6 Find the value of $\tan \left\{ 2 \tan^{-1} \left(\frac{1}{5} \right) - \frac{\pi}{4} \right\}$

Q.7 Evaluate $\sin^{-1}(x^2 - 2x + 3) + \cos^{-1}(x^2 - x) = \frac{\pi}{2}$

Q.8 Find the equation $\tan^{-1} (2x) + \tan^{-1} (3x) = \frac{\pi}{4}$

Q.9 Determine the equation $\sin^{-1} x + \sin^{-1} 2x = \frac{2\pi}{3}$

Q.10 solve the value of $\tan^{-1} 1 + \tan^{-1} \frac{1}{2} + \tan^{-1} \frac{1}{3}$

ANSWER KEY

1. $\frac{\sqrt{3}}{2}$

2. $\frac{1}{\sqrt{2}}$

3. $13 - 4\pi$

4. $3\pi - \theta, \theta - 2\pi, \theta - 3\pi, \theta - 2\pi$

5. $\frac{2\sqrt{5}}{5}$

6. $\frac{-7}{17}$

7. No solution

8. $x = \frac{1}{6}$

9. $x = \frac{1}{2}$

10. $\frac{\pi}{2}$