



MATHS

BOOKS - RESONANCE DPP ENGLISH

INVERSE TRIGONOMETRIC FUNCTIONS

Others

1. If $\cos ec^{-1}(\cos ecx)$ and $\cos ec(\cos ec^{-1}x)$ are equal functions, then the maximum range of value of x is $\left[-\frac{\pi}{2}, -1\right] \cup \left[1, \frac{\pi}{2}\right]$
- (b) $\left[-\frac{\pi}{2}, 0\right] \cup \left[0, \frac{\pi}{2}\right]$ (c) $(-\infty, -1) \cup [1, \infty)$ (d) $[-1, 0] \cup [0, 1]$



Watch Video Solution

2. The solution set of the inequality $4(\cos^{-1} x)^2 - 1 \geq 0$ is

- (a) $\left[-1, \frac{\cos 1}{2}\right]$ (b) $\left[0, \frac{\pi}{3}\right]$ (c) $\left(\frac{\cos 1}{2}, 1\right]$ (d) $\left[\frac{\pi}{3}, \frac{2\pi}{3}\right]$



Watch Video Solution

3. $\sin^{-1} \sqrt{\frac{2 - \sqrt{3}}{4}} + \cos^{-1} \left(\frac{\sqrt{12}}{4}\right) + \sec^{-1}(\sqrt{2}) =$

- (a) 0
(b) $\frac{\pi}{4}$
(c) $\frac{\pi}{6}$
(d) $\frac{\pi}{2}$



Watch Video Solution

4. The value of $\sin^{-1} \left(\frac{3}{\sqrt{73}}\right) + \cos^{-1} \left(\frac{11}{\sqrt{146}}\right) + \cot^{-1} \sqrt{3}$ is

- (A) $\frac{5\pi}{12}$ (B) $\frac{17\pi}{12}$ (C) $\frac{7\pi}{12}$ (D) None of these

 [Watch Video Solution](#)

5. $\tan\left(\tan^{-1} 5 + \frac{\cot^{-1} 1}{3}\right)$ $\frac{4}{7}$ b. $-\frac{4}{7}$ c. $\frac{3}{7}$ d. not defined

 [Watch Video Solution](#)

6. $\tan^{-1} n, \tan^{-1}(n+1)$ and $\tan^{-1}(n+2), n \in N$, are the angles of a triangle then the value of n is :

 [Watch Video Solution](#)

7. Total number of solutions of the equation $\cos^{-1}\left(\frac{1-x^2}{1+x^2}\right) = \sin^{-1} x$ is :

 [Watch Video Solution](#)

8. Which of the following is/are the value of

$$\cos \left[\frac{1}{2} \cos^{-1} \left(\cos \left(-\frac{14\pi}{5} \right) \right) \right] ? \quad \cos \left(-\frac{7\pi}{5} \right) \quad (\text{b}) \quad \sin \left(\frac{\pi}{10} \right)$$
$$\cos \left(\frac{2\pi}{5} \right) \quad (\text{d}) \quad -\cos \left(\frac{3\pi}{5} \right)$$

 [Watch Video Solution](#)

9. Which of the following is/are correct?

$$\tan \left[\frac{\cos^{-1} 4}{5} + \frac{\tan^{-1} 2}{3} \right] = \frac{17}{6}$$
$$\cos \left[\frac{\tan^{-1} 1}{3} + \frac{\tan^{-1} 1}{2} \right] = \frac{1}{\sqrt{2}}$$

 [Watch Video Solution](#)

10. The value(s) of x satisfying the equation

$$\cot^{-1}(x) + \cot^{-1}(17 - x) = \cot^{-1}(3) \text{ is/are (a) 4 (b) 3 (c) 12 (d)}$$

13

 [Watch Video Solution](#)

11. If $1 + \tan^{-1} x + \sin^{-1} \frac{2x}{1+x^2}$ is independent of x , then

 [Watch Video Solution](#)

12. The sum of the infinite series

$$\cot^{-1}\left(\frac{7}{4}\right) + \cot^{-1}\left(\frac{19}{4}\right) + \cot^{-1}\left(\frac{39}{4}\right) + \cot^{-1}\left(\frac{67}{4}\right) + \dots \dots \infty$$

is :

 [Watch Video Solution](#)

13. The locus of the point (x, y) which moves such that $\sin^{-1} 2x + \sin^{-1} y = \frac{\pi}{2}$ is a circle b. a hyperbola c. a straight d. an ellipse

 [Watch Video Solution](#)

14. $\tan^{-1}\left(\frac{-1 + \sin 1}{\cos 1}\right)$ equals (A) 0 (B) $1 - \frac{\pi}{2}$ (C) $\frac{\pi}{2} - 1$ (D) $\frac{1}{2} - \frac{\pi}{4}$

 [Watch Video Solution](#)

15. Number of integral solutions of the equation,
 $3 \tan^{-1} x + \cos^{-1}\left(\frac{1 - 3x^2}{(1 + x^2)^{\frac{3}{2}}}\right) = 0$ is, 1 (b) 2 (c) 0 (d) Infinite

 [Watch Video Solution](#)