

1. $\sin^{-1}\frac{8}{x} + \sin^{-1}\frac{15}{x} = \frac{\pi}{2}$, then $x = ?$

- a) 10 b) 17 c) -17 d) 13

2. If $\tan^{-1} 3 + \tan^{-1} x = \tan^{-1} 8$, then $x = ?$

- a) 5 b) 3 c) $\frac{1}{5}$ d) $\frac{1}{3}$

3. The number of solution of the equation $2 \sin[0.25 \cos^{-1} x] = \sqrt{3}$ is

- a) 0 b) 1 c) 2 d) 4

4. The value of $\sin\left(2 \tan^{-1}\frac{1}{3}\right) + \cos(\tan^{-1} 2\sqrt{2}) =$

- a) $\frac{4}{5}$ b) $\frac{13}{15}$ c) $\frac{14}{15}$ d) 1

5. If $x \neq n\pi, x \neq (2n + 1)\frac{\pi}{2}, n \in \mathbb{Z}$, then $\frac{\sin^{-1}(\cos x) + \cos^{-1}(\sin x)}{\tan^{-1}(\cot x) + \cot^{-1}(\tan x)} =$

- a) 0 b) 1 c) -1 d) 2

6. $\sin\left(2 \sin^{-1}\sqrt{\frac{63}{65}}\right) = ?$

- a) $\frac{4\sqrt{65}}{65}$ b) $\frac{2\sqrt{126}}{65}$ c) $\frac{\sqrt{63}}{65}$ d) $\frac{8\sqrt{63}}{65}$

7. $\sin\left[\sin^{-1}\frac{2}{3} + 2 \cos^{-1}\frac{2}{3}\right] =$

- a) $\frac{3}{2}$ b) $\frac{1}{3}$ c) $\frac{2}{3}$ d) None of these

8. If $\cos^{-1} x + \cos^{-1} y + \cos^{-1} z = 3\pi$ then $xy + yz + zx =$

- a) 1 b) $\frac{3}{2}$ c) -3 d) 3

9. if x taken negative permissible value, then $\cos^{-1} x =$

- a) $-\cos^{-1} x$ b) $\sin^{-1} \sqrt{1-x^2}$ c) $\pi - \sin^{-1} \sqrt{1-x^2}$ d) $-\sin^{-1} \sqrt{1-x^2}$

10. The value of $\tan\left(\frac{1}{2}\tan^{-1}\frac{12}{5}\right) =$

- a) $\frac{9}{2}$ b) $\frac{2}{3}$ c) $-\frac{2}{9}$ d) $\frac{4}{9}$

11. $\sin^{-1}[x\sqrt{1-x} - \sqrt{x}\sqrt{1-x^2}] =$

- a) $\sin^{-1} x - \sin^{-1} \sqrt{1-x^2}$ c) $\sin^{-1} x - \sin^{-1} \sqrt{x}$
b) $\sin^{-1} x + \sin^{-1} \sqrt{1-x}$ d) $\sin^{-1} x + \sin^{-1} \sqrt{x}$

12. If $\sin^{-1} x = \frac{\pi}{5}$, then $\cos^{-1} x =$

- a) $\frac{\pi}{15}$ b) $\frac{3\pi}{10}$ c) $\frac{5\pi}{12}$ d) $\frac{7\pi}{12}$

13. $\sin^{-1}(2x\sqrt{1-x^2}) = ?$, for $-\frac{1}{\sqrt{2}} \leq x \leq \frac{1}{\sqrt{2}}$

- a) $2 \sin^{-1} x$ b) $2 \cos^{-1} x$ c) $3 \sin^{-1} x$ d) $\frac{1}{2} \sin^{-1} x$

14. If $\cos^{-1} \sqrt{p} + \cos^{-1} \sqrt{1-p} + \cos^{-1} \sqrt{1-q} = \frac{3\pi}{4}$ then $q =$

- a) $\frac{1}{\sqrt{2}}$ b) 1 c) $\frac{1}{2}$ d) $\frac{1}{3}$

15. In ΔABC , $\angle C = \frac{\pi}{2}$, then $\tan^{-1}\left(\frac{a}{b+c}\right) + \tan^{-1}\left(\frac{b}{c+a}\right) =$

- a) $\frac{\pi}{2}$ b) $\frac{\pi}{4}$ c) $\frac{\pi}{3}$ d) None

16. If $\tan^{-1} x + \tan^{-1} 2 + \tan^{-1} 3 = \pi$, then $x =$

- a) 1 b) $\frac{1}{2}$ c) $\frac{1}{3}$ d) 2

17. In ΔABC , if $a = 2, B = \tan^{-1} \frac{1}{2}, C = \tan^{-1} \frac{1}{3}$, then $(A, b) =$

- a) $(\frac{3\pi}{4}, \frac{2}{\sqrt{5}})$ b) $(\frac{\pi}{4}, \frac{2\sqrt{2}}{5})$ c) $(\frac{3\pi}{4}, \frac{2\sqrt{2}}{\sqrt{5}})$ d) $(\frac{\pi}{4}, \frac{2}{\sqrt{5}})$

18. If $\sin^{-1}(\frac{3}{5}) + \sin^{-1} \sqrt{1-x^2} = \frac{\pi}{2}$, then $x = ?$

- a) $\frac{3}{5}$ b) $\frac{2}{5}$ c) $\frac{4}{5}$ d) $\frac{1}{5}$

19. If $a > b > 0, \sec^{-1}(\frac{a+b}{a-b}) = 2 \sin^{-1} x$, then $x =$

- a) $-\sqrt{\frac{b}{a+b}}$ b) $\sqrt{\frac{b}{a+b}}$ c) $-\sqrt{\frac{a}{a+b}}$ d) $\sqrt{\frac{a}{a+b}}$

20. If $\sin^{-1} \frac{x}{5} + \csc^{-1} \frac{5}{4} = \frac{\pi}{2}$ then x

- a) 3 b) 5 c) 1 d) 4

21. The value of $\cot[\csc^{-1} \frac{5}{3} + \tan^{-1} \frac{2}{3}] = ?$

- a) $\frac{4}{17}$ b) $\frac{5}{17}$ c) $\frac{6}{17}$ d) $\frac{3}{17}$

22. The positive solution of equation $\tan^{-1}(x-1) + \tan^{-1}(x) + \tan^{-1}(x+1) = \tan^{-1} 3x$

- a) 1 b) $\frac{1}{2}$ c) 2 d) $\frac{5}{2}$

23. The value of $\sin^{-1} \frac{1}{\sqrt{5}} + \cot^{-1} 3 = ?$

- a) $\frac{\pi}{2}$ b) $\frac{\pi}{6}$ c) $\frac{\pi}{3}$ d) $\frac{\pi}{4}$

24. The value of satisfying $4 \sin^{-1} x + \cos^{-1} x = \pi$ is,

a) $\frac{1}{2}$

b) 2

c) $\frac{1}{3}$

d) $\frac{\sqrt{3}}{2}$

25. If $\cos^{-1} x = \cot^{-1} \frac{4}{3} + \tan^{-1} \frac{1}{7}$, then $x = ?$

a) $\frac{1}{2}$

b) $\frac{\sqrt{3}}{2}$

c) $\frac{1}{\sqrt{2}}$

d) $\frac{3}{5}$