

**RAVI MATHS TUITION CENTER, CHENNAI-82. WHATSAPP -
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Inverse Trigonometric Functions

12th Standard

Maths

10 x 2 = 20

- 1) Find the principal value of: $\sec^{-1}\left(\frac{2}{\sqrt{3}}\right)$
- 2) Find the values of $\tan^{-1}\left(\tan \frac{3\pi}{4}\right)$
- 3) Find the value of $\tan\left(\sin^{-1} \frac{3}{5} + \cot^{-1} \frac{3}{2}\right)$
- 4) Write the principal value of $\left[\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) + \cos^{-1}\left(-\frac{1}{2}\right)\right]$
- 5) Write the principal value of the following: $\left[\tan^{-1}(-\sqrt{3}) + \tan^{-1}(1)\right]$
- 6) Write the principal value of $\tan^{-1}(1) + \cos^{-1}\left(-\frac{1}{2}\right)$
- 7) Using principal values, write the value of $\left[\cos^{-1}\left(\frac{1}{2}\right) + 2\sin^{-1}\left(\frac{1}{2}\right)\right]$
- 8) Using principal values, write the value of $2\cos^{-1} \frac{1}{2} + 3\sin^{-1} \frac{1}{2}$
- 9) Write the value of the following: $\tan^{-1}\left(\frac{a}{b}\right) - \tan^{-1}\left(\frac{a-b}{a+b}\right)$.
- 10) Find the value of $2\sec^{-1} 2 + \sin^{-1}\left(\frac{1}{2}\right)$

5 x 3 = 15

- 11) Show that:
 $\tan^{-1} \frac{1}{2} + \tan^{-1} \frac{2}{11} = \tan^{-1} \frac{3}{4}$
- 12) Express $\left(\tan^{-1}\left(\frac{\cos x}{1-\sin x}\right), -\frac{3\pi}{2}\right)$ in the simplest form:
- 13) Write the principal value of $\tan^{-1}(\sqrt{3}) + \cot^{-1}(-\sqrt{3})$
- 14) The value of $\tan^{-1}\left(\frac{-1}{\sqrt{3}}\right) + \cot^{-1}\left(\frac{1}{\sqrt{3}}\right) + \tan^{-1}\left(\sin\left(-\frac{\pi}{2}\right)\right)$ is
- 15) Evaluate $\cos\left[\cos^{-1}\left(\frac{-\sqrt{3}}{2}\right) + \frac{\pi}{6}\right]$

7 x 5 = 35

- 16) If $\sin\left(\sin^{-1} \frac{1}{5} + \cos^{-1} x\right) = 1$, then find the value of x.
- 17) $\tan^{-1}\left(\frac{x-2}{x-1}\right) + \tan^{-1}\left(\frac{x+2}{x+1}\right) = \frac{\pi}{4}$, then find the value of x.
- 18) Solve for x, $\tan^{-1} 3x + \tan^{-1} 2x = \frac{\pi}{4}$
- 19) Solve the following equations:
 $\tan^{-1}\left(\frac{x+1}{x-1}\right) + \tan^{-1}\left(\frac{x-1}{x}\right) = \tan^{-1}(-7)$
- 20) If $\tan^{-1}\left(\frac{x-2}{x-4}\right) + \tan^{-1}\left(\frac{x+2}{x+4}\right) = \frac{\pi}{4}$, find the values of x.
- 21) Does the following trigonometric equation have any solutions? If yes, obtain the solutions (s);
 $\tan^{-1}\left(\frac{x+1}{x-1}\right) + \tan^{-1}\left(\frac{x-1}{x}\right) = -\tan^{-1} 7$
- 22) Solve for x $\tan^{-1}(x-1) + \tan^{-1} x + \tan^{-1}(x+1) = \tan^{-1} 3x$
