

SuperGrads Study Material

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QUANTITATIVE ABILITY



INVERSE TRIGONOMETRIC FUNCTIONS

1. Find the value of $\cos^{-1}\left(\frac{1}{2}\right) + 2\sin^{-1}\left(\frac{1}{2}\right)$
2. Find the value of $\tan^{-1}(1) + \cos^{-1}\left(\frac{-1}{2}\right) + \sin^{-1}\left(\frac{-1}{2}\right)$
3. Find the value of $\tan^{-1}(\sqrt{3}) - \sec^{-1}(-2)$
4. $\sin\left\{\frac{\pi}{3} - \sin^{-1}\left(\frac{-1}{2}\right)\right\}$
5. $\sin\left(\frac{1}{2}\cos^{-1}\frac{4}{5}\right)$
6. Evaluate $\sin\left[2\cos^{-1}\left(\frac{-3}{5}\right)\right]$
7. $\cos\left(\sin^{-1}\frac{3}{5} + \sin^{-1}\frac{5}{13}\right)$
8. $\tan^{-1}\left\{2\cos\left(2\sin^{-1}\frac{1}{2}\right)\right\}$
9. Evaluate $\tan^{-1}\left(\frac{1}{7}\right) + \tan^{-1}\left(\frac{1}{13}\right)$
10. Evaluate $2\tan^{-1}\left(\frac{1}{2}\right) + \tan^{-1}\left(\frac{1}{7}\right)$
11. Evaluate $\cos^{-1}\frac{4}{5} + \cos^{-1}\frac{12}{13}$
12. Evaluate $\sin^{-1}\frac{8}{17} + \sin^{-1}\frac{3}{5}$
13. If $\sin\left(\sin^{-1}\frac{1}{5} + \cos^{-1}x\right) = 1$ Find the value of x.
14. The value of $\cos\left\{\sin^{-1}\left(-\frac{5}{13}\right)\right\}$
15. If $\sin\left(\sin^{-1}\frac{1}{2} + \cos^{-1}x\right) = 1$ Then the value of x is
16. For the principal value, evaluate $\tan^{-1}\left\{2\cos\left(2\sin^{-1}\frac{1}{2}\right)\right\}$
17. The value of the expression $\sin^{-1}\left[\cos\left\{\sin^{-1}\left(\frac{-\sqrt{3}}{2}\right)\right\}\right]$ is
18. The value of the expression $\tan^{-1}\left(\tan\frac{3\pi}{4}\right)$

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ANSWER KEY

1. $\frac{2\pi}{3}$	2. $\frac{3\pi}{3}$	3. $\frac{-\pi}{3}$	4. 1	5. $\frac{1}{\sqrt{10}}$	6. $\frac{-24}{25}$	7. $\frac{33}{65}$	8. $\frac{\pi}{4}$	9. $\tan^{-1}\left(\frac{2}{9}\right)$
10. $\tan^{-1}\left(\frac{31}{17}\right)$	11. $\cos^{-1}\left(\frac{33}{65}\right)$	12. $\cos^{-1}\left(\frac{36}{85}\right)$	13. $x = \frac{1}{5}$	14. $\frac{12}{13}$	15. $x = \frac{1}{2}$	16. Removed	17. $\frac{\pi}{6}$	18. $\frac{-\pi}{3}$

