



1. The value of $(\sin 30^\circ + \cos 30^\circ) - (\sin 60^\circ + \cos 60^\circ)$ is
(a) -1 (b) 0 (c) 1 (d) 2
2. The value of $(\sin 45^\circ + \cos 45^\circ)$ is
(a) $1/\sqrt{2}$ (b) $\sqrt{2}$ (c) $\sqrt{3}/2$ (d) 1
3. The value of $\tan 30^\circ / \cot 60^\circ$ is
(a) $1/\sqrt{2}$ (b) $1/\sqrt{3}$ (c) $\sqrt{3}$ (d) 1
4. If $\cos A = 4/5$, then the value of $\tan A$ is
(a) $3/5$ (b) $3/4$ (c) $4/3$ (d) $5/3$
5. If $\sin A = 1/2$ then the value of $\cot A$ is
(a) $\sqrt{3}$ (b) $1/\sqrt{3}$ (c) $\sqrt{3}/2$ (d) 1
6. If $\tan \theta = \frac{5}{12}$ find the value of: $\frac{\cos \theta + \sin \theta}{\cos \theta - \sin \theta}$
7. Prove that: $\cos^4 \theta - \cos^2 \theta = \sin^4 \theta - \sin^2 \theta$
8. Prove that :
$$\sqrt{\frac{\sec \theta - 1}{\sec \theta + 1}} + \sqrt{\frac{\sec \theta + 1}{\sec \theta - 1}} = 2 \operatorname{cosec} \theta$$
9. Prove that : $\sqrt{\frac{1 + \sin A}{1 - \sin A}} = \sec A + \tan A$
10. If $\sin \theta + \sin^2 \theta = 1$, prove that $\cos^2 \theta + \cos^4 \theta = 1$.
11. If $m \sin \theta + n \cos \theta = p$ and $m \cos \theta - n \sin \theta = q$ then prove that $m^2 + n^2 = p^2 + q^2$
