

1. Find the general solution of the equation $\operatorname{cosec} 4\theta = \frac{-2}{\sqrt{3}}$.
2. Find the value of $\sin 75^\circ \cos 15^\circ + \cos 75^\circ \sin 15^\circ$.
3. Find the value of $\sin \frac{5\pi}{3}$.
4. If $\sin A = \frac{1}{2}$, what is the value of $\sin 3A$?

5. Find the value of $\tan (-1125^\circ)$.
6. Find the value of $\frac{\cos (\pi + \theta) \cos (-\theta)}{\sin (\pi - \theta) \cos \left(\frac{\pi}{2} + \theta\right)}$.
7. If A, B, C are the angles of a triangle, find the value of $\sin \left(\frac{A+B}{2}\right)$.
8. If $\cot 2A = \tan (n-2) A$, find the value of A.
9. Find the solution of the equation $\tan \theta = -1$.
10. Find the value of $\cos 150^\circ + \sin 420^\circ$.
11. Find the value of $\tan 75^\circ$.
12. Find the value of $\sin (40^\circ + \theta) \cos (10^\circ + \theta) - \cos (40^\circ + \theta) \sin (10^\circ + \theta)$.
13. Write the general solution of the equation $\cos \theta = \frac{1}{\sqrt{2}}$.
14. Find the value of $\cos^2 52^\circ - \sin^2 38^\circ$.
15. If $\sin \theta = -\frac{1}{\sqrt{2}}$ and $\tan \theta = 1$, in which quadrant does the angle θ lie?
16. What is the domain of $\tan \theta$?
17. If $4 \sin^2 \theta = 1$, find the value of $\frac{2+3 \cos^2 \theta}{1-2 \sin^2 \theta}$.
18. Find the value of $2 \sin^2 \frac{3\pi}{4} + 2 \cos^2 \frac{\pi}{4}$.
19. If $\tan A = \frac{2}{3}$, find the value of $\tan 2A$.