

St. Mary's School, Dwarka
Holiday Homework
Class – XI
Subject: Mathematics

Find the general solution of the following equations.

1. $\cot x + \tan x = 2 \operatorname{cosec} x$
2. $7 \cos^2 x + 3 \sin^2 x = 4$
3. $\tan x + \tan 2x + \sqrt{3} \tan x \tan 2x = \sqrt{3}$
4. $\sin x = \tan x$
5. $\sin x \tan x = 1 + \tan x - \sin x$
6. $2 \tan \theta - \cot \theta + 1 = 0$
7. $\sin x + \sin 3x + \sin 5x = 0$
8. $4 \sin x \cos x + 2 \sin x + 2 \cos x + 1 = 0$
9. $\tan^2 \theta + \sec 2\theta = 1$
10. $\tan \theta + \sec \theta = 2 \cos \theta$
11. $\tan x + \tan 2x + \tan 3x = \tan x \tan 2x \tan 3x$
12. $\cos 3x + \cos x - \cos 2x = 0$
13. $\sin 2x \pm \sin 4x + \sin 6x = 0$
14. $\sqrt{3} \cos x - \sin x = 1$
15. $\cos \theta - \sin \theta = -1$
16. $\cos \theta + \sin \theta = 0$
17. $\sqrt{2} \sec x + \tan x = 1$
18. $\sin x + \cos x = \frac{1}{\sqrt{2}}$
19. $\sec x - \tan x = \sqrt{3}$
20. $\cot x + \operatorname{cosec} x = \sqrt{3}$
21. $\cos x + \sqrt{3} \sin x = 1$
22. $\sin nx = \sin mx$