

## SELF ASSESSMENT TEST -3

### CLASS 10+1

1.  $\cos x = \frac{7}{25}$  and  $x$  lies in fourth quad., find the value of  $\cos x - \sin x$
2. Is the equation  $2\sin^2 \theta - \cos \theta + 4 = 0$  possible ?
3. Find the minimum value of  $\sin^2 \theta + \operatorname{cosec}^2 \theta$
4. If  $\operatorname{cosec} x - \cot x = \frac{3}{2}$  find  $\cos x$  and  $\sin x$
5. If  $5 \tan x = 4$  find the value of  $\frac{5 \sin x - 3 \cos x}{5 \sin x + 3 \cos x}$
6. Show that the equation  $\sin^2 \theta = \frac{(x+y)^2}{4xy}$  is possible when  $x=y$
7. Is the equation  $\sin x = x + \frac{1}{x}$  possible
8. If  $\sin x = \frac{3}{5}$  find the value of  $\frac{\sec x - \tan x}{\sec x + \tan x}$
9. Find the value of  $\tan^2 60^\circ + 4 \cos^2 45^\circ + 3 \sec^2 30^\circ + 5 \cos^2 90^\circ$
10. If  $\sin^4 \theta + \sin^2 \theta = 1$  then find the value of  $\tan^4 \theta - \tan^2 \theta$
11. 1. Find the value (a)  $\sin(-1845^\circ)$  (b)  $\cos(2190^\circ)$  (c)  $\tan(3645^\circ)$
12. Prove that  $3 \cos^2 \frac{\pi}{4} + \sec \frac{2\pi}{3} + 5 \tan^2 \frac{\pi}{3} = \frac{29}{2}$
13. Find the value (a)  $\tan \frac{19\pi}{3}$  (b)  $\sin\left(-\frac{11\pi}{3}\right)$
14. Find the value  $\frac{4 \operatorname{cosec}(180^\circ + \theta) \cos(90^\circ + \theta) \tan(270^\circ - \theta) \cot(360^\circ - \theta)}{5 \sin(360^\circ - \theta) \cos(360^\circ + \theta) \operatorname{cosec}(-\theta) \sin(270^\circ + \theta)}$
15. Find  $x \operatorname{cosec}(90^\circ + \theta) + x \cos \theta \cot(90^\circ + \theta) = \sin(90^\circ + \theta)$

16. Prove that  $\sin^2 \frac{\pi}{8} + \sin^2 \frac{3\pi}{8} + \sin^2 \frac{5\pi}{8} + \sin^2 \frac{7\pi}{8} = 2$
17. Find the value of (a)  $\sin^2 15^\circ + \sin^2 75^\circ$  (b)  $\cos 25^\circ + \cos 155^\circ$
18. 8. If ABCD is cyclic quad. , prove that  $\cos A + \cos B + \cos C + \cos D = 0$
19. Show that in any triangle ABC,  $\tan \frac{A+B-C}{2} = \cot C$
20. Find the value of  $\sin(-690^\circ)\cos(-300^\circ) + \cos(-750^\circ)\sin(-240^\circ)$