EduSahara™ Assignment

Name : Trigonometric Expression Evaluation

Chapter : Trigonometry

Grade : SSC Grade X

1. If $\sin 2B = 2\sin B$, then B =

   (i) 45° (ii) 30° (iii) 0° (iv) 90° (v) 60°

2. If $\sin(D+E) = \frac{1}{2}\sqrt{3}$ and $\sin(D-E) = \frac{1}{2}$, find $D \& E$

   (i) D=46°,E=16° (ii) D=43°,E=13° (iii) D=44°,E=14° (iv) D=47°,E=17° (v) D=45°,E=15°

3. If $\tan(B+C) = \sqrt{3}$ and $\tan(B-C) = \sqrt{\frac{1}{3}}$, find $B \& C$

   (i) B=43°,C=13° (ii) B=46°,C=16° (iii) B=44°,C=14° (iv) B=45°,C=15° (v) B=47°,C=17°

4. $\cot 30° \sin 0° + \tan 60° \cot 90° =$

   (i) (-1) (ii) 0 (iii) 3 (iv) (-3) (v) 1

5. $\frac{\cos 30° \tan 45° \sin 60° - \tan 0° \sec 60° \sec 30°}{\cos 60° \operatorname{cosec} 45° \sin 90° + \sec 45° \operatorname{cosec} 30° \tan 60°} =$

   (i) $(-\frac{3}{188}\sqrt{-1}+\frac{3}{47}\sqrt{6})$ (ii) $(-\frac{3}{188}\sqrt{2}+\frac{18}{47})$ (iii) $(-\frac{3}{188}\sqrt{2}+\frac{3}{47}\sqrt{6})$ (iv) $(-\frac{3}{188}\sqrt{2}+\frac{3}{47}\sqrt{6})$

   (v) $(-\frac{3}{188}\sqrt{5}+\frac{3}{47}\sqrt{6})$

6. $\frac{\sin 61°}{\cos 29°} =$

   (i) $\tan 61°$ (ii) $\tan 29°$ (iii) -1 (iv) 1 (v) 0

7. $\frac{\cos 44°}{\sin 46°} =$

   (i) $\tan 46°$ (ii) $\tan 44°$ (iii) 0 (iv) -1 (v) 1

8. $\frac{\tan 57°}{\cot 33°} =$

   (i) $\tan 33°$ (ii) 1 (iii) $\tan 57°$ (iv) 0 (v) -1

9. $\frac{\cot 15°}{\tan 75°} =$

   (i) -1 (ii) 0 (iii) $\tan 15°$ (iv) $\tan 75°$ (v) 1

10. $\frac{\sec 9°}{\operatorname{cosec} 81°} =$

    (i) 0 (ii) 1 (iii) -1 (iv) $\tan 81°$ (v) $\tan 9°$

11. $\frac{\operatorname{cosec} 9^\circ}{\sec 81^\circ} =$

(i) 0 (ii) -1 (iii) 1 (iv) $\tan 81^\circ$ (v) $\tan 9^\circ$

12. $\frac{\sin 16^\circ \cos 20^\circ}{\cos 74^\circ \sin 70^\circ} =$

(i) -1 (ii) $\tan 16^\circ$ (iii) 1 (iv) 0 (v) $\tan 20^\circ$

13. $\frac{\cos 70^\circ \sin 57^\circ}{\sin 20^\circ \cos 33^\circ} =$

(i) -1 (ii) 0 (iii) $\tan 70^\circ$ (iv) 1 (v) $\tan 57^\circ$

14. $\frac{\tan 24^\circ \cot 57^\circ}{\cot 66^\circ \tan 33^\circ} =$

(i) $\tan 24^\circ$ (ii) -1 (iii) 0 (iv) 1 (v) $\tan 57^\circ$

15. $\frac{\cot 28^\circ \tan 20^\circ}{\tan 62^\circ \cot 70^\circ} =$

(i) $\tan 28^\circ$ (ii) -1 (iii) $\tan 20^\circ$ (iv) 0 (v) 1

16. $\frac{\sec 8^\circ \operatorname{cosec} 8^\circ}{\operatorname{cosec} 82^\circ \sec 82^\circ} =$

(i) -1 (ii) $\tan 8^\circ$ (iii) 0 (iv) 1

17. $\frac{\operatorname{cosec} 10^\circ \sec 65^\circ}{\sec 80^\circ \operatorname{cosec} 25^\circ} =$

(i) $\tan 65^\circ$ (ii) 0 (iii) 1 (iv) -1 (v) $\tan 10^\circ$

18. $\sin 16^\circ - \cos 74^\circ =$

(i) 0 (ii) -1 (iii) 1 (iv) $2\sin 74^\circ$ (v) $2\sin 16^\circ$

19. $\cos 84^\circ - \sin 6^\circ =$

(i) 0 (ii) $2\sin 6^\circ$ (iii) 1 (iv) $2\sin 84^\circ$ (v) -1

20. $\tan 50^\circ - \cot 40^\circ =$

(i) 0 (ii) $2\sin 50^\circ$ (iii) 1 (iv) -1 (v) $2\sin 40^\circ$

21. $\cot 74^\circ - \tan 16^\circ =$

(i) 1 (ii) -1 (iii) $2\sin 16^\circ$ (iv) 0 (v) $2\sin 74^\circ$

22. $\sec 65^\circ - \operatorname{cosec} 25^\circ =$

(i) $2\sin 25^\circ$ (ii) 1 (iii) -1 (iv) $2\sin 65^\circ$ (v) 0

23. $\operatorname{cosec} 24^\circ - \sec 66^\circ =$

(i) $2\sin 66^\circ$ (ii) 1 (iii) 0 (iv) -1 (v) $2\sin 24^\circ$

24. $\sin 86^\circ \cos 49^\circ - \cos 4^\circ \sin 41^\circ =$

(i) -1 (ii) $2\sin 86^\circ$ (iii) 0 (iv) 1 (v) $2\sin 49^\circ$

25. $\cos 53° \sin 49° - \sin 37° \cos 41° =$

(i) $2\sin 53°$ (ii) -1 (iii) 1 (iv) 0 (v) $2\sin 49°$

26. $\tan 75° \cot 80° - \cot 15° \tan 10° =$

(i) $2\sin 80°$ (ii) -1 (iii) $2\sin 75°$ (iv) 0 (v) 1

27. $\cot 67° \tan 62° - \tan 23° \cot 28° =$

(i) $2\sin 67°$ (ii) 0 (iii) $2\sin 62°$ (iv) -1 (v) 1

28. $\sec 28° \operatorname{cosec} 88° - \operatorname{cosec} 62° \sec 2° =$

(i) -1 (ii) $2\sin 88°$ (iii) $2\sin 28°$ (iv) 0 (v) 1

29. $\operatorname{cosec} 81° \sec 82° - \sec 9° \operatorname{cosec} 8° =$

(i) 1 (ii) 0 (iii) $2\sin 81°$ (iv) $2\sin 82°$ (v) -1

30. $\sin 45° \cos 90° + \cos 45° \sin 90° =$

(i) 1 (ii) $\frac{1}{2}\sqrt{4}$ (iii) $\frac{1}{2}\sqrt{2}$ (iv) $\frac{1}{2}\sqrt{2}$ (v) $\frac{1}{2}\sqrt{\frac{1}{2}}$

31. In $\triangle ABC$, right angled at B, if $\tan A = \frac{8}{9}$, find $\sin A \cos C + \cos A \sin C$

(i) $\frac{8}{145}\sqrt{145}$ (ii) 1 (iii) $\frac{1}{8}\sqrt{145}$ (iv) $\frac{9}{145}\sqrt{145}$ (v) $\frac{1}{9}\sqrt{145}$

32. In $\triangle CDE$, right angled at D, if $\tan C = \frac{5}{9}$, find $\cos C \cos E - \sin C \sin E$

(i) 0 (ii) $\frac{1}{5}\sqrt{106}$ (iii) $\frac{1}{9}\sqrt{106}$ (iv) $\frac{5}{106}\sqrt{106}$ (v) $\frac{9}{106}\sqrt{106}$

33. Find the value of $\tan 25° \tan 50° \tan 65° \tan 40°$

(i) 0 (ii) undefined (iii) 1 (iv) -1 (v) 2

34. Find the value of $\cot 35° \cot 40° \cot 55° \cot 50°$

(i) -1 (ii) 2 (iii) 0 (iv) undefined (v) 1

35. $\frac{\sin^2 15° + \sin^2 75°}{\cos^2 80° + \cos^2 10°} =$

(i) -1 (ii) 0 (iii) undefined (iv) 2 (v) 1

36. $\frac{\sin 65° \cos 25° + \cos 65° \sin 25°}{\sin 35° \cos 55° + \cos 35° \sin 55°} =$

(i) 0 (ii) 1 (iii) undefined (iv) -1 (v) 2

37. $\sin 23° + \cos 52° =$

(i) $\cos 67° + \sin 38°$ (ii) $\cos 67° + \cos 38°$ (iii) $\sin 23° + \sin 52°$ (iv) $\cos 23° + \sin 52°$

38. $\cos 47° + \sin 44° =$

(i) $\sin 47° + \cos 44°$ (ii) $\sin 43° + \cos 46°$ (iii) $\cos 47° + \cos 44°$ (iv) $\sin 43° + \sin 46°$

39. $\tan 45° + \cot 34° =$

(i) $\cot 45° + \tan 56°$ (ii) $\cot 45° + \tan 34°$ (iii) $\cot 45° + \cot 56°$ (iv) $\tan 45° + \tan 34°$

40. $\cot 69° + \tan 23° =$

(i) $\cot 69° + \cot 23°$ (ii) $\tan 21° + \cot 67°$ (iii) $\tan 69° + \cot 23°$ (iv) $\tan 21° + \tan 67°$

41. $\sec 33° + \operatorname{cosec} 75° =$

(i) $\operatorname{cosec} 33° + \sec 75°$ (ii) $\sec 33° + \sec 75°$ (iii) $\operatorname{cosec} 57° + \sec 15°$ (iv) $\operatorname{cosec} 57° + \operatorname{cosec} 15°$

42. $\operatorname{cosec} 41° + \sec 71° =$

(i) $\sec 49° + \operatorname{cosec} 19°$ (ii) $\sec 41° + \operatorname{cosec} 71°$ (iii) $\operatorname{cosec} 41° + \operatorname{cosec} 71°$ (iv) $\sec 49° + \sec 19°$

Assignment Key

1) (iii)	2) (v)	3) (iv)	4) (ii)	5) (iv)	6) (iv)
7) (v)	8) (ii)	9) (v)	10) (ii)	11) (iii)	12) (iii)
13) (iv)	14) (iv)	15) (v)	16) (iv)	17) (iii)	18) (i)
19) (i)	20) (i)	21) (iv)	22) (v)	23) (iii)	24) (iii)
25) (iv)	26) (iv)	27) (ii)	28) (iv)	29) (ii)	30) (iii)
31) (ii)	32) (i)	33) (iii)	34) (v)	35) (v)	36) (ii)
37) (i)	38) (ii)	39) (i)	40) (ii)	41) (iii)	42) (i)