EduSahara™ Assignment

Name : Trigonometric Expression Evaluation

Chapter : Trigonometry

Grade : SSC Grade X

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

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

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

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

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

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

4. $\cos 45° \cot 90° + \sin 30° \sin 0° =$

   (i) (-1) (ii) (-3) (iii) 0 (iv) 1 (v) 2

5. $\dfrac{\operatorname{cosec} 45° \sec 45° \sec 30° - \tan 30° \sec 0° \tan 0°}{\cot 45° \sin 60° - \operatorname{cosec} 90° \operatorname{cosec} 30°} =$

   (i) $(-\frac{8}{13} - \frac{32}{13})$ (ii) $(-\frac{8}{13} - \frac{32}{39}\sqrt{3})$ (iii) $(-\frac{6}{13} - \frac{32}{39}\sqrt{3})$ (iv) $(-\frac{8}{13} - \frac{32}{39}\sqrt[4]{3})$ (v) $(-\frac{10}{13} - \frac{32}{39}\sqrt{3})$

6. $\dfrac{\sin 75°}{\cos 15°} =$

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

7. $\dfrac{\cos 13°}{\sin 77°} =$

   (i) $\tan 77°$ (ii) 1 (iii) $\tan 13°$ (iv) -1 (v) 0

8. $\dfrac{\tan 78°}{\cot 12°} =$

   (i) 1 (ii) 0 (iii) $\tan 78°$ (iv) -1 (v) $\tan 12°$

9. $\dfrac{\cot 56°}{\tan 34°} =$

   (i) $\tan 56°$ (ii) -1 (iii) 0 (iv) $\tan 34°$ (v) 1

10. $\dfrac{\sec 77°}{\operatorname{cosec} 13°} =$

    (i) -1 (ii) $\tan 77°$ (iii) 0 (iv) $\tan 13°$ (v) 1

11. $\dfrac{\operatorname{cosec} 51°}{\sec 39°} =$

    (i) -1 (ii) $\tan 51°$ (iii) $\tan 39°$ (iv) 1 (v) 0

12. $\frac{\sin 25^\circ \cos 51^\circ}{\cos 65^\circ \sin 39^\circ} =$

(i) $\tan 51^\circ$ (ii) 0 (iii) $\tan 25^\circ$ (iv) -1 (v) 1

13. $\frac{\cos 13^\circ \sin 52^\circ}{\sin 77^\circ \cos 38^\circ} =$

(i) $\tan 13^\circ$ (ii) $\tan 52^\circ$ (iii) 0 (iv) 1 (v) -1

14. $\frac{\tan 76^\circ \cot 41^\circ}{\cot 14^\circ \tan 49^\circ} =$

(i) -1 (ii) $\tan 41^\circ$ (iii) 1 (iv) $\tan 76^\circ$ (v) 0

15. $\frac{\cot 79^\circ \tan 44^\circ}{\tan 11^\circ \cot 46^\circ} =$

(i) $\tan 44^\circ$ (ii) $\tan 79^\circ$ (iii) -1 (iv) 0 (v) 1

16. $\frac{\sec 5^\circ \operatorname{cosec} 65^\circ}{\operatorname{cosec} 85^\circ \sec 25^\circ} =$

(i) $\tan 65^\circ$ (ii) $\tan 5^\circ$ (iii) -1 (iv) 1 (v) 0

17. $\frac{\operatorname{cosec} 63^\circ \sec 9^\circ}{\sec 27^\circ \operatorname{cosec} 81^\circ} =$

(i) $\tan 63^\circ$ (ii) 1 (iii) 0 (iv) $\tan 9^\circ$ (v) -1

18. $\sin 62^\circ - \cos 28^\circ =$

(i) -1 (ii) $2\sin 28^\circ$ (iii) $2\sin 62^\circ$ (iv) 0 (v) 1

19. $\cos 15^\circ - \sin 75^\circ =$

(i) -1 (ii) $2\sin 15^\circ$ (iii) 1 (iv) 0 (v) $2\sin 75^\circ$

20. $\tan 71^\circ - \cot 19^\circ =$

(i) 1 (ii) $2\sin 19^\circ$ (iii) 0 (iv) $2\sin 71^\circ$ (v) -1

21. $\cot 19^\circ - \tan 71^\circ =$

(i) -1 (ii) $2\sin 19^\circ$ (iii) 0 (iv) $2\sin 71^\circ$ (v) 1

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

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

23. $\operatorname{cosec} 23^\circ - \sec 67^\circ =$

(i) 1 (ii) $2\sin 23^\circ$ (iii) 0 (iv) -1 (v) $2\sin 67^\circ$

24. $\sin 41^\circ \cos 10^\circ - \cos 49^\circ \sin 80^\circ =$

(i) $2\sin 10^\circ$ (ii) 1 (iii) 0 (iv) $2\sin 41^\circ$ (v) -1

25. $\cos 7^\circ \sin 70^\circ - \sin 83^\circ \cos 20^\circ =$

(i) 1 (ii) -1 (iii) 0 (iv) $2\sin 7^\circ$ (v) $2\sin 70^\circ$

26. $\tan 7^\circ \cot 72^\circ - \cot 83^\circ \tan 18^\circ =$

(i) $2\sin 7^\circ$ (ii) $2\sin 72^\circ$ (iii) 1 (iv) -1 (v) 0

27. $\cot 36° \tan 48° - \tan 54° \cot 42° =$

(i) $2\sin 48°$ (ii) -1 (iii) 1 (iv) 0 (v) $2\sin 36°$

28. $\sec 58° \operatorname{cosec} 24° - \operatorname{cosec} 32° \sec 66° =$

(i) 1 (ii) $2\sin 58°$ (iii) -1 (iv) 0 (v) $2\sin 24°$

29. $\operatorname{cosec} 80° \sec 2° - \sec 10° \operatorname{cosec} 88° =$

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

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

(i) $(\frac{1}{4}\sqrt{\frac{1}{2}}+\frac{1}{4}\sqrt{6})$ (ii) $(\frac{1}{4}\sqrt{2}+\frac{3}{2})$ (iii) $(\frac{1}{4}\sqrt{5}+\frac{1}{4}\sqrt{6})$ (iv) $(\frac{1}{4}\sqrt{2}+\frac{1}{4}\sqrt{6})$ (v) $(\frac{1}{4}\sqrt{2}+\frac{1}{4}\sqrt[4]{6})$

31. In $\triangle HIJ$, right angled at I, if $\tan H = \frac{4}{5}$, find $\sin H \cos J + \cos H \sin J$

(i) 1 (ii) $\frac{1}{5}\sqrt{41}$ (iii) $\frac{5}{41}\sqrt{41}$ (iv) $\frac{4}{41}\sqrt{41}$ (v) $\frac{1}{4}\sqrt{41}$

32. In $\triangle EFG$, right angled at F, if $\tan E = \frac{7}{9}$, find $\cos E \cos G - \sin E \sin G$

(i) 0 (ii) $\frac{1}{7}\sqrt{130}$ (iii) $\frac{9}{130}\sqrt{130}$ (iv) $\frac{7}{130}\sqrt{130}$ (v) $\frac{1}{9}\sqrt{130}$

33. Find the value of $\tan 80° \tan 50° \tan 10° \tan 40°$

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

34. Find the value of $\cot 55° \cot 20° \cot 35° \cot 70°$

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

35. $\frac{\sin^2 70° + \sin^2 20°}{\cos^2 60° + \cos^2 30°} =$

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

36. $\frac{\sin 60° \cos 30° + \cos 60° \sin 30°}{\sin 10° \cos 80° + \cos 10° \sin 80°} =$

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

37. $\sin 23° + \cos 80° =$

(i) $\cos 67° + \cos 10°$ (ii) $\sin 23° + \sin 80°$ (iii) $\cos 23° + \sin 80°$ (iv) $\cos 67° + \sin 10°$

38. $\cos 34° + \sin 16° =$

(i) $\cos 34° + \cos 16°$ (ii) $\sin 34° + \cos 16°$ (iii) $\sin 56° + \cos 74°$ (iv) $\sin 56° + \sin 74°$

39. $\tan 54° + \cot 76° =$

(i) $\cot 36° + \cot 14°$ (ii) $\tan 54° + \tan 76°$ (iii) $\cot 36° + \tan 14°$ (iv) $\cot 54° + \tan 76°$

40. $\cot 23° + \tan 57° =$

(i) $\tan 67° + \tan 33°$ (ii) $\tan 67° + \cot 33°$ (iii) $\cot 23° + \cot 57°$ (iv) $\tan 23° + \cot 57°$

41. $\sec 17° + \operatorname{cosec} 35° =$

(i) $\operatorname{cosec} 17° + \sec 35°$ (ii) $\sec 17° + \sec 35°$ (iii) $\operatorname{cosec} 73° + \operatorname{cosec} 55°$ (iv) $\operatorname{cosec} 73° + \sec 55°$

42. $\operatorname{cosec} 43° + \sec 46° =$

(i) $\sec 47° + \sec 44°$ (ii) $\sec 47° + \operatorname{cosec} 44°$ (iii) $\sec 43° + \operatorname{cosec} 46°$ (iv) $\operatorname{cosec} 43° + \operatorname{cosec} 46°$

Assignment Key

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

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