

EduSahara™ Learning Center Assignment**Grade : Class X, SSC****Chapter : Trigonometry****Name : Trigonometric Expression Evaluation**

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

- (i) 45° (ii) 0° (iii) 60° (iv) 30° (v) 90°
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2. If $\sin(D + E) = \frac{1}{2} \sqrt{3}$ and $\sin(D - E) = \frac{1}{2}$, find D & E

- (i) $D = 47^\circ, E = 17^\circ$
(ii) $D = 44^\circ, E = 14^\circ$
(iii) $D = 43^\circ, E = 13^\circ$
(iv) $D = 46^\circ, E = 16^\circ$
(v) $D = 45^\circ, E = 15^\circ$
-

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

- (i) $H = 46^\circ, I = 16^\circ$
(ii) $H = 47^\circ, I = 17^\circ$
(iii) $H = 44^\circ, I = 14^\circ$
(iv) $H = 43^\circ, I = 13^\circ$
(v) $H = 45^\circ, I = 15^\circ$
-

4. $\cot 45^\circ \cos 0^\circ - \sin 30^\circ \cot 60^\circ =$

- (i) $(-2 - \frac{1}{6} \sqrt{3})$ (ii) $(1 - \frac{1}{6} \sqrt{3})$ (iii) $(1 - \frac{1}{6} \sqrt{3})$
(iv) $(1 - \frac{1}{2})$ (v) $(4 - \frac{1}{6} \sqrt{3})$
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5. $\frac{\cot 60^\circ \cot 30^\circ + \sec 45^\circ \cos 45^\circ}{\cot 90^\circ \operatorname{cosec} 45^\circ - \tan 60^\circ \cos 45^\circ} =$

- (i) $(-\frac{2}{3} \sqrt{3})$ (ii) $(-\frac{2}{3} \sqrt{9})$ (iii) (-4)
(iv) $(-\frac{2}{3} \sqrt{6})$ (v) $(-\frac{2}{3} \sqrt{6})$
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6. $\frac{\sin 48^\circ}{\cos 42^\circ} =$

(i) $\tan 42^\circ$ (ii) 1 (iii) 0 (iv) $\tan 48^\circ$ (v) -1

7. $\frac{\cos 31^\circ}{\sin 59^\circ} =$

(i) 1 (ii) $\tan 59^\circ$ (iii) 0 (iv) -1 (v) $\tan 31^\circ$

8. $\frac{\tan 33^\circ}{\cot 57^\circ} =$

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

9. $\frac{\cot 37^\circ}{\tan 53^\circ} =$

(i) $\tan 37^\circ$ (ii) -1 (iii) $\tan 53^\circ$ (iv) 1 (v) 0

10. $\frac{\sec 21^\circ}{\operatorname{cosec} 69^\circ} =$

(i) $\tan 69^\circ$ (ii) $\tan 21^\circ$ (iii) 0 (iv) 1 (v) -1

11. $\frac{\operatorname{cosec} 76^\circ}{\sec 14^\circ} =$

(i) $\tan 76^\circ$ (ii) 0 (iii) $\tan 14^\circ$ (iv) 1 (v) -1

12. $\frac{\sin 8^\circ \cos 32^\circ}{\cos 82^\circ \sin 58^\circ} =$

(i) 1 (ii) -1 (iii) $\tan 32^\circ$ (iv) $\tan 8^\circ$ (v) 0

13. $\frac{\cos 4^\circ \sin 45^\circ}{\sin 86^\circ \cos 45^\circ} =$

(i) $\tan 45^\circ$ (ii) -1 (iii) $\tan 4^\circ$ (iv) 1 (v) 0

14. $\frac{\tan 64^\circ \cot 63^\circ}{\cot 26^\circ \tan 27^\circ} =$

(i) 0 (ii) 1 (iii) -1 (iv) $\tan 63^\circ$ (v) $\tan 64^\circ$

15. $\frac{\cot 38^\circ \tan 16^\circ}{\tan 52^\circ \cot 74^\circ} =$

(i) $\tan 38^\circ$ (ii) -1 (iii) $\tan 16^\circ$ (iv) 0 (v) 1

16. $\frac{\sec 20^\circ \operatorname{cosec} 31^\circ}{\operatorname{cosec} 70^\circ \sec 59^\circ} =$

(i) 0 (ii) $\tan 20^\circ$ (iii) -1 (iv) $\tan 31^\circ$ (v) 1

17. $\frac{\operatorname{cosec} 56^\circ \sec 21^\circ}{\sec 34^\circ \operatorname{cosec} 69^\circ} =$

(i) $\tan 56^\circ$ (ii) $\tan 21^\circ$ (iii) 0 (iv) -1 (v) 1

18. $\sin 24^\circ - \cos 66^\circ =$

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

19. $\cos 12^\circ - \sin 78^\circ =$

(i) $2 \sin 12^\circ$ (ii) $2 \sin 78^\circ$ (iii) 1 (iv) -1 (v) 0

20. $\tan 51^\circ - \cot 39^\circ =$

(i) $2 \sin 51^\circ$ (ii) 1 (iii) -1 (iv) $2 \sin 39^\circ$ (v) 0

21. $\cot 53^\circ - \tan 37^\circ =$

(i) $2 \sin 37^\circ$ (ii) 1 (iii) $2 \sin 53^\circ$ (iv) -1 (v) 0

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

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

23. $\operatorname{cosec} 51^\circ - \sec 39^\circ =$

(i) $2 \sin 39^\circ$ (ii) 1 (iii) $2 \sin 51^\circ$ (iv) 0 (v) -1

24. $\sin 51^\circ \cos 21^\circ - \cos 39^\circ \sin 69^\circ =$

(i) 0 (ii) $2 \sin 21^\circ$ (iii) 1 (iv) $2 \sin 51^\circ$ (v) -1

25. $\cos 81^\circ \sin 60^\circ - \sin 9^\circ \cos 30^\circ =$

(i) -1 (ii) 0 (iii) 1 (iv) $2 \sin 60^\circ$ (v) $2 \sin 81^\circ$

26. $\tan 18^\circ \cot 40^\circ - \cot 72^\circ \tan 50^\circ =$

(i) $2 \sin 40^\circ$ (ii) 0 (iii) 1 (iv) -1 (v) $2 \sin 18^\circ$

27. $\cot 82^\circ \tan 49^\circ - \tan 8^\circ \cot 41^\circ =$

(i) 0 (ii) $2 \sin 49^\circ$ (iii) -1 (iv) $2 \sin 82^\circ$ (v) 1

28. $\sec 43^\circ \operatorname{cosec} 65^\circ - \operatorname{cosec} 47^\circ \sec 25^\circ =$

(i) 0 (ii) -1 (iii) 1 (iv) $2 \sin 65^\circ$ (v) $2 \sin 43^\circ$

29. $\operatorname{cosec} 33^\circ \sec 12^\circ - \sec 57^\circ \operatorname{cosec} 78^\circ =$

(i) -1 (ii) 1 (iii) $2 \sin 33^\circ$ (iv) 0 (v) $2 \sin 12^\circ$

30. $\sin 90^\circ \cos 45^\circ + \cos 90^\circ \sin 45^\circ =$

- (i) $\frac{1}{2} \sqrt{4}$ (ii) 1 (iii) $\frac{1}{2} \sqrt{2}$ (iv) $\frac{1}{2} \sqrt{-1}$ (v) $\frac{1}{2} \sqrt{2}$
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31. In $\triangle HIJ$, right angled at I, if $\tan H = \frac{5}{6}$, find $\sin H \cos J + \cos H \sin J$

- (i) 1 (ii) $\frac{1}{5} \sqrt{61}$ (iii) $\frac{5}{61} \sqrt{61}$ (iv) $\frac{6}{61} \sqrt{61}$ (v) $\frac{1}{6} \sqrt{61}$
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32. In $\triangle LMN$, right angled at M, if $\tan L = \frac{4}{9}$, find $\cos L \cos N - \sin L \sin N$

- (i) $\frac{4}{97} \sqrt{97}$ (ii) $\frac{1}{4} \sqrt{97}$ (iii) 0 (iv) $\frac{1}{9} \sqrt{97}$ (v) $\frac{9}{97} \sqrt{97}$
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33. Find the value of $\tan 35^\circ \tan 30^\circ \tan 55^\circ \tan 60^\circ$

- (i) undefined (ii) -1 (iii) 2 (iv) 1 (v) 0
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34. Find the value of $\cot 30^\circ \cot 70^\circ \cot 60^\circ \cot 20^\circ$

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

35. $\frac{\sin^2 80^\circ + \sin^2 10^\circ}{\cos^2 20^\circ + \cos^2 70^\circ} =$

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

36. $\frac{\sin 15^\circ \cos 75^\circ + \cos 15^\circ \sin 75^\circ}{\sin 25^\circ \cos 65^\circ + \cos 25^\circ \sin 65^\circ} =$

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

37. $\sin 67^\circ + \cos 17^\circ =$

- (i) $\sin 67^\circ + \sin 17^\circ$
 (ii) $\cos 23^\circ + \cos 73^\circ$
 (iii) $\cos 23^\circ + \sin 73^\circ$
 (iv) $\cos 67^\circ + \sin 17^\circ$
-

38. $\cos 20^\circ + \sin 50^\circ =$

- (i) $\sin 70^\circ + \cos 40^\circ$
 (ii) $\sin 70^\circ + \sin 40^\circ$
 (iii) $\cos 20^\circ + \cos 50^\circ$
 (iv) $\sin 20^\circ + \cos 50^\circ$
-

39. $\tan 76^\circ + \cot 21^\circ =$

(i) $\cot 14^\circ + \cot 69^\circ$

(ii) $\tan 76^\circ + \tan 21^\circ$

(iii) $\cot 14^\circ + \tan 69^\circ$

(iv) $\cot 76^\circ + \tan 21^\circ$

40. $\cot 20^\circ + \tan 69^\circ =$

(i) $\tan 70^\circ + \cot 21^\circ$

(ii) $\cot 20^\circ + \cot 69^\circ$

(iii) $\tan 70^\circ + \tan 21^\circ$

(iv) $\tan 20^\circ + \cot 69^\circ$

41. $\sec 17^\circ + \operatorname{cosec} 61^\circ =$

(i) $\operatorname{cosec} 17^\circ + \sec 61^\circ$

(ii) $\sec 17^\circ + \sec 61^\circ$

(iii) $\operatorname{cosec} 73^\circ + \sec 29^\circ$

(iv) $\operatorname{cosec} 73^\circ + \operatorname{cosec} 29^\circ$

42. $\operatorname{cosec} 29^\circ + \sec 45^\circ =$

(i) $\sec 61^\circ + \operatorname{cosec} 45^\circ$

(ii) $\sec 29^\circ + \operatorname{cosec} 45^\circ$

(iii) $\sec 61^\circ + \sec 45^\circ$

(iv) $\operatorname{cosec} 29^\circ + \operatorname{cosec} 45^\circ$

Assignment Key

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