

EduSahara™ Learning Center Assignment**Grade : Class X, CBSE****Chapter : Introduction to Trigonometry****Name : Finding Values**

1. $\frac{1 - \tan^2 10^\circ}{1 + \tan^2 10^\circ} =$

(i) $\sin 20^\circ$ (ii) $\cot 20^\circ$ (iii) $\tan 20^\circ$ (iv) $\cos 20^\circ$

2. If $\sin 2E = 2 \sin E$, then $E =$

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

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

(i) $D = 46^\circ, E = 16^\circ$

(ii) $D = 44^\circ, E = 14^\circ$

(iii) $D = 45^\circ, E = 15^\circ$

(iv) $D = 43^\circ, E = 13^\circ$

(v) $D = 47^\circ, E = 17^\circ$

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

(i) $B = 45^\circ, C = 15^\circ$

(ii) $B = 46^\circ, C = 16^\circ$

(iii) $B = 47^\circ, C = 17^\circ$

(iv) $B = 44^\circ, C = 14^\circ$

(v) $B = 43^\circ, C = 13^\circ$

5. In $\triangle CDE$, right angled at D , if $\tan C = \frac{1}{2}$, find $\sin C \cos E + \cos C \sin E$

(i) 1 (ii) $\frac{2}{5} \sqrt{5}$ (iii) $\sqrt{5}$ (iv) $\frac{1}{2} \sqrt{5}$ (v) $\frac{1}{5} \sqrt{5}$

6. In $\triangle FGH$, right angled at G , if $\tan F = \frac{1}{3}$, find $\cos F \cos H - \sin F \sin H$

(i) $\frac{1}{10} \sqrt{10}$ (ii) $\frac{3}{10} \sqrt{10}$ (iii) $\frac{1}{3} \sqrt{10}$ (iv) 0 (v) $\sqrt{10}$

7.

If $\cot \theta = \frac{1}{3}$, find $\frac{(1 + \sin \theta)(1 - \sin \theta)}{(1 - \cos \theta)(1 + \cos \theta)}$

- (i) $\frac{1}{11}$ (ii) $\frac{1}{3}$ (iii) $(-\frac{1}{9})$ (iv) $\frac{1}{7}$ (v) $\frac{1}{9}$
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8. If $\tan \theta = \frac{1}{2}$, find $\frac{(1 + \cos \theta)(1 - \cos \theta)}{(1 + \sin \theta)(1 - \sin \theta)}$

- (i) $\frac{1}{4}$ (ii) $\frac{1}{2}$ (iii) $\frac{3}{4}$ (iv) $\frac{1}{6}$ (v) $(-\frac{1}{4})$
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9. Find the value of $10 \sec^2 \theta - 10 \tan^2 \theta$

- (i) 7 (ii) 13 (iii) 0 (iv) 10 (v) 1
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10. Find the value of $(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$

- (i) 1 (ii) 5 (iii) 2 (iv) 3 (v) 0
-

11. Given $A = 45^\circ$, $B = 30^\circ$, find $\tan 75^\circ$

- (i) $(2 - \sqrt{3})$ (ii) $(2 + 3)$ (iii) $(-1 + \sqrt{3})$ (iv) $(2 + \sqrt{3})$ (v) $(5 + \sqrt{3})$
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12. Given $A = 45^\circ$, $B = 30^\circ$, find $\tan 15^\circ$

- (i) $(2 - \sqrt{3})$ (ii) $(2 - 3)$ (iii) $(5 - \sqrt{3})$ (iv) $(2 + \sqrt{3})$ (v) $(-1 - \sqrt{3})$
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13. If $\tan \theta + \cot \theta = 3$, find $\tan^2 \theta + \cot^2 \theta$

- (i) 8 (ii) 7 (iii) 9 (iv) 5 (v) 6
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14. If $\tan \theta - \cot \theta = 8$, find $\tan^2 \theta + \cot^2 \theta$

- (i) 69 (ii) 65 (iii) 64 (iv) 66 (v) 67
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15. If $\sin 6x = \cos((x+13))$, then $x =$

- (i) 11 (ii) 12 (iii) 13 (iv) 10 (v) 8
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16. If $\cos 5x = \sin((x+18))$, then $x =$

(i) 11 (ii) 12 (iii) 10 (iv) 13 (v) 15

17. If $\tan 6x = \cot((x+27))$, then $x =$

(i) 11 (ii) 8 (iii) 10 (iv) 9 (v) 7

18. If $\cot 4x = \tan((x+65))$, then $x =$

(i) 3 (ii) 4 (iii) 5 (iv) 6 (v) 7

19. If $\sec 6x = \operatorname{cosec}((x+20))$, then $x =$

(i) 11 (ii) 12 (iii) 9 (iv) 8 (v) 10

20. If $\operatorname{cosec} 4x = \sec((x+55))$, then $x =$

(i) 6 (ii) 8 (iii) 9 (iv) 7 (v) 5

21. If Q, R and S are the interior angles of a triangle, then $\sin\left(\frac{Q+R}{2}\right) =$

(i) $\cos\left(\frac{S}{2}\right)$ (ii) $\sin S$ (iii) $\sin\left(\frac{Q}{2}\right)$ (iv) $\cos\left(\frac{Q}{2}\right)$ (v) $\sin\left(\frac{S}{2}\right)$

Assignment Key

- 1) (iv)
- 2) (iii)
- 3) (iii)
- 4) (i)
- 5) (i)
- 6) (iv)
- 7) (v)
- 8) (i)
- 9) (iv)
- 10) (iii)
- 11) (iv)
- 12) (i)
- 13) (ii)
- 14) (iv)
- 15) (i)
- 16) (ii)
- 17) (iv)
- 18) (iii)
- 19) (v)
- 20) (iv)
- 21) (i)