EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Introduction to Trigonometry

Grade : CBSE Grade X

1. $\operatorname{cosec} B =$

   (i) $\frac{1}{\cos B}$ (ii) $\frac{1}{\sec B}$ (iii) $\frac{1}{\cot B}$ (iv) $\frac{1}{\sin B}$ (v) $\frac{1}{\tan B}$

2. The value of $\operatorname{cosec} 94°$ in terms of an angle between $0°$ and $90°$ is

   (i) $-\operatorname{cosec} 4°$ (ii) $\operatorname{cosec} 4°$ (iii) $-\sec 4°$ (iv) $\sec 4°$

3. The value of $\sin 85°$ in terms of an angle between $0°$ and $90°$ is

   (i) $-\sin 85°$ (ii) $\sin 85°$ (iii) $\cos 85°$ (iv) $-\cos 85°$

4. $\frac{1 + \tan^2 \theta}{1 + \cot^2 \theta} =$

   (i) $\operatorname{cosec}^2 \theta$ (ii) $\cot^2 \theta$ (iii) 1 (iv) $\sec^2 \theta$ (v) $\tan^2 \theta$

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

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

6. $\operatorname{cosec} 50° - \sec 40° =$

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

7. If $\sin 6x = \cos((x-1))$, then $x =$

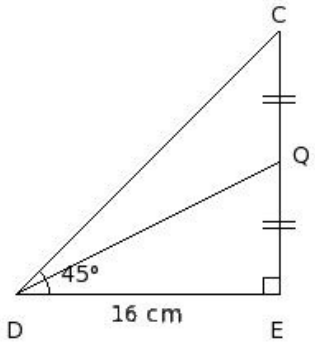
   (i) 14 (ii) 10 (iii) 12 (iv) 13 (v) 15

8. Which of the following are true?

   a) $\tan 0° = 0$
   b) $\sin 0° = 0$
   c) $\sin 45° = 0$
   d) $\cos 0° = 0$
   e) $\tan 90° = 0$
   f) $\cos 45° = 0$
   g) $\cos 90° = 0$
   h) $\sin 90° = 0$

   (i) {d,b} (ii) {a,b,g} (iii) {e,f,g} (iv) {c,a} (v) {h,a,b}

9. In the given figure, △CDE is a right angle triangle with ∠E = 90° and DE = 16 cm. Q is the mid-point of CE. Find QE

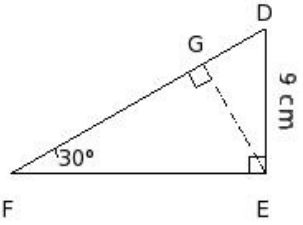


(i) 11 cm (ii) 7 cm (iii) 5 cm (iv) 8 cm (v) 9 cm

10. Express $\sin\theta$ in terms of $\cos\theta$

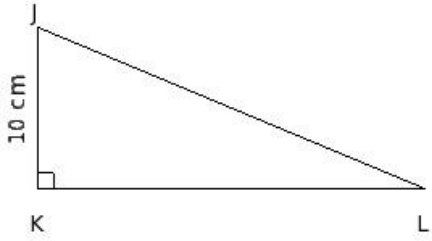
(i) $\frac{\sqrt{1-\cos^2\theta}}{\cos\theta}$ (ii) $\sqrt{1-\cos^2\theta}$ (iii) $\frac{1}{\sqrt{1-\cos^2\theta}}$ (iv) $\frac{1}{\cos\theta}$ (v) $\frac{\cos\theta}{\sqrt{1-\cos^2\theta}}$

11. In the given figure, △DFE is right angled at E. If DE = 9 cm and ∠F = 30°, find DF



(i) 18 cm (ii) 17 cm (iii) 21 cm (iv) 19 cm (v) 16 cm

12. In the given figure, if JL + KL = 50 cm, and JK = 10 cm, find $\sin J$



(i) $\frac{12}{11}$ (ii) $\frac{10}{13}$ (iii) $\frac{12}{13}$ (iv) $\frac{14}{13}$ (v) $\frac{4}{5}$

13. Express $\tan 48°$ in terms of $\sec 48°$

(i) $\sqrt{\sec^2 48° - 1}$ (ii) $\frac{1}{\sec 48°}$ (iii) $\frac{1}{\sqrt{\sec^2 48° - 1}}$ (iv) $\frac{\sec 48°}{\sqrt{\sec^2 48° - 1}}$ (v) $\frac{\sqrt{\sec^2 48° - 1}}{\sec 48°}$

14. In △PQR, right angled at Q, if PQ = 35 cm and QR = 12 cm, find $\sec R$

(i) $\frac{35}{12}$ (ii) $\frac{13}{4}$ (iii) $\frac{37}{14}$ (iv) $\frac{37}{10}$ (v) $\frac{37}{12}$

15. If $\tan\theta + \cot\theta = 7$, find $\tan^2\theta + \cot^2\theta$

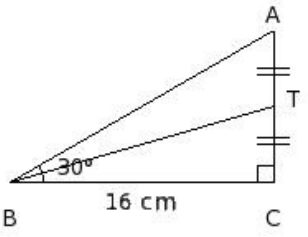
(i) 45 (ii) 47 (iii) 46 (iv) 49 (v) 48

16. $\sin 25° =$

(i) $\sin 40° \cos 15° - \cos 40° \sin 15°$ (ii) $\sin 40° \cos 15° + \cos 40° \sin 15°$ (iii) $\cos 40° \cos 15° - \sin 40° \sin 15°$

(iv) $\cos 40° \cos 15° + \sin 40° \sin 15°$

17. In the given figure, $\triangle ABC$ is a right angle triangle with $\angle C = 90°$ and BC = 16 cm. T is the mid-point of AC. Find $\angle TBA$ using tables.



(i) 13° 54' (ii) 11° 54' (iii) 16° 54' (iv) 15° 54' (v) 10° 54'

18. Which of the following are true?

a) $\cos(360 - \theta) = \cos\theta$
b) $\sin(360 - \theta) = -\cos\theta$
c) $\cos(360 - \theta) = \sin\theta$
d) $\tan(360 - \theta) = -\tan\theta$
e) $\sin(360 - \theta) = -\sin\theta$
f) $\tan(360 - \theta) = -\cot\theta$

(i) {a,d,e} (ii) {c,d} (iii) {c,a,d} (iv) {b,a} (v) {f,b,e}

19. Which of the following are true?

a) $\sin(270 - \theta) = -\sin\theta$
b) $\tan(270 - \theta) = \cot\theta$
c) $\sin(270 - \theta) = -\cos\theta$
d) $\cos(270 - \theta) = -\sin\theta$
e) $\tan(270 - \theta) = \tan\theta$
f) $\cos(270 - \theta) = -\cos\theta$

(i) {e,b,c} (ii) {e,c} (iii) {f,a,d} (iv) {a,b} (v) {b,c,d}

20. $\frac{\cos 59°}{\sin 31°} =$

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

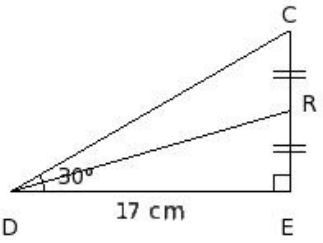
21. The value of $\sin 108°$ in terms of an angle between $0°$ and $90°$ is

(i) $-\cos 18°$ (ii) $-\sin 18°$ (iii) $\cos 18°$ (iv) $\sin 18°$

22. In $\triangle MNO$, right angled at N, if MN = 15 cm and NO = 8 cm, find $\cot M$

(i) $\frac{5}{2}$ (ii) $\frac{17}{8}$ (iii) $\frac{3}{2}$ (iv) $\frac{15}{8}$ (v) $\frac{13}{8}$

23. In the given figure, △CDE is a right angle triangle with ∠E = 90° and DE = 17 cm. R is the mid-point of CE. Find RE



(i) $\frac{17}{6}\sqrt{18}$ cm (ii) $\frac{17}{6}$ cm (iii) $\frac{17}{6}\sqrt{3}$ cm (iv) $\frac{17}{4}\sqrt{2}$ cm (v) $\frac{17}{2}$ cm

24. Express $\operatorname{cosec}\theta$ in terms of $\sin\theta$

(i) $\frac{\sqrt{1-\sin^2\theta}}{\sin\theta}$ (ii) $\frac{1}{\sin\theta}$ (iii) $\sqrt{1-\sin^2\theta}$ (iv) $\frac{\sin\theta}{\sqrt{1-\sin^2\theta}}$ (v) $\frac{1}{\sqrt{1-\sin^2\theta}}$

25. Express $\operatorname{cosec}31°$ in terms of $\cot 31°$

(i) $\frac{1}{\sqrt{1+\cot^2 31°}}$ (ii) $\sqrt{1+\cot^2 31°}$ (iii) $\frac{\cot 31°}{\sqrt{1+\cot^2 31°}}$ (iv) $\frac{1}{\cot 31°}$ (v) $\frac{\sqrt{1+\cot^2 31°}}{\cot 31°}$

Assignment Key

1) (iv)	2) (iv)	3) (ii)	4) (v)	5) (iii)	6) (i)
7) (iv)	8) (ii)	9) (iv)	10) (ii)	11) (i)	12) (iii)
13) (i)	14) (v)	15) (ii)	16) (i)	17) (i)	18) (i)
19) (v)	20) (ii)	21) (iii)	22) (iv)	23) (iii)	24) (ii)
25) (ii)					