EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Introduction to Trigonometry

Grade : CBSE Grade X



1. If $\sin 7x = \cos((x+10))$, then $x =$

   (i) 9 (ii) 11 (iii) 10 (iv) 13 (v) 8

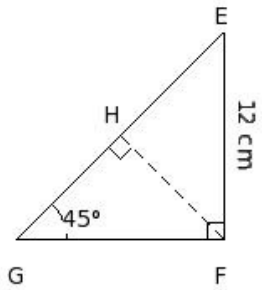
2. In $\triangle ABC$, right angled at B, if AB = 24 cm and BC = 10 cm, find $\operatorname{cosec} C$

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

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

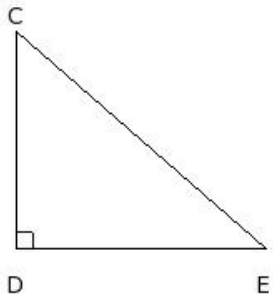
   (i) G=44°,H=14° (ii) G=46°,H=16° (iii) G=43°,H=13° (iv) G=47°,H=17° (v) G=45°,H=15°

4. In the given figure, $\triangle EGF$ is right angled at F. If EF = 12 cm and $\angle G = 45°$, find EG




   (i) $6\sqrt{12}$ cm (ii) 12 cm (iii) $12\sqrt{2}$ cm (iv) $24\sqrt{3}$ cm (v) 24 cm

5. From the given figure, find $\tan(90 - C)$




   (i) $\frac{CD}{CE}$ (ii) $\frac{CE}{DE}$ (iii) $\frac{CE}{CD}$ (iv) $\frac{DE}{CE}$ (v) $\frac{CD}{DE}$

6. Given that $4\tan\theta = 3$, find $\operatorname{cosec}\theta$

   (i) $\frac{4}{3}$ (ii) $\frac{3}{5}$ (iii) $\frac{5}{3}$ (iv) $\frac{4}{5}$ (v) $\frac{5}{4}$

7. Find angle $\theta$ such that $\cos\theta = 0.8054$

**From Table of Natural Cosines**

| x° | 0' | 6' | 12' | 18' | 24' | 30' | 36' | 42' | 48' | 54' | 1' | 2' | 3' | 4' | 5' |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | 0.8090 | 0.8080 | 0.8070 | 0.8059 | 0.8049 | 0.8039 | 0.8028 | 0.8018 | 0.8007 | 0.7997 | 2 | 3 | 5 | 7 | 8 |

(i) 36° 26' (ii) 36° 21' (iii) 36° 11' (iv) 36° 16' (v) 36° 31'

8. Which of the following are true?

a) $\cos(B + C) = \cos B + \cos C$

b) $\tan B = \tan \times B$

c) $\sin(B + C) = \sin B + \sin C$

d) The cotangent of an angle is the reciprocal of the tangent of the angle.

e) The cosecant of an angle is the reciprocal of the secant of the angle

f) The cosine value of an angle is the reciprocal of the sine of the angle.

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

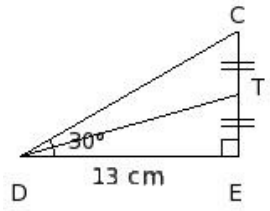
9. The value of $\tan 163°$ in terms of an angle between $0°$ and $90°$ is

(i) $-\tan 73°$ (ii) $-\cot 73°$ (iii) $\tan 73°$ (iv) $\cot 73°$

10. Find the value of $(\operatorname{cosec}\theta - \cot\theta)^2$

(i) $\dfrac{1 + \cos\theta}{1 - \cos\theta}$ (ii) $\dfrac{1 - \cos\theta}{1 + \cos\theta}$ (iii) $\dfrac{1 - \sin\theta}{1 + \sin\theta}$ (iv) $\dfrac{1 + \sin\theta}{1 - \sin\theta}$

11. In the given figure, $\triangle CDE$ is a right angle triangle with $\angle E = 90°$ and DE = 13 cm. T is the mid-point of CE. Find $\angle TDE$ using tables.




(i) 14° 6' (ii) 13° 6' (iii) 19° 6' (iv) 18° 6' (v) 16° 6'

12. $\sec 42° + \operatorname{cosec} 14° =$

(i) $\operatorname{cosec} 48° + \sec 76°$ (ii) $\operatorname{cosec} 48° + \operatorname{cosec} 76°$ (iii) $\operatorname{cosec} 42° + \sec 14°$ (iv) $\sec 42° + \sec 14°$

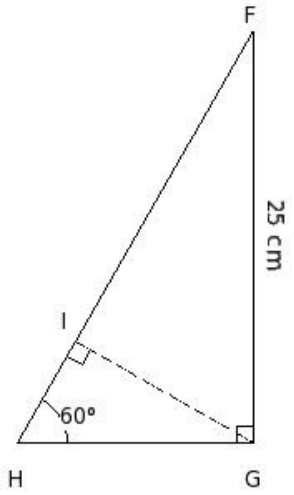
13. The value of $\cos 311°$ in terms of an angle between $0°$ and $90°$ is

(i) $\cos 41°$ (ii) $-\sin 41°$ (iii) $\sin 41°$ (iv) $-\cos 41°$

14. Given $\cot P = \dfrac{4}{3}$, find $\operatorname{cosec} P$

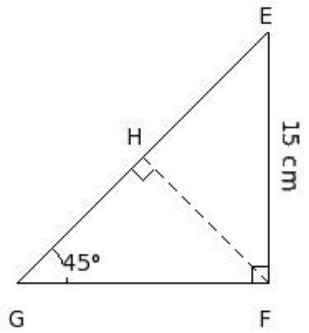
(i) $\dfrac{3}{4}$ (ii) $\dfrac{5}{4}$ (iii) $\dfrac{4}{5}$ (iv) $\dfrac{3}{5}$ (v) $\dfrac{5}{3}$

15. In the given figure, △FHG is right angled at G. If FG = 25 cm and ∠H = 60°, find GH



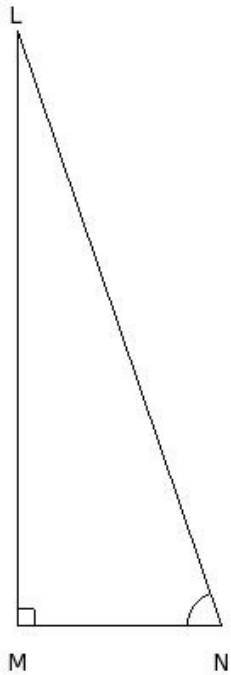

(i) $\frac{25}{2}\sqrt{2}$ cm (ii) 25 cm (iii) $\frac{25}{3}\sqrt{18}$ cm (iv) $\frac{25}{3}$ cm (v) $\frac{25}{3}\sqrt{3}$ cm

16. In the given figure, △EGF is right angled at F. If EF = 15 cm and ∠G = 45°, find EH




(i) $15\sqrt{3}$ cm (ii) $\frac{15}{2}$ cm (iii) $\frac{15}{2}\sqrt{2}$ cm (iv) $\frac{15}{4}\sqrt{12}$ cm (v) 15 cm

17. In the given figure, $\cos N =$




(i) $\frac{LN}{LM}$ (ii) $\frac{MN}{ML}$ (iii) $\frac{ON}{OM}$ (iv) $\frac{MN}{LN}$ (v) $\frac{NL}{NM}$

18. In $\triangle FGH$, right angled at G, if FG = 8 cm and GH = 6 cm, find cot F

(i) $\frac{2}{3}$ (ii) 4 (iii) $\frac{4}{5}$ (iv) 2 (v) $\frac{4}{3}$

19. $\tan 71° - \cot 19° =$

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

20. $\frac{\cot 4° \tan 28°}{\tan 86° \cot 62°} =$

(i) -1 (ii) 1 (iii) $\tan 4°$ (iv) 0 (v) $\tan 28°$

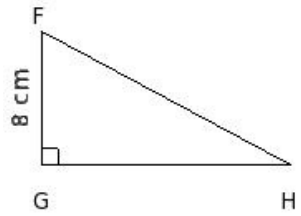
21. Given $\tan N = \frac{1}{12}\sqrt{6}$, find $\cos N$

(i) $\frac{5}{12}\sqrt{6}$ (ii) 5 (iii) $\frac{1}{5}$ (iv) $2\sqrt{6}$ (v) $\frac{2}{5}\sqrt{6}$

22. Given $\sin N = \frac{4}{5}$, find $\operatorname{cosec} N$

(i) $\frac{5}{4}$ (ii) $\frac{4}{3}$ (iii) $\frac{5}{3}$ (iv) $\frac{3}{4}$ (v) $\frac{3}{5}$

23. In the given figure, if FH + GH = 32 cm, and FG = 8 cm, find $\sin F$

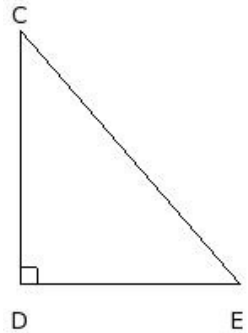



(i) $\frac{13}{17}$ (ii) 1 (iii) $\frac{15}{17}$ (iv) $\frac{15}{19}$

24. Given $\operatorname{cosec} M = \frac{5}{4}$, find $\sin M$

(i) $\frac{3}{5}$ (ii) $\frac{3}{4}$ (iii) $\frac{4}{3}$ (iv) $\frac{4}{5}$ (v) $\frac{5}{3}$

25. From the given figure, find $\operatorname{cosec}(90 - C)$




(i) $\frac{CE}{CD}$ (ii) $\frac{CE}{DE}$ (iii) $\frac{DE}{CE}$ (iv) $\frac{CD}{DE}$ (v) $\frac{DE}{CD}$

## Assignment Key

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