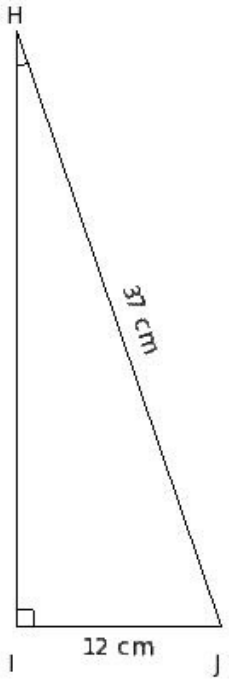
EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Trigonometrical Ratios

Grade : ICSE Grade IX

1. In the given figure, $\sec H =$



(i) 1 (ii) $\frac{37}{35}$ (iii) $\frac{37}{33}$ (iv) $\frac{39}{35}$

2. Given $\cos F = \frac{12}{13}$, find $\cot F$

(i) $\frac{5}{13}$ (ii) $\frac{12}{5}$ (iii) $\frac{5}{12}$ (iv) $\frac{13}{12}$ (v) $\frac{13}{5}$

3. Given $\sin C = \frac{8}{17}$, find $\operatorname{cosec} C$

(i) $\frac{17}{15}$ (ii) $\frac{8}{15}$ (iii) $\frac{17}{8}$ (iv) $\frac{15}{8}$ (v) $\frac{15}{17}$

4. Given $\operatorname{cosec} C = 7$, find $\sin C$

(i) $\frac{7}{12}\sqrt{3}$ (ii) $\frac{4}{7}\sqrt{3}$ (iii) $\frac{1}{7}$ (iv) $4\sqrt{3}$ (v) $\frac{1}{12}\sqrt{3}$

5. Given $\tan E = \frac{3}{4}$, find $\cos E$

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

6. $\sin 7° =$

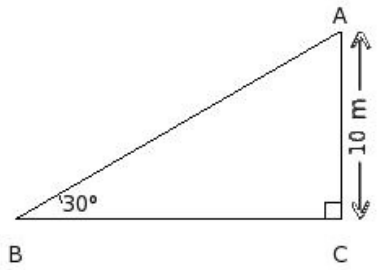
(i) $\sin 49° \cos 42° - \cos 49° \sin 42°$ (ii) $\sin 49° \cos 42° + \cos 49° \sin 42°$ (iii) $\cos 49° \cos 42° + \sin 49° \sin 42°$

(iv) $\cos 49° \cos 42° - \sin 49° \sin 42°$

7. $\cos D =$

(i) $\frac{1}{\tan D}$ (ii) $\frac{1}{\cot D}$ (iii) $\frac{1}{\sec D}$ (iv) $\frac{1}{\operatorname{cosec} D}$ (v) $\frac{1}{\sin D}$

8. A radio tower stands vertically on the ground. From a point on the ground, the angle of elevation of the top of the radio tower is found to be 30°. If the height of the radio tower is 10 m, find the distance between the observation point and the top of the radio tower.



(i) 20 m (ii) 23 m (iii) 19 m (iv) 21 m (v) 18 m

9. $\sin 30° \cos 86° - \cos 60° \sin 4° =$

(i) -1 (ii) $2\sin 86°$ (iii) 1 (iv) 0 (v) $2\sin 30°$

10. Given $\cot E = \frac{12}{5}$, find $\tan E$

(i) $\frac{12}{13}$ (ii) $\frac{5}{12}$ (iii) $\frac{5}{13}$ (iv) $\frac{13}{5}$ (v) $\frac{13}{12}$

11. Given $\cot P = \frac{4}{3}$, find $\sin P$

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

12. $\cot 11° + \tan 14° =$

(i) $\cot 11° + \cot 14°$ (ii) $\tan 11° + \cot 14°$ (iii) $\tan 79° + \cot 76°$ (iv) $\tan 79° + \tan 76°$

13. Given $\sin B = \frac{2}{9}$, find $\cot B$

(i) $\frac{1}{2}\sqrt{77}$ (ii) $\frac{9}{2}$ (iii) $\frac{1}{9}\sqrt{77}$ (iv) $\frac{2}{77}\sqrt{77}$ (v) $\frac{9}{77}\sqrt{77}$

14. Which of the following are true?

a) $\cos(C + D) = \cos C + \cos D$
b) The cotangent of an angle is the reciprocal of the tangent of the angle.
c) The cosecant of an angle is the reciprocal of the secant of the angle
d) $\sin(C + D) = \sin C + \sin D$
e) The cosine value of an angle is the reciprocal of the sine of the angle.
f) $\tan C = \tan \times C$

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

15. Find the value of $\tan 35° \tan 20° \tan 55° \tan 70°$

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

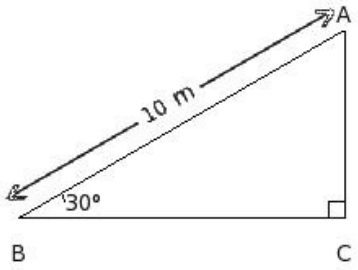
16. $\dfrac{\sin 15° \cos 16°}{\cos 75° \sin 74°} =$

(i) 0 (ii) $\tan 16°$ (iii) -1 (iv) $\tan 15°$ (v) 1

17. Find the value of $\dfrac{(1 + \sin\theta)}{(\cos\theta)} + \dfrac{(\cos\theta)}{(1 + \sin\theta)}$

(i) $2\sec\theta$ (ii) $2\sin\theta$ (iii) $2\operatorname{cosec}\theta$ (iv) $2\cos\theta$

18. A radio tower stands vertically on the ground. From a point on the ground, the angle of elevation of the top of the radio tower is found to be 30°. If the distance between the point and the top of the radio tower is 10 m, find the distance between the observation point and the foot of the radio tower.

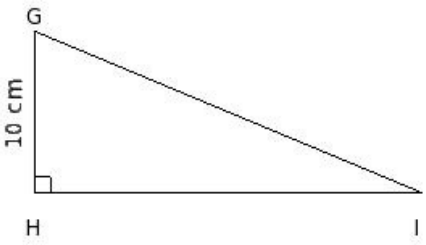


(i) $5\sqrt{18}$ m (ii) 15 m (iii) 5 m (iv) $\frac{15}{2}\sqrt{2}$ m (v) $5\sqrt{3}$ m

19. Given that $3\operatorname{cosec}\theta = 5$, find $\cot\theta$

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

20. In the given figure, if $GI - HI = 2$ cm, and $GH = 10$ cm, find $\tan G$



(i) 4 (ii) 2 (iii) $\frac{12}{5}$ (iv) $\frac{14}{5}$ (v) $\frac{12}{7}$

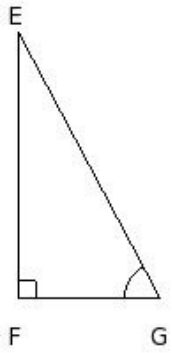
21. $\text{cosec}\,59°\sec 86° - \sec 31°\,\text{cosec}\,4° =$

(i) 1 (ii) $2\sin 59°$ (iii) -1 (iv) $2\sin 86°$ (v) 0

22. Given that $17\cos\theta = 15$, find $\sin\theta$

(i) $\frac{17}{15}$ (ii) $\frac{15}{8}$ (iii) $\frac{17}{8}$ (iv) $\frac{8}{17}$ (v) $\frac{8}{15}$

23. In the given figure, $\sec G =$

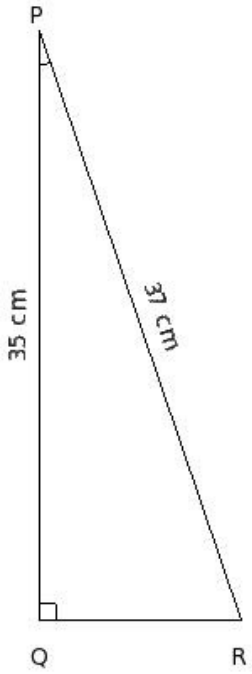


(i) $\frac{EG}{FG}$ (ii) $\frac{HF}{HG}$ (iii) $\frac{EF}{EG}$ (iv) $\frac{GF}{GE}$ (v) $\frac{FE}{FG}$

24. $\tan 14°\cot 29° - \cot 76°\tan 61° =$

(i) $2\sin 29°$ (ii) $2\sin 14°$ (iii) 0 (iv) 1 (v) -1

25. In the given figure, $\sin P =$



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

Assignment Key

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