EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Trigonometrical Ratios

Grade : ICSE Grade IX

1. Given that $5\cot\theta = 12$, find $\cos\theta$

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

2. Given $\operatorname{cosec} K = \frac{5}{4}$, find $\tan K$

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

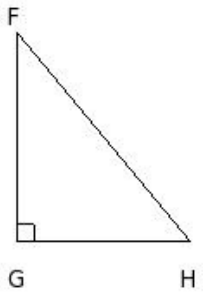
3. Given that $17\cos\theta = 15$, find $\tan\theta$

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

4. $\sec M =$

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

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



(i) $\frac{FG}{FH}$ (ii) $\frac{FH}{GH}$ (iii) $\frac{FH}{FG}$ (iv) $\frac{FG}{GH}$ (v) $\frac{GH}{FH}$

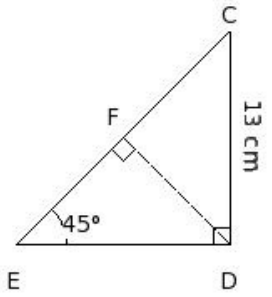
6. Given $\cos D = \frac{3}{5}$, find $\tan D$

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

7. Given $\sec N = \frac{5}{3}$, find $\operatorname{cosec} N$

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

8. In the given figure, △CED is right angled at D. If CD = 13 cm and ∠E = 45°, find DE



(i) 11 cm (ii) 14 cm (iii) 16 cm (iv) 12 cm (v) 13 cm

9. The upper part of a tree is broken into two parts without being detatched. It makes an angle of 45° with the ground. The top of the tree touches the ground at a distance of 120 m from the foot of the tree . Find the height of the tree before it was broken.

(i) 272.71 m (ii) 263.71 m (iii) 305.71 m (iv) 297.71 m (v) 289.71 m

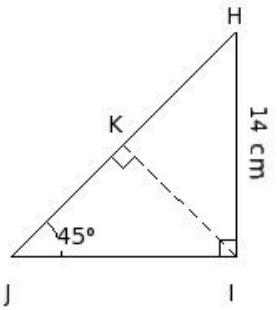
10. Given $\sec P = \frac{9}{28}\sqrt{14}$, find $\tan P$

(i) $\frac{5}{28}\sqrt{14}$ (ii) $\frac{2}{9}\sqrt{14}$ (iii) $\frac{2}{5}\sqrt{14}$ (iv) $\frac{9}{5}$ (v) $\frac{5}{9}$

11. A tower stands vertically on the ground.
The distance between the observation point and its foot tower is $200\sqrt{2}$ m.
The distance between the observation point and its top is 400 m.
Find the angle of elevation.

(i) 60° (ii) 105° (iii) 30° (iv) 45° (v) 75°

12. In the given figure, △HJI is right angled at I. If HI = 14 cm and ∠J = 45°, find JK



(i) $14\sqrt{3}$ cm (ii) $7\sqrt{2}$ cm (iii) $\frac{7}{2}\sqrt{12}$ cm (iv) 14 cm (v) 7 cm

13. $\sec 80° - \operatorname{cosec} 10° =$

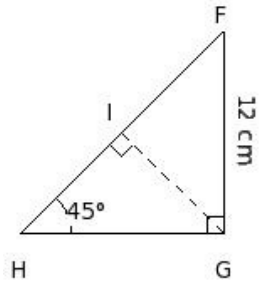
(i) 1 (ii) -1 (iii) 0 (iv) $2\sin 80°$ (v) $2\sin 10°$

14. $\cos 21° =$

(i) $\cos 35°\cos 14° - \sin 35°\sin 14°$ (ii) $\cos 35°\cos 14° + \sin 35°\sin 14°$ (iii) $\sin 35°\cos 14° + \cos 35°\sin 14°$

(iv) $\sin 35°\cos 14° - \cos 35°\sin 14°$

15. In the given figure, △FHG is right angled at G. If FG = 12 cm and ∠H = 45°, find FH



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

16. Given $\cot P = \frac{3}{4}$, find $\sec P$

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

17. Which of the following are true?

a) $\sec\theta = \frac{1}{\cos\theta}$

b) $\operatorname{cosec}\theta = \frac{1}{\sin\theta}$

c) $\cot\theta = \frac{1}{\sec\theta}$

d) $\tan\theta = \frac{1}{\cot\theta}$

e) $\cos\theta = \frac{1}{\operatorname{cosec}\theta}$

f) $\sec\theta = \frac{1}{\sin\theta}$

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

18. Given that $12\sec\theta = 13$, find $\cos\theta$

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

19. $\sin 78° =$

(i) $\sin 54° \cos 24° - \cos 54° \sin 24°$ (ii) $\cos 54° \cos 24° + \sin 54° \sin 24°$ (iii) $\cos 54° \cos 24° - \sin 54° \sin 24°$

(iv) $\sin 54° \cos 24° + \cos 54° \sin 24°$

20. In $\triangle IJK$, right angled at J, if IJ = 24 cm and JK = 10 cm, find $\cos I$

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

21. $\sin 12° =$

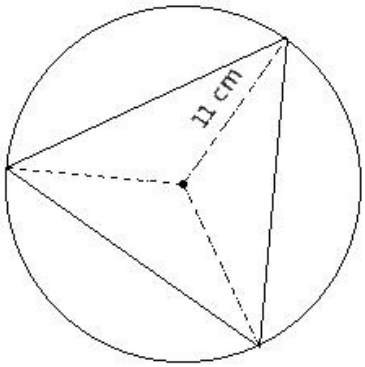
(i) $\cos 18° \cos 6° + \sin 18° \sin 6°$ (ii) $\cos 18° \cos 6° - \sin 18° \sin 6°$ (iii) $\sin 18° \cos 6° + \cos 18° \sin 6°$

(iv) $\sin 18° \cos 6° - \cos 18° \sin 6°$

22. $\tan(A + B) =$

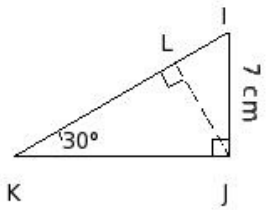
(i) $\frac{\tan A - \tan B}{1 - \tan A \tan B}$ (ii) $\frac{\tan A - \tan B}{1 + \tan A \tan B}$ (iii) $\frac{\tan A + \tan B}{1 + \tan A \tan B}$ (iv) $\frac{\tan A + \tan B}{1 - \tan A \tan B}$

23. An equilateral triangle is inscribed in a circle of radius 11 cm. Find the length of its sides.



(i) $\frac{33}{2}\sqrt{2}$ cm (ii) $11\sqrt{3}$ cm (iii) 33 cm (iv) 11 cm (v) $11\sqrt{18}$ cm

24. In the given figure, $\triangle IKJ$ is right angled at J. If IJ = 7 cm and $\angle K = 30°$, find KL



(i) $\frac{19}{2}$ cm (ii) $\frac{23}{2}$ cm (iii) $\frac{21}{2}$ cm (iv) $\frac{21}{4}$ cm (v) 21 cm

25. $\cos H =$

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

Assignment Key

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