EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Trigonometrical Identities

Grade : ICSE Grade X

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1. In $\triangle HIJ$, right angled at I, if HI = 24 cm and IJ = 10 cm, find sec J

   (i) $\frac{13}{5}$ (ii) $\frac{13}{7}$ (iii) $\frac{13}{3}$ (iv) $\frac{11}{5}$ (v) 3

2. Find the area of the right angled triangle with hypotenuse 3 cm and one of the acute angle being 34°

   (i) 1.0861 cm (ii) 4.0861 cm (iii) 3.0861 cm (iv) 2.0861 cm

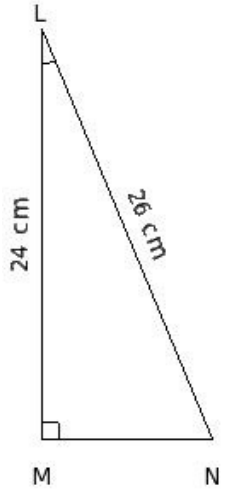
3. $\cos 62° - \sin 28° =$

   (i) $2\sin 62°$ (ii) 1 (iii) -1 (iv) 0 (v) $2\sin 28°$

4. If $\tan\theta + \cot\theta = 4$, find $\tan^2\theta + \cot^2\theta$

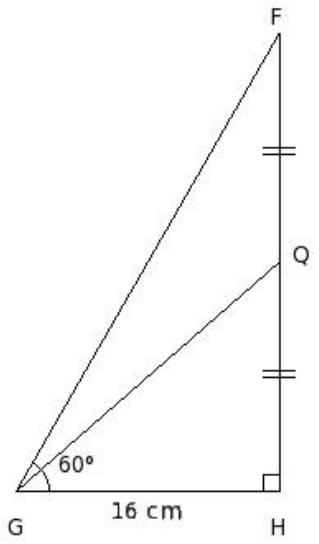
   (i) 14 (ii) 15 (iii) 17 (iv) 11 (v) 13

5. In the given figure, cos L =



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

6. In the given figure, $\triangle FGH$ is a right angle triangle with $\angle H = 90°$ and GH = 16 cm. Q is the mid-point of FH. Find QH



(i) 24 cm (ii) $12\sqrt{2}$ cm (iii) $8\sqrt{18}$ cm (iv) 8 cm (v) $8\sqrt{3}$ cm

7. $\dfrac{\cot 2°}{\tan 88°} =$

(i) 0 (ii) -1 (iii) 1 (iv) $\tan 2°$ (v) $\tan 88°$

8. $\sin M =$

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

9. Which of the following are true?

a) If $\sin A = 0$, then $\cos A = 1$ or $\cos A = -1$
b) The value of $\tan A$ is always less than 1
c) The value of $\cot A$ is always less than 1
d) $\cos A$ is the abbrieviation for $\operatorname{cosec} A$
e) The value of $\sin A$ is always less than 1

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

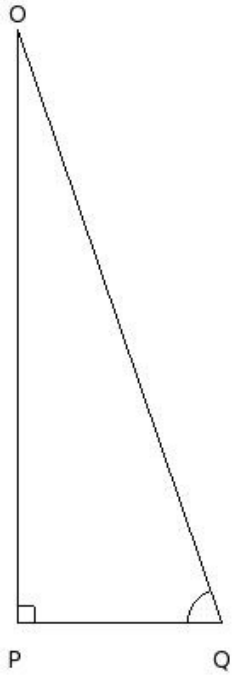
10. $\operatorname{cosec} J =$

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

11. Given $\sin K = \dfrac{1}{2}$, find $\tan K$

(i) $\dfrac{2}{3}\sqrt{3}$ (ii) 2 (iii) $\dfrac{1}{3}\sqrt{3}$ (iv) $\sqrt{3}$ (v) $\dfrac{1}{2}\sqrt{3}$

12. In the given figure, $\sec Q =$



(i) $\frac{OQ}{PQ}$ (ii) $\frac{OP}{OQ}$ (iii) $\frac{RP}{RQ}$ (iv) $\frac{PO}{PQ}$ (v) $\frac{QP}{QO}$

13. Express $\sec 72°$ in terms of $\operatorname{cosec} 72°$

(i) $\sqrt{\operatorname{cosec}^2 72° - 1}$ (ii) $\frac{\operatorname{cosec} 72°}{\sqrt{\operatorname{cosec}^2 72° - 1}}$ (iii) $\frac{\sqrt{\operatorname{cosec}^2 72° - 1}}{\operatorname{cosec} 72°}$ (iv) $\frac{1}{\operatorname{cosec} 72°}$ (v) $\frac{1}{\sqrt{\operatorname{cosec}^2 72° - 1}}$

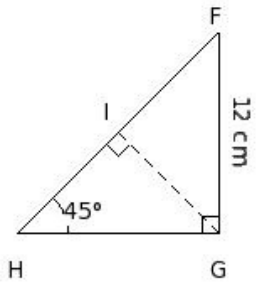
14. Given that $5 \sin\theta = 3$, find $\sec\theta$

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

15. Given $\cos H = \frac{12}{13}$, find $\operatorname{cosec} H$

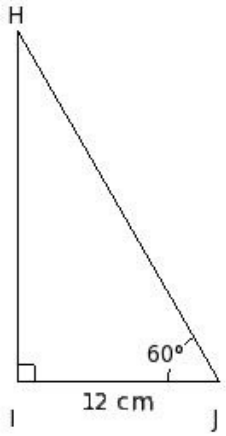
(i) $\frac{5}{13}$ (ii) $\frac{12}{5}$ (iii) $\frac{5}{12}$ (iv) $\frac{13}{12}$ (v) $\frac{13}{5}$

16. In the given figure, $\triangle FHG$ is right angled at G. If FG = 12 cm and $\angle H = 45°$, find GH



(i) 15 cm (ii) 11 cm (iii) 12 cm (iv) 9 cm (v) 13 cm

17. In the given figure, $\triangle HIJ$ is right angled at I. If IJ = 12 cm and $\angle J = 60°$, find HI and HJ



(i) $12\sqrt{\frac{4}{3}}$ cm & 25 cm (ii) $12\sqrt{3}$ cm & 23 cm (iii) $12\sqrt{3}$ cm & 24 cm (iv) $12\sqrt{3}$ cm & 25 cm (v) $12\sqrt{3}$ cm & 24 cm

18. Given $\operatorname{cosec} C = \frac{4}{3}$, find $\sec C$

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

19. Given that $3\cot\theta = 4$, find $\sec\theta$

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

20. $\sin 60° =$

(i) $\frac{1}{2}\sqrt{5}$ (ii) $\frac{1}{2}\sqrt{3}$ (iii) $\frac{1}{2}\sqrt{3}$ (iv) $\frac{3}{2}$ (v) $\frac{1}{2}$

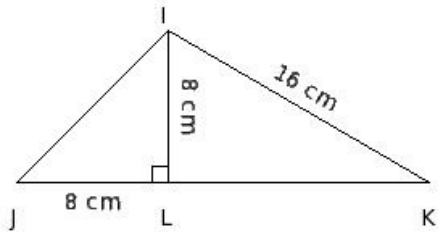
21. If $\tan\theta = \frac{1}{3}$, find $\frac{(1+\cos\theta)(1-\cos\theta)}{(1+\sin\theta)(1-\sin\theta)}$

(i) $\frac{1}{7}$ (ii) $\frac{1}{11}$ (iii) $\frac{1}{3}$ (iv) $(\frac{-1}{9})$ (v) $\frac{1}{9}$

22. Given $\tan A = \frac{2}{5}\sqrt{5}$, find $\sin A$

(i) $\frac{1}{2}\sqrt{5}$ (ii) $\frac{2}{3}$ (iii) $\frac{3}{2}$ (iv) $\frac{1}{3}\sqrt{5}$ (v) $\frac{3}{5}\sqrt{5}$

23. The altitude IL of $\triangle IJK$ in which $\angle I$ is obtuse is 8 cm. If JL = 8 cm and $KL = 8\sqrt{3}$ cm, find $\angle JIK$



(i) 120° (ii) 105° (iii) 100° (iv) 110° (v) 115°

24. Given $\cot C = \frac{1}{3}\sqrt{55}$, find $\sin C$

(i) $\frac{8}{55}\sqrt{55}$ (ii) $\frac{1}{8}\sqrt{55}$ (iii) $\frac{8}{3}$ (iv) $\frac{3}{55}\sqrt{55}$ (v) $\frac{3}{8}$

25. The value of $\sec 254°$ in terms of an angle between $0°$ and $90°$ is

(i) $\operatorname{cosec} 74°$ (ii) $-\sec 74°$ (iii) $\sec 74°$ (iv) $-\operatorname{cosec} 74°$

Assignment Key

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

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