EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Trigonometry

Grade : SSC Grade X

1. If $\sin 2H = 2\sin H$, then $H =$

   (i) $30°$ (ii) $60°$ (iii) $90°$ (iv) $45°$ (v) $0°$

2. Express $\cos\theta$ in terms of $\sec\theta$

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

3. Which of the following are true?

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

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

4. Express $\cot\theta$ in terms of $\tan\theta$

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

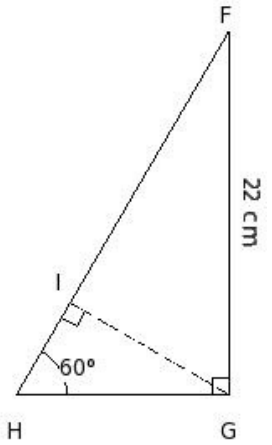
5. Given that $12\sec\theta = 13$, find $\cot\theta$

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

6. Given that $8\cot\theta = 15$, find $\operatorname{cosec}\theta$

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

7. In the given figure, △FHG is right angled at G. If FG = 22 cm and ∠H = 60°, find HI



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

8. $\frac{\sec 18°}{\operatorname{cosec} 72°} =$

(i) 0 (ii) $\tan 72°$ (iii) $\tan 18°$ (iv) 1 (v) -1

9. Express $\sec\theta$ in terms of $\cot\theta$

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

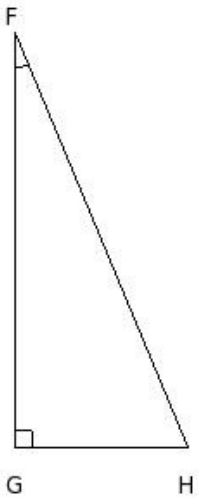
10. Express $\cot\theta$ in terms of $\sin\theta$

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

11. Given that $3\cot\theta = 4$, find $\tan\theta$

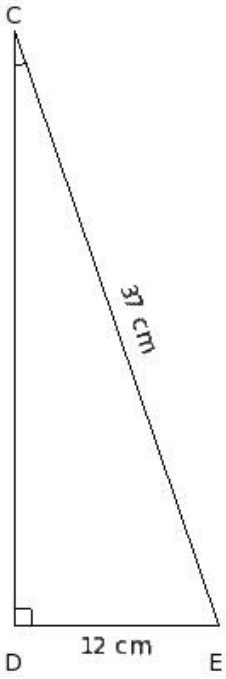
(i) $\frac{5}{4}$ (ii) $\frac{3}{5}$ (iii) $\frac{3}{4}$ (iv) $\frac{5}{3}$ (v) $\frac{4}{5}$

12. In the given figure, $\tan F =$



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

13. In the given figure, $\sin C =$



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

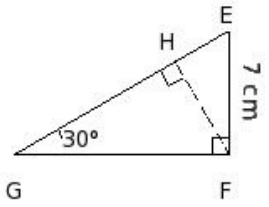
14. Find the value of $(\operatorname{cosec}\theta - \cot\theta)^2$

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

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

(i) 44 (ii) 48 (iii) 49 (iv) 47 (v) 46

16. In the given figure, △EGF is right angled at F. If EF = 7 cm and ∠G = 30°, find EH



(i) $\frac{5}{2}$ cm (ii) 4 cm (iii) $\frac{13}{4}$ cm (iv) $\frac{7}{2}$ cm (v) $\frac{9}{2}$ cm

17. Given that $3\sec\theta = 5$, find $\tan\theta$

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

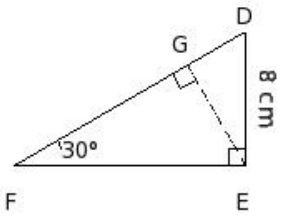
18. Express $\tan 43°$ in terms of $\cos 43°$

(i) $\frac{\sqrt{1-\cos^2 43°}}{\cos 43°}$ (ii) $\sqrt{1-\cos^2 43°}$ (iii) $\frac{\cos 43°}{\sqrt{1-\cos^2 43°}}$ (iv) $\frac{1}{\sqrt{1-\cos^2 43°}}$ (v) $\frac{1}{\cos 43°}$

19. Express $\sec 21°$ in terms of $\cos 21°$

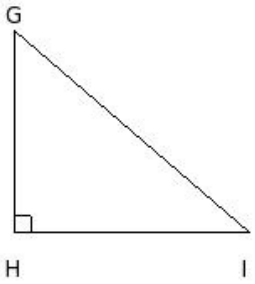
(i) $\frac{\cos 21°}{\sqrt{1-\cos^2 21°}}$ (ii) $\frac{1}{\cos 21°}$ (iii) $\frac{1}{\sqrt{1-\cos^2 21°}}$ (iv) $\frac{\sqrt{1-\cos^2 21°}}{\cos 21°}$ (v) $\sqrt{1-\cos^2 21°}$

20. In the given figure, △DFE is right angled at E. If DE = 8 cm and ∠F = 30°, find DF



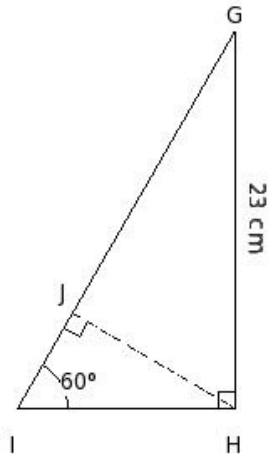
(i) 14 cm (ii) 16 cm (iii) 19 cm (iv) 15 cm (v) 17 cm

21. From the given figure, find $\cot(90 - G)$



(i) $\frac{HI}{GI}$ (ii) $\frac{GI}{GH}$ (iii) $\frac{GH}{GI}$ (iv) $\frac{HI}{GH}$ (v) $\frac{GI}{HI}$

22. In the given figure, △GIH is right angled at H. If GH = 23 cm and ∠I = 60°, find GI

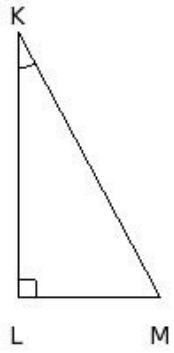


(i) $46\,\text{cm}$ (ii) $\frac{46}{3}\sqrt{3}\,\text{cm}$ (iii) $\frac{46}{3}\sqrt{18}\,\text{cm}$ (iv) $23\sqrt{2}\,\text{cm}$ (v) $\frac{46}{3}\,\text{cm}$

23. Given $\sec M = \frac{8}{15}\sqrt{15}$, find $\tan M$

(i) $\frac{1}{7}\sqrt{15}$ (ii) $\frac{1}{8}\sqrt{15}$ (iii) $\frac{8}{7}$ (iv) $\frac{7}{15}\sqrt{15}$ (v) $\frac{7}{8}$

24. In the given figure, $\cos K =$



(i) $\frac{MK}{LK}$ (ii) $\frac{MK}{ML}$ (iii) $\frac{KL}{KM}$ (iv) $\frac{ML}{NL}$ (v) $\frac{KM}{KL}$

25. Express $\tan 41°$ in terms of $\text{cosec}\,41°$

(i) $\frac{\sqrt{\text{cosec}^2 41° - 1}}{\text{cosec}\,41°}$ (ii) $\frac{1}{\sqrt{\text{cosec}^2 41° - 1}}$ (iii) $\frac{1}{\text{cosec}\,41°}$ (iv) $\frac{\text{cosec}\,41°}{\sqrt{\text{cosec}^2 41° - 1}}$ (v) $\sqrt{\text{cosec}^2 41° - 1}$

Assignment Key

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