EduSahara™ Worksheet

Name : Chapter Based Worksheet

Chapter : Introduction to Trigonometry

Grade : CBSE Grade X

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1. If $\cot\theta = \frac{1}{5}$, find $\frac{(1+\sin\theta)(1-\sin\theta)}{(1-\cos\theta)(1+\cos\theta)}$

   (i) $(\frac{-1}{25})$ (ii) $\frac{1}{25}$ (iii) $\frac{1}{27}$ (iv) $\frac{1}{23}$ (v) $\frac{3}{25}$

2. Which of the following are true?

   a) $\sin^2\theta + \cos^2\theta = 1, 0 \le \theta \le 90°$

   b) $\sec^2\theta - \tan^2\theta = 1, 0 \le \theta \le 90°$

   c) $\sin^2\theta - \cos^2\theta = 1, 0 \le \theta \le 90°$

   d) $\text{cosec}^2\theta + \cot^2\theta = 1, 0 \le \theta \le 90°$

   e) $\text{cosec}^2\theta - \cot^2\theta = 1, 0 \le \theta \le 90°$

   f) $\sec^2\theta + \tan^2\theta = 1, 0 \le \theta \le 90°$

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

3. The value of $\tan 186°$ in terms of an angle between $0°$ and $90°$ is

   (i) $-\tan 6°$ (ii) $\tan 6°$ (iii) $\cot 6°$ (iv) $-\cot 6°$

4. $\cot M =$

   (i) $\frac{1}{\sin M}$ (ii) $\frac{1}{\text{cosec}\, M}$ (iii) $\frac{1}{\sec M}$ (iv) $\frac{1}{\tan M}$ (v) $\frac{1}{\cos M}$

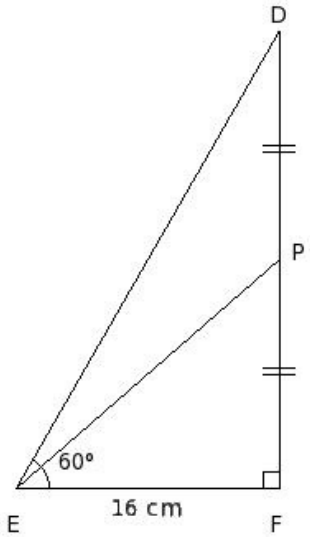
5. $\frac{\sin 57°}{\cos 33°} =$

   (i) $\tan 57°$ (ii) 0 (iii) 1 (iv) -1 (v) $\tan 33°$

6. Express $\cos 52°$ in terms of $\tan 52°$

   (i) $\frac{\tan 52°}{\sqrt{1+\tan^2 52°}}$ (ii) $\frac{1}{\sqrt{1+\tan^2 52°}}$ (iii) $\sqrt{1+\tan^2 52°}$ (iv) $\frac{\sqrt{1+\tan^2 52°}}{\tan 52°}$ (v) $\frac{1}{\tan 52°}$

7. In the given figure, $\triangle DEF$ is a right angle triangle with $\angle F = 90°$ and EF = 16 cm. P is the mid-point of DF. Find PF



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

8. Which of the following are true?

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

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

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

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

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

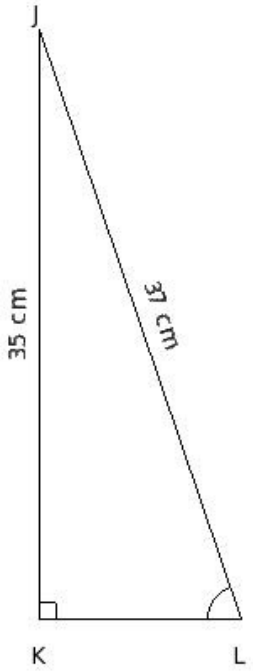
f)
$$\cos\theta = \frac{1}{\operatorname{cosec}\theta}$$

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

9. The value of $\cot 339°$ in terms of an angle between $0°$ and $90°$ is

(i) $\tan 69°$ (ii) $-\tan 69°$ (iii) $-\cot 69°$ (iv) $\cot 69°$

10. In the given figure, $\cos L =$



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

11. Given $\sec N = \frac{5}{12}\sqrt{6}$, find $\sin N$

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

12. Find the value of $\tan 60° \tan 55° \tan 30° \tan 35°$

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

13. Given $\cot P = \frac{12}{5}$, find $\operatorname{cosec} P$

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

14. Given that $13\sin\theta = 5$, find $\tan\theta$

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

15. Given $\cos D = \frac{4}{9}\sqrt{5}$, find $\operatorname{cosec} D$

(i) $\frac{9}{20}\sqrt{5}$ (ii) $\frac{1}{20}\sqrt{5}$ (iii) $\frac{1}{9}$ (iv) $4\sqrt{5}$ (v) 9

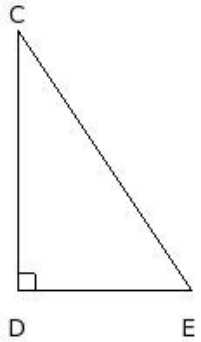
16. Given that $3\sec\theta = 5$, find $\tan\theta$

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

17. Given $\tan P = \frac{4}{3}$, find $\sin P$

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

18. From the given figure, find $\cos(90 - E)$



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

19. Given $\sin F = \frac{4}{5}$, find $\cos F$

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

20. $\tan 57° + \cot 79° =$

(i) $\tan 57° + \tan 79°$ (ii) $\cot 33° + \tan 11°$ (iii) $\cot 33° + \cot 11°$ (iv) $\cot 57° + \tan 79°$

21. Express $\sec\theta$ in terms of $\operatorname{cosec}\theta$

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

22. Given that $5\cos\theta = 3$, find $\sin\theta$

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

23. Which of the following are true?

a) $\operatorname{cosec}(90 - \theta) = \sec\theta$
b) $\cos(90 - \theta) = \cot\theta$
c) $\cos(90 - \theta) = \cos\theta$
d) $\tan(90 - \theta) = -\tan\theta$
e) $\sec(90 - \theta) = \operatorname{cosec}\theta$
f) $\cot(90 - \theta) = \tan\theta$

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

24. Given that $15\sec\theta = 17$, find $\cot\theta$

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

25. In $\triangle DEF$, right angled at E, if $DE = 15$ cm and $EF = 8$ cm, find $\sin F$

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

Assignment Key

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

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