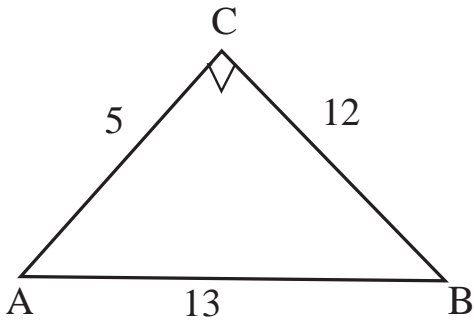


## 11. TRIGONOMETRY

1. In the following figure, the value of  $\cot A$  is \_\_\_\_\_



2. If in  $\Delta ABC$ ,  $\angle B = 90^\circ$ ,  $AB = 12$  cm and  $BC = 5$  cm then the value of  $\cos C$  is \_\_\_\_\_
3. If  $\cot \theta = \frac{b}{a}$  then the value of
- $$\frac{\cos \theta + \sin \theta}{\cos \theta - \sin \theta}$$
- is \_\_\_\_\_
4. The maximum value of  $\sin \theta$  is \_\_\_\_\_
5. If A is an acute angle of a  $\Delta ABC$ , right angled at B, then the value of  $\sin A + \cos A$  is \_\_\_\_\_
6. The value of  $\frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ}$  is \_\_\_\_\_
7. If  $\sin \theta = 1/2$ , then the value of  $(\tan \theta + \cot \theta)^2$  is \_\_\_\_\_
8. If  $\sin \theta - \cos \theta = 0$  then the value of  $\sin^4 \theta + \cos^4 \theta$  is \_\_\_\_\_
9. If  $\theta = 45^\circ$  then the value of

$$\frac{1 - \cos 2\theta}{\sin 2\theta}$$

is \_\_\_\_\_

10. If  $\tan \theta = \cot \theta$ , then the value of  $\sec \theta$  is \_\_\_\_\_
11. If  $A + B = 90^\circ$ ,  $\cot B = 3/4$ , then  $\tan A$  is equal to \_\_\_\_\_
12. If  $\sin (x - 20^\circ) = \cos (3x - 10^\circ)$ . Then x is \_\_\_\_\_
13. The value of  $1 + \tan 5^\circ \cot 85^\circ$  is equal to \_\_\_\_\_

14. If any triangle ABC, the value of  $\sin \frac{B+C}{2}$  is \_\_\_\_\_

$$\frac{B+C}{2}$$

15. If  $\cos\theta = a/b$ , then  $\operatorname{cosec}\theta$  is equal to \_\_\_\_\_

16. The value of  $\cos 20^\circ \cos 70^\circ - \sin 20^\circ \sin 70^\circ$  is equal to \_\_\_\_\_

17. The value of  $\tan 5^\circ \tan 25^\circ \tan 45^\circ \tan 65^\circ \tan 85^\circ$  is \_\_\_\_\_

18. If  $\tan\theta + \cot\theta = 5$  then the value of  $\tan^2\theta + \cot^2\theta$  is \_\_\_\_\_

19. If  $\operatorname{cosec}\theta = 2$  and  $\cot\theta = \sqrt{3}p$  where  $\theta$  is an acute angle, then the value of P is \_\_\_\_\_

20.  $\frac{\sqrt{1+\sin A}}{\sqrt{1-\sin A}}$  is equal to \_\_\_\_\_

21. If  $\operatorname{cosec}\theta - \cot\theta = 1/4$  then the value of  $\operatorname{cosec}\theta + \cot\theta$  is \_\_\_\_\_

22.  $\sin 45^\circ + \cos 45^\circ =$  \_\_\_\_\_

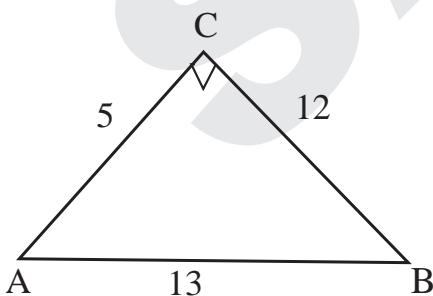
23.  $2\tan^2 45^\circ + \cos^2 30^\circ - \sin^2 60^\circ =$  \_\_\_\_\_

24.  $\sin(90^\circ - A) =$  \_\_\_\_\_

25. If  $\sin A = \cos B$  then, the value of  $A + B =$  \_\_\_\_\_

26. If  $\sec\theta = \frac{m+n}{2\sqrt{mn}}$  then  $\sin\theta =$  \_\_\_\_\_

27. In the figure, the value of  $\sec A$  is \_\_\_\_\_



28. If  $\sin 2A = 1/2$ ,  $\tan^2 45^\circ$ , where A is an acute angle then the value of A is \_\_\_\_\_

29. The maximum value of  $1/\sec\theta$ ,  $0^\circ < \theta < 90^\circ$  is \_\_\_\_\_

30.  $\frac{\sin^2 \theta}{1 - \cos^2 \theta}$  is equal to \_\_\_\_\_

31. If  $\cot\theta=1$  then  $\frac{1+\sin\theta}{\cos\theta} = \underline{\hspace{2cm}}$
32.  $\sec^2\theta-1 = \underline{\hspace{2cm}}$
33. If  $\sec\theta + \tan\theta = p$ , then the value of  $\sec\theta - \tan\theta = \underline{\hspace{2cm}}$
34. The value of  $\sin A$  or  $\cos A$  never exceeds  $\underline{\hspace{2cm}}$
35.  $\sec(90^\circ - A) = \underline{\hspace{2cm}}$

## ANSWERS

- 1)  $5/12$ ; 2)  $5/13$ ; 3)  $b+a/b-a$ ; 4) 1;  
5) greater than one; 6)  $\sin 60^\circ$ ; 7)  $16/3$ ;  
8)  $1/2$ ; 9) 1; 10)  $\sqrt{2}$ ; 11)  $3/4$  ; 12)  $30^\circ$ ;  
13)  $\sec^2 5^\circ$ ; 14)  $\cos A/2$ ; 15)  $\sqrt{b^2 - a^2} / b$  ;  
16) 1; 17) 1; 18) 23; 19) 1; 20)  $\sec A + \tan A$ ; 21) 4; 22)  $\sqrt{2}$ ; 23) 2;  
24)  $\cos A$ ;  
25)  $90^\circ$ ; 26)  $m-n/m+n$  ; 27)  $13/5$ ;  
28)  $15^\circ$ ; 29) 1; 30) 1; 31)  $\sqrt{2} + 1$ ;  
32)  $\tan^2\theta$ ; 33)  $1/p$ ; 34) 1; 35)  $\operatorname{cosec} A$ .