



MATHS

BOOKS - MBD NCERT SOLUTIONS

INTRODUCTION TO TRIGONOMETRY

Multiple Choice Questions

1. In a ΔABC , $\angle B = 90^\circ$, $AB = 24\text{cm}$ and $BC = 7\text{cm}$.

Find (i) $\sin A$ (ii) $\cos A$ (iii) $\sin C$ (iv) $\cos C$.

A. $\frac{7}{25}$

B. $\frac{7}{24}$

C. $\frac{24}{25}$

D. None of these

Answer: A

 [Watch Video Solution](#)

2. In $\triangle ABC$, right angled at B, $AB = 24$ cm, $BC = 7$ cm. The value of $\cos A$ is :

A. $\frac{7}{25}$

B. $\frac{24}{25}$

C. $\frac{7}{24}$

D. None of these

Answer: B

 [Watch Video Solution](#)

3. In $\triangle ABC$, right angled at B, $AB = 24$ cm, $BC = 7$ cm. The value of $\sin C$ is :

A. $\frac{24}{25}$

B. $\frac{7}{25}$

C. $\frac{7}{24}$

D. None of these

Answer: A



[Watch Video Solution](#)

4. In $\triangle ABC$, right angled at B, $AB = 24$ cm, $BC = 7$ cm. The value of $\cos C$ is :

A. $\frac{7}{25}$

B. $\frac{7}{24}$

C. $\frac{24}{25}$

D. None of these

Answer: A

 [Watch Video Solution](#)

5. If $\tan A = \frac{5}{12}$, then the value of $\cos A$ is

A. $\frac{5}{13}$

B. $\frac{12}{5}$

C. $\frac{13}{5}$

D. $\frac{12}{13}$.

Answer: D

 [Watch Video Solution](#)

6. The value of $\frac{1 - \tan^2 360^\circ}{1 + \tan^2 360^\circ}$ is :

A. $\cos 60^\circ$

B. $\tan 60^\circ$

C. $\sin 60^\circ$

D. $\tan 30^\circ$.

Answer: A

 [Watch Video Solution](#)

7. If $\cos A = \frac{7}{25}$, then the value of $\tan A$ is

A. $\frac{25}{7}$

B. $\frac{24}{7}$

C. $\frac{24}{25}$

D. $\frac{25}{24}$

Answer: B

 [Watch Video Solution](#)

8. The value of $\frac{2\tan 30^\circ}{1 + \tan^2 30^\circ}$ is :

A. $\sin 60^\circ$

B. $\cos 60^\circ$

C. $\tan 60^\circ$

D. $\cot 60^\circ$

Answer: A

 [Watch Video Solution](#)

9. If $\sin A = \frac{5}{13}$, then the value of $\sec A$ is :

A. $\frac{13}{5}$

B. $\frac{13}{12}$

C. $\frac{12}{13}$

D. $\frac{12}{5}$.

Answer: B



[Watch Video Solution](#)

10. The value of $\frac{2\tan 30^\circ}{1 - \tan^2 30^\circ}$ is :

A. $\tan 60^\circ$

B. $\sin 60^\circ$

C. $\cos 60^\circ$

D. $\cot 60^\circ$

Answer: A



[Watch Video Solution](#)

11. If $\cot A = \frac{7}{24}$, then the value of $\sin A$ is :

A. $\frac{24}{7}$

B. $\frac{24}{25}$

C. $\frac{25}{24}$

D. $\frac{7}{25}$.

Answer: B



[Watch Video Solution](#)

12. The value of $3\sin 30^\circ - 4\sin^3 30^\circ$ is :

A. $\sin 60^\circ$

B. $\sin 90^\circ$

C. 0

D. None of these

Answer: B

 [Watch Video Solution](#)

13. The value of $5 \cot^2 A - 5 \operatorname{cosec}^2 A$ is :

A. -1

B. 5

C. 5

D. 0

Answer: C

 [Watch Video Solution](#)

14. If $\cos \theta = \frac{3}{5}$ then the value of $\cot \theta$ is :

A. $\frac{4}{5}$

B. $\frac{3}{4}$

C. $\frac{4}{3}$

D. None of these

Answer: B



[Watch Video Solution](#)

15. $\cos 46^\circ - \sin 44^\circ$ is equal to:

A. 0

B. -1

C. 1

D. 2

Answer: A

 [Watch Video Solution](#)

16. $\cos^2 20^\circ + \cos^2 70^\circ$ is equal to :

A. -1

B. 0

C. 2

D. 1

Answer: D

 [Watch Video Solution](#)

17. The value of $\frac{\tan 64^\circ}{\cot 26^\circ}$ will be :

A. 0

B. 1

C. -1

D. $2\tan 64^\circ$.

Answer: B

 [Watch Video Solution](#)

18. $\sin 60^\circ \cos 30^\circ$ is equal to:

A. 1

B. $\frac{2\sqrt{3}}{4}$

C. $\frac{4}{3}$

D. $\frac{3}{4}$

Answer: A

 [Watch Video Solution](#)

19. If $\sin \theta = \frac{4}{5}$, then the value of $\tan \theta$ will be :

A. $\frac{4}{3}$

B. $\frac{5}{4}$

C. $\frac{5}{3}$

D. 1

Answer: A



Watch Video Solution

20. Find in the blank.

$$\tan^2 \theta = \dots - 1.$$

A. $\cot^2 \theta$

B. $\sec^2 \theta$

C. $\operatorname{cosec}^2 \theta$

D. $\cos^2 \theta$

Answer: B

 [Watch Video Solution](#)

21. If $\operatorname{cosec} \theta = 2$, then the value of $\tan \theta$ will be :

A. $\frac{\sqrt{3}}{2}$

B. $\frac{1}{\sqrt{3}}$

C. $\frac{1}{2}$

D. $\frac{2}{\sqrt{3}}$

Answer: B

 [Watch Video Solution](#)

22. The value of $\sin 39^\circ - \cos 51^\circ$ will be:

A. 0

B. 1

C. 2

D. -1.

Answer: A



[Watch Video Solution](#)

23. The value of $\cos 45^\circ - \sin 45^\circ$ will be :

A. -1

B. 0

C. 1

D. 2

Answer: B

 [Watch Video Solution](#)

24. $6 \sec^2 \theta - 6 \tan^2 \theta$ is equal to :

A. 1

B. -6

C. 6

D. 0

Answer: C

 [Watch Video Solution](#)

25. $\cos \theta \times \sec \theta$ is equal to :

A. -1

B. 1

C. 0

D. $2 \cos \theta$.

Answer: B



[View Text Solution](#)

26. If $15 \cot A = 8$, the value of $\sin A$ is :

A. $\frac{8}{17}$

B. $\frac{15}{17}$

C. $\frac{17}{8}$

D. $\frac{17}{15}$

Answer: B



[Watch Video Solution](#)

27. The value of $\cos 38^\circ \cos 52^\circ - \sin 38^\circ \sin 52^\circ$ is :

A. -1

B. 1

C. 0

D. None of these

Answer: C



[Watch Video Solution](#)

28. $\frac{2\tan 60^\circ}{1 + \tan^2 60^\circ}$ is equal to :

A. $\sin 60^\circ$

B. $\cos 60^\circ$

C. $\tan 30^\circ$

D. $\sin 30^\circ$

Answer: A



Watch Video Solution

29. $(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta)$ is equal to :

A. 0

B. -1

C. 2

D. 1

Answer: C



Watch Video Solution

True Or False

1. $\cos \theta = \frac{3}{2}$ for some angle θ .

 [Watch Video Solution](#)

2. state True or false and justify $\sin \theta = \cos \theta$ for all values of θ .

 [Watch Video Solution](#)

3. "cot A is not defined for $A = 0^\circ$ ".

 [Watch Video Solution](#)

4. $\sin \theta = \frac{3}{2}$ can be for any angle $\angle \theta$.

 [Watch Video Solution](#)

1. Evaluate : $\frac{\sin 18^\circ}{\cos 72^\circ}$

 [Watch Video Solution](#)

2. Evaluate $\frac{\tan 26^\circ}{\cot 64^\circ}$

 [Watch Video Solution](#)

3. Evaluate : $\operatorname{cosec} 32^\circ - \sec 58^\circ$.

 [Watch Video Solution](#)

4. If A, B and C are interior angles of a triangle ABC, then show that

$$\sin\left(\frac{B + C}{2}\right) = \frac{\cos A}{2}.$$

 [Watch Video Solution](#)

5. Find the value of $\frac{\tan 25^\circ}{\cot 65^\circ}$.

 [Watch Video Solution](#)

6. Find the value of $\cos 42^\circ - \sin 48^\circ$.

 [Watch Video Solution](#)

7. Express $\cos 85^\circ + \cos 75^\circ$ in terms of trigonometric ratio of angles between 0° and 1.7° .

 [View Text Solution](#)

Short Answer Type Questions

1. If $\tan(A + B) = \sqrt{3}$ and $\tan(A - B) = \frac{1}{\sqrt{3}}$, $0^\circ < A + B \leq 90^\circ$, $A > B$, then find the value of A and B.

 [Watch Video Solution](#)

2. If $\sin(A + B) = \frac{\sqrt{3}}{2}$ and $\sin(A - B) = \frac{1}{2}$, $0^\circ < A + B \leq 90^\circ$, $A > B$, then find the value of A and B.

 [View Text Solution](#)

3. If $\cos 4A = \sin(A - 20^\circ)$, where $4A$ is an acute angle, then find the value of A.

 [Watch Video Solution](#)

4. If $\tan 2A = \cot(A - 18^\circ)$ where $2A$ is an acute angle, find the value of A .

 [Watch Video Solution](#)

5. If $\sin A = \frac{3}{4}$, then find the value of $\tan A$.

 [Watch Video Solution](#)

6. If $3 \cot \theta = 2$, then find the value of $\tan \theta$.

 [Watch Video Solution](#)

7. Find the value of $\cos 48^\circ - \sin 42^\circ$.

 [Watch Video Solution](#)

8. Evaluate the following :

$$\sin 60^\circ \cos 30^\circ + \sin 30^\circ \cos 60^\circ$$

 [Watch Video Solution](#)

9. Evaluate : $\frac{\tan 45^\circ}{\operatorname{cosec} 30^\circ} + \frac{\sec 60^\circ}{\cot 45^\circ} - \frac{2\sin 90^\circ}{\cos 0^\circ}$.

 [Watch Video Solution](#)

Long Short Answer Type Questions

1. Prove that :

$$(\operatorname{cosec} \theta - \cot \theta)^2 = \frac{1 - \cos \theta}{1 + \cos \theta}$$

 [Watch Video Solution](#)

2. Prove that $\frac{\cos A - \sin A + 1}{\cos A + \sin A - 1} = \operatorname{cosec} A + \cot A$ using the identity $\operatorname{cosec}^2 A = 1 + \cot^2 A$.

 [Watch Video Solution](#)

3. Prove that $\frac{1 + \sec A}{\sec A} = \frac{\sin^2 A}{1 - \cos A}$.

 [Watch Video Solution](#)

4. $\frac{\tan \theta}{1 - \cot \theta} + \frac{\cot \theta}{1 - \tan \theta} = 1 + \sec \theta \operatorname{cosec} \theta$

 [Watch Video Solution](#)

5. $(\sin A + \operatorname{cosec} A)^2 + (\cos A + \sec A)^2 = 7 + \tan^2 A + \cot^2 A$

 [Watch Video Solution](#)

6.
$$\frac{\sin \theta - 2 \sin^3 \theta}{2 \cos^3 \theta - \cos \theta} = \tan \theta$$

 [Watch Video Solution](#)

7.
$$\frac{\sin \theta - \cos \theta + 1}{\sin \theta + \cos \theta - 1} = \frac{1}{\sec \theta - \tan \theta}$$

 [Watch Video Solution](#)

8. Prove that
$$\sqrt{\frac{1 + \sin A}{1 - \sin A}} = \sec A + \tan A.$$

 [Watch Video Solution](#)