

Mathematics
Practice Test Paper 1
(Chapter 8: Introduction to Trigonometry)
Class X | 2026-27

Time Allowed: 45 Minutes

Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Unless stated otherwise, angles are acute. Use of calculators is not allowed.

SECTION A

(5 questions $\times$ 1 mark = 5 marks)

1. In a right triangle, $\sin A$ is the ratio of:

- (A) adjacent side to hypotenuse
- (B) opposite side to hypotenuse
- (C) opposite side to adjacent side
- (D) hypotenuse to opposite side

2. The value of $\cos 60^\circ$ is:

- (A) 0
- (B) $\frac{\sqrt{3}}{2}$
- (C) 1
- (D) $\frac{1}{2}$

3. For acute A , $\sec^2 A - \tan^2 A$ equals:

- (A) 1
- (B) 0
- (C) $\sin^2 A$
- (D) $\cos^2 A$

4. Which ratio is not defined at 90° ?

- (A) $\sin$
- (B) $\cos$
- (C) $\tan$
- (D) cosec

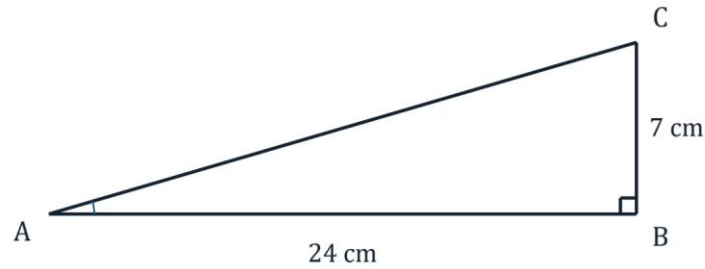
5. If $\sin A = \frac{5}{13}$, then $\operatorname{cosec} A$ is:

- (A) $\frac{12}{13}$
- (B) $\frac{13}{5}$
- (C) $\frac{5}{12}$
- (D) $\frac{13}{12}$

SECTION B

(4 questions $\times$ 2 marks = 8 marks)

6. In the right triangle shown, find $\sin A$ and $\cos C$.



7. If $\sin A = \frac{3}{4}$, find $\cos A$ and $\tan A$.

8. Evaluate $\sin 60^\circ \cos 30^\circ + \sin 30^\circ \cos 60^\circ$.

9. Prove that $\frac{1 - \cos^2 A}{\sin A} = \sin A$ (where defined).

SECTION C

(3 questions $\times$ 3 marks = 9 marks)

10. Given $\tan A = \frac{4}{3}$, find the other five trigonometric ratios.

11. Prove that $\sec A(1 - \sin A)(\sec A + \tan A) = 1$ (where defined).

12. If $\sin(A - B) = \frac{1}{2}$ and $\cos(A + B) = \frac{1}{2}$, find A and B , given $A > B > 0^\circ$ and $A + B \leq 90^\circ$.

SECTION D

(Application Based Question - 3 marks)

13. A triangular card ABC is right-angled at B. Its perpendicular sides AB and BC are 6 cm and 8 cm, respectively.

(i) Find AC.

(ii) Find $\sin A$.

(iii) Find $\tan C$.