

Mathematics
Practice Test Paper 10
(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. $\tan 0^\circ$ equals:

- | | |
|-------|-----------------|
| (A) 1 | (B) not defined |
| (C) 0 | (D) -1 |

2. Which expression equals $\tan^2 A$?

- (A) $\sec^2 A - 1$
(B) $1 - \sec^2 A$
(C) $\operatorname{cosec}^2 A - 1$
(D) $1 - \sin^2 A$

3. Which value cannot be the cosecant of an acute angle?

- | | |
|----------------|-------------------|
| (A) 2 | (B) $\frac{5}{4}$ |
| (C) $\sqrt{2}$ | (D) $\frac{3}{4}$ |

4. If $\cos A = \frac{3}{5}$, then $\sin A$ equals:

- | | |
|-------------------|-------------------|
| (A) $\frac{3}{4}$ | (B) $\frac{4}{5}$ |
| (C) $\frac{5}{4}$ | (D) $\frac{2}{5}$ |

5. $\sec A \cos A$ equals:

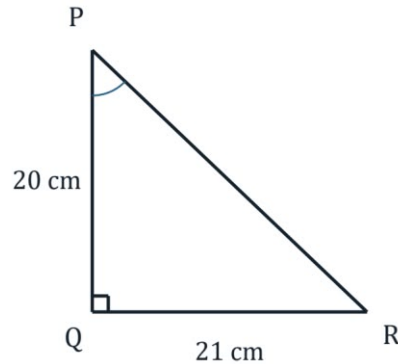
- | | |
|-------|--------|
| (A) 0 | (B) 2 |
| (C) 1 | (D) -1 |

SECTION B

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

6. Given $\cos \theta = \frac{4}{5}$, evaluate $\frac{1-\sin \theta}{1+\sin \theta}$.

7. In the right triangle PQR shown, find $\sin P$ and $\cos P$.



8. Evaluate $\frac{\sin 30^\circ + \cos 60^\circ}{\tan 45^\circ + \cot 45^\circ}$.

9. Prove that $\frac{1+\cos A}{\sin A} = \operatorname{cosec} A + \cot A$ (where defined).

SECTION C

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

10. In a right triangle, the hypotenuse plus the side adjacent to A is 18 cm. The side opposite A is 6 cm. Find the hypotenuse, the adjacent side and $2 \sin A \cos A$.

11. Prove that $\frac{\tan A}{1-\cot A} + \frac{\cot A}{1-\tan A} = 1 + \sec A \operatorname{cosec} A$ (where defined).

12. If $\sin A + \sin^2 A = 1$, find $\cos^2 A + \cos^4 A$.

SECTION D

(Application Based Question - 3 marks)

13. A triangular fabric piece ABC is right-angled at B, with $\angle A = 30^\circ$ and hypotenuse $AC = 18$ cm.

(i) Find BC.

(ii) Find AB.

(iii) Find $\angle C$.