Mathematics

Practice Test Paper 8

(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 × 1 mark = 5 marks)

1. $\sec 60°$ is:

(A) 2 (B) 1

(C) $\sqrt{3}$ (D) $\frac{1}{2}$

2. $\cos 90°$ equals:

(A) 1 (B) not defined

(C) 0 (D) −1

3. The notation $\sin^2 A$ means:

(A) $\sin(2A)$

(B) $2 \sin A$

(C) $\sin(A^2)$

(D) $(\sin A)^2$

4. If $\text{cosec}\,\theta = \frac{25}{24}$, then $\cot\theta$ equals:

(A) $\frac{24}{7}$ (B) $\frac{7}{24}$

(C) $\frac{25}{7}$ (D) $\frac{7}{25}$

5. For an acute angle, $\tan A \cot A$ equals:

(A) 0 (B) 2

(C) 1 (D) −1

SECTION B

(4 questions × 2 marks = 8 marks)

6. If $\tan A = \frac{16}{63}$, find sin A and cos A.

7. Evaluate $\cos^2 0° + \sin^2 90° + \cot^2 45°$.

8. Prove that $\frac{\text{cosec}^2 A - 1}{\text{cosec}^2 A} = \cos^2 A$ (where defined).

9. If $7\sin^2 \theta + 3\cos^2 \theta = 4$, find tan θ.

SECTION C

(3 questions × 3 marks = 9 marks)

10. In triangle PQR, ∠Q = 90°, PR + QR = 25 cm and PQ = 5 cm. Find sin P, cos P and tan P.

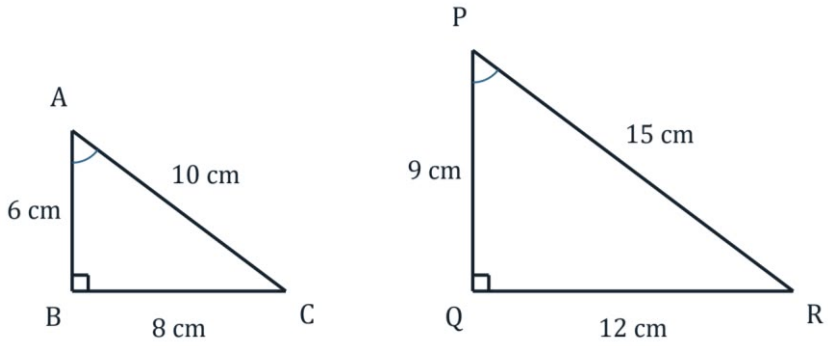
11. Prove that $\frac{\cos A}{1-\sin A} - \frac{\cos A}{1+\sin A} = 2\tan A$ (where defined).

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

SECTION D

(Application Based Question - 3 marks)

13. The two similar right triangles shown are cut from a sheet to make matching patterns. Compare the trigonometric ratios of ∠A and ∠P.



(i) Find sin A.

(ii) Find cos P.

(iii) Find tan A and tan P, and compare them.