Mathematics

Practice Test Paper 5

(Chapter 4: Quadratic Equations)

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. Use algebraic methods where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. If the discriminant is 49, the quadratic has:

(A) two distinct real roots

(B) two equal real roots

(C) no real roots

(D) exactly one non-real root

2. Which equation has 0 as a root?

(A) $x^2 + 1 = 0$

(B) $x^2 - x + 1 = 0$

(C) $x^2 - 1 = 0$

(D) $2x^2 + 5x = 0$

3. The roots of $9x^2 - 16 = 0$ are:

(A) $\pm 3/4$

(B) $\pm 4/3$

(C) $\pm 4/9$

(D) $\pm 16/9$

4. For $5x^2 - 2x - 3 = 0$, the discriminant is:

(A) -56

(B) 4

(C) 64

(D) 56

5. Which equation has equal roots?

(A) $x^2 - 2x + 1 = 0$

(B) $x^2 - 1 = 0$

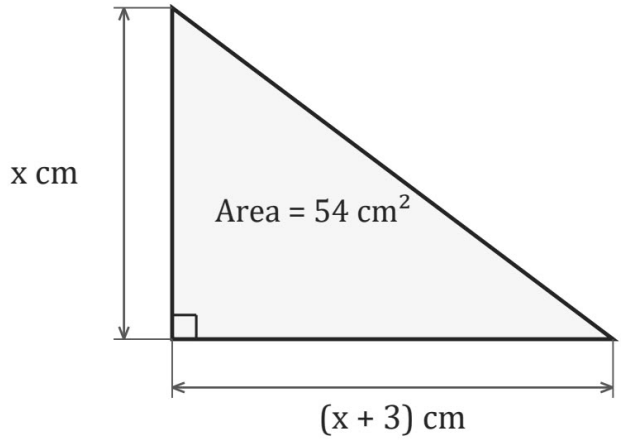
(C) $x^2 + 1 = 0$

(D) $x^2 + x - 2 = 0$

SECTION B

(4 questions × 2 marks = 8 marks)

6. The right triangle shown has area 54 cm^2. Form a quadratic equation and find x.



7. Solve $100x^2 - 20x + 1 = 0$ by factorisation.

8. For which real values of k does $x^2 + 4x + k = 0$ have real roots?

9. If 2 is a root of $x^2 + px - 10 = 0$, find p and the other root.

SECTION C

(3 questions × 3 marks = 9 marks)

10. John and Jivanti together have 45 marbles. After each loses five marbles, the product of their remaining numbers is 124. Find their original numbers of marbles.

11. Use the quadratic formula to solve $5x^2 - 4x - 2 = 0$. Give exact roots.

12. For which real k does $x^2 - 2(k + 1)x + k^2 = 0$ have real roots? Find the repeated root at the boundary value of k.

SECTION D

(Application Based Question - 3 marks)

13. A club shares a ₹720 fee equally among x members. If three more members join, each pays ₹20 less.

(i) Form a quadratic equation in x.

(ii) Find the original number of members.

(iii) Find each member's original payment.