Mathematics

Practice Test Paper 9

(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. The equation $9x^2 - 6x - 2 = 0$ has:

(A) equal real roots

(B) no real roots

(C) distinct real roots

(D) three real roots

2. Which value of k makes $5x^2 + kx + 5 = 0$ have equal roots?

(A) 5 (B) 10

(C) 15 (D) 20

3. The equation $x^2 + 6x + 8 = 0$ factors as:

(A) $(x + 2)(x + 4) = 0$

(B) $(x - 2)(x - 4) = 0$

(C) $(x + 1)(x + 8) = 0$

(D) $(x - 1)(x - 8) = 0$

4. If x is the breadth of a rectangle whose length is x + 7 and area is 60, the equation is:

(A) $x^2 - 7x - 60 = 0$ (B) $x^2 + 7x + 60 = 0$

(C) $2x + 7 = 60$ (D) $x^2 + 7x - 60 = 0$

5. The equation $7x^2 = 0$ has:

(A) no real roots (B) a repeated root 0

(C) roots 0 and 7 (D) roots −7 and 7

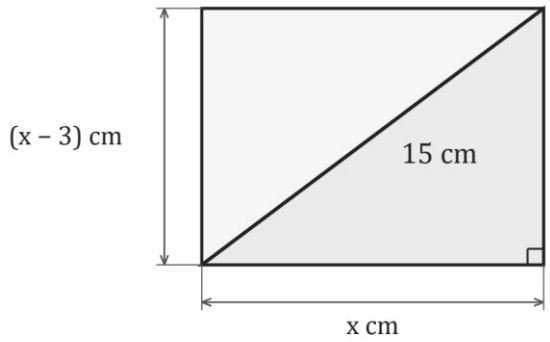
SECTION B

(4 questions × 2 marks = 8 marks)

6. Simplify $(x - 3)(2x + 1) = x(x + 5)$. State whether it is quadratic and give its standard form.

7. Find k for which $(k - 1)x^2 + 4x + 4 = 0$ has equal roots. Check that it remains quadratic.

8. Use the rectangle's diagonal and side labels to form a quadratic equation and find x.



9. If 1 is a root of $(k - 2)x^2 + 3x + 1 = 0$, find k and confirm that the equation is quadratic.

SECTION C

(3 questions × 3 marks = 9 marks)

10. An industry makes x pottery articles in a day. Each costs ₹(2x + 3) to produce. The total cost is ₹90. Find the number of articles and the cost per article.

11. Use the quadratic formula to solve $3x^2 - 7x + 1 = 0$. Give exact roots.

12. Two taps together fill a tank in 6 hours. The faster tap takes 9 hours less than the slower tap when used alone. Find each tap's filling time.

SECTION D

(Application Based Question - 3 marks)

13. A display has x rows of bulbs, with (2x − 1) bulbs in every row. There are 190 bulbs altogether.

(i) Form a quadratic equation.

(ii) Find the number of rows.

(iii) Find the number of bulbs in each row.