Mathematics

Practice Test Paper 3

(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. Which value of x satisfies $3x^2 - 12 = 0$?

(A) 1 (B) 3

(C) −2 (D) −4

2. If $b^2 - 4ac = 0$, a quadratic equation has:

(A) no real roots

(B) two equal real roots

(C) two distinct real roots

(D) three real roots

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

(A) 0 and −9 (B) 0 and 9

(C) −3 and 3 (D) −9 and 9

4. The discriminant of $2x^2 + 3x - 2 = 0$ is:

(A) −7 (B) 7

(C) 17 (D) 25

5. Which equation becomes linear after simplification?

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

(B) $x(x + 2) = x^2 + 5$

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

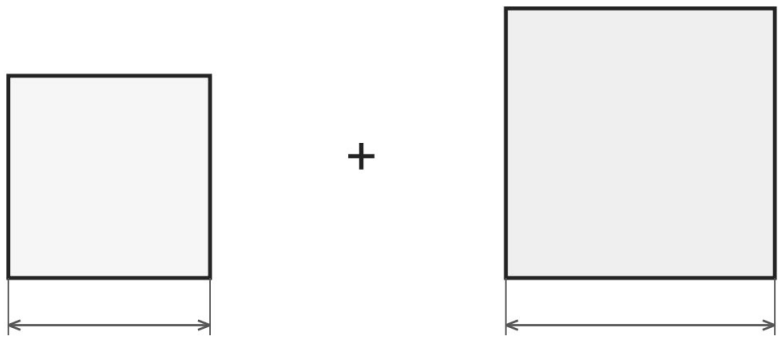
(D) $(x - 1)(x + 1) = 4$

SECTION B

(4 questions × 2 marks = 8 marks)

6. Solve $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ by factorisation.

7. The two squares shown have total area 100 cm^2. Form an equation and find x.



Combined area = 100 cm^2

8. Find the values of k for which $2x^2 + kx + 3 = 0$ has two equal roots.

9. Solve $x^2 = 9x$. Explain why dividing both sides by x may lose a solution.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Rohan's mother is 26 years older than him. Three years from now, the product of their ages will be 360. Find their present ages.

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

12. A two-digit number has digit product 24. Subtracting 18 reverses its digits. Find the number using a quadratic equation.

SECTION D

(Application Based Question - 3 marks)

13. A craft unit produces x gift boxes. The cost per box is ₹(2x + 5) and the total cost is ₹525.

(i) Form an equation for x.

(ii) Find the number of boxes produced.

(iii) Find the cost of one box.