# Mathematics

## Practice Test Paper 7

### (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 degree of the equation $(x + 2)^3 = x^3 - 4$ after simplification is:

(A) 1 (B) 3

(C) 2 (D) 0

**2.** If 1 is a root of $2x^2 + px - 7 = 0$, then p equals:

(A) 5 (B) −5

(C) 7 (D) 9

**3.** For $3x^2 - 8x + 4 = 0$, the discriminant equals:

(A) 8 (B) 12

(C) 64 (D) 16

**4.** If $(2x + 3)(x - 5) = 0$, which is a root?

(A) $3/2$ (B) $-3/2$

(C) $-5$ (D) $-2/3$

**5.** A repeated root of $ax^2 + bx + c = 0$ equals:

(A) $\frac{b}{2a}$

(B) $-\frac{c}{a}$

(C) $-\frac{b}{2a}$

(D) $\frac{c}{b}$

## SECTION B

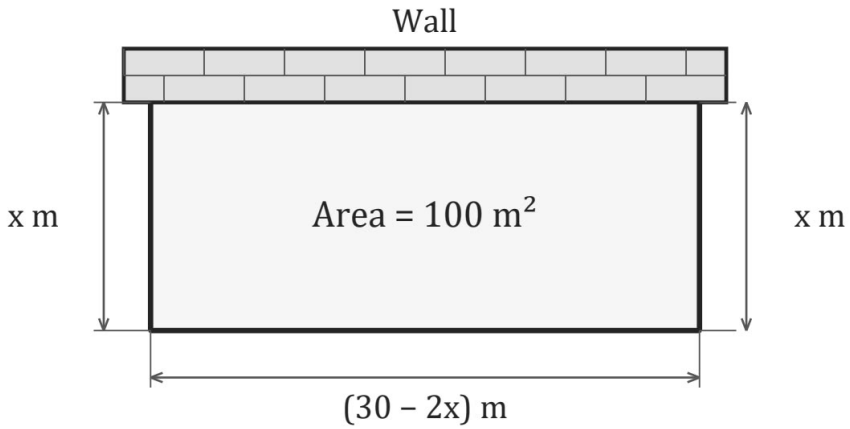
(4 questions × 2 marks = 8 marks)

**6.** Find k so that $2x^2 + kx + 2 = 0$ has equal roots.

**7.** The equation $3x^2 + bx + 12 = 0$ has equal roots and $b > 0$. Find b and the repeated root.

**8.** Solve $6x^2 - x - 2 = 0$ by factorisation.

**9.** A 30 m fence encloses three sides of the garden shown; the wall forms the fourth. Its area is 100 $m^2$. Find both possible values of x.




## SECTION C

(3 questions × 3 marks = 9 marks)

**10.** Find two numbers whose sum is 27 and whose product is 182, using a quadratic equation.

**11.** Use the quadratic formula to solve $2x^2 + 4x - 3 = 0$. Give exact roots.

**12.** Two squares have sides differing by 4 cm. Their total area is 656 $cm^2$. Find both side lengths.

## SECTION D

(Application Based Question - 3 marks)

**13.** A square garden of side x metres is surrounded by a 2 m wide path. The total area of the garden and path is 196 $m^2$.

(i) Form a quadratic equation in x.

(ii) Find the garden's side.

(iii) Find the area occupied by the path.