# Mathematics

## Practice Test Paper 1

### (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 equation is quadratic?

(A) $3x + 7 = 0$

(B) $x^2 - 5x + 6 = 0$

(C) $x^3 - 1 = 0$

(D) $5 = 0$

**2.** For $2x^2 - 7x + 3 = 0$, the coefficient b is:

(A) 2 (B) 3

(C) 7 (D) −7

**3.** The discriminant of $x^2 - 6x + 9 = 0$ is:

(A) 0 (B) 9

(C) 18 (D) 36

**4.** Which is a root of $x^2 - 4x - 5 = 0$?

(A) −5 (B) 1

(C) 5 (D) 4

**5.** A quadratic equation can have at most:

(A) one real root

(B) two real roots

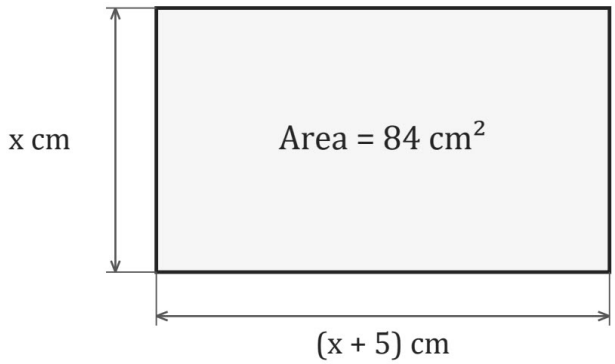
(C) three real roots

(D) four real roots

## SECTION B

(4 questions × 2 marks = 8 marks)

**6.** Using the rectangle shown, form a quadratic equation in x and find its positive value.




**7.** Solve $x^2 - 3x - 10 = 0$ by factorisation.

**8.** Find every k for which $x^2 + 5kx + 16 = 0$ has equal real roots.

**9.** Solve $(x + 2)^2 = 3x + 10$ after writing it in standard form.

## SECTION C

(3 questions × 3 marks = 9 marks)

**10.** A rectangular plot has area 528 $m^2$. Its length is one metre more than twice its breadth. Form a quadratic equation and find its dimensions.

**11.** Use the quadratic formula to solve $2x^2 - 6x + 3 = 0$. Give exact roots.

**12.** Two non-zero numbers have sum 15 and the sum of their reciprocals is $\frac{3}{10}$. Find the numbers.

## SECTION D

(Application Based Question - 3 marks)

**13.** A rectangular stage has width x metres, length (x + 4) metres and area 96 $m^2$.

(i) Form the quadratic equation in x.

(ii) Find the valid width.

(iii) Find the perimeter of the stage.