

Mathematics
Practice Test Paper 9
(Chapter 2: Polynomials)
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 $(3x - 2)(x + 5)^2$ is:

- | | |
|-------|-------|
| (A) 1 | (B) 2 |
| (C) 3 | (D) 4 |

2. The expression $(k - 3)x^2 + 4x - 1$ is linear when k is:

- | | |
|--------|-------|
| (A) -3 | (B) 0 |
| (C) 3 | (D) 4 |

3. A quadratic has two real zeroes with negative product. Their signs must be:

- (A) both positive
(B) both negative
(C) opposite
(D) both zero

4. Which pair has sum 4 and product 3?

- (A) 1 and 3
(B) -1 and -3
(C) 2 and 2
(D) -1 and 5

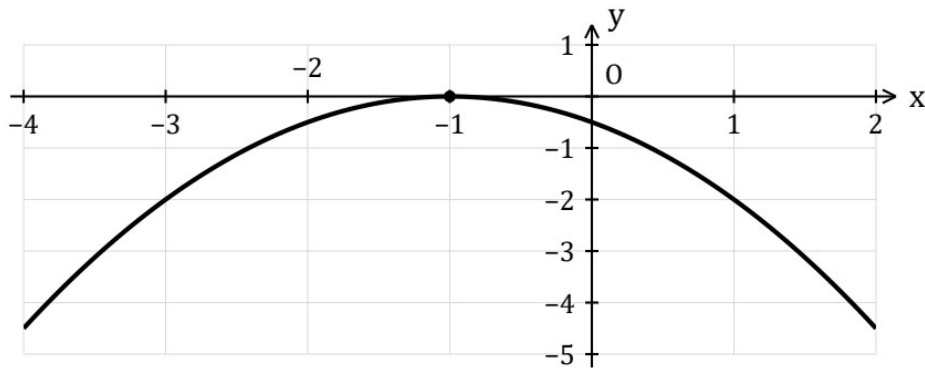
5. How many distinct real zeroes does $-x^2 - 4x - 4$ have?

- | | |
|-------|-------|
| (A) 0 | (B) 1 |
| (C) 2 | (D) 3 |

SECTION B

(4 questions $\times$ 2 marks = 8 marks)

6. Find a quadratic polynomial whose zeroes have sum $-2\sqrt{3}$ and product 2.
7. Find a quadratic polynomial with zeroes $5 + 2\sqrt{6}$ and $5 - 2\sqrt{6}$.
8. If -3 is a zero of $(k - 1)x^2 + kx + 1$, find k . Check that the resulting polynomial is quadratic.
9. The graph is a quadratic touching the x -axis. State its repeated zero and the sum of its two equal zeroes.



SECTION C

(3 questions $\times$ 3 marks = 9 marks)

10. Find the zeroes of $2x^2 - 8x + 6$ and verify both relationships between the zeroes and the coefficients.
11. If α and β are zeroes of $2x^2 - 5x - 3$, form a quadratic with zeroes 3α and 3β .
12. The non-zero real zeroes α and β of $x^2 - 12x + k$ satisfy $\frac{\alpha}{\beta} + \frac{\beta}{\alpha} = \frac{10}{3}$. Find k and the zeroes.

SECTION D

(Application Based Question - 3 marks)

13. A calibration model uses $C(z) = z^2 + 4z - 12$. A setting z is calibrated when $C(z) = 0$. The device can use only positive settings.
- (i) Find both zeroes of $C(z)$.
- (ii) Which calibrated setting can the device use?
- (iii) Find $C(1)$.