

Mathematics
Practice Test Paper 2
(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 $\times$ 1 mark = 5 marks)

1. Which expression is a quadratic polynomial in x ?

- | | |
|-----------------------|-----------------------|
| (A) $\sqrt{x} + 1$ | (B) $\frac{1}{x} + 2$ |
| (C) $\sqrt{3}x^2 + 2$ | (D) $x^{-2} + 1$ |

2. A polynomial graph meets the x -axis only at $(-7, 0)$ and $(4, 0)$. Its zeroes are:

- (A) 0 and 4
(B) -7 and 4
(C) -7 and 0
(D) 7 and -4

3. If the zeroes of $5x^2 + 13x + k$ are reciprocals of each other, k equals:

- | | |
|--------|----------|
| (A) 1 | (B) 5 |
| (C) 13 | (D) -5 |

4. How many quadratic polynomials can have -3 and 5 as their zeroes?

- (A) Exactly one
(B) Exactly two
(C) Exactly three
(D) Infinitely many

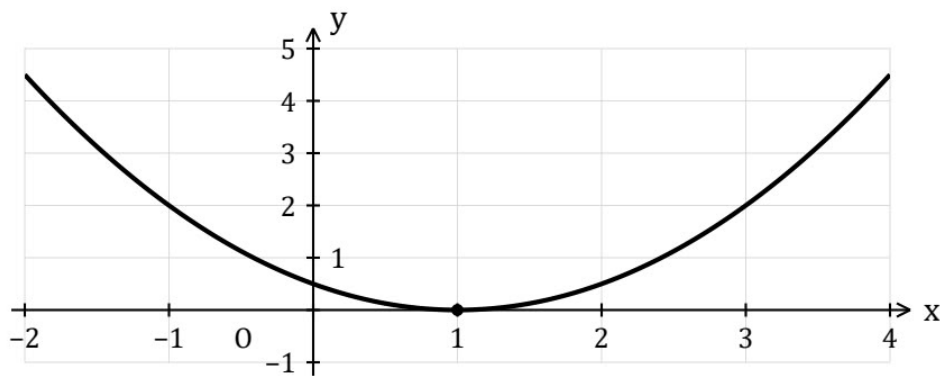
5. For $p(x) = 2x^2 - 9x + 11$, $p(0)$ equals:

- | | |
|--------|----------|
| (A) 2 | (B) -9 |
| (C) 11 | (D) 0 |

SECTION B

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

6. Find a quadratic polynomial whose zeroes have sum $\sqrt{2}$ and product $\frac{1}{3}$.
7. What constant must be added to $x^2 - 5x + 4$ so that 3 becomes a zero of the resulting polynomial?
8. If α and β are the zeroes of $3x^2 - 8x + 4$, find $\frac{1}{\alpha} + \frac{1}{\beta}$.
9. The displayed quadratic graph touches the x-axis at one point. Write its zero and the coordinates of the touching point.



SECTION C

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

10. Find the zeroes of $4x^2 - 4x + 1$ and verify both relationships between the zeroes and the coefficients.
11. If α and β are zeroes of $6x^2 - 7x - 3$, form a quadratic with zeroes 2α and 2β .
12. The zeroes α and β of $x^2 - 9x + m$ satisfy $\alpha - \beta = 3$. Find m and the zeroes.

SECTION D

(Application Based Question - 3 marks)

13. A plotting app uses $p(x) = k(x + 2)(x - 5)$, where k is non-zero. Its graph passes through $(0, -20)$.
- (i) Write the zeroes of $p(x)$.
- (ii) Find k .
- (iii) Expand $p(x)$ in descending powers of x .