

Mathematics
Practice Test Paper 7
(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. A quadratic with leading coefficient 1 has zeroes 4 and -6 . Its x-coefficient is:

- (A) -2 (B) 2
(C) -24 (D) 24

2. Which expression is not a polynomial in x?

- (A) $\sqrt{5}x + 1$ (B) $x^3 - 2$
(C) $\sqrt{x} + 3$ (D) $\frac{x}{2} + 7$

3. If $\alpha + \beta = -5$ and $\alpha\beta = 4$, then $\frac{1}{\alpha} + \frac{1}{\beta}$ equals:

- (A) $-\frac{5}{4}$ (B) $\frac{5}{4}$
(C) -9 (D) $-\frac{4}{5}$

4. The zeroes of $x^2 + (a + 1)x + b$ are 2 and -3 . The values of a and b are:

- (A) $a = 0, b = -6$
(B) $a = -2, b = -6$
(C) $a = 0, b = 6$
(D) $a = 1, b = -6$

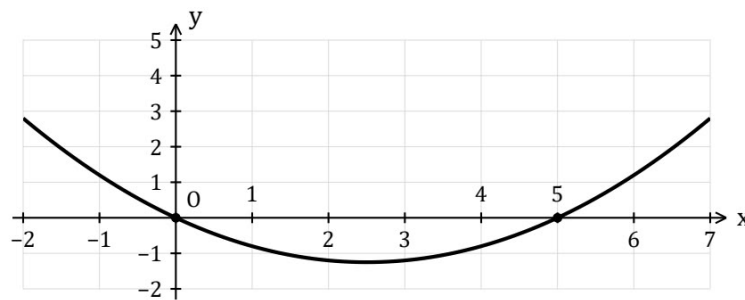
5. A polynomial graph never meets the x-axis. Its number of real zeroes is:

- (A) 0 (B) 1
(C) 2 (D) Cannot be determined

SECTION B

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

6. Find a quadratic polynomial whose zeroes have sum $-\frac{7}{2}$ and product $\frac{3}{2}$.
7. What constant must be subtracted from $x^2 - 16x + 30$ so that 15 becomes a zero?
8. One zero of $6x^2 + kx - 10$ is $\frac{5}{3}$. Find k and the other zero.
9. Write the zeroes from the displayed quadratic graph. What must be its constant coefficient? Explain.



SECTION C

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

10. Find the zeroes of $x^2 + 7x + 10$ and verify both relationships between the zeroes and the coefficients.
11. If α and β are zeroes of $x^2 - x - 2$, form a quadratic with zeroes $2\alpha + 1$ and $2\beta + 1$.
12. The zeroes α and β of $2x^2 + 5x + k$ satisfy $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$. Find k and then find the zeroes.

SECTION D

(Application Based Question - 3 marks)

13. A graphing activity uses $P(x) = k(x - 2)(x - 6)$, where k is non-zero. The plotted value at $x = 4$ is -12 .
- (i) Write the zeroes of P(x).
- (ii) Find k.
- (iii) Find the point where the graph meets the y-axis.