

Mathematics
Practice Test Paper 6
(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 non-zero polynomial of degree 5 can have at most how many distinct real zeroes?

- (A) 2 (B) 3
(C) 4 (D) 5

2. The zeroes of $x(x - 7)$ are:

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

3. The sum of the zeroes of $-2x^2 + 9x - 4$ is:

- (A) $-\frac{9}{2}$ (B) $\frac{9}{2}$
(C) 2 (D) -2

4. If 0 is a zero of $ax^2 + bx + c$, $a \neq 0$, then:

- (A) $a = 0$ (B) $b = 0$
(C) $c = 0$ (D) $a = b$

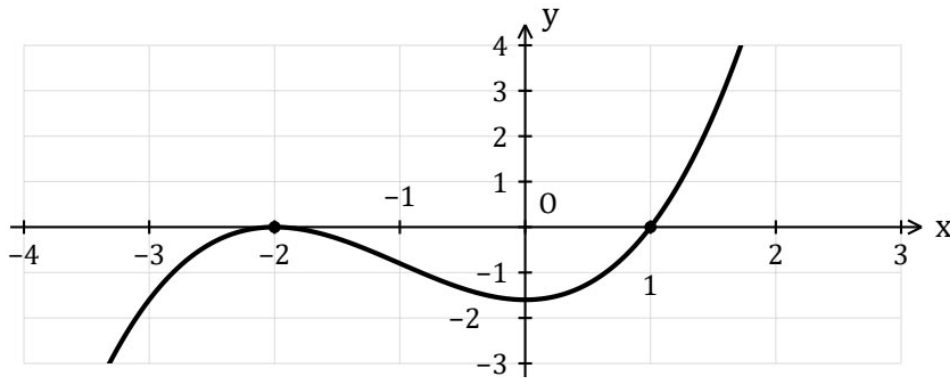
5. Which polynomial has zeroes $-\frac{2}{3}$ and $\frac{2}{3}$?

- (A) $4x^2 - 9$
(B) $9x^2 + 4$
(C) $9x^2 - 4$
(D) $9x^2 - 2$

SECTION B

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

6. Find a quadratic polynomial whose zeroes have sum $\frac{5}{2}$ and product $-\frac{3}{2}$.
7. For $x^2 - (k + 6)x + 2(2k - 1)$, the zeroes' sum is half their product. Find k .
8. Explain why $p(x) = x^2 - 4x - 5$ and $q(x) = -3x^2 + 12x + 15$ have the same zeroes. Find those zeroes.
9. The graph touches the x-axis at one place and crosses it at another. Write its distinct zeroes and find their product.



SECTION C

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

10. Find the zeroes of $3x^2 - x - 4$ and verify both relationships between the zeroes and the coefficients.
11. If α and β are zeroes of $2x^2 + 9x + 4$, form a quadratic with zeroes $\frac{1}{\alpha}$ and $\frac{1}{\beta}$.
12. The zeroes of $x^2 - kx + 6$ are in the ratio 3 : 2. Find all possible k and the zeroes.

SECTION D

(Application Based Question - 3 marks)

13. An arch has height $h(x) = -x^2 + 6x - 5$ metres between its ground contacts. The horizontal coordinate x is in metres.
- (i) Find the x -coordinates where the arch meets the ground.
- (ii) Find its horizontal span.
- (iii) Find its height at $x = 3$.