

**Mathematics**  
**Practice Test Paper 3**  
**(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. The coefficient of  $x^0$  in  $x^2 + 3x + 2$  is:

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

2. If  $-4$  is a zero of  $x^2 - x - (2k + 2)$ ,  $k$  equals:

- (A) 6
- (B)  $-6$
- (C) 9
- (D)  $-9$

3. If the two real zeroes of  $ax^2 + bx + c$ ,  $a \neq 0$ , are opposites of each other, then:

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

4. A cubic polynomial can have at most how many distinct real zeroes?

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

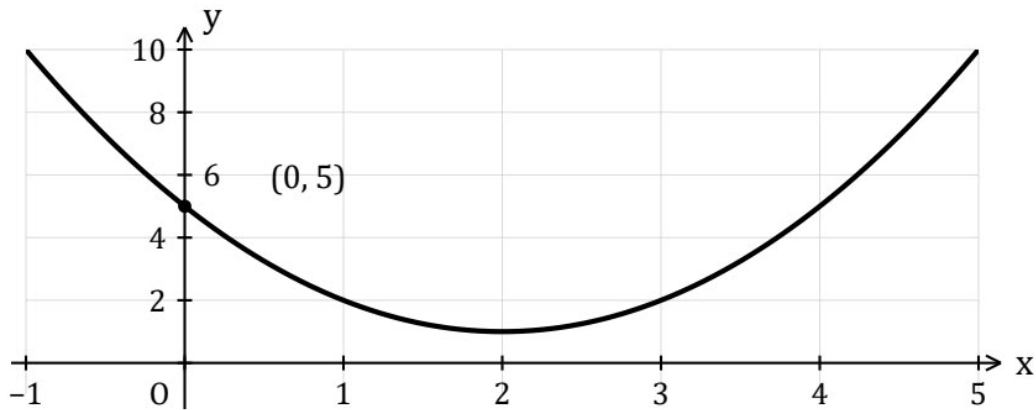
5. Which polynomial has 0 as a zero?

- (A)  $x^2 + 4$
- (B)  $2x^2 - 7x$
- (C)  $x^2 - 3$
- (D)  $3x - 2$

## SECTION B

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

6. Find a quadratic polynomial whose zeroes have sum  $-3$  and product  $2$ .
7. The product of the zeroes of  $ax^2 - 6x - 6$  is  $4$ . Find  $a$  and the sum of the zeroes.
8. For the zeroes  $\alpha$  and  $\beta$  of  $4x^2 + 12x + 5$ , find  $\alpha^2 + \beta^2$ .
9. How many real zeroes does the graph below show? Explain why the marked point  $(0, 5)$  is not a zero.



## SECTION C

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

10. Find the zeroes of  $6x^2 - 7x - 3$  and verify both relationships between the zeroes and the coefficients.
11. If  $\alpha$  and  $\beta$  are zeroes of  $x^2 - 3x - 10$ , form a quadratic with zeroes  $\alpha + 1$  and  $\beta + 1$ .
12. The zeroes of  $ax^2 + 7x + b$  are  $\frac{2}{3}$  and  $-3$ . Find  $a$  and  $b$ .

## SECTION D

(Application Based Question - 3 marks)

13. A small business uses the model  $P(x) = -x^2 + 9x - 20$  for profit in thousands of rupees, where  $x$  measures production in hundreds of items. Break-even occurs when  $P(x) = 0$ .
- (i) Find and interpret  $P(6)$ .
- (ii) Find the two break-even production levels, in items.
- (iii) Does the graph open upwards or downwards? Give a reason.