



Laying the foundation of lifelong success

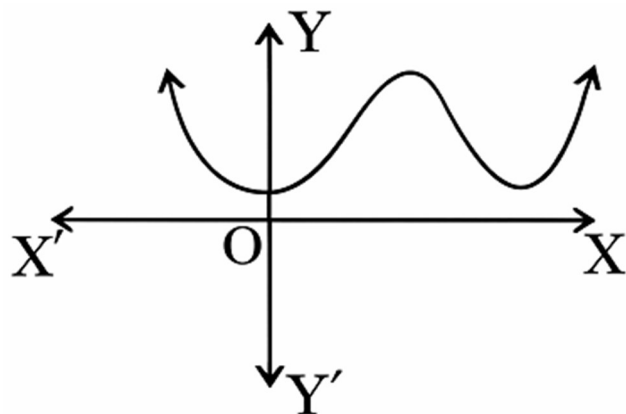
CHAPTER 2

Polynomials

(Previous Years' Questions)

MCQ

1. The graph of $y = f(x)$ is given.

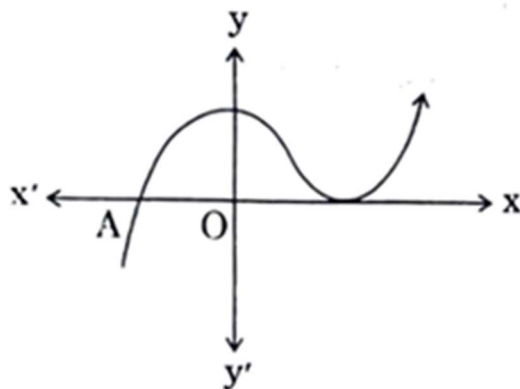


The number of zeroes of $f(x)$ is:

- (A) 0
(B) 1
(C) 2
(D) 4

(2026)

2. The graph of $y = f(x)$ is given. The number of distinct zeroes of $y = f(x)$ is :



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

(D) 3

(2026)

3. If α and β are two zeroes of a polynomial $f(x) = px^2 - 2x + 3p$ and $\alpha + \beta = \alpha\beta$ then value of p is:

(A) $-\frac{2}{3}$

(B) $\frac{2}{3}$

(C) $\frac{1}{3}$

(D) $-\frac{2}{3}$

(2026)

4. A polynomial $p(x)$ which has sum of its zeroes equal to their product, is:

(A) $3x^2 + 2x + 2$

(B) $3x^2 - 2x - 3$

(C) $3x^2 - 2x + 2$

(D) $x^2 - 3x + 2$

(2026)

5. If sum and product of zeroes of a polynomial are (-3) and (-2) respectively, then a polynomial is

(A) $x^2 - 3x - 2$

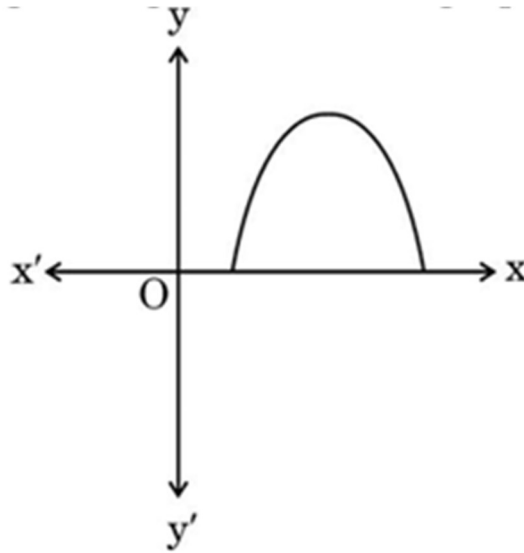
(B) $-x^2 - 3x + 2$

(C) $-x^2 + 3x - 2$

(D) $x^2 + 3x + 2$

(2026)

6. If the given figure shows the graph of polynomial $y = ax^2 + bx + c$ then :



- (A) $a < 0$
(B) $c > 0$
(C) $b^2 < 4ac$
(D) a and b are of same sign

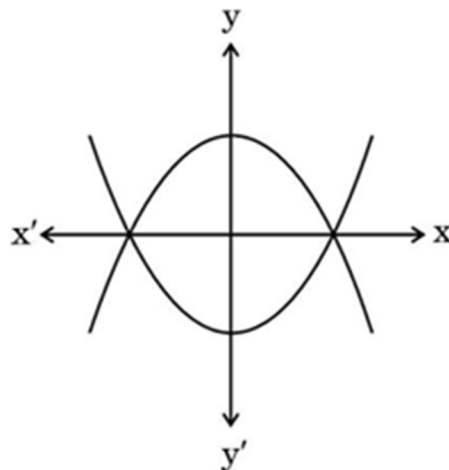
(Comptt., 2025)

7. If α and β are the zeroes of polynomial $3x^2 + 6x + k$ such that $\alpha + \beta + \alpha\beta = -\frac{2}{3}$, then the value of k is:

- (A) -8
(B) 8
(C) -4
(D) 4

(2025)

8. Two polynomials are shown in the graph below. The number of distinct zeroes of both the polynomials is :



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

(2025)

9. The sum of the zeroes of the polynomial $p(x) = 5x - 7x^2 + 3$ is:

- (A) $-\frac{7}{5}$
- (B) $\frac{7}{5}$
- (C) $\frac{5}{7}$
- (D) $-\frac{5}{7}$

(2025)

10. If -4 is a zero of the polynomial $p(x) = x^2 - x - (2 + 2k)$, then the value of k is:

- (A) 3

(B) 9

(C) 6

(D) -9

(2025)

11. If one zero of the polynomial $q(x) = (p^2 + 4)x^2 + 65x + 4p$ is reciprocal of the other, then the value of 'p' is :

(A) -1

(B) 1

(C) -2

(D) 2

(2025)

12. If α and β are the zeroes of the polynomial $p(x) = x^2 - ax - b$, then the value of $(\alpha + \beta + \alpha\beta)$ is equal to :

(A) $a + b$

(B) $-a - b$

(C) $a - b$

(D) $-a + b$

(2025)

13. Zeroes of the polynomial $p(x) = x^2 - 3\sqrt{2}x + 4$ are :

(A) $2, \sqrt{2}$

(B) $2\sqrt{2}, \sqrt{2}$

(C) $4\sqrt{2}, -\sqrt{2}$

(D) $\sqrt{2}, 2$

(2025)

14. Zeroes of the polynomial $p(y) = 7y^2 - \frac{11}{3}y - \frac{2}{3}$ are:

(A) $-\frac{2}{3}, -\frac{1}{7}$

(B) $\frac{2}{3}, -\frac{1}{3}$

(C) $\frac{2}{3}, \frac{1}{7}$

(D) $\frac{2}{3}, -\frac{1}{7}$

(2025)

15. If α and β are zeroes of the polynomial $p(x) = kx^2 - 30x + 45k$ and $\alpha + \beta = \alpha\beta$, then the value of 'k' is :

(A) $-\frac{2}{3}$

(B) $-\frac{3}{2}$

(C) $\frac{3}{2}$

(D) $\frac{2}{3}$

(2025)

16. Which of the following statements is true for a polynomial $p(x)$ of degree 3?

(A) $p(x)$ has at most two distinct zeroes.

(B) $p(x)$ has at least two distinct zeroes.

(C) $p(x)$ has exactly three distinct zeroes.

(D) $p(x)$ has at most three distinct zeroes.

(2025)

17. If the zeroes of the polynomial $ax^2 + bx + \frac{2a}{b}$ are reciprocal of each other, then the value of b is

(A) 2

(B) $\frac{1}{2}$

(C) -2

(D) $-\frac{1}{2}$

(2025)

18. If the sum of zeroes of the polynomial $p(x) = 2x^2 - k\sqrt{2}x + 1$ is $\sqrt{2}$, then value of k is:

(A) $\sqrt{2}$

(B) 2

(C) $2\sqrt{2}$

(D) $\frac{1}{2}$

(2024)

19. The zeroes of a polynomial $x^2 + px + q$ are twice the zeroes of the polynomial $4x^2 - 5x - 6$. The value of p is :

(A) $-\frac{5}{2}$

(B) $\frac{5}{2}$

(C) -5

(D) 10

(2024)

20. If the sum and the product of zeroes of a quadratic polynomial are $2\sqrt{3}$ and 3 respectively, then a quadratic polynomial is :

(A) $x^2 + 2\sqrt{3}x - 3$.

(B) $(x - \sqrt{3})^2$.

(C) $x^2 - 2\sqrt{3}x - 3$.

(D) $x^2 + 2\sqrt{3}x + 3$.

(2024)

21. If α, β are the zeroes of the polynomial $6x^2 - 5x - 4$,

then $\frac{1}{\alpha} + \frac{1}{\beta}$ is equal to:

(A) $\frac{5}{4}$

(B) $-\frac{5}{4}$

(C) $\frac{4}{5}$

(D) $\frac{5}{24}$

(2024)

22. If α and β are zeroes of the polynomial $5x^2 + 3x - 7$,

the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ is

(A) $-\frac{3}{7}$

(B) $\frac{3}{5}$

(C) $\frac{3}{7}$

(D) $-\frac{5}{7}$

(2024)

23. If α and β are zeroes of the polynomial $2x^2 - 9x + 5$, then value of $\alpha^2 + \beta^2$ is

(A) $\frac{1}{4}$

(B) $\frac{61}{4}$

(C) 1

(D) $\frac{71}{4}$

(2024)

24. If α and β ($\alpha > \beta$) are the zeroes of the polynomial $-x^2 + 8x + 9$ then $(\alpha - \beta)$ is equal to

(A) -10

(B) 10

(C) ± 10

(D) 8

(2024)

25. The zeroes of the quadratic polynomial $2x^2 - 3x - 9$ are:

(A) $3, -\frac{3}{2}$

(B) $-3, -\frac{3}{2}$

(C) $-3, \frac{3}{2}$

(D) $3, \frac{3}{2}$

(2024)

26. What should be subtracted from the polynomial $x^2 - 16x + 30$, so that 15 is the zero of the resulting polynomial?

(A) 30

(B) 14

(C) 15

(D) 16

(2024)

27. If a polynomial $p(x)$ is given by $p(x) = x^2 - 5x + 6$, then the value of $p(1) + p(4)$ is:

(A) 0

(B) 4

(C) 2

(D) -4

(2024)

28. A quadratic polynomial, one of whose zeroes is $2 + \sqrt{5}$ and the sum of whose zeroes is 4, is:

(A) $x^2 + 4x - 1$

(B) $x^2 - 4x - 1$

(C) $x^2 - 4x + 1$

(D) $x^2 + 4x + 1$

(2024)

29. The zeroes of the polynomial $3x^2 + 11x - 4$ are:

(A) $\frac{1}{2}, -4$

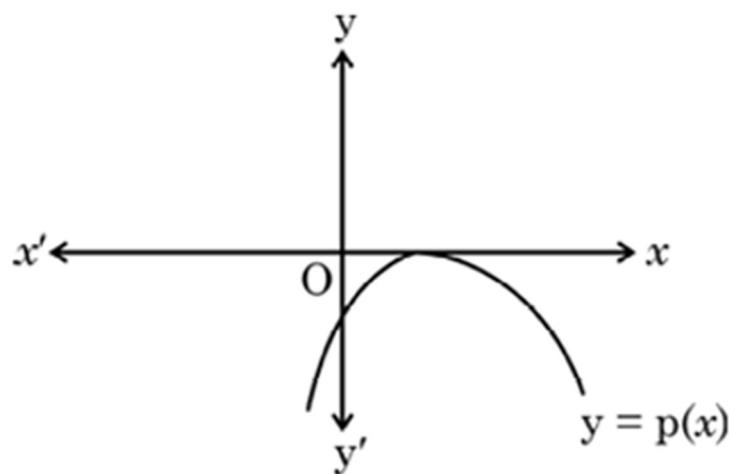
(B) $\frac{1}{4}, -3$

(C) $\frac{1}{3}, -4$

(D) $\frac{1}{3}, 4$

(Comptt., 2023)

30. The graph of $y = p(x)$ is given, for a polynomial $p(x)$.
The number of zeroes of $p(x)$ from the graph is



(A) 3

(B) 1

(C) 2

(D) 0

(2023)

31. If α, β are the zeroes of a polynomial $p(x) = x^2 + x - 1$, then $\frac{1}{\alpha} + \frac{1}{\beta}$ equals to

(A) 1

(B) 2

(C) -1

(D) $-\frac{1}{2}$

(2023)

32. Which of the following is a quadratic polynomial having zeroes $-\frac{2}{3}$ and $\frac{2}{3}$?

(A) $4x^2 - 9$

(B) $\frac{4}{9}(9x^2 + 4)$

(C) $x^2 + \frac{9}{4}$

(D) $5(9x^2 - 4)$

(2023)

33. Which of the following is a quadratic polynomial with zeroes $\frac{5}{3}$ and 0?

(A) $3x(3x - 5)$

(B) $3x(x - 5)$

(C) $x^2 - \frac{5}{3}$

(D) $\frac{5}{3}x^2$

(2023)

34. If α, β are zeroes of a polynomial $p(x) = 2x^2 - x - 1$ then $\alpha^2 + \beta^2$ is equal to

(A) $-\frac{3}{4}$

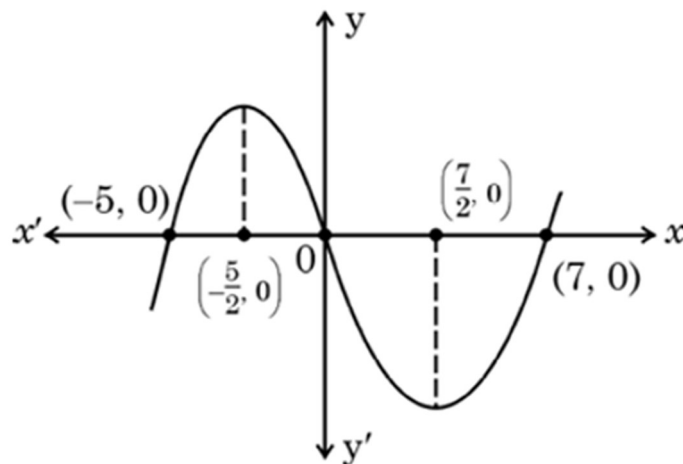
(B) $\frac{5}{4}$

(C) $\frac{1}{4}$

(D) $\frac{3}{4}$

(2023)

35. The graph of $y = p(x)$ is given in the adjoining figure. Zeroes of the polynomial $p(x)$ are



(A) $-5, 7$

(B) $-\frac{5}{2}, -\frac{7}{2}$

(C) $-5, 0, 7$

(D) $-5, -\frac{5}{2}, \frac{7}{2}, 7$

(2023)

36. If one zero of the polynomial $6x^2 + 37x - (k - 2)$ is reciprocal of the other, then what is the value of k ?

(A) -4

(B) -6

(C) 6

(D) 4

(2023)

37. The zeroes of the polynomial $p(x) = x^2 + 4x + 3$ are given by :

(A) $1, 3$

(B) $-1, 3$

(C) $1, -3$

(D) $-1, -3$

(2023)

38. If α and β are the zeroes of the quadratic polynomial $p(x) = x^2 - ax - b$, then the value of $\alpha^2 + \beta^2$ is :

(A) $a^2 - 2b$

(B) $a^2 + 2b$

(C) $b^2 - 2a$

(D) $b^2 + 2a$

(2023)

39. If one zero of the polynomial $x^2 - 3kx + 4k$ be twice the other, then the value of k is:

(A) -2

(B) 2

(C) $\frac{1}{2}$

(D) $-\frac{1}{2}$

(2023)

40. If ' α ' and ' β ' are the zeroes of the polynomial $ax^2 - 5x + c$ and $\alpha + \beta = \alpha\beta = 10$, then :

(A) $a = 5, c = \frac{1}{2}$

(B) $a = 1, c = \frac{5}{2}$

(C) $a = \frac{5}{2}, c = 1$

(D) $a = \frac{1}{2}, c = 5$

(2023)

41. The sum of zeroes of the polynomial $\sqrt{2}x^2 - 17$ are given as :

(A) $\frac{17\sqrt{2}}{2}$

(B) $-\frac{17\sqrt{2}}{2}$

(C) 0

(D) 1

(2023)

42. If α, β are zeroes of the polynomial $x^2 - 1$, then value of $(\alpha + \beta)$ is :

(A) 2

(B) 1

(C) -1

(D) 0

(2023)

43. If α, β are the zeroes of the polynomial $p(x) =$

$4x^2 - 3x - 7$, then $\frac{1}{\alpha} + \frac{1}{\beta}$ is equal to : --

(A) $\frac{7}{3}$

(B) $-\frac{7}{3}$

(C) $\frac{3}{7}$

(D) $-\frac{3}{7}$

(2023)

44. The number of polynomials having zeroes -1 and 2 is:

(A) exactly 2

(B) only 1

(C) at most 2

(D) infinite

(2023)

45. The number of quadratic polynomials having zeroes -5 and -3 is

- (A) 1
- (B) 2
- (C) 3
- (D) more than 3

(2023)

46. If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and -3 , then

- (A) $a = -7, b = -1$
- (B) $a = 5, b = -1$
- (C) $a = 2, b = -6$
- (D) $a = 0, b = -6$

(2023)

47. If one zero of the polynomial $x^2 + 3x + k$ is 2, then the value of k .

- (A) 10
- (B) 10
- (C) 5
- (D) -5

(2023)

