INTERNATIONAL INDIAN SCHOOL BURAIDAH

Work Sheet - 2025-26

CLASS: X

SUBJECT: MATHEMATICS

Chapter 02 - Polynomials

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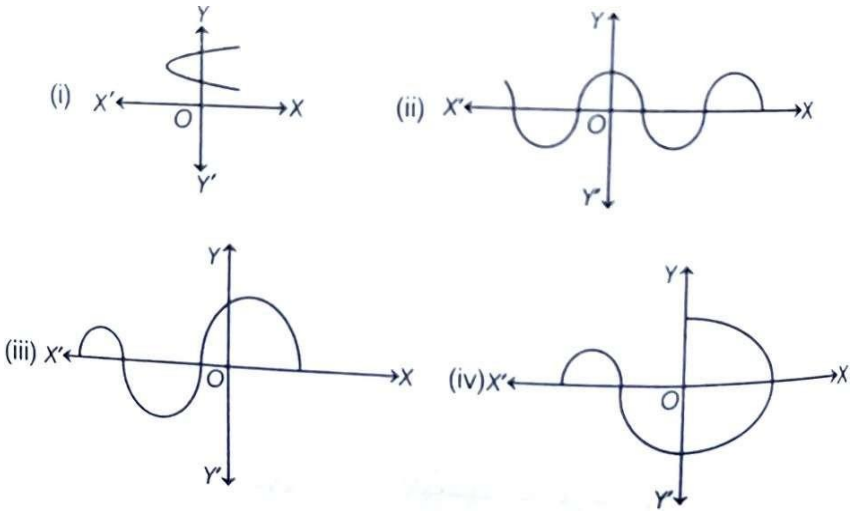
1. The quadratic polynomial, the sum of whose zeroes is-5 and their product is 6, is (Ans: $x^2 + 5x + 6$)
2. Find the zeroes of the polynomial $x^2 - 3x - m(m+3)$. (Ans: -m , m+3)
3. Find the zeroes of given polynomial P(x)= $4\sqrt{3}\,x^2 + 5x - 2\sqrt{3}$ (Ans: $-\frac{-2}{\sqrt{3}}$ and $\frac{\sqrt{3}}{4}$)
4. If one zero of the polynomial $x^2 + 3x + k$ is 2, then find the value of k (Ans:-10)
5. If 2 is a zero of polynomial $p(x) = 4x^2 + 2x - 5a$, then find the value of a. (Ans: 4)
6. If the zeroes of the quadratic polynomial $x^2 + (a+1)x + b$ are 2 and -3 then the value of a and b (Ans: a=0 , b= -6)
7. If α and β are the zeroes of $4x^2 - 4x - 3$, then find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ (Ans: $\frac{-4}{3}$)
8. If the sum of the zeroes of the quadratic polynomial $kt^2 + 2t + 3k$ is equal to their product, Find the value of k (Ans: - 2/3)
9. If the sum of roots of the polynomial $4x^2 - 2x + (k-4)$ is half of their product ,then the value of k is (Ans :8)
10. If one zero of the polynomial $p(x) = 6x^2 + 37x - (k-2)$ is reciprocal of the other,then find the value of k (Ans: k= -4)
11. If α & β are the zeroes of the polynomial $x^2 - 5x + k$ such that $\alpha - \beta = 1$, Find the value of k (Ans: k = 6)
12. If 2 and 3 are zeroes of polynomial $3x^2 - 2kx + 2m$, then find the value of k and m (Ans: m = 9 & k = $\frac{15}{2}$)
13. Find the zeroes of the quadratic polynomials and verify the relationship between the zeroes and their coefficients.
    a) $x^2 + 2\sqrt{2}\,x - 6$ (Ans:-$3\sqrt{2}$, $\sqrt{2}$)
    b) $\sqrt{3}x^2 + 10x + 7\sqrt{3}$ (Ans: -$\sqrt{3}$, $\frac{-7}{\sqrt{3}}$)
14. Find the quadratic polynomial whose sum and product of the zeroes are :

$-2\sqrt{3}, -9$ (Ans: $x^2 + 2\sqrt{3}x - 9$)

15. If one zero of $5x^2 + 13x + k$ is the reciprocal of the other zero, then find the value of k (Ans: 5)
16. If $x + k$ is the HCF of $x^2 - 2x - 15$ and $x^3 + 27$, then find the value of k. (Ans : 3)
17. The graph y = p(x) is given below, for some polynomials p(x). Find the number of zeroes of p(x) in each case:



(Ans: i) 0 ii) 5 iii) 4 iv) 3)

18. If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - 1$, Find the quadratic polynomial whose zeroes are $\frac{2\alpha}{\beta}$ and $\frac{2\beta}{\alpha}$ (Ans: $k(x^2 + 4x + 4)$)

19. If α and β are the zeroes of the quadratic polynomial $p(x) = 4x^2 - 5x - 1$, Find the value of $\alpha^2\beta + \alpha\beta^2$. (Ans: $\frac{-5}{16}$)

20. If the sum of the squares of zeroes of the quadratic polynomial $f(x) = x^2 - 8x + k$ is 40, Find the value of k (Ans: 12)

21. If $f(x) = x/x^2 + 1$,then find the f(1/x) and f(x-1) (Ans: $x/x^2 + 1$, $x-1 / x^2 - 2x + 2$)

22. Find the zeroes of the quadratic polynomial $7y^2 - \frac{11}{3}y - \frac{2}{3}$ and verify the relation between the zeroes and the coefficients. (Ans: $\frac{2}{3}, -\frac{1}{7}$)

23. If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - p(x+1) - c$, then show that $(\beta + 1)(\alpha + 1) = 1 - c$

24. Find the value of p for which one zero of the polynomial $px^2 - 14x + 8$ is 6 times the other. (Ans: p=3)

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