

Mathematics Assignment (Class-X)

Chapter-2 Polynomials

	1 MARKER QUESTIONS
1	Find the quadratic polynomial the sum of whose zeroes is 8 and their product is 12.
2	If α, β are the zeroes of a polynomial, such that $\alpha + \beta = 6$ and $\alpha\beta = 4$, then write the polynomial.
3	If one zero of the polynomial: $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of the other, then the value of a is _____.
4	If the product of the zeroes of the polynomial $ax^2 - 6x - 6$ is 4, then the value of a is _____.
5	The number of polynomials having Zeroes as -2 and 5 is a) 1 b) 2 c) 3 d) more than 3
6	The degree of a Zero Polynomial is a) 0 b) not defined c) 1 d) any number
7	Graph of a quadratic polynomial is a/an a) straight line b) circle c) parabola d) ellipse
8	Zeroes of a polynomial can be determined graphically. Number of zeroes of a polynomial $p(x)$ is equal to number of points where the graph of polynomial a) intersects y-axis b) intersects x-axis c) intersects y-axis or intersects x-axis d) none of these
	2 MARKER QUESTIONS
9	If α and β are the zeroes of the quadratic polynomial $p(x) = x^2 + kx + 45$, such that $(\alpha - \beta)^2 = 144$, find the value of k .
10	If α and β are the zeroes of the quadratic polynomial $f(x) = 3x^2 - 5x - 2$, find the value of $\frac{1}{\alpha} + \frac{1}{\beta}$.
11	If α and β are the zeroes of the quadratic polynomial $f(x) = 4x^2 - 4x + 1$, find the value of $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$.
12	If α and β are the zeroes of the quadratic polynomial $f(x) = x^2 - x - 2$, find the polynomial whose zeroes are $(1 + 2\alpha)$ and $(1 + 2\beta)$.
13	If α and β are the zeroes of a quadratic polynomial such that $\alpha + \beta = 24$ and $\alpha - \beta = 8$, find a quadratic polynomial having α and β as its zeroes.
14	Find the cubic polynomial whose zeroes are $0, \frac{2}{3}$ and $\frac{-2}{3}$.

15	Find the zeroes of the polynomial $p(x) = x^3 - 2x^2 - 49x + 98$, if its two zeroes are equal in magnitude but opposite in sign.
16	Find the zeroes of the polynomial $f(x) = 2x^2 - 5x - 12$ and verify the relationship between its zeroes and coefficients.
	3 MARKER QUESTIONS
17	If two zeroes of the polynomial $x^3 + 2x^2 - x - 2$ are 1 and - 1, find all the zeroes of the polynomial.
18	Verify that -1, 3 and 6 are the zeroes of the cubic polynomial $p(y) = y^3 - 8y^2 + 9y + 18$ and then verify the relationships between the zeroes and the coefficients.
19	Divide $3x^2 - x^3 - 3x + 5$ by $x - 1 - x^2$ and verify the division algorithm.
20	On dividing $x^3 - 8x^2 + 20x - 10$ by a polynomial $g(x)$, the quotient and remainder were $x - 4$ and 6 respectively. Find $g(x)$.
21	If $\sqrt{5}$ and $-\sqrt{5}$ are two zeroes of the polynomial $x^3 + 3x^2 - 5x - 15$, find its third zero.
	4 MARKER QUESTIONS
22	If α and β are the zeroes of the quadratic polynomial $f(x) = 6x^2 - 7x - 3$, find the value of (a) $\alpha^3 + \beta^3$ (b) $\frac{\alpha^2}{\beta} + \frac{\beta^2}{\alpha}$
23	Find all the zeroes of the polynomial $2x^4 + 7x^3 - 19x^2 - 14x + 30$, if two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$
	HOTS
24	If $n - k$ is a factor of the polynomials $x^2 + px + q$ and $x^2 + mx + n$, prove that: $k = n + \frac{n-q}{m-p}$.
25	What must be subtracted from the polynomial $4x^4 + 2x^3 - 8x^2 + 3x - 7$, so that the resulting polynomial is exactly divisible by $2x^2 + x - 2$?
26	Find all the zeroes of the polynomial $x^4 - 6x^3 - 26x^2 + 138x - 35$, if two of its zeroes are $2 \pm \sqrt{3}$.
27	If the zeroes of the polynomial $x^3 - 15x^2 + 71x + p$ are in AP, find the value of p .
28	If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by another polynomial $3x^2 + 4x + 1$, the remainder comes out to be $(ax + b)$, then find a and b.