

Mathematics Assignment (Class-IX)
Chapter- 2 Polynomials

	1 MARKER QUESTIONS
1	Give one example of each of a trinomial of degree 49 and a monomial of degree 105.
2	Write the degree of each of a constant polynomial and of the zero polynomial.
3	Find the value of $p(x) = x^3 + 3x^2 - 7x + 3$ at: a) $x = 2$ b) $x = -3$
4	If $(x - 1)$ is a factor of $p(x) = x^2 + x + k$, then find the value of k .
5	If -1 is a zero of the polynomial $p(x) = ax^3 - x^2 + x + 4$, find the value of a .
6	Find the remainder when $p(x) = 9x^3 - 3x^2 + x - 5$ is divided by $g(x) = x - \frac{2}{3}$.
	2 MARKER QUESTIONS
7	Factorize: (a) $14x^3y^2 - 28xy^2z + 35xy$ (b) $5xy - 25x^3y$ (c) $x(2a + b)^2 + 4ay + 2by + 8a + 4b$ (d) $x^2 + \frac{1}{x^2} - 2 - 3x + \frac{3}{x}$ (e) $3xy - 243xy^5$ (f) $ax + bx + cy + by - cx - ay$ (g) $1 - 2xy - (x^2 - y^2)$ (h) $x^4 + x^2 + 1$ (i) $x^2 + \frac{1}{6}x - \frac{1}{6}$ (j) $16\sqrt{5}x^2 - 50x + 5\sqrt{5}$ (k) $4x^4 - 5x^2 + 1$ (l) $x^3 + \frac{3}{2}x^2 + \frac{3}{4}x + \frac{1}{8}$ (m) $2\sqrt{2}a^3 + 8b^3 - 27c^3 + 18\sqrt{2}abc$
8	Without actually calculating the cubes find the value of $(-1.5)^3 + (0.8)^3 + (0.7)^3$.
9	Given a polynomial $p(x) = x^2 - 5x + 4$ a) Find the value of $p(x)$ at $x = 2$ b) Check whether $(x - 2)$ is factor of $p(x)$ c) Factorise $p(x)$
10	If $a^2 + b^2 + c^2 = 250$ and $ab + bc + ca = 3$ then find $a + b + c$.
11	Evaluate the following using suitable identity. (a) $(1.1)^3$ (b) $(104)^3 + (96)^3$ (c) $(9.8)^3$ (d) $(106)^3 - (94)^3$
12	Find the value of $x^3 - y^3$ if $(x - y) = -7$ and $xy = -10$.
	3 MARKER QUESTIONS
13	If both $(x - 2)$ and $(x - \frac{1}{2})$ are factors of the polynomial $f(x) = px^2 + 5x + r$, show that $p = r$.
14	If the polynomials $2x^3 + ax^2 + 3x - 5$ and $x^3 + x^2 - 4x + a$ leave the same remainder when divided by $x - 2$ find the value of a . Also find the remainder in each case.
15	If $x + y + z = 9$ and $x^2 + y^2 + z^2 = 35$, find the value of $x^3 + y^3 + z^3 - 3xyz$.

16	Simplify: $\frac{(x^3 - y^3)^3 + (y^3 - z^3)^3 + (z^3 - x)^3}{(x - y)^3 + (y - z)^3 + (z - x)^3}$.
17	If $x + \frac{1}{x} = 8$, find the value of $x^4 + \frac{1}{x^4}$.
18	Simplify: $(2x + 3y)^3 + (2x - 3y)^3$
	4 MARKER QUESTIONS
19	Factorise $2x^3 - 3x^2 - 17x + 30$
20	Factorise $x^3 - 3x^2 - 17x + 30$
	HOTS
21	If $(x^2 - 1)$ is a factor of $f(x) = ax^4 + bx^3 + cx^2 + dx + e$, show that $a + c + e = b + d = 0$.
22	The polynomials $ax^3 + 3x^2 - 3$ and $2x^3 - 5x + a$ when divided by $(x - 4)$ leave the remainder 'p' and 'q' respectively. Find the value of a if $p + q = 0$.