

INDIAN SCHOOL AL WADI AL KABIR

Department: Mathematics

Class IX

Worksheet – POLYNOMIALS

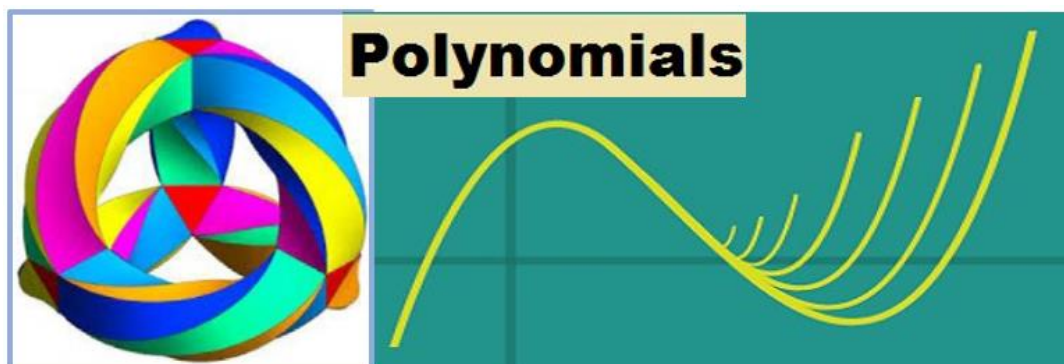
Questions of 1 mark each

Q.1.	The degree of the polynomial $\sqrt{3}$ is							
	A	3	B	1	C	0	D	3
Q.2.	The value of the polynomial $x^2 - 3x + 6$ at $x = \sqrt{2}$ is							
	A	$8 - 3\sqrt{2}$	B	$8 + 3\sqrt{2}$	C	$-8 + 2\sqrt{3}$	D	$8 - 2\sqrt{3}$
Q.3.	The value of 'k', if $x - 2$ is a factor of $p(x) = 2x^2 + 3x - k$.							
	A	-14	B	14	C	12	D	-12
Q.4.	Which among the following expressions is not a polynomial?							
	A	$x^{10} + y^3 + t^{50}$	B	$3\sqrt{t} + t\sqrt{2}$	C	$7x^5 - \sqrt{5}x + 2x$	D	$\frac{x^3 + 2x^2 + 5x}{6}$
Q.5.	The remainder when $4x^3 - 12x^2 + 14x - 3$ is divided by $x - \frac{1}{2}$ is							
	A	$-\frac{2}{3}$	B	$\frac{2}{3}$	C	$-\frac{3}{2}$	D	$\frac{3}{2}$
Q.6.	If $x - \frac{1}{x} = \frac{1}{2}$, then $4x^2 + \frac{4}{x^2} =$							
	A	9	B	16	C	25	D	64
Q.7.	If $a^2 + b^2 + c^2 = 90$, and $a + b + c = 20$, then the value of $ab + bc + ca$.							
	A	170	B	160	C	165	D	155
Q.8.	Zero of the polynomial $p(x)$, where $p(x) = ax + 1, a \neq 0$ is							
	A	$\frac{1}{a}$	B	0	C	$-\frac{1}{a}$	D	-a

Q.19.	<p>i) If $(x - 2)$ and $(x - \frac{1}{2})$ are factors of $px^2 + 5x + r$, then show that $p = r$.</p> <p>ii) Factorize $8x^3 + 27y^3 + 36x^2y + 54xy^2$</p>
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Case study-based (4 marks)

Q.20. On one day, principal of a particular school visited the classroom. Class teacher was teaching the concept of polynomial to students. He was very much impressed by her way of teaching. To check, whether the students also understand the concept taught by her or not, he asked various questions to students. Some of them are given below. Answer them.



- i) Without actually calculating the cubes, find the value of $(\frac{1}{2})^3 + (\frac{1}{3})^3 - (\frac{5}{6})^3$
- ii) Show that $(x - 1)$ is a factor of the polynomial $f(x) = 2x^3 - 3x^2 + 7x - 6$.
- iii) Factorise $2x^2 + y^2 + 8z^2 - 2\sqrt{2}xy + 4\sqrt{2}yz - 8xz$

ANSWERS

Q.1	C	Q.2	A	Q.3	B	Q.4	B
Q.5	D	Q.6	A	Q.7	D	Q.8	C
Q.9	A	Q.10	A	Q.11	$4x^2 + 9y^2 + z^2 - 12xy - 6yz + 4xz$	Q.12	224
Q.13	$2(5p - 6q)(25p^2 + 36q^2 + 30pq)$	Q.14	5	Q.15	970	Q.16	$(x - 2)(3x - 2)(2x - 3)$
Q.17	<p>i) 1</p> <p>ii) a) 11130 b) $16x^4 - y^4$</p>	Q.18	5, 10, 19	Q.20	i) $\frac{-5}{12}$	Q.20	$(-\sqrt{2}x + y + 2\sqrt{2}z)(-\sqrt{2}x + y + 2\sqrt{2}z)$