INTERNATIONAL INDIAN SCHOOL
BURAIDAH

Worksheet For The Academic Year 2023-24

CLASS: IX SUBJECT: Mathematics DATE: 14/05/2023

LESSON-2 Polynomials

1) A non-zero constant polynomial has _____ zeroes.
2) The degree of a zero polynomial is _____.
3) The coefficient of x^3 in $3x^2 - 4x^3 + 5x - 7$ is ____.
4) The degree of the polynomial $x^{100} - 9x^2 + 50$ is _____.
5) A polynomial of degree 4 is called a _____ polynomial.
6) Find the value of the polynomial $x^2 - 9$ for $x = 97$.
7) Find the remainder of :
   (i) $2x^2 - 5x - 3$ if divided by $x - 3$.
   (ii) $x^2 + 2x + 1$ if divided by $x + 2$.
8) Find the value of k when $x^2 + x + k$ has $x - 1$ as its factor.
9) Find p(0) , p(4) & p(-5) if $p(t) = 4t^2 - 3t + 6$.
10) Find the value of k if $x - 4$ is a factor of $2x^3 - 3x^2 - 18x + k$.
11) Using Factor Theorem , show that g(x) is a factor of p(x):
   (i) $p(x) = x^3 - 8$, $g(x) = x - 2$
   (ii) $p(x) = 2x^4 + 9x^3 + 6x^2 - 11x - 6$, $g(x) = x - 1$
12) Factorise:
   (i) $x^2 - 11x - 80$ (ii) $3x^2 - 14x + 8$
13) Factorise:
   (i) $x^3 + 6x^2 + 11x + 6$ (ii) $2x^3 + x^2 - 7x - 6$
14) Evaluate using identities:
   (i) 995^2 (ii) 107^2 (iii) 98^2
15) Expand:
   (i) $(3x + 2)^2$ (ii) $(m + 2n - 5p)^2$ (iii) $(x - \frac{2}{x})^3$
16) Simplify: $(\frac{x}{2} + \frac{y}{3})^3 - (\frac{x}{2} - \frac{y}{3})^3$
17) Factorise:
   (i) $y^3 + 125$ (ii) $8a^3 + 27b^3 + 36a^2b + 54ab^2$
   (iii) $4 + x^2 + 4y^2 + 4x - 4xy - 8y$
18) If $x + y + z = 0$ then $x^3 + y^3 + z^3 =$ _____.

19) Evaluate: (i) $48^3 - 30^3 - 18^3$

(ii) $(\frac{1}{2})^3 + (\frac{1}{3})^3 - (\frac{5}{6})^3$

20) Find the product using identities:

(i) (5y – 2x)(5y + 2x) (ii) (a – 10)(a + 5)

ANSWERS

1) No	9) 6 , 58 , 121
2) Not defined	10) -8
3) -4	12) i (x + 5)(x – 16) ii (x – 4)(3x – 2)
4) 100	13) (i) (x + 1)(x + 2)(x + 3)
5) biquadratic	(ii) (x + 1)(x – 2)(x + $\frac{3}{2}$)
6) 9400	14) (i) 990025 (ii) 11449 (iii) 941192
7) (i) 0 (ii) 1	16) $\frac{2y3}{27} + \frac{x2y}{2}$
8) -2	17) (i) (y + 5)(y^2 – 5y + 25)
18) 3xyz	(ii) (2a + 3b)(2a + 3b)(2a + 3b)
19) (i) 77760 (ii) $\frac{-5}{12}$	(iii) (2 + x –2y)(2 + x – 2y)