

SUBJECT –MATHEMATICS,,CLASS-IX
CHAPTER-2 (POLYNOMIALS)
WORKSHEET(ADVANCED)

Choose the correct option : (3X1=3)

1. $(x+1)$ is a factor of $x^n + 1$ only if
(a) n is an odd integer (b) n is an even integer
(c) n is a negative integer (d) n is a positive integer
2. If $\frac{x}{y} + \frac{y}{x} = -1$ ($x, y \neq 0$), the value of $x^3 - y^3$ is
(a) 1 (b) -1 (c) 0 (d) $\frac{1}{2}$
3. Degree of the zero polynomial is
(a) 0 (b) 1 (c) any real number
(d) not defined

Fill in the blanks : (2 X 1=2)

4. If $x-a$ is a factor of $x^3 - 3x^2a + 2a^2x + b$, then value of b is -----
5. If $x^3 + \frac{1}{x^3} = 110$, then $x + \frac{1}{x} =$ -----

Answer the following question (1)

6. Find the remainder when $x^3 + 4x^2 + 4x - 3$ is divided by x .

Short answer type Question-I(2 X 2=4)

7. Factorise $(2x + \frac{1}{3})^2 - (x - \frac{1}{2})^2$
8. Without actual division, prove that $x^4 + 2x^3 - 2x^2 + 2x - 3$ is exactly divisible by $x^2 + 2x - 3$.

Short Answer type Questions-II(2 X 3=6)

9. Find the value of $x^3 + y^3 - 12xy + 64$, when $x+y=-4$
10. If both $x-2$ and $x - \frac{1}{2}$ are factors of $px^2 + 5x + r$, show that $p=r$.

Long Answer type Question:(1 X 4=4)

11. Prove that $(a+b+c)^3 - a^3 - b^3 - c^3 = 3(a+b)(b+c)(c+a)$