

Class - 1x
Holiday Homework
Worksheet - Chapter - Polynomials.

CHAPTER EXERCISE

Very Short Answer Type Questions

[1 Mark each]

- Which of the following expressions is a polynomial?
(i) $x + \frac{1}{x}$ (ii) $\sqrt{x} + x + x^2$
(iii) $\sqrt{2}x + x^3 + 3x^2$ (iv) $x^2 + x^{-2} + 2$
- Write the coefficient of x in the expansion of $(x + 5)^3$.
- Find the coefficient of x^2 in $(4 + 4x^2)(3x^2 - 5)$.
- Classify the following as a constant, linear and quadratic polynomials.
(i) $3x + 5$ (ii) $1 + x + x^2$
- Find the value of $p\left(\frac{1}{2}\right)$ for $p(x) = x^4 - x^2 + x$.
- Find the value of the polynomial at the indicated value of variable $p(x) = 3x^2 - 4x + \sqrt{11}$ at $x = 2$.
- If $p(x) = x^3 - x^2 + x + 1$, then find the value of $\frac{p(1) + p(-1)}{2}$.
- Find the zeroes of $x^2 - 7$.
- Verify that, 1 is not a zero of the polynomial $4y^4 - 3y^3 + 2y^2 - 5y + 1$.
- If $x^{99} + 99$ is divided by $x + 1$, then find remainder.
- Find the zeroes of the polynomial
 $p(x) = (x - 3)^2 - (x + 3)^2$.
- For the polynomial $\frac{x^3 + 3x + 9}{5} - \frac{7}{11}x^2 - x^5$, write
(i) the degree of the polynomial.
(ii) the coefficient of x^3 .

Short Answer Type I Questions

[2 Marks each]

- Find the value of the polynomial $p(z) = 3z^2 - 4z + \sqrt{17}$, when $z = 3$.
- If $p(x) = x^3 + 3x^2 - 2x + 4$, then find the value of $p(-3) + p(1) + p(0)$.
- Find the remainder, when $x^3 - 3x^2 + 3x - 1$ is divided by $(x - 1)$.
- Using remainder theorem, find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by $\left(x - \frac{1}{2}\right)$.
- Find the value of p , if $(x - 2)$ is a factor of the polynomial $x^3 - px^2 + 12$.
- If (-1) is a zero of the polynomial $p(x) = ax^3 - x^2 + x + 4$, then find the value of a .
- Using a suitable identity, evaluate $(-28)^3 + (9)^3 + (19)^3$.
- Check whether $f(x) = 4x^3 + 4x^2 - x - 1$ is a multiple of $2x + 1$.
- HOTS** If $a + b + c = 7$ and $ab + bc + ca = 20$, then find the value of $a^2 + b^2 + c^2$.
- HOTS** If $ab = 5$ and $a - b = 2$, then find the value of $a^3 - b^3$.
- HOTS** Using remainder theorem, find the value of k , so that $(4x^2 + kx - 1)$ leaves the remainder 3, when divided by $(x - 4)$.
- HOTS** If $x^2 + \frac{1}{x^2} = 5$, find the positive value of $\left(x - \frac{1}{x}\right)$.