SARALA BIRLA PUBLIC SCHOOL

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(SARALA BIRLA GROUP OF SCHOOLS)

Birla Knowledge City, Mahilong, Ranchi

CLASS-IX (2020-21)

Sub: MATHEMATICS

Assignment-3

1. Which of the following expressions are polynomials ? In case of polynomial write its degree .

   (a) $x^5 - 2x^3 + x + 7$

   (b) $\sqrt[3]{x}$

   (c) $y^3 - \sqrt{3}y$

   (d) $x^{-2} + 2x^{-1} + 3$

   (e) $-\frac{3}{5}$

2 . (a) Give an example of a binomial of degree 29.

   (b) Give an example of a trinomial of degree 3.

3. Classify the following as linear , quadratic , and cubic polynomials.

   (a) $2x^2 + 4x$

   (b) $t - t^3$

   (c) $-7 + y$

   (d) $5t$

4. If $f(t) = 4t^2 - 3t + 6$, Find $f(0)$, $f(4)$ and $f(-5)$.

5. Find the zero of the polynomial.

   (a) $q(x) = x+4$

   (b) $p(t) = t - 5$

   (c) $p(x) = 4x$

   (d) $h(x) = ax$, where $a \neq 0$

6. Using remainder theorem , find the reminder when

   (a) $x^3 - 6x^2 + 9x + 3$ is divided by $x - 1$.

(b) $4x^3 - 12x^2 + 11x - 5$ is divided by $2x - 1$.

7. Verify 2 and 3 are the zeros of the polynomial $p(x) = x^2 + x - 6$.

8. The polynomial $(ax^3 + 3x^2 - 3)$ and $(2x - 5x + a)$ when divide by $(x - 4)$ leaves the same remainder . Find the value of a .

9 . Find the value of a for which the polynomial $p(x) = x^4 - x^3 - 11x^2 - x + a$ is divisible by $(x+3)$.

(Hint : here $x+3$ is a factor)

10. If $p(x) = x^3 + ax^2 + bx + 6$ has $(x-2)$ as a factor and leaves a remainder 3 when divided by $(x-3)$. Find

The value of a and b .

11. Divide the following by long division method :

I. $x^3 + x^2 + 3x + 115$ by $x+5$.

II. $x^3 - 8$ by $x-2$.

III. $x^3 - 3x^2 + 4x + 50$ by $x+3$.