STD – 9 MATHS

CHAPTER - 2

polynomials

EXERCISE – 2.1 Q : 4,5

4. Write the degree of each of the following polynomials:

(i) $5x^3 + 4x^2 + 7x$

- The highest power of the variable in a polynomial is the degree of the polynomial.
- Here, $5x^3 + 4x^2 + 7x = 5x^3 + 4x^2 + 7x^1$
- The powers of the variable x are: 3, 2, 1

$\therefore$ the degree of $5x^3 + 4x^2 + 7x$ is 3 as 3 is the highest power of x in the equation.

(ii) $4-y^2$

- The highest power of the variable in a polynomial is the degree of the polynomial.
- Here, in $4-y^2$,
- The power of the variable y is 2.

$\therefore$ the degree of $4 - y^2$ is 2 as 2 is the highest power of y in the equation.

(iii) $5t - \sqrt{7}$

- The highest power of the variable in a polynomial is the degree of the polynomial.
- Here, in $5t - \sqrt{7}$,
- The power of the variable t is : 1

$\therefore$ the degree of $5t - \sqrt{7}$ is 1 as 1 is the highest power of t in the equation.

(iv) 3

- The highest power of the variable in a polynomial is the degree of the polynomial.
- Here, $3 = 3 \times 1 = 3 \times x^0$
- The power of the variable here is : 0

$\therefore$ the degree of 3 is 0.

5. Classify the following as linear, quadratic and cubic polynomials:

- We know that,
- Linear polynomial : A polynomial of degree one is called a linear polynomial.
- Quadratic polynomial : A polynomial of degree two is called a quadratic polynomial.
- Cubic polynomial : A polynomial of degree three is called a cubic polynomial.

(i) $x^2 + x$

- The highest power of $x^2 + x$ is 2

$\therefore$ the degree is 2

- Hence, $x^2 + x$ is a quadratic polynomial.

(ii) $x - x^3$

- The highest power of $x-x^3$ is 3

$\therefore$ the degree is 3

- Hence, $x-x^3$ is a cubic polynomial.

(iii) $Y + y^2 + 4$

- The highest power of $y + y^2 + 4$ is 2

$\therefore$ the degree is 2

- Hence, $y + y^2 + 4$ is a quadratic polynomial.

(iv) $1 + x$

- The highest power of $1 + x$ is 1

$\therefore$ the degree is 1

- Hence, $1 + x$ is a linear polynomial.

(v) 3t

- The highest power of 3t is 1

∴ the degree is 1

- Hence, 3t is a linear polynomial.

(vi) r^2

- The highest power of r^2 is 2

∴ the degree is 2

- Hence, $r^2$is a quadratic polynomial.

(vii) $7x^3$

- The highest power of $7x^3$ is 3

$\therefore$ the degree is 3

- Hence, $7x^3$ is a cubic polynomial.

Thanks

For watching