MATHEMATICS

CHAPTER NUMBER :~ 4
CHAPTER NAME :~ LINEAR EQUATIONS IN TWO VARIABLES
SUB TOPIC :~ INTRODUCTION

LEARNING OUTCOME:-

Students will be able to learn

a.The general form of linear equations in two variables

b.The formation of linear equations when statements are given

POLYNOMIALS:–

Let x be a variable (literal), n be a integer and $a_0, a_1, a_2, \cdots, a_n$ be constants (real numbers). Then, $a_n x_n + a_{n-1} x^{n-1}$ is known as a polynomial is variable $x.$

VARIABLES:–

A term or a quantity which can take any real value in a particular situation or in a given problem is called a variable.

Variables are generally denoted by the letters x, y, z, etc.

CONSTANT:–

A term or a quantity whose value remains same throughout a particular situation or in a given problem is called a constant.

Constants are generally denoted by letters a, b, c, etc.

Example	Variable	Terms	No: of terms	Coefficient	Degree
A) $5x$	x	$5x$	1	Coefficient of x is 5	1
B) $2y^3 + 9y^2 - 4$	y	$2y^3$ $9y^2$ -4	3	Coefficient of y^3 is 2 Coefficient of y^2 is 9 Coefficient of 1 is -4	3
C) $-10z^0 (= -10)$	z	-10	1	Coefficient of 1 is -10	0
D) $x^2 - x$	x	x^2 $-x$	2	Coefficient of x^2 is 1 Coefficient of x is -1	2

- **Monomials**- Polynomials having only one term.   Example- A) and C)
- **Binomials**- Polynomials having only two terms.   Example- D)
- **Trinomials**- Polynomials having only three terms.   Example- B)
- **Linear Polynomial**- Polynomial having degree 1.   Example- A)
- **Quadratic Polynomial**- Polynomial having degree 2. Example- D)
- **Cubic Polynomial**- Polynomial having degree 3.   Example- B)
- → C) is also an example of a (non-zero) constant polynomial and its degree is 0. In particular, the constant polynomial 0 is called the **Zero Polynomial** and whose degree is not defined.

Important Notes:

✔ A linear polynomial has the form-
   $ax + b$ where a, b are constants and a is non-zero
✔ A quadratic polynomial has the form-
   $ax^2 + bx + c$ where a, b, c are constants and a is non-zero
✔ A cubic polynomial has the form-
   $ax^3 + bx^2 + cx + d$ where a, b, c, d are constants and a is non-zero

   Generally, a polynomial in one variable of degree n has the form-
   $a_0 + a_1x + a_2x^2 + a_3x^3 + \ldots + a_nx^n$

✔ If $a_0 = a_1 = \ldots = a_n = 0$ then the polynomial is called a zero polynomial denoted by 0.
✔ Degree of non-zero constant polynomial is zero.
✔ Only zero polynomial is the constant polynomial whose degree is not defined.

<div align="center">Evaluation:</div>

Question:1.Find the degree of the following polynomials:-

a)$x^5 - x^4 + 3$

b) 2

2. Classify the polynomials into linear, quadratic, cubic polynomials:-

a. $x^2 + x$

b.1+x

c.$7x^2$

d. $x - x^3$

HOMEWORK:-
EXERCISE – 2.1

AHA:-

Give 2 examples of :

Linear polynomial

Quadratic polynomial

Cubic polynomial

Biquadratic polynomial

THANKING YOU

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