

## NOTES

## ALGEBRAIC EXPRESSION

$2x$	Expression
$2x + y$	Binomial
$2x = 14$	Equation

- **Variable:** A symbol which takes various values is known as a variable. Normally it is denoted by  $x, y, z$  etc.
- **Algebraic expression:** A combination of constants and variables connected by some or all of the four fundamental operations  $+, -, \times$  and  $\div$  is called an algebraic expression.  
e.g.,  $-5x + 6$  is an algebraic expression.
- Here  $-5$  is the coefficient of the variable ' $x$ ' and  $6$  is the constant.

**Various types of algebraic expression:**

(a) Monomial: An algebraic expression which contains only one term, is called as monomial.

Thus,  $2x, 3y, 5xy, 6ab^2, -11$  etc. are called monomials.

(b) Binomial: An algebraic expression containing only two terms is called a binomial.

Thus,  $(2a + 6b), (8 - 6x), (x^2 - 6xy^2)$ , etc., are all binomials.

(c) Trinomial: An algebraic expression containing only three terms is called a trinomial.

Thus,  $(a + 2b + 5c), (x + 2y - 3z), (x^3 + y^3 + z^3)$ , etc., are all trinomials.

(d) Polynomial: An expression containing two or more terms is called a polynomial.

- **Addition of Algebraic Expression:** While adding algebraic expressions, we collect the like terms and add them. The sum of several like terms is another like term whose coefficient is the sum of the coefficients of those like terms. The like terms are added and the unlike terms are left as they are. e.g.,  

$$7x + 2y + 8x + 3x^2 + 5x^2 + 6y^2$$

$$= (7 + 8)x + 2y + (3 + 5)x^2 + 6y^2$$
- **Subtraction of Algebraic Expression:** The difference of two like terms is a like term whose coefficients is the difference of the numerical coefficients of the two like terms.  
e.g.,  $7x^2 - 8x^2 = (7 - 8)x^2 = -x^2$ ,  $8y - 6y - 2y = (8 - 6 - 2)y = 0y = 0$