Class 7-Mathematics

Instructions for students: The notes provided must be copied to the Maths copy and then do the homework in the same copy.

Chapter 8

ALGEBRAIC EXPRESSIONS

Definition: A collection of constants and variables connected by one or more of the operations like addition, subtraction, multiplication and division is called an algebraic expression.

E.g. 3x+5y, $4x^2$ -2x+1, etc.

Types Of Algebraic Expressions

Monomial: An algebraic expression having only one term.

E.g. 3x

Binomial: An algebraic expression having two terms.

E.g. 3x+4y

Trinomial: An algebraic expression having three terms.

E.g. $3x^2$+4y+5

Multinomial: An algebraic expression having two or more terms.

E.g. $5x^2$ +9, $3x^2$ +2xy+ $5y^2$ – 8

Polynomial: An algebraic expression is said to be a polynomial, if the powers of its variables in each term are whole numbers.

e.g $3x^3$ +$2x^2$ – 5   (Polynomial in one variable with degree 3)

3xy + 2x – 3y (Polynomial in two variables with degree 2)

3x +$\frac{2}{x}$ + 6   (Not a polynomial)

Exercise 8.1

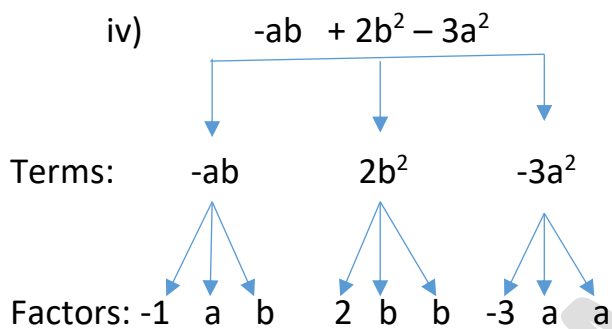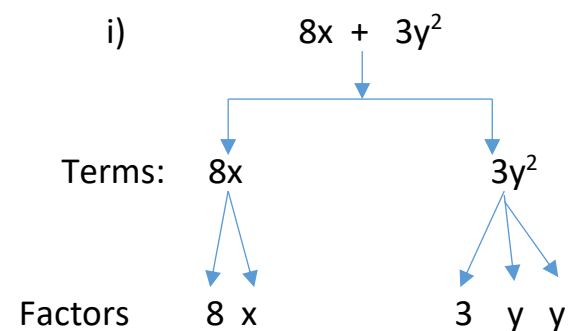2. Write algebraic expression

Charge per km   = ₹9

Distance for which taxi is hired = x km

Fixed charge   =₹50

Required algebraic expression: ₹(9x + 50)

6. Show terms and factors by tree diagrams.

i) $8x + 3y^2$

Terms: $8x$ $3y^2$

Factors   8   x   3   y   y

iv) $-ab + 2b^2 - 3a^2$

Terms: $-ab$ $2b^2$ $-3a^2$

Factors: -1   a   b   2   b   b   -3   a   a

12. Identify the terms containing y^2 and write the coefficient of y^2.

Expression	Terms containing y^2	Coefficient
i) $8 - xy^2$	$-xy^2$	$-x$
ii) $5y^2 + 7x - 3xy^2$	$5y^2$, $-3xy^2$	5, $-3x$
iii) $2x^2y - 15xy^2 + 7y^2$	$-15xy^2$, $7y^2$	-15x, 7

16. Write down the degrees of the polynomials:

i) $x^2 -6x^7 +x^8$ Degree: 8

ii) $3 - 2x$ Degree : 1 ($-2x = -2x^1$)

iii) -2 Degree : 0 ($-2 = -2 \times 1 = -2x^0$)

iv) $1 - x^2$ Degree : 2

17. Write down the degrees of the polynomials:

i) $3x^2 - 5xy^2 +7$ Degree : 3 ($-5x^1y^2$, 1+2 =

Home Work: Complete Exercise 8.1 in the Maths Copy.