

Exercise 18(B)

1. Separate the constants and the variables from each of the following

$$6, 4y, -3x, \frac{5}{4}, \frac{4}{5}xy, az, 7p, 0, \frac{9x}{y}, \frac{3}{4x}, -\frac{xy}{3y}$$

Ans - The constants are $-6, \frac{5}{4}, 0$

The variables are $-4y, -3x, \frac{4}{5}xy, az, 7p, \frac{9x}{y}, \frac{3}{4x}, -\frac{xy}{3y}$

2. Group the like terms together:

i) $4x, -3y, -x, \frac{2}{3}x, \frac{4}{5}y$ and y

Ans - The like terms are:

$$4x, -x, \frac{2}{3}x \text{ and } -3y, \frac{4}{5}y, y$$

ii) $\frac{2}{3}xy, -4yx, 2yx, \frac{-2}{3}yz, \frac{2y}{3}$ and yx

Ans - The like terms are:

$$\frac{2}{3}xy, -4yx, yx \text{ and } 2yz, \frac{-2}{3}yz, \frac{2y}{3}$$

iii) $-ab^2, b^2a, 7b^2a, -3a^2b^2$ and $2ab^2$

Ans - The like terms are:

$$-ab^2, 7b^2a, 2ab^2 \text{ and } b^2a, -3a^2b^2$$

iv) $5ax, -5by, \frac{by}{7}, 7xa$ and $\frac{2ax}{3}$

Ans - The like terms are:

$$5ax, 7xa \text{ and } \frac{2ax}{3} \text{ and } -5by, \frac{by}{7}$$

3. State whether true or false:

i) 16 is a constant and y is a variable but $16y$ is a variable.

Ans - The given statement is true.

ii) $5x$ has two terms 5 and x .

Ans - The given statement is false.

iii) The expression $5+x$ has two terms 5 and x .

Ans - The given statement is True.

iv) The expression $2x^2 + x$ is a trinomial.

Ans - The given statement is false.

v) $ax^2 + bx + c$ is a trinomial.

Ans - The given statement is True.

vi) $8x^2ab$ is a binomial.

Ans - The given statement is True.

vii) $8 + ab$ is binomial.

Ans - The given statement is True.

viii) $x^3 - 5xy + 6x + 7$ is a Polynomial.

Ans - The given statement is True.

ix) $x^3 - 5xy + 6x + 7$ is a multinomial.

Ans - The given statement is True.

x) The coefficient of x in $5x$ is $5x$.

Ans - The given statement is False.

xi) The coefficient of ab in $-ab$ is -1 .

Ans - The given statement is True.

xii) The coefficient of y in $-3xy$ is -3 .

Ans - The given statement is False.

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4. State the number of terms in each of the following expressions:

i) $2a - b$

Ans- There are 2 terms

ii) $3xx + \frac{a}{2}$

Ans- There are two terms

iii) $3x - \frac{x}{p}$

Ans- There are 2 terms.

iv) $a^2xx + b + 6$

Ans- There are 2 terms.

v) $3x \div 2 + y + 4$

Ans- There are 3 terms.

vi) $xy \div 2$

Ans- There are 2 terms.

vii) $2x + y \div a$

Ans- There are 2 terms.

viii) $2x + y + 8 \div y$

Ans- There are 3 terms.

ix) $2xa + 3ab + 4$

Ans- There are 3 terms.

5. State whether true or false:

i) xy and $-yx$ are like terms.

Ans- The given statement is True

ii) x^2y and $-y^2x$ are like terms.

Ans- The given statement is False

iii) a and $-a$ are like terms.

Ans- The given statement is true.

iv) $-ba$ and $2ab$ are unlike terms.

Ans- The given statement is False.

v) 5 and $5x$ are like terms.

Ans- The given statement is False.

vi) $3xy$ and $4xyz$ are unlike terms.
Ans - The given statement is True.

6. For each expression, given below, state whether it is a monomial, or a binomial or a trinomial.

i) xy

Ans - It is a monomial.

ii) $xy + x$

Ans - It is a binomial.

iii) $2x + y$

Ans - It is a monomial.

iv) $-a$

Ans - It is a monomial.

v) $ax^2 - x + 5$

Ans - It is a trinomial.

vi) $-3bc + d$

Ans - It is a Binomial.

vii) $1 + x + y$

Ans - It is a trinomial.

viii) $1 + x \div y$

Ans - It is a Binomial.

ix) $x + xy - y^2$

Ans - It is a Trinomial.

7. Write down the coefficient of x in the following monomial:

i) x

Ans - The coefficient of x is 1.

ii) $-x$

Ans - The coefficient of x is -1.

iii) $-3x$

Ans - The coefficient of x is -3.

iv) $-5ax$

Ans- The coefficient of x is $-5a$

v) $\frac{3}{2}xy$

Ans- The coefficient of x is $\frac{3}{2}y$

vi) $\frac{ax}{y}$

Ans- The coefficient of x is $\frac{a}{y}$

8. Write the coefficients of:

i) x in $-3xy^2$

Ans- The coefficient of x in $-3xy^2$ is $-3y^2$

ii) x in $-ax$

Ans- The coefficient of x in $-ax$ is $-a$

iii) y in $-y$

Ans- The coefficient of y in $-y$ is -1

iv) y in $\frac{2}{a}y$

Ans- The coefficient of y in $\frac{2}{a}y$ is $\frac{2}{a}$

v) xy in $-2xyz$

Ans- The coefficient of xy in $-2xyz$ is $-2z$

vi) ax in $-axy^2$

Ans- The coefficient of ax in $-axy^2$ is $-y^2$

vii) x^2y in $-3ax^2y$

Ans- The coefficient of x^2y in $-3ax^2y$ is $-3a$

viii) xy^2 in $5axy^2$

Ans- The coefficient of xy^2 in $5axy^2$ is $5a$

9. State the numeral coefficient of the following monomials:

i) $5xy$

Ans - The numeral coefficient of ~~the~~ $5xy$ is 5.

ii) abc

Ans - The numeral coefficient of abc is 1.

iii) $5pqr$

Ans - The numeral coefficient of $5pqr$ is 5.

iv) $\frac{-2x}{y}$

Ans - The numeral coefficient of $\frac{-2x}{y}$ is -2.

v) $\frac{2}{3}xy^2$

Ans - The numeral coefficient of $\frac{2}{3}xy^2$ is $\frac{2}{3}$.

vi) $\frac{-15xy}{2z}$

Ans - The numeral coefficient of $\frac{-15xy}{2z}$ is $-\frac{15}{2}$.

vii) $-7x \div y$

Ans - The numeral coefficient of $-7x \div y$ is -7.

viii) $-3x \div (2y)$

Ans - The numeral coefficient of $-3x \div (2y)$ is $-3 \div 2 = -\frac{3}{2}$.

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

i) $x + x^2$

Ans - Here the degree of the polynomial will be 2.

ii) $5x^2 - 7x + 2$

Ans - Here the degree of the polynomial will be 2.

iii) $x^3 - x^8 + x^{10}$

Ans - Here the degree of the polynomial will be 10.

iv) $1 - 100x^{20}$

Ans - Here the degree of the polynomial will be 20.

v) $4 + 4x - 4x^3$

Ans - Here the degree of the polynomial will be 3.

vi) $8x^2y - 3y^2 + x^2y^5$

Ans - Sum of the powers of the term $8x^2y = 2 + 1 = 3$

Sum of the powers of the term $3y^2 = 2$

Sum of the powers of the term $x^2y^5 = 2 + 5 = 7$

∴ The degree of given polynomial is 7

vii) $8z^3 - 8y^2z^3 + 7yz^5$

Ans - Sum of the power of the term $8z^3 = 3$

Sum of the powers of the term $8y^2z^3 = 2 + 3 = 5$

Sum of the powers of the term $7yz^5 = 1 + 5 = 6$

So, The degree of the given polynomial is 6

viii) $4y^2 - 3x^3 + y^2x^7$

Ans - Sum of the powers of the term $4y^2 = 2$

Sum of the powers of the term $3x^3 = 3$

Sum of the powers of the term $y^2x^7 = 2 + 7 = 9$

∴ The degree of the given polynomial is 9.