

EXERCISE 18(B)

- Separate the **constants** and the **variables** from each of the following :

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

C ✓ V ✓ V ✓ 4 ✓ V ✓

$\frac{2}{3}xy, -4yx, 2yz, \frac{-2}{3}yz, \frac{zy}{3}$ and yx
- Group the like terms together :

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

$(ii) 5ax, -5by, \frac{7}{9}ax$ and $\frac{2ax}{3}$.
- State whether **true** or **false** :

(i) 16 is a constant and y is a variable, but $16y$ is variable. **T**

(ii) 5x has two terms 5 and x. **F**

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

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

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

(vi) $8 \times ab$ is a binomial. **F**

(vii) $8 + ab$ is a binomial. **T**

$(viii)$ $x^3 - 5xy + 6x + 7$ is a multinomial. **T**

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

(x) The coefficient of x in $5x$ is 5x. **F**

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

(xii) The coefficient of y in $-3xy$ is -3 . **F**
- State the number of terms in each of the following expressions :

$(i) 2a - b$

$(ii) 3 \times x + \frac{a}{2}$

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

$(iv) a \div x \times b + c$

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

$(vi) xy \div 2$

$(vii) x + y \div a$

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

$(ix) 2 \times a + 3 \div b + 4$
- State whether **true** or **false** :

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

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

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

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

(v) 5 and 5x are like terms.

(vi) 3xy and 4xyz are unlike terms.
- For each expression given below, state whether it is a **monomial**, or a **binomial**, or a **trinomial**.

(i) xy

(ii) $xy + x$

(iii) $2x \div y$

(iv) $-a$

(v) $ax^2 - x + 5$

(vi) $-3bc + d$

(vii) $1 + x + y$

$(viii)$ $1 + x \div y$

(ix) $x + xy - y^2$

(x) $\frac{3}{2}xy$

(vi) $\frac{ax}{y}$
- Write down the coefficient of x in the following monomials :

(i) x

(ii) $-x$

(iii) $-3x$

(iv) $-5ax$

(v) $2xy$

(vi) $\frac{ax}{y}$
- Write the coefficients of :

(i) x in $-3xy^2$

(ii) x in $-ax$

(iii) y in $-y$

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

(v) xy in $-2xyz$

(vi) ax in $-axy^2$

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

$(viii)$ xy^2 in $5axy^2$
- State the numeral coefficients of the following monomials :

(i) $5xy$

(ii) abc

(iii) $5pqr$

(iv) $\frac{2}{3}xy^2$

(v) $\frac{-15xy}{2z}$

(vi) $-7x \div y$

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

$(viii)$ $\frac{-2x}{y}$
- Write the degree of each of the following polynomials :

(i) $x + x^2$

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

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

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

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

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

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

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

Monomial

$2x + 2 = 2x^2$ Binomial \downarrow $\frac{3}{1}$ \downarrow $2x$ = monomial

Binomial = $\frac{2xy}{3} + \frac{3+y}{3}$

Multinomial = $2x + 1$ multinomial

Polynomial = $2x^2 - 2x^2 - 2x^2$

It is an algebraic expression containing at least one term with positive exponent

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2) i) $4x + 2y, x, \frac{2}{3}x, \frac{4}{5}y + y$
Ans $4x, x, \frac{2}{3}x$

$y + \frac{4}{5}y + 3y$

i) $\frac{2}{3}xy, 2yx, 2y^2, -\frac{2}{3}yz, 2y$ and yx

Ans $\frac{2}{3}xy, 4yx, yx$

$2yz, -\frac{2}{3}yz, 2y, \frac{2}{3}y$

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

iv) i) $5ac, 7ca, 2ac$ and $5by + \frac{by}{7}$

Coefficient

Any factor's or group of factors of a product is known as coefficient of remaining factors.

$-a^2b$ ab $-a$

$-a \times b$ $-a$ and b

Degree of the polynomials

$2x^3 + 3x^2 + 7$
 \downarrow
Degree = 3

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10) i) $x + 2x$
Ans $\frac{1}{2} \frac{1}{2} = 2$

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

iii) $x^3 - 2x^2 + 2x + 10$
Ans 10

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

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

vi) $8x^2y - 3y^2 + 2y^5$
Ans) 7

vii) $8x^3 - 8y^2 + 7y^5$
Ans) 6

7) i) $x = 1$

Ans

ii) $-x = -1$

iii) $-3x = -3$

iv) $-5ax = -5a$

v) $\frac{3xy}{a} = \frac{3y}{a}$

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

8) i) x in $-3xy^2$

Ans) $3y^2$

ii) x in $-ax$

Ans) $-a$

iii) y in $-y$

Ans) -1

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

Ans) $\frac{2}{a}$

v) xy in $-2xyz$

Ans) $-2z$

vi) ax in $-ax^2y$

Ans) $2y$

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

Ans) $-3a$

9) i) $5xy = 5$

ii) $abc = 1$

iii) $5pqr = 5$

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

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

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

vii) $-7x \div y = -7$

viii) $-3x \div (2y) = \frac{-3}{2}$