

EXERCISE - 18 (B)

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

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

$$\frac{3}{4x}, -\frac{xz}{3y}$$

Sol. Constants — $6, \frac{5}{4}, 0$

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

$$\frac{3}{4x}, -\frac{xz}{3y}$$

2. Group the like terms together :

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

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

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

Sol. $\frac{2}{3}xy, -4yx, yx$ and $2yz, -\frac{2}{3}yz, \frac{zy}{3}$

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

Sol. $-ab^2, 7b^2a, 2ab^2$ and $b^2a^2, -3a^2b^2$

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

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

3. State True or false:

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

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

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

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

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

vi) $8 \times ab$ is a binomial. False

vii) $8+ab$ is a binomial. True

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

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

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

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

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

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

i) $2a - b$ 2 terms

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

iii) $3x - \frac{x}{p}$ 2 terms

iv) $a + x + b + c$ 4 terms

v) $3x + 2 + y + 4$ 4 terms

vi) $xy + 2$ 2 terms

vii) $x + y + a$ 3 terms

viii) $2x + y + 8 + y$ 4 terms

ix) $2x + 3 + b + 4$ 4 terms

5. State True or False :

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

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

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

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

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

vi) $3xy$ and $4xy^2$ are unlike terms. True

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

i) xy

Monomial

ii) $xy + x$

Binomial

iii) $2x \div y$

Monomial

iv) $-a$

Monomial

v) $ax^2 - x + 5$

Trinomial

vi) $-3bc + d$

Binomial

vii) $1 + x + y$

Trinomial

viii) $1 + x \div y$

Binomial

ix) $x + xy - y^2$

Trinomial

7. Write down the coefficient of x in the following monomials :-

i) $x = 1$

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

ii) $-x = -1$

iii) $-3x = -3$

iv) $-5ax = -5a$

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

8. Write the coefficients of :

i) x in $-3xy^2$ ——— $-3y^2$

ii) x in $-ax$ ——— $-a$

iii) y in $-y$ ——— -1

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

v) xy in $-2xyz$ ——— $-2z$

vi) ax in $-axy^2$ ——— $-y^2$

vii) x^2y in $-3ax^2y$ ——— $-3a$

viii) xy^2 in $5axy^2$ ——— $\cdot 5a$

9. State the numeral coefficients of the following monomials :—

i) $5xy = 5$

vii) $-7x \div y = \frac{-7 \div 1}{-1} = 7$

ii) $abc = 1$

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

iii) $5pqr = 5$

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

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

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

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

i) $x + x^2$ — 2

ii) $5x^2 - 7x + 2$ — 2

iii) $x^3 - x^8 + x^{10}$ — 10

iv) $1 - 100x^{20}$ — 20

v) $4 + 4x - 4x^3$ — 3

vi) $8x^2y - 3y^2 + x^2y^5$ — 7

vii) $8z^3 - 8y^2z^3 + 7yz^5$ — 6

viii) $4y^2 - 3x^3 + y^2x^7$ — 9