

Ex-18.B

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

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

| Constants | Variables |
|------------------------|--|
| 6, $\frac{5}{4}$ and 0 | $4y, -3x, \frac{4}{5}xy, az, 7p, 9x, \frac{3}{4x}, -\frac{xz}{3y}$ |

2. Group the like terms together:

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

$$4x, -x, \frac{2}{3}x \quad | \quad -3y, \frac{4}{5}y, y$$

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

$$\frac{2}{3}xy, -4yx, yx \quad | \quad 2yz, -\frac{2}{3}yz, \frac{2y}{3}$$

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

$$-ab^2, 7b^2a, 2ab^2 \quad | \quad b^2a^2, -3a^2b^2$$

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

$$5ax, 7xa, \frac{2ax}{3} \quad | \quad = 5by, \frac{by}{7}$$

3. State whether true or false:

- (i) 16 is a constant and y is a variable, but 16y is variable. ~~True~~ False
- (ii) 5x has two terms 5 and x. ~~True~~ False
- (iii) The expression 5+x has two terms 5 and x. ~~True~~ False
- (iv) The expression $2x^2 + x$ is a trinomial. ~~True~~ False
- (v) $ax^2 + bx + c$ is a trinomial. ~~True~~ False
- (vi) 8xab is a binomial. ~~True~~ False
- (vii) 8tab is a binomial. ~~True~~ True
- (viii) $x^3 - 5xy + 6x + 7$ is a polynomial. ~~True~~ True
- (ix) $x^3 - 5xy + 6x + 7$ is a multinomial. ~~False~~ True
- (x) The coefficient of x in 5x is 5x. ~~True~~ False
- (xi) The coefficient of ab in -ab is -1. ~~True~~ True
- (xii) The coefficient of y in $-3xy$ is -3. ~~True~~ False

4. State the number of terms in each of the following expression.

(i) $2a - b$ - two terms

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

= $3x + \frac{a}{2}$ = two terms

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

= two terms

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

= $a \div x \cdot b + c = \text{three terms} = \frac{a}{x} + c = \text{two terms}$

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

= four terms = $\frac{3x}{2} + y + 4 = \text{three terms}$

(vi) $xy \div 2$

= $\frac{xy}{2} = \text{one term}$

(vii) $x + y \div a$

= $\frac{x+y}{a} = \text{two terms}$

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

= $\frac{2x + y + 8}{y} = \text{three terms}$

(ix) $2x \div a + 3 \div b + 4$

= $\frac{2x}{a} + \frac{3}{b} + 4$

5. State whether 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 $4xyz$ are unlike terms. True

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

- (i) $xy =$ monomial
- (ii) $xy + x =$ binomial
- (iii) $2x \div y = \frac{2x}{y} =$ monomial
- (iv) $-a =$ monomial
- (v) $ax^2 - x + 5 =$ trinomial
- (vi) $-3bc + d =$ binomial
- (vii) $1 + x + y =$ trinomial
- (viii) $1 + x \div y = 1 + \frac{x}{y} =$ binomial
- (ix) $x + xy - y^2 =$ trinomial

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

- (i) $x = 1$
- (ii) $-x = -1$
- (iii) $-3x = -3$
- (iv) $-5ax = -5a$
- (v) $\frac{3}{2}xy = \frac{3}{2}y$
- (vi) $\frac{ax}{4} = \frac{a}{4}$
- (vii) $\frac{a}{4} = \frac{a}{4}$

8. Write the coefficients of:

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

= $-3x^2$

(ii) x in $-ax$

= $-a$

(iii) y in $-y$

= -1

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

= $\frac{2}{a}$

(v) $\frac{2}{3}xy^2$ in $-2xy^2$

= -22

(vi) ax in $-axy^2$

= $-y^2$

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

= $-3a$

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

= $5a$

9. State the numeral coefficients of the following monomials

(i) $5xy$

= 5

(i) abc
= 1

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

(ii) $5pqx$
= 5

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

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

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

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

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

(i) $x + x^2$
 $x = 1$
 $x^2 = \textcircled{2} = 2$

(v) $4 + 4x - 4x^3$
 $4x = x = 1$
 $x^3 = \textcircled{3} = 3$

(ii) $5x^2 - 7x + 2$
 $x^2 = \textcircled{2}$
 $7x = x = 1 = 2$

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

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

$y^5 = \textcircled{5} = 5$

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

(vii) $8z^3 - 8y^2z^3 + 7yz^5$
 $z^3 = 3$
 $y^2 = 2$
 $z^3 = 3$
 $z^5 = \textcircled{5} = 5$

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

$$y^2 = 2$$

$$x^3 = 3$$

$$y^2 = 2$$

$$x^7 = \textcircled{7} = 7$$

Ch-19 Ex-19(A)

1. Fill in the blanks:-

(i) $5 + 4 = 9$ and $5x + 4x = 9x$

(ii) $12x + 18 = 30$ and $12x^2y + 18x^2y = 30x^2y$

(iii) $7 + 16 = 23$ and $7a + 16b = 7a + 16b$

(iv) $1 + 3 = 4$ and $x^2y + 3xy^2 = x^2y + 3xy^2$

(v) $7 - 4 = 3$ and $7ab - 4ab = 3ab$

(vi) $12 - 5 = 7$ and $12x - 5y = 12x - 5y$

(vii) $35 - 16 = 19$ and $35ab - 16ba = 19ab$ or $19ba$

(viii) $28 - 13 = 15$ and $28ax^2 - 13a^2x = 28ax^2 - 13a^2x$

2. Fill in the blanks:

(i) The sum of -2 and $-5 = -7$ and the sum of $-2x$ and $-5x$ is $-7x$

(ii) The sum of 8 and $-3 = 5$ and the sum of $8ab$ and $-3ab = 5ab$

(iii) The sum of -15 and $-4 = -19$ and the sum of $-15x$ and $-4y = -15x + (-4y)$

(iv) $15 + 8 + 3 = 26$ and the sum of $15x + 8y + 3x = 15x + 3x + 8y = 18x + 8y$

(v) $12 - 9 + 15 = 12 + 15 - 9 = 27 - 9 = 18$ and $12ab - 9ab + 15ba = 12ab + 15ba - 9ab = 27ab - 9ab = 18ab$ or $18ba$

(vi) $25 - 7 - 9 = 16$ and $25xy - 7xy - 9yx = 16xy$