

# FUNDAMENTAL CONCEPTS OF ALGEBRA

# 9

**Q1. Express each of the following in mathematical form using appropriate literals, numbers and signs:**

a. Twice the sum of x and y

Answer: \_\_\_\_\_

b. x divided by y added to the product of 2 and a

Answer: \_\_\_\_\_

c. Sum of x and y is decreased by 10

Answer: \_\_\_\_\_

d. Subtract the product of x and y from b

Answer: \_\_\_\_\_

**Q2. Choose the correct statement for the following algebraic expressions:**

a.  $a \times 2x + b$

(i) a multiplied by the sum of 2x and b

(ii) product of a and 2x added to b

(iii) product of 2x and b added to a

b.  $\frac{7}{x} + 3y$

(i) 7 divided by x added to 3y

(ii) x divided by 7 added to 3y

(iii) 7 divided by x added to 3 and multiplied by y

**Q3. Ram has listed the following like terms in his notebook. Tick the correct pairs and cross out the wrong:**

Terms

Correct/Incorrect

a.  $3a^2b$ ,  $4ab^2$

\_\_\_\_\_

b.  $9x^2y^3$ ,  $3x^2y^3$

\_\_\_\_\_

c.  $8ab, -7ab$  \_\_\_\_\_

d.  $400xy, 40x^2y^2$  \_\_\_\_\_

**Q4. Find the degree of the following polynomials.**

Polynomial Degree

a.  $7x^2y^3 + 8xy$  \_\_\_\_\_

b.  $4abc - 2xy$  \_\_\_\_\_

c.  $26x + 34y$  \_\_\_\_\_

**Q5. Identify monomials, binomials and trinomials from the following expressions.**

Expression	Type of polynomial
$3ab$	
$2x^2y - 5xy + 23p^2y^3$	
$6x - 7y$	
$24xy - 3x^2y$	

**Q6. Write down the coefficients of:**

a. a in  $5a^2b^3$  : \_\_\_\_\_

b. xy in  $3x^2y^2$  : \_\_\_\_\_

c.  $pq^2r$  in  $-pq^2r$  : \_\_\_\_\_

**Q7. State true or false:**

a. The numerical factor of  $-10xy$  is 10. \_\_\_\_\_

b. The literal factor of  $7x^2y$  is  $x^2y^2$ . \_\_\_\_\_

c. The numerical coefficient of  $pqr$  is 1. \_\_\_\_\_

d. The numerical coefficient of  $-a^2bc$  is  $-1$ . \_\_\_\_\_

**Q8. The three sides of a triangle are x, y and z. Find the perimeter of the triangle and write the algebraic expression for it.**

Answer: \_\_\_\_\_

**Q9.** There were  $y$  children playing in the school ground. 2 of them left for their class. Find how many children are still there on the ground and write the algebraic expression for it.

Answer: \_\_\_\_\_

**Q10.** Raju bought  $x$  dozens of bananas. He felt hungry and ate 2 bananas. The rest of the bananas were sold by him at the price of ₹  $y$  per banana. How much money did Raju earn by selling the bananas?

Answer: \_\_\_\_\_

## ANSWERS

- a.  $2(x+y)$ , b.  $\frac{x}{y} + 2a$ , c.  $(x+y) - 10$ , d.  $b - (xy)$
- a. (ii), b (i)
- Correct pairs: (b),(c); Incorrect pairs: (a), (d)
- a. 5, b. 3, c. 1

Expression	Type of polynomial
$3ab$	Monomial
$2x^2y - 5xy + 23p^2y^3$	Trinomial
$6x - 7y$	Binomial
$24xy - 3x^2y$	Binomial

- a.  $5ab^3$ , b.  $3xy$ , c.  $-1$
- a. False, b. False, c. True, d. True
- $x + y + z$
- $y - 2$
- $\text{₹} (12x - 2) y$