

**MATHEMATICS**  
**CLASS – VII**  
**Chapter- 12**  
***Algebraic expressions***



**ZERO**  
**PERIOD**  
We Believe in Learning

1. Write down the numerical coefficient of each of the following monomials:

(a)  $\frac{-5}{9}x^3y$       (b)  $-8x^2y^3z^2$       (c)  $\frac{6}{13}abc^2$

2. Add:

(a)  $3x^2y, -5x^2y, -x^2y$ .

(b)  $a + b - 3, b + 2a - 1$

3. Simplify by combining the like terms:

(a)  $a - (a - b) - b - (b - a)$

(b)  $x^2 - 3x + y^2 - x - 2y^2$ .

4. Find the value of the following algebraic expressions for  $x = 2, y = -1$  and  $z = 2$ .

(a)  $4x^2 - 3y^2 + 5z^2$ .

(b)  $3x^3 - 2x(4yz + 5x^2)$ .

(c)  $1 - 4x(yz + 3xy)$

5. Subtract  $-2x^2 + 5xy + 4y^2$  from the sum of  $x^2 - 2xy + y^2$  and  $3x^2 + 4xy - y^2$ .

6. What should be added to  $-3a + 7b - 16$  to get  $4a - 3b + 19$ ?

7. The perimeter of a triangle is  $4x - 8$  units. One of the sides is  $2x - 4$  units and another side is  $3x + 8$  units. Find the third side.

8. Find the area of the rectangle whose length is 4 times of its breadth where breadth is  $3a$  units.

9. Simplify the following expressions and then find the numerical values for  $x = -2$ .

(i)  $3(2x - 4) + x^2 + 5$

(ii)  $-2(-3x + 5) - 2(x + 4)$

10. To what expression must  $99x^3 - 33x^2 - 13x - 41$  be added to make the sum zero?

11. Find the value of  $u$  if the value of  $3x^2 + 5x - 2u$  equals to 8, when  $x = -1$ .

12. From the sum of  $2x^2 + 3xy - 5$  and  $7 + 2xy - x^2$  subtract  $3xy + x^2 - 2$ .

13. If  $A = -(2x + 3)$ ,  $B = -3(x - 2)$  and  $C = -2x + 7$ . Find the value of  $u$  if  $(A + B + C) = ux$ .

14. Find the perimeter of the given figure ABCDEF.

