

## Chapter—12

# Algebraic Expressions

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1. Simplify :

(a)  $2x - \{5y - (x - 2y)\}$

(b)  $5a - \{3a - (2 - a) + 4\}$

2. Pallavi spends ₹  $x$  daily and saves ₹  $y$  per day. What is her income after 3 weeks?

3. If  $P = -10$ , find the value of  $P^2 - 2P - 100$ .

4. If  $a + b = 6$ , then find the value of  $\frac{1}{2}a + \frac{1}{2}b$ .

5. From the sum of  $3x - y + 11$  and  $-y - 11$ , subtract  $3x - y - 11$ .

6. Write down the numerical coefficient in each of the following terms.

(i)  $xy$                       (ii)  $-3xy$                       (iii)  $2p^3$                       (iv)  $-5abc$

7. Simplify the expression and find its value when  $a = 5$  and  $b = -3$ .  $2(a + ab) + 3 - ab$

8. Add  $4x^2y$ ,  $8x^2y$  and  $-2x^2y$ .

9. Solve and verify your answer.

$$\frac{2}{21}x + 8 = x + 6$$

10. What should be added to  $a^2 + ab + b^2$  to obtain  $4ab + b^2$ ?

11. The length of a rectangular field is 6m less than three times its breadth. Find the dimensions of the rectangle if its perimeter is 148 m.

12. Collect like terms and simplify the expression :

$$12m^2 - 9m + 5m - 4m^2 - 7m + 10$$

13. What should be subtracted from  $a^3 - 4a^2 + 5a - 6$  to obtain  $a^2 - 2a + 1$ ?

14. In an isosceles triangle, the base angles are equal, the vertex angle is twice either the base angle. What are the degree measures of the angles of triangle?

15. A bag contains 25 paise and 50 paise coins whose total value is ₹ 30. If the total number of 25 paise coins is four times that of 50 paise coins, find the number of each type of coins.