

## Worksheet

- Choose the correct option.
  - An expression which contains only one term is known as
    - polynomial
    - monomial
    - trinomial
    - binomial
  - The degree of  $4x^2y - 3y + 4x^2$  is
    - 3
    - 2
    - 1
    - 3
  - If  $a = b = 2$ , then the value of  $(a - b)(a^2 + ab - b^2)$  will be
    - 0
    - 1
    - 2
    - 10
  - $(y + 4)(y - 2)$  is equal to
    - $y^2 - 8$
    - $y^2 + 2y - 8$
    - $y^2 - 2y - 8$
    - $y^2 + 8$
- Complete the following:
  - An expression which contains three terms is known as \_\_\_\_\_
  - A quantity which has a fixed numerical value is called a \_\_\_\_\_
  - $x^a \div x^b =$  \_\_\_\_\_ when  $a$  and  $b$  are positive integers and  $a > b$ .
- State true or false:
  - An expression which contains two terms is known as monomial.
  - $3x^2y$  and  $xzy^2$  are examples of like terms.
  - A combination of constants and variables connected by the symbols  $+$ ,  $-$ ,  $\times$  and  $\div$  is called an algebraic expression.
- Classify the following as like or unlike terms:
  - $6ab, 9ba$
  - $-4xy, -3y^2x$
  - $7cb^3a^3 - 4a^3b^2c$
- Shina and Meena are two friends. Shina has five coloured pencils more than Meena. If Meena has  $p$  coloured pencils, how many coloured pencils does Shina have?
- In the algebraic expressions  $4p^2q + 3pq + 9q^2p - 10$ ,
  - list all the terms.
  - write the degree of the polynomial.
  - write the coefficient of  $p$  in  $3pq$ .
- Subtract the sum of  $-6x + 8y - 4z$  and  $9x - 2y + z$  from  $9x - 13y + 6z$ .
- Find the value of the following expressions for  $x = 3$ .
  - $x^2 + 9$
  - $x^3 + 9 + 8x$
  - $x^3 - 3x$
- If  $x = 6$  and  $y = 9$ , find the value of
  - $16 - 2x + 9y$
  - $x^2 + y^2 - 2xy$
- Sum of three prime numbers is 38. Find the numbers.
- Simplify:
  - $\left(\frac{4}{3}ab - 1\right) - \left(-1 + \frac{4}{3}ab\right)$
  - $a^3b[a^2 - 2a + \{5 - \overline{2a + 4b}\}]$

12. The sides of a triangle are  $3x^2 - 2x + 5$ ,  $-5x^2 - 2 + 3x$  and  $-7x + 4x^2 + 5$ . Find its perimeter.
13. If  $M = 4p^2q - 3pq + 5pq^2 - 8p + 7q - 12$  and  $N = 18 - 3p - 11q + 5pq - 2pq^2 + 5p^2q$ , then find  $(N - M)$ .
14. Simplify:
- $x\left(x + \frac{1}{x}\right) - y\left(y - \frac{1}{y}\right) - z\left(z + \frac{1}{z}\right)$
  - $5x(2x + 3y) - 3x(x - 2y)$
  - $x(x + y - z) + y(z + x - y) - z(x + y - z)$
  - $(2x - y)(4x + zy + 2z)$
15. Find the value of  $4x^2 - 12xy + 9y^2$ , when  $x = 2$  and  $y = 3$ .

## Answers to Worksheet

- ii
  - i
  - i
  - ii
- Trinomial
  - Constant
  - $x^{a-b}$
- False
  - False
  - True
- Like
  - Unlike
  - Unlike
- $p + 5$
- $4p^2q, 3pq, 9q^2p, -10$
  - 3
  - $3q$
- $6x - 19y + 9z$
- 18
  - 60
  - 18
- 85
  - 9
  10. 2, 17, 19
- 0
  - $a^5b + 5a^3b - 4a^4b - 4a^3b^2$
- $2x^2 - 6x + 8$
- $p^2q - 7pq^2 + 8pq - 18q + 5p + 30$
- $x^2 - y^2 - z^2 + 1$
  - $7x^2 + 21xy$
  - $x^2 - y^2 + z^2 + 2xy - 2xz$
  - $8x^2 + 2xyz + 4xz - 4xy - y^2z - 2zy$
- 25