

## Worksheet

- Choose the correct answer.
  - The product of  $(y + 7)(y - 9)$  is
    - $y^2 + 2y - 63$
    - $y^2 - 2y - 63$
    - $y^2 - 2y + 63$
    - $y^2 + 2y + 63$
  - If  $a - b = 7$  and  $ab = 4$ , then the value of  $(a + b)^2$  is
    - 56
    - 65
    - 57
    - 11
  - Which of the following is a perfect square trinomial?
    - $a^2 - 4ab + b^2$
    - $a^2 - 2ab + b^2$
    - $a^2 - 2ab - b^2$
    - $a^2 + 2ab - b^2$
  - If  $\left(x^2 + \frac{1}{x^2}\right) = 11$ , then the value of  $\left(x - \frac{1}{x}\right)^2$  is
    - 7
    - 3
    - 3
    - 9
  - The missing term in the perfect square  $4x^2 - 20xy + \boxed{?}$  is
    - $y^2$
    - $5y^2$
    - $25y^2$
    - $2y^2$
- State true or false.
  - $(a + b)(a - b) = a^2 + b^2$
  - $16x^2 - 40xy + 25y^2 = (4x + 5y)^2$
  - The coefficient of  $x$  in the expansion  $(4x - 5)(4x + 5)$  is 0.
  - $(a + b)^2 = (a - b)^2 + 4ab$
  - $9x^2 + 6x + 1$  is a perfect square trinomial.
- Simplify the following.
  - $(3a + 2b)^2$
  - $\left(\frac{p}{2q} + 4\right)^2$
- Using the identity  $a^2 - b^2 = (a + b)(a - b)$ , find the value of the following.
  - $237^2 - 163^2$
  - $1.2^2 - 0.8^2$
- Without actual multiplication, simplify the following squares.
  - $91^2$
  - $997^2$
  - $1004^2$
  - $105^2$
- Expand the following.
  - $(2x + 3y)^2$
  - $(3m - 5n)^2$
  - $\left(\frac{3x}{2}\right)^2 - \left(\frac{y}{3}\right)^2$
- Find the value of  $a^2 + b^2$ , if
  - $a + b = 8$  and  $ab = 7$
  - $a - b = 5$  and  $ab = 1$
- Given  $x^2 + \frac{1}{x^2} = 490$ , find  $\left(x - \frac{1}{x}\right)^2$ .
- Simplify:
  - $(4m - 3n)^2 + (4m + 3n)^2$
  - $(3p^2 + 4)^2 - (3p^2 - 4)^2$
  - $\left(\frac{3x}{4} + \frac{y}{3}\right)^2 + \left(\frac{3x}{4} - \frac{y}{3}\right)^2$

