

**INTERNATIONAL INDIAN SCHOOL**

**BURAIDAH**

Worksheet For The Academic Year 2024-25

**CLASS: VIII    SUBJECT: Mathematics    DATE: 15/12/2024**

**LESSON-9 Algebraic Expressions & Identities**

- 1) The coefficient of  $-3a^2x$  is \_\_\_\_\_.
- 2) The expression  $7x^2 + 8xy + 9$  has \_\_\_\_\_ terms.
- 3) Add the following expressions:
  - a)  $3a + 4a + -5a$
  - b)  $3ab^2 + 8a^2b + 4ab^2 + -7a^2b$
  - c)  $7x^2 - 8xy$  and  $5x^2 + 3xy - 6b^2$
  - d)  $3x - 4z$  and  $9x + 8y + 9z$
  - e)  $-7a^2 + 6b - 10c$  and  $6a^2 - 5b + 9c$
  - f)  $3 + 2x - 5x^2 - 4x^3$ ,  $7x^3 - 10x + 1$  and  $2x^3 - 9x^2 + 8$
  - g)  $10cz - 2ax - 3by$ ,  $6by - 11ax - cz$  and  $6ax - 2by + 3cz$
- 4) Subtract the following expressions:
  - a)  $-3a^2 + 4ab - 2b^2$  and  $3a^2 + 4ab - 3b^2$
  - b)  $5m^4 - 3m^3 + 2m^2 + m - 1$  and  $4m^4 - 2m^3 - 6m^2 - m + 5$
  - c)  $2x - 5y + 2z$  from  $3x - 4y - z + 6$
  - d)  $x^2 + 8x - 3$  from  $-5x + 3x^2 - 7x + 2$
- 5) Subtract the sum of  $3p - 2q - 3r$  and  $5p + 3q - 2r$  from  $2p - 2q + 2r$  and  $3p + 2q + r$ .
- 6) Simplify:  $15x - 4x(8 - 2x)$  and find the value of  $x = 2$ .
- 7) Multiply  $5x + 4x^2 + 2y^2$  by  $3y - 2x$  and find the value if  $x = 2$ ,  $y = 1$ .
- 8) Multiply the following:
  - a)  $3a^2 \times a^4$                       b)  $p^7 \times pq$
  - c)  $(5 - a) \times 9$                       d)  $(a + 2)(a - 4)$
  - e)  $(2m - 3)(5m^2 - 6m + 9)$

f)  $(3a + 2b + 4)(a - b + 2)$

g)  $(x^2 - 3)(x^3 - 5x^2 + 3x + 1)$

9) Expand the following identities:

a)  $(a + b)^2$

b)  $(a - b)^2$

c)  $(x + a)(x + b)$

10) The identity  $(a + b)(a - b)$  is \_\_\_\_\_.

11) Subtract  $3a(2a + 3b) + 5ab + 5a^2$  from  $3ab + a(5a + 3 + 2ab)$

12) Multiply  $(3ax - 2a + 3b)$  and  $(x + y - a)$