

## Class 8 Algebraic Expressions and Identities

### CBSE TEST PAPER -04

#### Standard Identities:

- $(a + b)^2 = a^2 + b^2 + 2ab$
- $(a - b)^2 = a^2 + b^2 - 2ab$
- $(a^2 - b^2) = (a-b)(a+b)$
- $(x + a)(x + b) = x^2 + (a + b)x + ab$

#### Algebraic Expressions And Identities

**Q.1. Which of the following algebraic expressions are polynomial and why?**

(i)  $\frac{x^2 + 7x + 3}{x}$                       (ii)  $\frac{1}{7} - 13x^2 + \frac{8}{3}x^4 - \frac{1}{13}x^3$

**Q.2. Fill in the blanks:**

- (i)  $\frac{2}{3}ab^2$  is a \_\_\_\_\_.
- (ii)  $6a^3b^3c, -3cb^3a^2$  are \_\_\_\_\_ terms.
- (iii) Product of  $\frac{2}{3}x^2y$  and  $\frac{12}{17}y$  is \_\_\_\_\_.
- (iv)  $7x^2y \times \frac{-2}{7}xz^2 \times \frac{-2}{5}y^2z \times 5x^3y^2z^2 =$  \_\_\_\_\_.
- (v) Degree of the polynomial in Q1 (ii) is \_\_\_\_\_.

**Q.3. Find the value of  $(5a^6)(-10ab^2)(-2.1a^2b^3)$  for  $a = \frac{2}{5}, b = \frac{1}{2}$ .**

**Q.4. Simplify :**  $-n^2(n-2) + 2n^3(n+3) - 6n(n-4)$ .

**Q.5. Simplify the following :-**

- (i)  $67 \times 73$                       (ii)  $113 \times 87$
- (iii)  $(79)^2 - (69)^2$               (iv)  $\frac{198 \times 198 - 102 \times 102}{96}$

**Q.6. What must be subtracted from  $3a^2 - 6ab - 3b^2 - 1$  to get  $4a^2 - 7ab - 4b^2 + 1$**

**Q.7. Show that  $(9a - 5b)^2 + 180ab = (9a + 5b)^2$ .**

**Q.8. If  $\left(x - \frac{1}{x}\right) = 9$ , find  $x^2 + \frac{1}{x^2}$**

**Q.9. Find the value of  $\left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4}\right)$**