INDIAN SCHOOL NIZWA- WORKSHEET

Chapter 6 We Distribute, Yet Things Multiply

Name: **Class :VIII Sec:**

Multiple choice questions

1. The expression $(3a - 5b)^2$ contains which term as the middle term?
   A. $-30ab$ B. $15ab$ C. $-15ab$ D. $30ab$
2. If $(x + y)^2 = x^2 + 2xy + y^2$, then the coefficient of xy is
   A. 1 B. 2 C. x D. y
3. Which of the following is a **perfect square**?
   A. $a^2 - b^2$ B. $a^2 + b^2$ C. $a^2 + 2ab + b^2$ D. $a^2 - 2ab$
4. Which of the following is **not** an identity?
   A. $(a + b)^2 = a^2 + 2ab + b^2$ B. $(a - b)^2 = a^2 - 2ab + b^2$
   C. $a^2 - b^2 = (a - b)(a + b)$ D. $(a + b)^2 = a^2 + b^2$
5. **Assertion A:** $(a - b)^2$ always gives a positive value.
   Reason R: Square of any real number is non-negative.
   A. Both A and R are true, and R is the correct explanation of A.
   B. Both A and R are true, but R is not the correct explanation of A.
   C. A is true, but R is false.
   D. A is false, but R is true.
6. **Assertion A:** The expression $(x + y)^2 + (x - y)^2$ has no xy term.
   Reason R: The terms $+2xy$ **and** $-2xy$ when added gets cancelled out.
   A. Both A and R are true and R is the correct explanation of A
   B. Both A and R are true but R is not the correct explanation of A
   C. A is true but R is false
   D. A is false but R is true
7. **Expand:**
   a) $(a + ab - 3b^2)(4 + b)$ b) $(4y + 7)(y + 11z - 3)$ c)$(5 + z)(y + 9)$
   d) $(a - b)(a^3 + a^2b + ab^2 + b^3)$ e)$(7y - 34z)^2$
8. **Evaluate using identities:**
   a) 406^2 b)72^2 c) 145^2 d) 1097^2 e) 124^2
9. **Find the value using suitable identities:**
   a) 265831×1001 b)1111×1001 c) 23478×999 d)949×101
   e)89×101
10. **Factor or simplify:**
    a) $(p - 1)(p + 11)$ b) $(3a - 9b)(3a + 9b)$ c) $(6x + 5y)^2$
    d)$(2x - \frac{1}{2})^2$ e) $(a - b)(a^2 + ab + b^2)$

11. Answer the following:
    a) Write the next identity after
    $(a + b)(a - b), (a - b)(a^2 + ab + b^2), (a - b)(a^3 + a^2b + ab^2 + b^3)$
    b) Express 200 as the difference of two squares.
    c) Find 999^2 using identities.

d) Find 1001^2 using identities.

12. A teacher asks students to compare the expressions $(x + y)^2$ and $(x - y)^2$. Students expand both and observe the similarities and differences.

Answer the following questions:

i. Which terms are common in both expansions?
A. Middle term B. Square of first term only
C. Square of both variables D. Linear terms only

ii. The difference between $(x + y)^2$ and $(x - y)^2$ is due to
A. Square terms B. Constant term C. Middle term D. Coefficient of x^2

iii. Which statement is correct?
A. Both expressions are identical B. Only the sign of the middle term changes
C. Both have different square terms D. One is linear and the other is quadratic

iv. The expression $(x + y)^2 + (x - y)^2$ has no xy term because
A. Squares eliminate variables B. Middle terms cancel out
C. Constants dominate D. It is a perfect square

13. During a class activity, students expand the expression $(a + b)(a - b)$. They observe that the product simplifies without any middle term.

Answer the following questions:

i. Which identity is applied in this case?
A. $(a + b)^2$ B. $(a - b)^2$ C. $a^2 - b^2$ D. $(a + b)^3$

ii. The simplified form of $(a + b)(a - b)$is
A. $a^2 + b^2$ B. $a^2 - b^2$ C. $2ab$ D. $(a - b)^2$

iii. Why is there no middle term in the expansion?
A. The terms cancel each other B. The product is linear
C. Squaring is involved D. Coefficients are zero

iv. Which of the following expressions represents a **difference of two squares**?
A. $(a^2 + ab + b^2)$ B. $(a^2 - ab + b^2)$ C. $a^2 - b^2$ D. $2ab$

Revision

1. Add: 14.375, 6.82, 0.905, and 3.6
2. Subtract: 25.4 from 78.965
3. Multiply: 18.24 × 2.5
4. Divide: 45.36 ÷ 1.2
5. Find: (–48) ÷ 6 × (–5)
6. Find: –72 + 36 – (–18)
7. Find: (–15) × (–4) ÷ 6
8. Evaluate: –100 + 25 × 4
9. Simplify: 120 ÷ 6 + 8 × 3
10. Simplify: (–50) + 10 × 4 – 30
11. Simplify: 18 – [6 + 4 × 3]
12. Simplify: (–36) ÷ (–6) × 5 + 12
13. Find the LCM of 12, 18, and 24
14. Find the HCF of 45, 60, and 75