

Name : _____ Date : _____ Score: _____

Grade & Section: _____ LRN: _____

PART I. MULTIPLE CHOICE (5 ITEMS)

Directions: Read each question carefully and select the letter corresponding to the correct answer. Write the capital letter of your choice on the blank before each number.

_____ 1. Which of the following is the correct expansion of the square of a binomial difference $(x - y)^2$?

- A. $x^2 - y^2$ B. $x^2 - xy + y^2$
C. $x^2 - 2xy + y^2$ D. $x^2 - 2xy - y^2$

_____ 2. What is the product of the sum and difference of two terms $(x + 8)(x - 8)$?

- A. $x^2 -$ B. $x^2 - 64$
C. $16x^2 + 64$ D. $x^2 - 16x - 64$

_____ 3. Which pattern represents the correct expansion of the square of a sum $(x + y)^2$?

- A. $x^2 + y^2$ B. $x^2 + 2xy + y^2$
C. $x^2 + xy + y^2$ D. $x^2 + 2xy + 2y^2$

_____ 4. Expand the cube of the binomial $(3x - 1)^3$.

- A. $27x^3 - 1$ B. $27x^3 - 9x^2 + 3x - 1$
C. $27x^3 - 27x^2 + 9x - 1$ D. $27x^3 - 27x^2 - 9x + 1$

_____ 5. What is the product of the algebraic expressions $(2x^2 + 5y)(2x^2 - 5y)$?

- A. $4x^4 - 25y^2$ B. $4x^4 + 25y^2$
C. $4x^2 - 25y$ D. $2x^4 - 5y^2$

PART II. MATCHING TYPE (5 ITEMS)

Directions: Match each special product expression in Column A with its corresponding expanded product in Column B. Write the letter of your answer on the space provided before each item.

Column A	Column B
_____ 6. $(x + 9)(x - 9)$	A. $\frac{3}{x} - 12x^2 + 48x - 64$
_____ 7. $(x - 6)^2$	B. $16x^4 - 49$
_____ 8. $(2x + 5)^2$	C. $\frac{2}{x} - 81$
_____ 9. $(x - 4)^3$	D. $\frac{2}{x} - 12x + 36$
_____ 10. $(4x^2 + 7)(4x^2 - 7)$	E. $4x^2 + 20x + 25$

PART III. FILL IN THE BLANKS (5 ITEMS)

Directions: Fill in the missing term(s) to make each special product equation mathematically correct.

11) $(x + 7)^2 = x^2 + \underline{\hspace{2cm}} + 49$

12) $(m - 8)(m + 8) = m^2 - \underline{\hspace{2cm}}$

13) $(y - 5)^2 = y^2 - 10y + \underline{\hspace{2cm}}$

14) $(x + 3)^3 = x^3 + 9x^2 + \underline{\hspace{2cm}} + 27$

15) $(3x^2 - 5y)^2 = 9x^4 - \underline{\hspace{2cm}} + 25y^2$

PART IV. PROBLEM SOLVING (5 ITEMS) – TURN THE TIDES!!

Directions: Solve each application problem involving special products. Write the expanded algebraic polynomial and box your final answer. Show your work in the workspace provided. No solution, no points.

- ($x + 6$)
16. **Garden Area:** A square garden has a side length measuring $(x + 6)$ meters. Find the area of the garden as an expanded polynomial. (5pts)

Show solution here:

17. **Rectangular Lot:** A rectangular plot of land has a length of $(3y + 8)$ feet and a width of $(3y - 8)$ feet. Find its area in expanded form. (5pts)

Show solution here:

18. **Volume of a Storage Box:** A cubic storage crate has an edge length of $(x + 4)$ units. Calculate the volume of the crate in expanded form. (5pts)

Show solution here:

19. **Square Backdrop Area:** A square backdrop has side dimensions of $(3x^2 + 5y^3)$ meters. What is the total surface area of the backdrop in expanded form? (5pts)

Show solution here:

20. **Spot the Error:** A student simplified the algebraic expression $(2x - 9)^2 = 4x^2 + 81$. What term did they forget, and what is the correct expanded answer? (5pts)

Show solution here: