

The background is a solid green color with various mathematical symbols scattered across it. These symbols include plus signs (+), minus signs (-), multiplication signs (x), and circles with dots in the center (representing pi or a similar symbol). Some of these symbols are slightly larger and more prominent than others, creating a subtle pattern.

MATH 8 – QUARTER 1 LESSON 1

Let's exercise our mind.

Solve the following:

1. $4^2 = 16$


2. $7^2 = 49$

3. $(5x)^2 = 25x^2$

4. $(7a)(8a) = 56a^2$

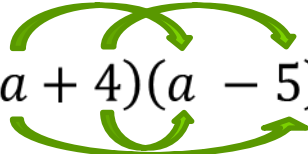
5. $(9c)(6d) = 54cd$

6. $2b(11b + 10) =$



$$22b^2 + 20b$$

7. $(a + 4)(a - 5) = a^2 - 5a + 4a - 20$


$$a^2 - a - 20$$

8. $(x - 3)^2 = x^2 - 6x + 9$

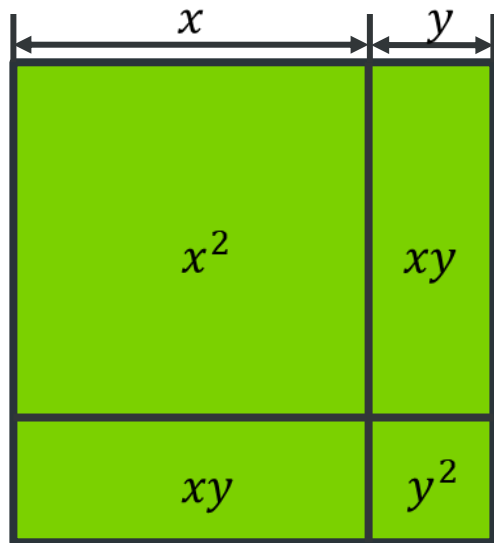
SPECIAL PRODUCTS

SPECIAL PRODUCTS

- shortcut to multiplying polynomials.
- it does not apply to all multiplication of polynomials.
- patterns or formulas are provided to arrive with the correct product.

SQUARE OF BINOMIALS

Square of Binomials



$$s = x + y$$

$$\text{Area of square} = (x + y)^2 = (x + y)(x + y)$$

$$(x + y)^2 = x^2 + xy + xy + y^2$$

$$(x + y)^2 = x^2 + 2xy + y^2$$

$$(x - y)^2 = x^2 - 2xy + y^2$$

Recall:

$$\text{Area of square} = s^2$$

$$\text{Area of rectangle} = lw$$

$$(x \pm y)^2 = x^2 \pm 2xy + y^2$$

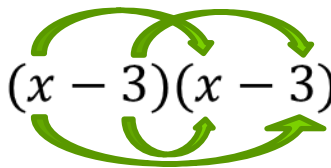
Square of Binomials

Examples:

$$(x \pm y)^2 = x^2 \pm 2xy + y^2$$

$$1. (x - 3)^2 = (x)^2 + 2(x)(-3) + (-3)^2$$

$$(x - 3)^2 = \underline{x^2 - 6x + 9} \quad \checkmark$$



$$\begin{aligned} (x - 3)(x - 3) &= x^2 - 3x - 3x + 9 \\ &= \underline{x^2 - 6x + 9} \quad \checkmark \end{aligned}$$

$$2. (x + 5)^2 = (x)^2 + 2(x)(5) + (5)^2$$

$$(x + 5)^2 = \underline{x^2 + 10x + 25}$$

$$3. (3x + 4y)^2 = (3x)^2 + 2(3x)(4y) + (4y)^2$$

$$(3x + 4y)^2 = \underline{9x^2 + 24xy + 16y^2}$$

The square of a binomial is made up of the square of the first term, twice the product of the first and second/last term, and the square of the second/last term.

Let's Try

Complete the table.

	First Term	Second Term	Third Term	Product
	y^2	$12y$	36	$y^2 + 12y + 36$
	$4x^2$	$12x$	9	$4x^2 + 12x + 9$
	$25x^2$	$-40xy$	$16y^2$	$25x^2 - 40xy + 16y^2$

Remember:

- The square of a binomial is denoted by:
$$(x \pm y)^2 = x^2 \pm 2xy + y^2$$
- The square of a binomial is made up of:
the square of the first term, twice the product of the first and second/last term, and the square of the second/last term.

The background is a solid green color. It is decorated with various geometric shapes in a lighter shade of green, including squares, circles, and crosses, some of which are rotated or tilted. These shapes are scattered across the entire background, creating a patterned effect.

THANK YOU!!!