

Reading, computing and expanding some algebraic expressions.

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-Adults school

Objectives:



1) Follow the correct order of operations in expanding the square of a binomial.



2) Read in English algebraic expressions that contain additions, multiplications and squares.



3) Deduce the formula of the square of a binomial from its geometric interpretation.



4) Increase the love for Maths and students' self-confidence.

Reading expressions:

Math(ematic)s

Plus

ADD (+)

$5+7=$ (equals) 12

Minus

SUBTRACT (-)

$8-1=7$

Divided by

DIVIDE (\div)

$15 \div 3 = 5$

Times

MULTIPLY (\times)

$9 \times 8 = 72$

Three squared

3^2



Let's get started!
Look at these columns and join with arrows:

$(3 + 5)^2$
$3^2 + 30 + 5^2$
34

64
$3^2 + 5^2$
$9 + 2 \times 3 \times 5 + 25$

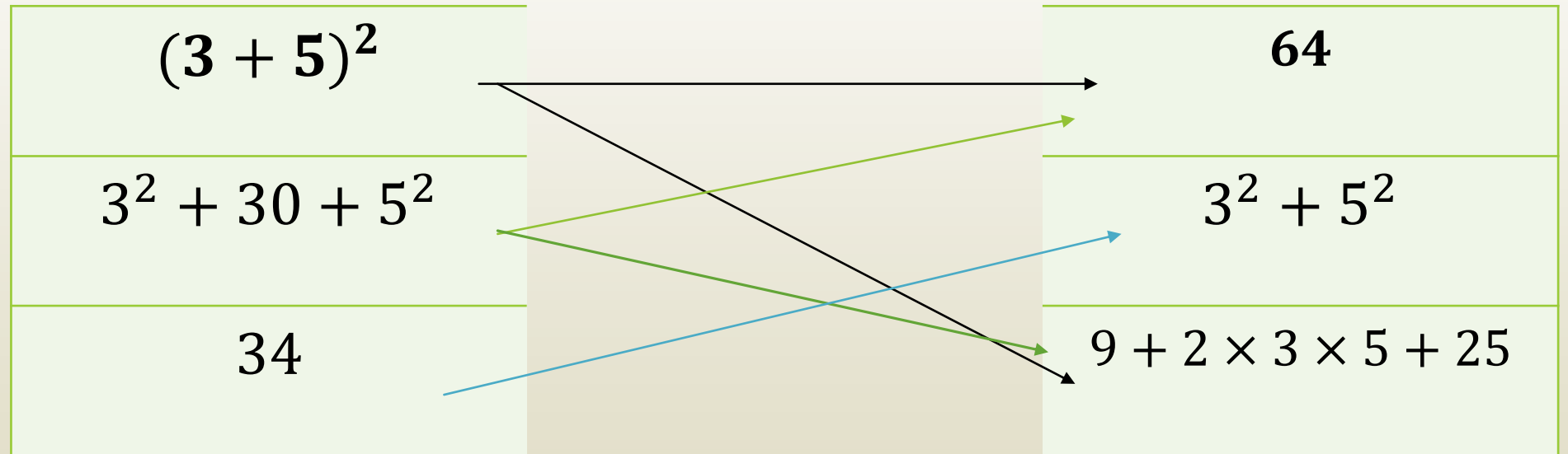


Order of Operations:

- 1) Parentheses first
- 2) Exponents next
- 3) Multiply or divide next
- 4) Add or subtract last

Solve left to right

Answer:





Build sentences in pairs.

For example:

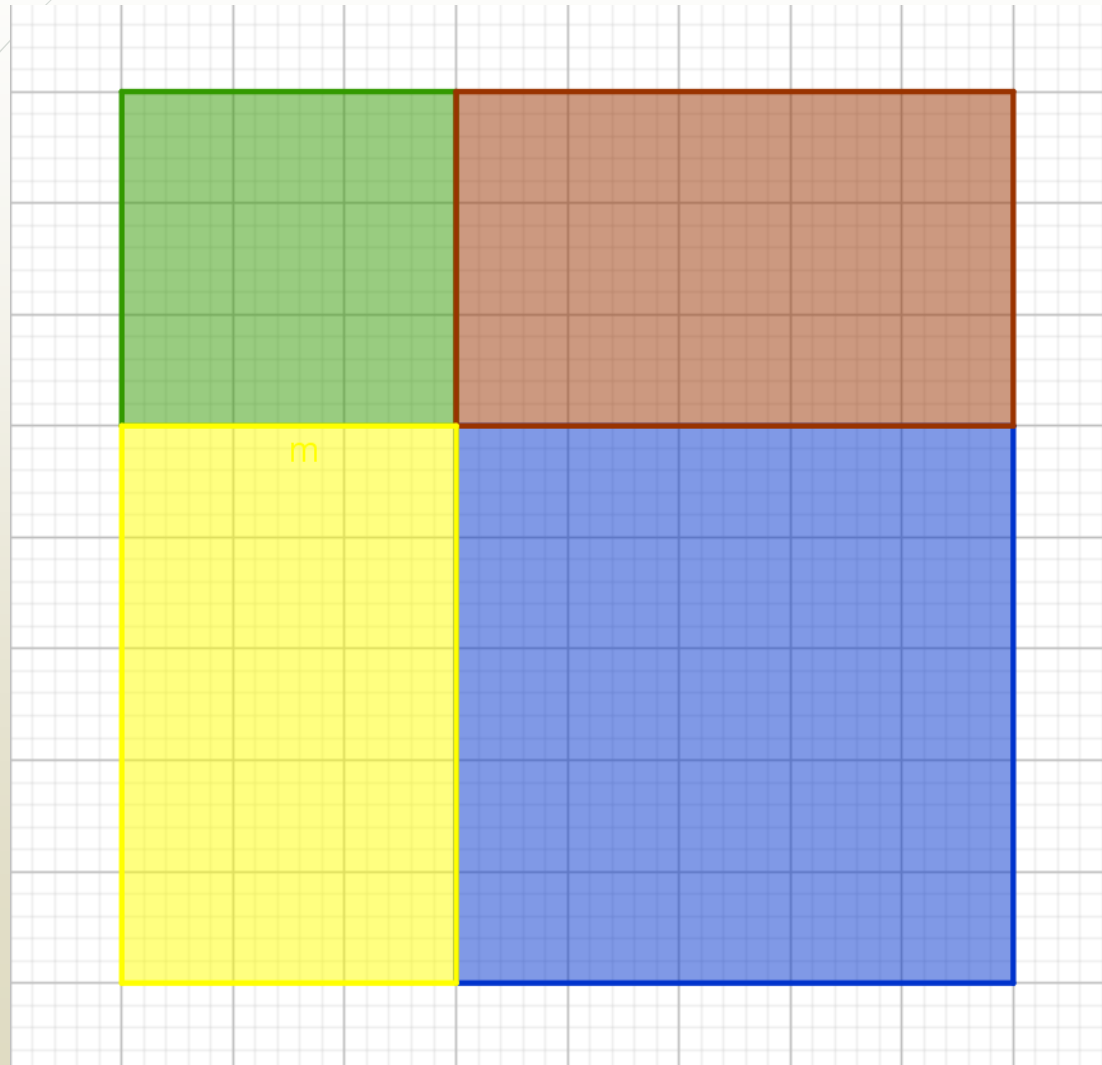
- Left parenthesis three plus five
right parenthesis squared equals
sixty-four.

$$(3 + 5)^2 = 64$$



Why?

Geometric interpretation:



The area of the square whose side measures 8 is equal to 64.

$$64 = 8 \times 8$$

The area of the green square is equal to 9.

The area of the blue square is equal to 25.

The area of the yellow rectangle is equal to 15.

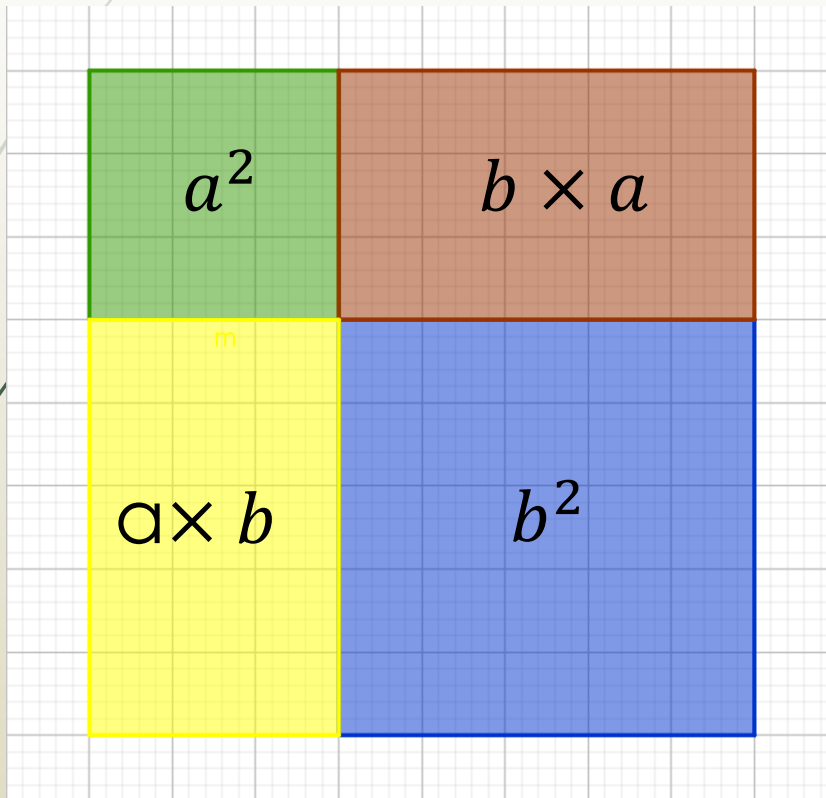
The area of the red rectangle is equal to 15, as well.



What is the formula of the square
of a binomial?

$$(3 + 5)^2 = 3^2 + 2 \times 3 \times 5 + 5^2$$

In general:





$$(a + b)^2 = a^2 + 2 \times a \times b + b^2$$



Expand the following squares of binomials in pairs and read:


$$(a + 5)^2$$


$$(3 + b)^2$$


$$(7a + 4b)^2$$



Why do you need to learn Maths?

- ▶ You need your certificate to get a better job.
- ▶ Mathematics is all around us.
- ▶ You can help your children with their school work.

<https://youtu.be/jej8qlzlAGw>

