

# Can we count like Gauss?

Math

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MYP 1

# Gauss theory

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One day when Gauss was just a little boy, his teacher asked the class add up all the numbers from 1 to 100 just as the teacher asked this question gauss shot his hand up and he said 5050. He was correct.

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There are 50 pairs  
from 1 to 100

$$1 + 100 = 101$$

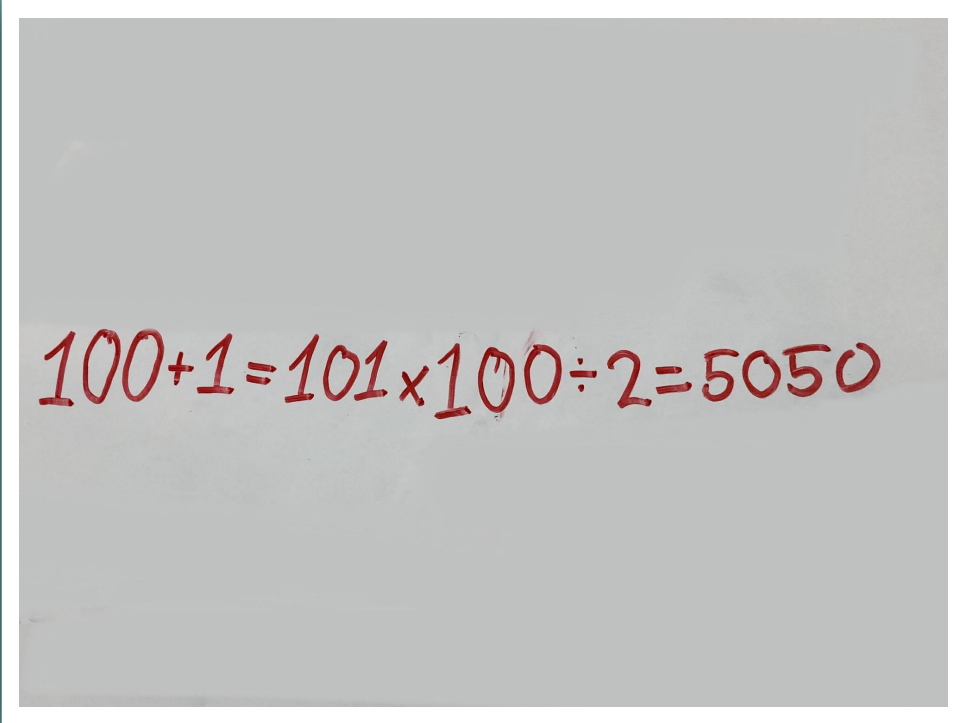
$$2 + 99 = 101$$

...

$$101 \times 50 = 5050$$

**How he  
solved it**

## How we solved it

A photograph of a whiteboard with a white border. The whiteboard has a light gray background. The formula  $100+1=101 \times 100 \div 2 = 5050$  is written in red marker.
$$100+1=101 \times 100 \div 2 = 5050$$

We don't need  
to count the  
pairs

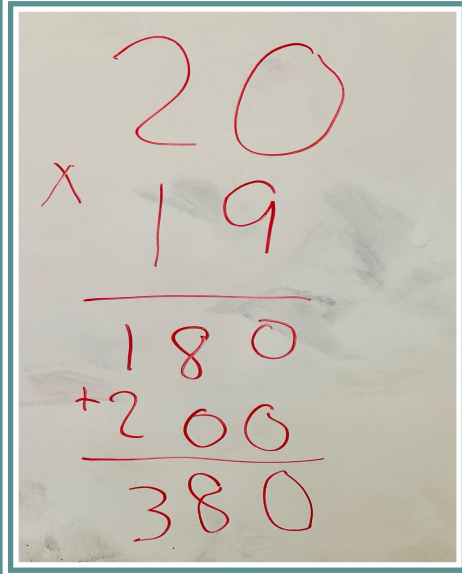
**We are gonna  
show you how  
to do 1....19**

$$19 + 1 = 20$$

**We first:**

## Then we

multiply the original number by the new one number plus the first number, which in this case is 20.



A photograph of a piece of paper with handwritten red ink showing the multiplication of 20 by 19. The numbers are written in a casual, slightly slanted style. The multiplication is set up with 20 on the top line, a multiplication sign (x) to its left, and 19 on the line below. A horizontal red line separates the multiplicand from the partial products. Below the line, 180 is written, followed by a plus sign and 200. Another horizontal red line is drawn below these partial products, and the final result, 380, is written at the bottom.

$$\begin{array}{r} 20 \\ \times 19 \\ \hline 180 \\ + 200 \\ \hline 380 \end{array}$$

A handwritten long division problem on a piece of paper. The divisor is 2, and the dividend is 380. The quotient is written as 190 above the dividend. The calculation shows 2 times 190 equals 380, with the remainder being 0. Red arrows indicate the steps of the division process.

$$\begin{array}{r} 190 \\ 2 \overline{) 380} \\ \underline{- 2} \phantom{0} \\ 18 \phantom{0} \\ \underline{- 18} \\ 00 \end{array}$$

**And at last**

**we divided the  
answer by 2.**



Answer: 190

# The end

Thanks for your attention