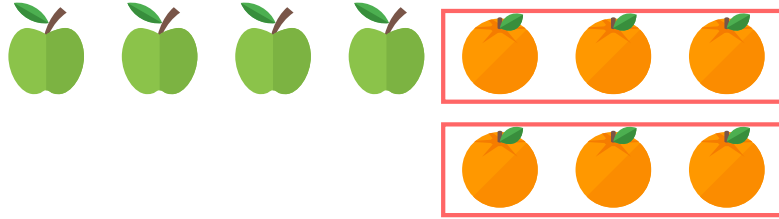


# ORDER OF OPERATIONS

In math, we often solve problems that use more than one operation, like addition, subtraction, multiplication, or division. The order in which we do these steps matters. That's why mathematicians made a rule called the **Order of Operations**.

## A ORDER OF OPERATIONS

**Discover:** Hugo has 4 apples and 2 baskets, each containing 3 oranges.



Hugo writes the expression:

$$4 + 2 \times 3$$

- His brother Louis reads it and says: "I'll add 2 to 4, which gives me 6. Then I'll multiply the result, which is 6, by 3. I get 18 fruits!"
- Hugo replies: "No, you must multiply 2 and 3 first, then add 4. I have 10 fruits."

Who is right, and why?

*Answer:* To avoid confusion (and maybe an argument between Hugo and Louis!), mathematicians created rules for the **Order of Operations**. These rules say:

**Do multiplication before addition.**

Let's solve  $4 + 2 \times 3$  step by step:

- First, multiply:

$$2 \times 3 = 6$$

- Then, add:

$$4 + 6 = 10$$

So, Hugo is correct: there are 10 fruits in total.

### Definition Order of operations

The **order of operations** is:

1. parentheses
2. multiplication and division (from left to right)
3. addition and subtraction (from left to right).

**Ex:** Calculate  $4 + 2 \times 3$

*Answer:*

$$\begin{aligned} 4 + 2 \times 3 &= 4 + 6 && \text{(evaluate the multiplication } 2 \times 3) \\ &= 10 && \text{(evaluate the addition } 4 + 6) \end{aligned}$$