

Operator Precedence Rules

$$3 + 4 * 5$$

$$3 + 20 = 23$$

There can be more than one operator in a math expression

They are not always evaluated from left to right, but based on operator precedence rules

Operator precedence rules

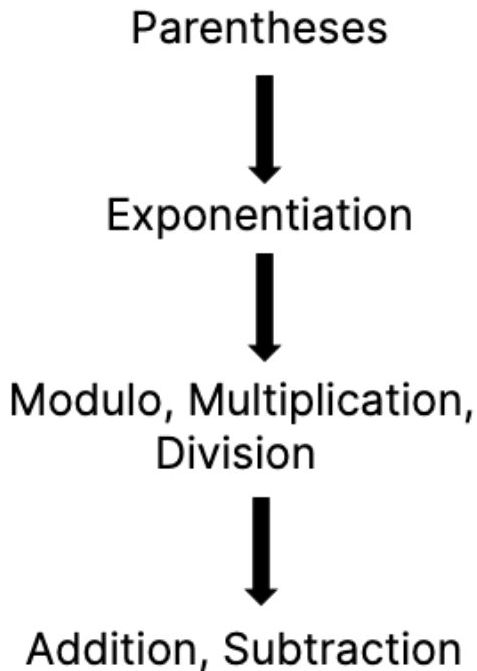
You must understand these rules when using math operators

This concept is also called the "order of operations"

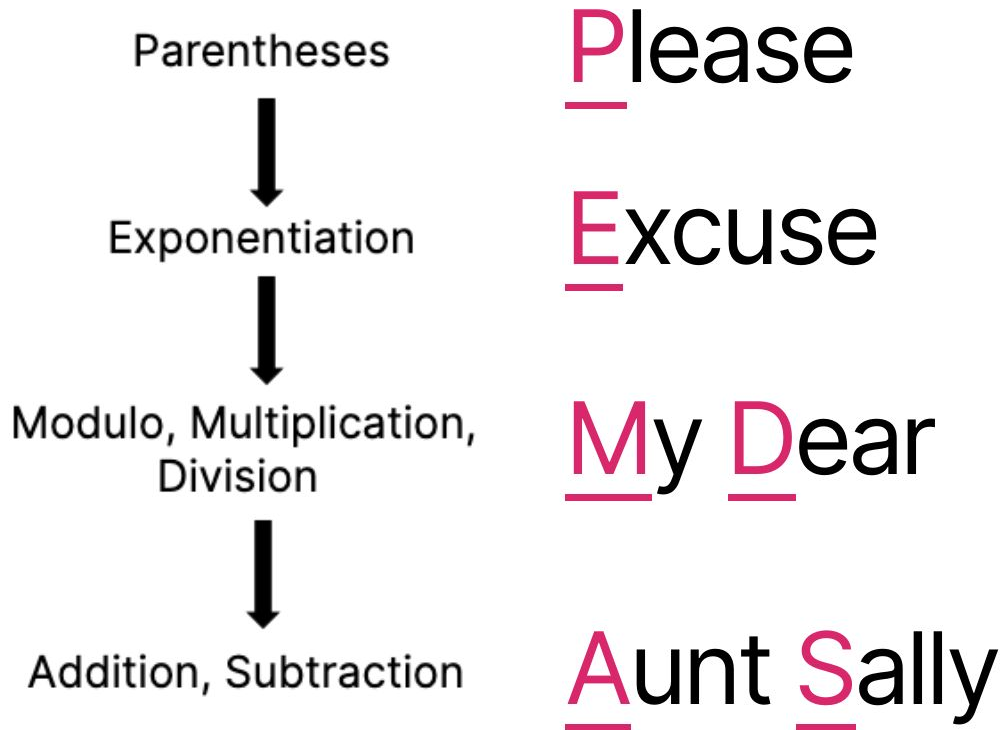
Operator precedence rules

Highest to lowest precedence rules:

1. Operations inside parentheses have highest precedence
2. Exponentiation (raise to a power) has the next highest precedence
3. Multiplication, Division, and Modulo have the next precedence
4. Addition and Subtraction have the lowest precedence



Operator precedence rules



Example

$x = 1 + 2 * 3 - 4 / 5 ** 6$

Example

$$x = 1 + 2 * 3 - 4 / \boxed{15,625}$$

Exponentiation

Example

$$x = 1 + \boxed{6} - \boxed{0.000256}$$

Modulo, Multiplication or Division

Example

$$X = \boxed{7} - \boxed{0.000256}$$

Addition or Subtraction

Example

$$x = \boxed{7} - \boxed{0.000256}$$

$$x = 6.999744$$

Another example

$$1 + 2 ** 3 / (4 * 5)$$

↓ Parentheses: $4 * 5 = 20$

$$1 + 2 ** 3 / 20$$

↓ Exponentiation: $2 ** 3 = 8$

$$1 + 8 / 20$$

↓ Division: $8 / 20 = 0.4$

$$1 + 0.4$$

↓ Addition: $1 + 0.4 = 1.4$

$$1.4$$