Operators in R

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Arithmetic

+ - * /

%% %/% ^

Relational

< > ==

<= >= !=

Assignment

= <- <<-

-> ->>

Logical

& | !

&& ||

Misc.

? $: %any% [[]] []

::: :: @ %in% %*% %>%

~ %o%

` ‘ “

, . \ ;

Arithmetic Operators

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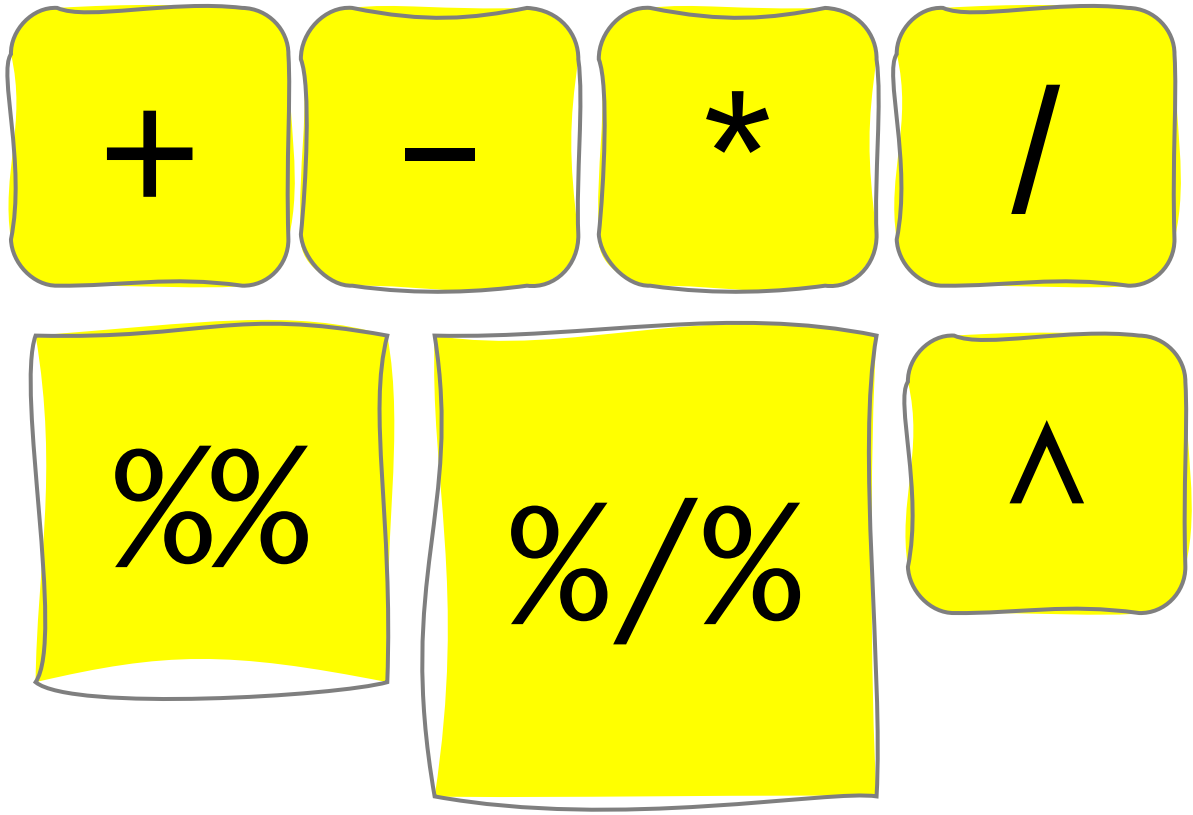
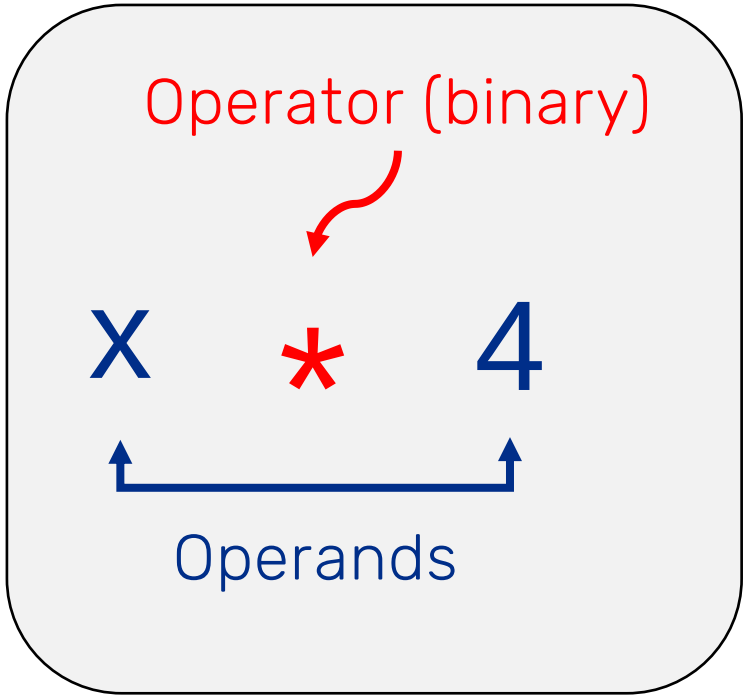


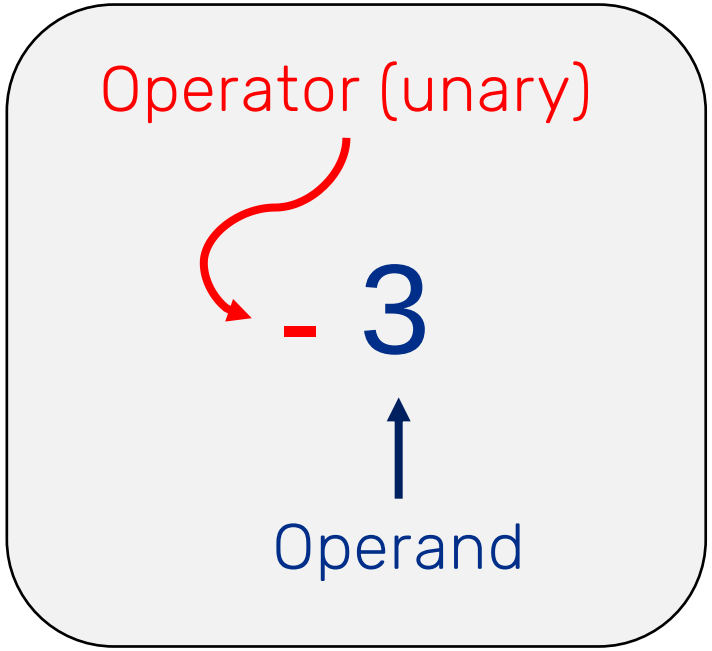
- ## Operator

  An operator is a symbol used in codes that often denotes an action or process. An operator accepts one (unary operator) or more (if two, binary operator) values or **operands** and outputs a result that depends on those values. These operands can be vector, scalar or complex values.

  The operator indicates **what action or operation** to perform. The operand is the **object (target) of the operation**.

- Binary Operators (2 operands)
- Unary Operators (1 operand)

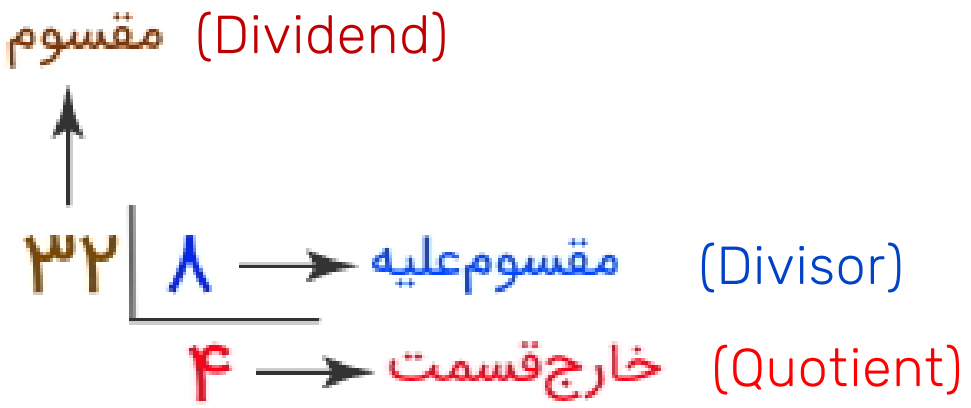




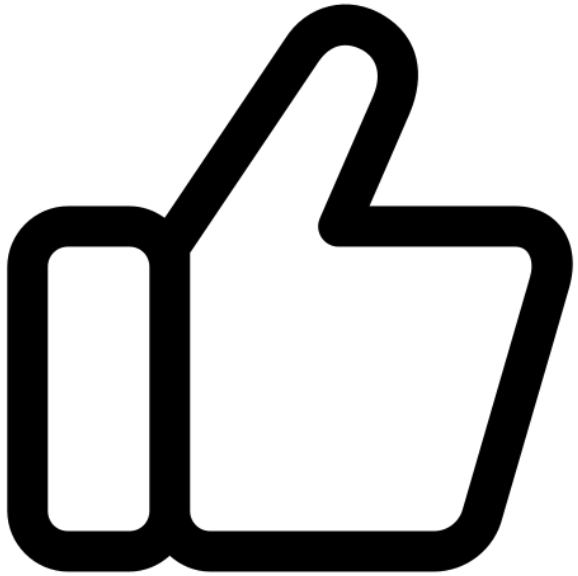
Arithmetic Operators

Operator	Function	Description
+	Addition (Binary) Positive (Unary)	Adds two operands Represents the positive value of an operand
-	Subtraction (Binary) Negation (Unary)	Subtract the second value from the first value Negates the value of an operand
*	Multiplication	Multiplies both values
^ or **	Power (Exponentiation)	The first value is raised to the power of the second value
/	Division	Divide the first value by the second one
%%	Modulo (Modulus)	Remainder from division
%/%	Integer Division	The floored quotient of the division of the first value by the second

Long Division (تقسیم چکشی)



- باقی مانده (Remainder)



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Exercise

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Arithmetic Operators in R

- **Addition (Binary):**

  $5 + 3.8 - 2.2$

  Question: Calculate the final value after performing this complex addition and subtraction

- **Subtraction (Binary):**

  $12 - 4.5 - 2.3$

  Question: Determine the value after this multi-level subtraction.

- **Multiplication:**

  $6 \times 2.5 \times 1.2$

  Question: What is the final value after this sequence of multiplications?

- **Power (Exponentiation):**

  $3^{4.25^{2.66}}$

  Question: Compute the value after raising 3 to the power of 4.25.

- **Division:**

$\frac{10}{2.5}$ Question: Calculate the value after this division involving decimal numbers.

- **Modulo (Modulus):**

$\frac{15}{7.3}$ Question: Find the remainder after applying the modulo operator.

- **Integer Division:**

$\frac{15}{7.3}$ Question: Calculate the floored quotient using integer division with a decimal divisor.

- **Negation (Unary):**

$-(-9.2) \times (-3.5)$

Question: Calculate the value after using the negation unary operator on a negative number and performing multiplication.

Source code and answers in:
https://github.com/bioinfmatters/elmium

elmium elmium elmium_ bioinfmatters