

Datatypes . 5, 10, 76, 54

Arithmetic

↑
Numeric . — [integral — int (non-fractional) .
non-integral — float (Fractional) .
27.6, 5.34, 6.173

logical / ← Boolean — bool .

Boolean
operations

x = 10
y = 3

True / False

$x > y$

↓

True

$x == y$.

↓

False

Case Sensitive

$x + iy$
Complex

$x = 10$

↙ ↓
Name dtype = 'int'

Variables

— Containers to hold data

↙ ↘
Name datatype

Rules for naming Variables

1. The first character should be one of

$[a-z, A-Z, _]$

2. optionally followed by any no. of

$[a-z, A-Z, _, 0-9]$

3. Reserved words cannot be used

$x = 10 \rightarrow \checkmark$

$x_val = 5 \rightarrow \checkmark$

$_x = 12 \checkmark$

$__x__ = 11 \checkmark$

$day7 = True \checkmark$

7th-day = False ✗

price = 50 ✗

$_ = 'Hello' \checkmark$

$if = 12 \text{ ✗}$

C, C++, Java -

declare a variable

int x ←

"Static typing"

Python

dynamic typing

No declaration

X = 10
 int ←
 X = 10.72
 float ←

• ipynb → Julia →
 ↙ ↓ ↘ Py →
 R →

Arithmetic operations

+ → Addition

- → subtraction

* → Multiplication

/ → Division

% → Modulo division (Remainder)

// → Floor division

** → power

$$x = 10 \quad y = 3$$

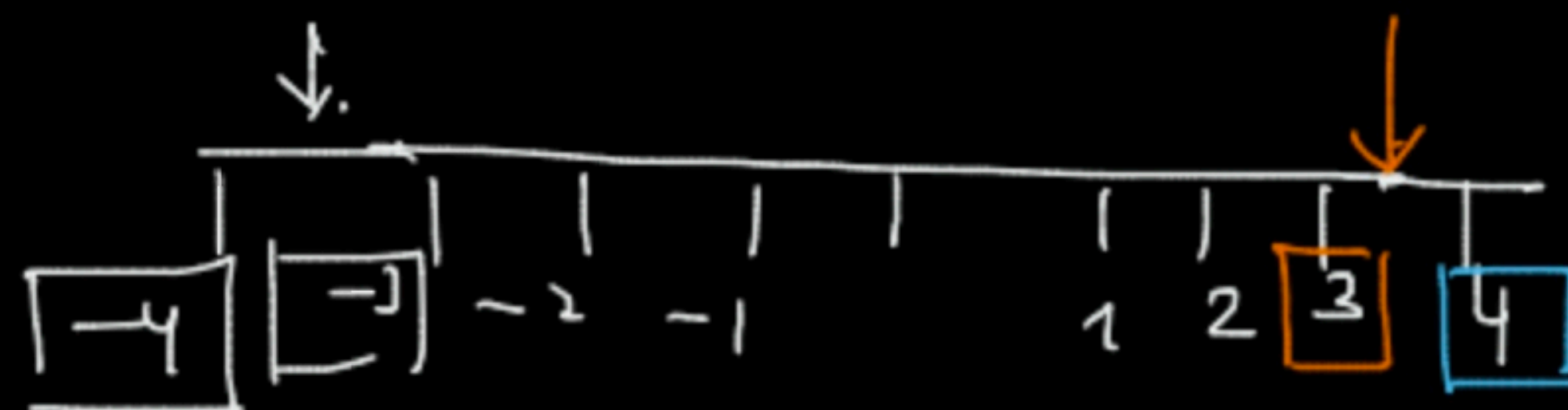
$$x / y = 3.33333 \dots$$

$$x \% y = 1$$

$$x // y =$$

$$x ** y$$

$$\begin{array}{r}
 3 \rightarrow \text{Quotient} \\
 3 \overline{) 10} \\
 \underline{9} \\
 1 \rightarrow \text{Remainder}
 \end{array}$$



	Round	ceil	floor
3.3	3.0	<u>4.0</u>	<u>3.0</u>
3.8	4.0	<u>4.0</u>	<u>3.0</u>
-3.3	-3.0	-3.0	-4.0