# Datatypes . 5, 10, 76, 54

Arithmetic

↑

Numeric . — integral — int (Whole Numbers non-fractional).

non-integral — float (Fractional).

27.6, 5.34, 6.173

x + iy

Complex

Logical / Boolean operations ← Boolean — bool .

True / False

Case Sensitive

x = 10

y = 3

x > y  x == y .

↓ True

↓ False

$X = 10$

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

$X = 10$ → ✓

X_Val = 5 → ✓

_x = 12 ✓

__x__ = 11 ✓

day7 = True ✓

7th_day = False ✗

price$ = 50 ✗

_ = 'Hello' ✓

if = 12 ✗

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

$x = 10 \quad y = 3$

\+ → Addition

\- → subtraction

* → Multiplication

/ → Division

% → Modulo division (Remainder)

// → Floor division

** → power

$x / y = 3.33333\ldots$

$x \% y = 1$

$x // y =$

$x ** y$

3 → Quotient

3 | 10
9

1 → Remainder

| | Round | ceil | floor |
|---|---|---|---|
| 3.3 | 3.0 | 4.0 | 3.0 |
| 3.8 | 4.0 | 4.0 | 3.0 |
| -3.3 | -3.0 | -3. | -4.0 |