

# Arithmetic

Big integer arithmetic is used so that numerical values can exceed machine size.

`2^64`

18446744073709551616

`212^17`

3529471145760275132301897342055866171392

Rational number arithmetic is used by default.

`1/2 + 1/3`

$\frac{5}{6}$

Floating point arithmetic can also be used.

`1/2 + 1/3.0`

0.833333

An integer or rational number result can be converted to a floating point value by entering `float`.

`212^17`

3529471145760275132301897342055866171392

`float`

$3.52947 \times 10^{39}$

The following example shows how to enter a floating point value using scientific notation.

`epsilon = 1.0 10^(-6)`

`epsilon`

$\varepsilon = 1.0 \times 10^{-6}$