

# 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
```

The `float` function converts integers and rationals to floating point values.

```
float(212^17)
```

$$3.52947 \times 10^{39}$$

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

```
epsilon = 1.0 10^(-6)  
epsilon
```

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