Syntax

Arithmetic operators have the expected precedence of multiplication and division before addition and subtraction. Subexpressions in parentheses have highest precedence.

Math	*Eigenmath*	*Comment*
$a = b$	`a == b`	*test for equality*
$-a$	`-a`	*negation*
$a + b$	`a+b`	*addition*
$a - b$	`a-b`	*subtraction*
ab	`a b`	*multiplication, also* `a*b`
$\frac{a}{b}$	`a/b`	*division*
$\frac{a}{bc}$	`a/b/c`	*division is left-associative*
a^2	`a^2`	*power*
$\sqrt{a}$	`sqrt(a)`	*square root, also* `a^(1/2)`
$a\,(b+c)$	`a (b+c)`	*space is required*
$f(a)$	`f(a)`	*function*
$\begin{pmatrix} a \\ b \\ c \end{pmatrix}$	`(a,b,c)`	*vector*
$\begin{pmatrix} a & b \\ c & d \end{pmatrix}$	`((a,b),(c,d))`	*matrix*
$F^1{}_2$	`F[1,2]`	*tensor component access*
	`"hello, world"`	*string literal*
π	`pi`	
e	`exp(1)`	*natural number*

Parentheses are required around negative exponents. For example,

```
10^(-3)
```

instead of

```
10^-3
```

The reason for this is that the binding of the negative sign is not always obvious. For example, consider

```
x^-1/2
```

It is not clear whether the exponent should be -1 or $-1/2$. Hence the following syntax is required.

```
x^(-1/2)
```

In general, parentheses are always required when the exponent is an expression. For example, `x^1/2` is evaluated as $(x^1)/2$ which is probably not the desired result.

```
x^1/2
```

$\frac{1}{2}x$

Using `x^(1/2)` yields the desired result.

```
x^(1/2)
```

$x^{1/2}$