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`
$\dfrac{a}{b}$	`a/b`	division
$\dfrac{a}{bc}$	`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)`

$x^{1/2}$