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	$multiplication, \ also \ {\tt a*b}$
$\frac{a}{b}$	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)
$a\left(b+c ight)$	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)

 $x^{1/2}$