Variables

Integer	1362, -217897
Real	1.234, -10.76
Complex	3.21 + 4.22 i
Array or matrix of any of the above	[1.1 2 1-i]

Note that variable names in Matlab are allowed using any combination of letters and numbers and starting with a letter. Also, variable names are case sensitive.

Useful system constants and variables

pi	π value = 3.14159265...
i,j	Imaginary unit
inf	Infinity
NaN	Not-a-number
Ans	Result of last command

Useful Array Initializations

zeros()	generate array of zeros with the dimensions given in argument
ones()	generate array of ones with the dimensions given in argument
rand()	generate array of uniformly distributed random numbers with the dimensions given in argument
randn()	generate array of normally distributed random numbers with the dimensions given in argument
J:K	Same as [J, J+1, ..., K].
J:D:K	Same as [J, J+D, ..., J+m*D] where m = fix((K-J)/D)

Arithmetic operators

A+B	Addition
A-B	Subtraction
A*B	Multiplication
A.*B	Elementwise multiplication
A/B	Division
A./B	Elementwise division
A^B	Power
A.^B	Elementwise power
A'	Conjugate transpose
A.'	Transpose

Relational operators

A < B	Less than
A > B	Greater than
A <= B	Less than or equal
A >= B	Greater than or equal
A == B	Equal
A ~= B	Not equal

Logical Operators

expr1 && expr2	Logical AND
expr1 || expr2	Logical OR
~expr	Logical NOT
A & B	Element-wise AND
A I B	Element-wise OR

Operator Precedence

Highest (calculated first)	Parentheses ()
	Transpose (.'), power (.^), complex conjugate transpose ('), matrix power (^)
	Unary plus (+), unary minus (-), logical negation (~)
	Multiplication (.*), right division (./), left division (.\), matrix multiplication (*), matrix right division (/), matrix left division (\)
	Addition (+), subtraction (-)
	Colon operator (:)
	Less than (<), less than or equal to (<=), greater than (>), greater than or equal to (>=), equal to (==), not equal to (~=)
	Element-wise AND (&)
	Element-wise OR (|)
	Short-circuit AND (&&)
Lowest (calculated last)	Short-circuit OR (||)

Mathematical Functions

abs , angle	magnitude, angle of complex number
cos, sin, tan	cosine, sine, tangent
acos, asine, atan	inverse cosine, sine, tangent
cosh, sinh, tanh	hyperbolic cosine, sine, tangent
acosh, asinh, atanh	inverse cosh, sinh, tanh
conj, imag, real	complex conjugate, imaginary, real parts
exp, log, log10	exponential, natural and base 10 logarithms