Courtesy of TheCoaler!

A = [1 2; 3 4]	Make a matrix!
x = [1 2 3 4 5]	Make a vector!
zeros(m,n) / ones	Make an m*n matrix of zeros or ones
eye(n)	Make an n*n identity matrix
A(x,y)	Obtain the matrix value at row x, column y
length(x)	Obtain the number of elements in a vector
sum(x)	Sum the elements within a vector
prod(x)	Multiply the elements within a vector
size(A)	Find the dimensions of a matrix
x:y	Generate a sequence from x to y (use numbers of course)
x:y:z	Generate a sequence starting at x, incrementing by y, and ending at z
A(:,y)	Obtain the y^{th} column from a matrix
A(x,:)	Obtain the x^{th} row from a matrix
A(x:x1, y:y1)	Obtain the matrix from row x to x1, and from column y to y1 **Example** to extract from row 1 to 2, and column 1 to 3: D(1:2,1:3)
A+B	Add matrices
A*B	Multiply matrices
A^x	Take the x^{th} power of a matrix
rref(A)	Put a matrix in reduced row echelon form!
trace(A)	Take the trace of a matrix
A.*B	Take the COMPONENTWISE multiple of A*B (multiplies each component in A by its corresponding counterpart in B)
A./B	Take the COMPONENTWISE division of A/B
A.^x	Take the COMPONENTWISE x^{th} power of a matrix
[A,B]	Concatenate (join) matrixes A and B, by adding B onto the end of A **Example:** A = [1;2], B = [3;4], [A,B] = [1 3; 2 4]
inv(A)	Take the inverse of a matrix
A\b	If you have a system of equations, Ax = b, you can solve the system by doing A\b
tic;operation;toc	Time how long a function took to run
[A]'	Take the transpose of a matrix
x(x>y)	Extract numbers from vector x that are larger than a given value y
x(x>=y & x<=z)	Extract numbers from vector x that are larger than a given value y and less than a given value z (inclusive)
x(x>y | x<z)	Extract numbers from vector x that are larger than a given value y **OR** less than a given value z
eig(A)	Find the eigenVALUES of a matrix A
[P,D] = eig(sym(A))	Returns the P matrix (V in this case) and the diagonal matrix D corresponding to P (useful to find the eigenvectors?)

det(A)	Find the determinant of a matrix A
factor(polynomial)	Factor a polynomial!
x = sym('x')	Create a symbolic variable x
charpoly(A,x)	Find the characteristic polynomial for A **TRY THIS ONE OUT TO SEE HOW IT WORKS!!!! (x needs to be defined as a symbolic variable, A should be your matrix)**
A = magic(n)	Generates a magic matrix of order n
B = transpose(A)	Makes matrix B that is the transpose of A
B = repmat(A,b,c)	Repeats some matrix A in a bxc grid pattern
B = trilu/d(A)	Returns the lower/upper triangular portion of A
D = diag(v,k)	places the elements of vector v on the kth diagonal. k=0 represents the main diagonal, k>0 is above the main diagonal, and k<0 is below the main diagonal.
cofactorA = transpose(det(A)*inv(A))	Finds cofactor matrix of A