

Matlab Linear Algebra

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Operators

```
* # matrix multiplication
.* # elemnt-wise multi
^ # exponent
.^ # elemnt-wise exponent
```

Linear Algebra

```
A = [1 2; 3 4] # 2 by 2 matrix
r = [1 2 3 4] # row vector len 4
c = [1; 2; 3] # col vector len 3
eye(n) # identity matrix
eig(A) # eigenvals & eigenvctrs
[A,B] # concat cols
[A;B] # concat rows
```

Functions

```
A' # transpose
inv(A) # inverse
det(A) # determinant
```

Plots

```
fig1 = plot(x,y) # 2d line plot
set(fig1, 'color', 'red')
xlabel('Xs', 'Font', 11)
ylim([0 50])
fig3 = surf(x,y,z) # 3d surface plot
hold on # To keep adding plots
hold off # To print plots
```

For loop & Conditionals

```
for n=1:3
<stuff>
end
if <criteria>
<stuff>
else <criteria>. # elif also valid
<stuff>
end
```

Handy commands

```
clc # clean all
clear <myvar> # delete specific var
clear all # deletes all
format long # more decimals
format short # less decimals
whos # variables in workspace
edit <myfile> # edit or open new one
ans # last result
help <func> # prints info of function
class(obj) # class of object
beep # makes a beep
```

Index

```
A(4,2) # brings row 4 col 2
A(8) # same but linear indexing
B = 0:10:50 # ranges 0 to 50, steps of 10
linspace(0,50,5) # ranges 0 to 50 in 5 steps
```