

```
>> a=3
```

```
a =
```

```
3
```

```
>> b=4
```

```
>> b
```

```
b =
```

```
4
```

```
>> c=a+b
```

```
c =
```

```
7
```

Using Mat file

```
>> p1
```

```
c =
```

```
7
```

Vectors

```
>> a=[1 2 3]
```

```
a =
```

```
    1    2    3
```

```
>> a'
```

```
ans =
```

```
    1  
    2  
    3
```

```
>> a*a'
```

```
ans =
```

```
    14
```

```
>> a=[1;2;3]
```

```
a =
```

```
    1  
    2  
    3
```

```
>> a'*a
```

```
ans =
```

```
    14
```

```
>> a(2)
```

```
ans =
```

```
2
```

Clearing variables

```
>> clear a
```

```
>> clear
```

Help

```
>> help clear
```

Matrix

```
>> b=[10 22 31;45 57 67;74 81 94]
```

```
b =
```

```
10 22 31  
45 57 67  
74 81 94
```

```
>> b(1)
```

```
ans =
```

```
10
```

```
>> b(9)
```

```
ans =
```

```
94
```

```
>> b(1,:)
```

```
ans =
```

```
10 22 31
```

```
>> b(:,1)
```

```
ans =
```

```
10  
45  
74
```

```
>> b(1,:)*b(:,1)
```

```
ans =
```

```
3384
```

```
>> a=b(1,:)
```

```
a =
```

```
10 22 31
```

```
>> a=b(:,1)
```

```
a =
```

```
10  
45  
74
```

Matrix - Vector operations

```
>> b*a
```

```
ans =
```

```
    3384  
    7973  
   11341
```

```
>> a=b(1,:)
```

```
a =
```

```
    10    22    31
```

```
>> b*a
```

```
??? Error using ==> mtimes  
Inner matrix dimensions must agree.
```

```
>> a*b
```

```
ans =
```

```
    3384    3985    4698
```

```
>> det(b)
```

```
ans =
```

```
   -2437
```

```
>> inv(b)
```

```
ans =
```

```
0.0283 -0.1818 0.1202  
-0.2987 0.5556 -0.2975  
0.2351 -0.3357 0.1723
```

Solving Linear Equations

```
>> R = [19 -12 0; -12 18 -6; 0 -6 18]
```

```
R =
```

```
19 -12 0  
-12 18 -6  
0 -6 18
```

```
>> b=[60;0;0]
```

```
b =
```

```
60  
0  
0
```

```
>> I=R\b
```

```
I =
```

```
6.0000  
4.5000  
1.5000
```

```
>> b=[60 0 0]
```

```
b =
```

```
60 0 0
```

```
>> I=R\b
```

```
??? Error using ==> mldivide  
Matrix dimensions must agree.
```

```
>> I=b/R
```

```
I =
```

```
6.0000 4.5000 1.5000
```

Complex Numbers

```
>> a=3+(j*4)
```

```
a =
```

```
3.0000 + 4.0000i
```

```
>> abs(a)
```

```
ans =
```

```
5
```

```
>> angle(a)
```

```
ans =
```

```
0.9273
```

```
(in radian)
```

```
>> angle(a)*180/pi    (converting to degrees)
```

```
ans =
```

```
53.1301
```

Complex numbers operations

```
>> b=12+(4*i)
```

```
b =
```

```
12.0000 + 4.0000i
```

Addition

```
>> a+b
```

```
ans =
```

```
15.0000 + 8.0000i
```

Multiplication

```
>> a*b
```

```
ans =
```

```
20.0000 +60.0000i
```

Division

```
>> a/b
```

```
ans =
```

```
0.3250 + 0.2250i
```


M-file to plot

```
k=0;
for i=-100:100
k=k+1;
t=i/100;
bb(k)=cos(2*pi*t);
end
plot(bb)
```