Digital Image Processing Lab

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LAB 1

```
>> 4+5^2
ans =
 29

>> 1+12+123
ans =
 136

>> [4:32:2:6]
ans =
 1×0 empty double row vector

>> [2:3:4:5]
ans =
 2 3 4 5

>> [3,6,9,12]
ans =
 3 6 9 12

>> 4:12
ans =
 Columns 1 through 8
```

```
4 5 6 7 8 9 10 11
Column 9
12

>> 2:6
ans =
2 3 4 5 6

>> 2:6+1
ans =
2 3 4 5 6 7

>> 1:3:9
ans =
1 4 7

>> 5:-2:1
ans =
5 3 1

>> [1 2 3;6 7 8;4 5 6]
ans =
1 2 3
6 7 8
4 5 6

>> [[65;43;23] [45;56;7]]
ans =
65 45
43 56
23 7

>> [[12;43;54] [18;22;73]]
ans =
12 18
43 22
54 73

>> [[1 2;4 3;5 4] [18;22;73]]
ans =
1 2 18
4 3 22
5 4 73

>> zeros
ans =
0

>> ones
ans =
1

>> eye
ans =
1

>> rand
ans =
0.8147
```

```
>> [rand rand rand;rand rand rand; rand rand rand]
ans =
 0.9058 0.1270 0.9134
 0.6324 0.0975 0.2785
 0.5469 0.9575 0.9649

>> x=[1 2 3;4 5 6;7 8 9]

x =

 1 2 3
 4 5 6
 7 8 9
>> diag(x)
ans =
 1
 5
 9

>> diag(x,1)
ans =
 2
 6

>> size(x)
ans =
 3 3

>> length(x)
ans =
 3

>> numel(x)
ans =
 9

>> det(x)
ans =
 -9.5162e-16

>> cond(x)
ans =
 5.0523e+16

>> inv(x)
Warning: Matrix is close to singular or badly
scaled. Results may be inaccurate. RCOND
= 2.202823e-18.

ans =
 1.0e+16 *

 0.3153 -0.6305 0.3153
 -0.6305 1.2610 -0.6305
 0.3153 -0.6305 0.3153

>> y=[1 0 ;3 6 ;3 7]

y =
```

```
 1 0
 3 6
 3 7
>> inv(y)
Error using inv
Matrix must be square.

>> eig(x)
ans =
 16.1168
 -1.1168
 -0.0000

>> [v,d]=eig(x)

v =

   -0.2320   -0.7858   0.4082
-0.5253    -0.0868    -0.8165
-0.8187 0.6123 0.4082


d =

   16.1168    0    0       0
-1.1168 0  0 0 -0.0000

>> inf
ans =
 Inf

>> inf-inf
ans =
 NaN

>> 1-inf
ans =
 -Inf

>> inf + nan
ans =
 NaN

>> x

x =

 1 2 3
 4 5 6
 7 8 9
>> find(x,5)
ans =
 1
 2
 3
 4
 5

>> x(2,3)
```

```
ans =
 6

>> x(:,2)
ans =
 2
 5
 8

>> x(2,:)
ans =
 4 5 6

>> x(:,:)
ans =
 1 2 3
 4 5 6
 7 8 9

>> x([2,3,5])
ans =
 4 7 5

>> x([1,3,5])
ans =
 1 7 5

>> x([1,3],2:end)
ans =
 2 3
 8 9

>> y=[rand rand rand;rand rand rand;rand rand rand]

y =

 0.1576 0.9706 0.9572
 0.4854 0.8003 0.1419
 0.4218 0.9157 0.7922
>> C = x.*y
C =
   0.1576    1.9412    2.8715
1.9415     4.0014     0.8513
2.9523 7.3259 7.1299

>> C = x./y
C =
 6.3447 2.0606 3.1342
8.2410 6.2478 42.2874
16.5971 8.7361 11.3607

>> c = x.^3
c =
 1 8 27
 64 125 216
 343 512 729

>> transpose(x)
ans =
 1 4 7
```

```
 2 5 8
 3 6 9

>> abs(x)
ans =
 1 2 3
 4 5 6
 7 8 9

>> n=-6
n =
 -6

>> sign(n)
ans =
 -1

Did you mean:
>> asin(45)
ans =
 1.5708 - 4.4997i

>> acos(45)
ans =
 0.0000 + 4.4997i

>> sin(45)
ans =
 0.8509
>> cos(45)
ans =
 0.5253

>> exp(56)
ans =
 2.0917e+24

>> log(10)
ans =
 2.3026

>> ceil(10.11)
ans =
 11

>> floor(10.11)
ans =
 10

>> round(11.56)
ans =
 12

>> real(23)
ans =
 23

>> real(x)ans = 1 2 3  4 5 6
 7 8 9
```

```
>> imag(x)
ans =
 0 0 0
 0 0 0
 0 0 0

>> sort(x)
ans =
 1 2 3
 4 5 6
 7 8 9
```