

Numerical Analysis and Computer Experiment - Assignment 1

Dept. of Mathematics
2019160041 강병찬

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1 기본 연산자

```
>> 1+3  
ans =  
     4  
  
>> 13-4  
ans =  
     9  
  
>> 12+3  
ans =  
    15  
  
>> 36/3  
ans =  
    12
```

2 관계 연산자

```
>> x = [1 2 3 4 5]; y = [5 4 3 2 1];  
>> x<y
```

```
ans =
```

```
1×5 logical array
```

```
1 1 0 0 0
```

```
>> x<=y
```

```
ans =
```

```
1×5 logical array
```

```
1 1 1 0 0
```

```
>> x==y
```

```
ans =
```

```
1×5 logical array
```

```
0 0 1 0 0
```

```
>> x>=y
```

```
ans =
```

```
1×5 logical array
```

```
0 0 1 1 1
```

```
>> x>y
```

```
ans =
```

```
1×5 logical array
```

```
0 0 0 1 1
```

3 for 문

```
>> for x=0:2:10  
a=2^x  
end
```

a =

1

a =

4

a =

16

a =

64

a =

256

a =

1024

4 if/else 문

```
>> a=3;  
>> if a<1  
b=a+1  
else  
c=a+2  
end
```

c =

5

5 while 문

```
>> a=1;  
>> while a<4  
a=a+1  
end
```

```
a =  
  
    2
```

```
a =  
  
    3
```

```
a =  
  
    4
```

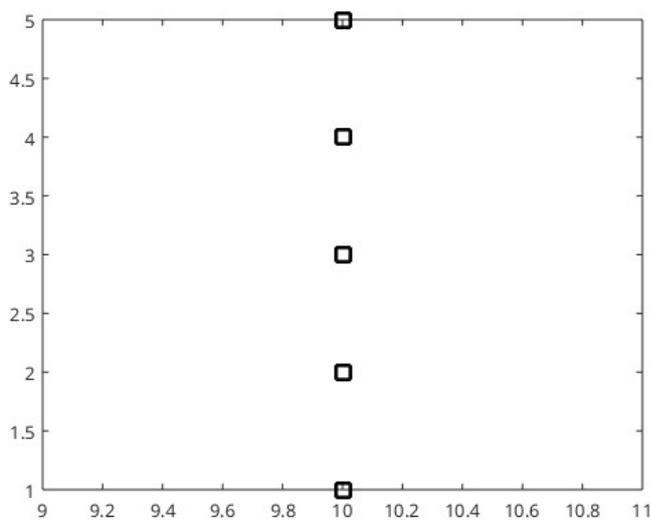
6 세미콜론 ;

```
>> a=1; b=2,c=3;
```

```
b =  
  
    2
```

7 명령문 연속

```
>> plot(x,y,"--rs", 'Linewidth',2, 'MarkerEdgeColor', 'k', 'MarkerSize',10)
```



8 Inline

```
>> f=inline('x.^3+6*x-2','x');  
>> f(3)
```

```
ans =
```

```
43
```

```
>> f([3 4 5])
```

```
ans =
```

```
43    86   153
```

9 Linspace

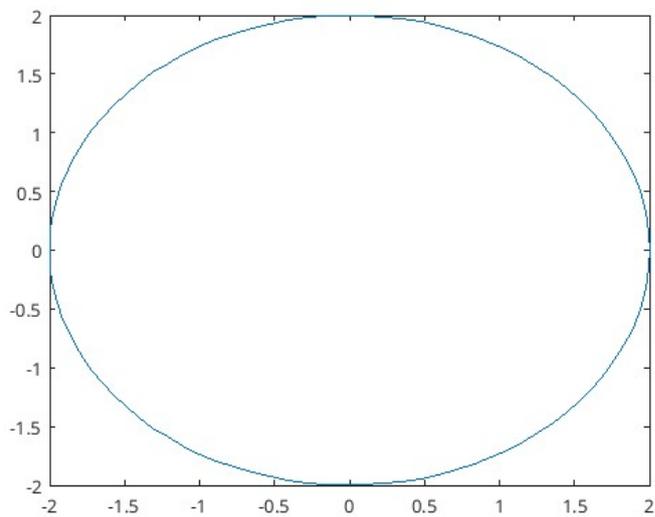
```
>> x=linspace(0,5,6)
```

```
x =
```

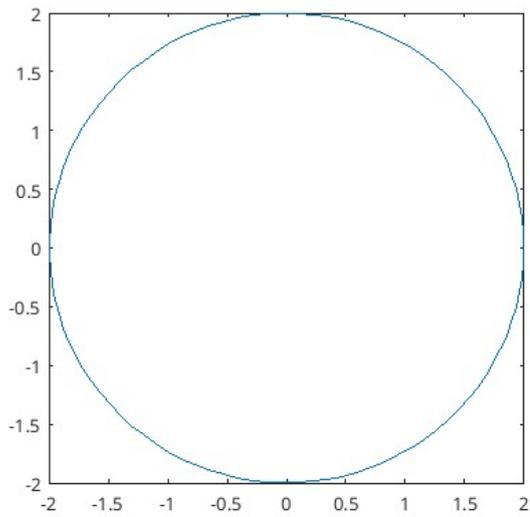
```
0    1    2    3    4    5
```

10 Plot

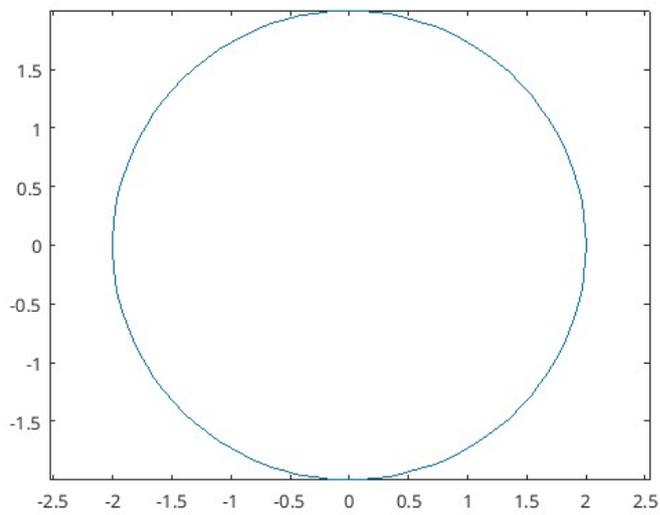
```
>> t=linspace(0,2*pi,100); x=2*cos(t); y=2*sin(t);  
>> plot(x,y)
```



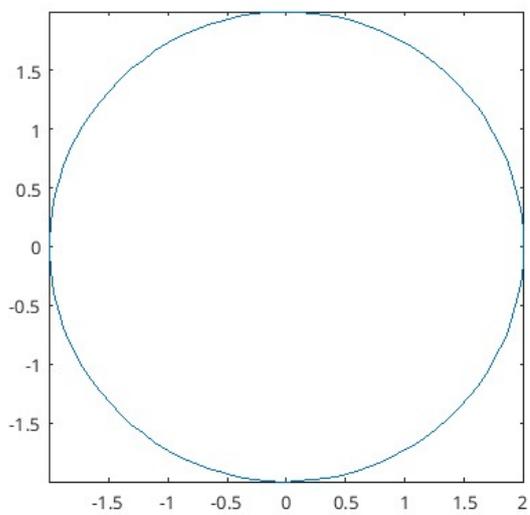
```
>> plot(x,y); axis square;
```



```
>> plot(x,y); axis equal;
```



```
>> plot(x,y); axis image;
```



11 Ones (모든 성분이 1인 정사각행렬)

```
>> ones(3)
```

```
ans =
```

```
    1    1    1
    1    1    1
    1    1    1
```

12 Zeros (모든 성분이 0인 정사각행렬)

```
>> zeros(2)
```

```
ans =
```

```
    0    0
    0    0
```

13 Length

```
>> C=[1 2 3]; length(C)
```

```
ans =
```

```
    3
```

14 Sum

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

```
>> sum(A)
```

```
ans =
```

```
    12    15    18
```

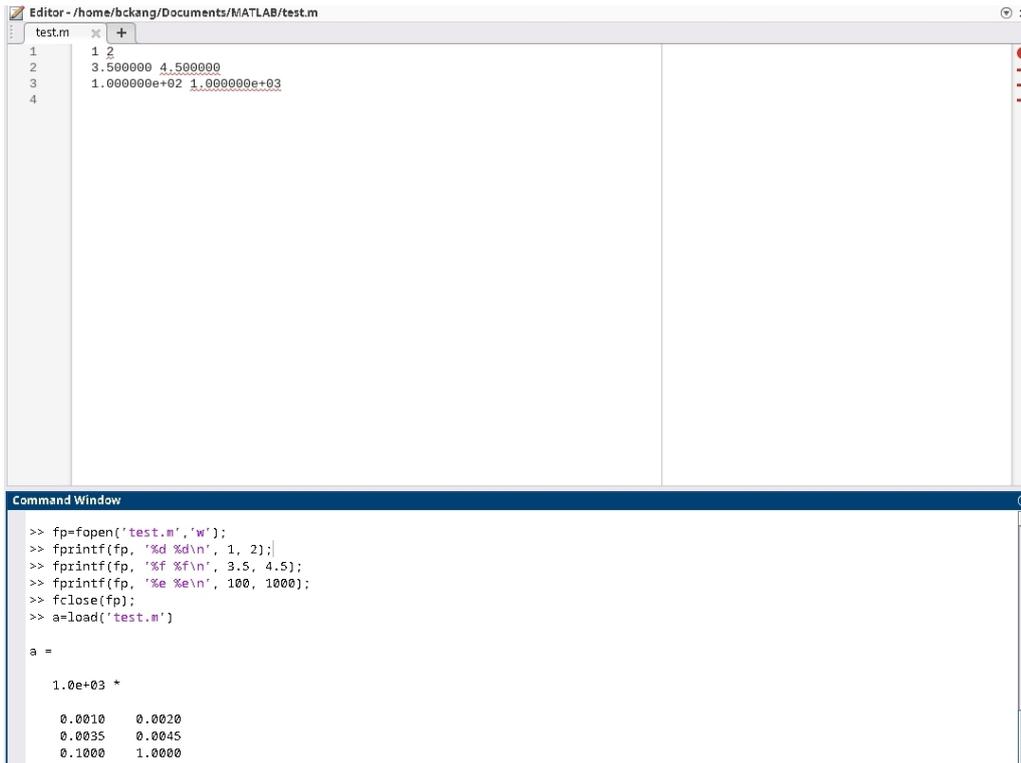
15 Absolute Value

```
>> abs(-3)
```

```
ans =
```

```
    3
```

16 fprintf + load



The screenshot shows the MATLAB Editor window with a file named 'test.m' containing the following code:

```
1 1 2
2 3.500000 4.500000
3 1.000000e+02 1.000000e+03
4
```

The Command Window shows the execution of the following commands:

```
>> fp=fopen('test.m','w');
>> fprintf(fp, '%d %d\n', 1, 2);
>> fprintf(fp, '%f %f\n', 3.5, 4.5);
>> fprintf(fp, '%e %e\n', 100, 1000);
>> fclose(fp);
>> a=load('test.m')
```

The output of the 'load' command is displayed as:

```
a =
    1.0e+03 *
    0.0010    0.0020
    0.0035    0.0045
    0.1000    1.0000
```

17 Rand()

```
>> Random_matrix = rand(2,3)
```

```
Random_matrix =
```

```
    0.8147    0.1270    0.6324
    0.9058    0.9134    0.0975
```

```
>> rand('seed',3)
```

```
>> rand(2,3)
```

```
ans =
```

```
    0.5387    0.0512    0.3010
    0.3815    0.2851    0.1277
```