Basic operation

```
>> 1+3

ans =

     4

>> 13-4

ans =

     9

>> 12*3

ans =

    36

>> 36/3

ans =

    12
```

Logical operations

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

y =

     5     4     3     2     1

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

ans =

  1×5 logical 배열

   1   1   0   0   0

>> x<=y

ans =

  1×5 logical 배열

   1   1   1   0   0

>> x == y

ans =

  1×5 logical 배열

   0   0   1   0   0

>> x >= y

ans =

  1×5 logical 배열

   0   0   1   1   1

>> x > y

ans =

  1×5 logical 배열

   0   0   0   1   1
```

For loop, while loop and if

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

a =

        1024

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

c =

     5

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

a =

     2


a =

     3


a =

     4
```

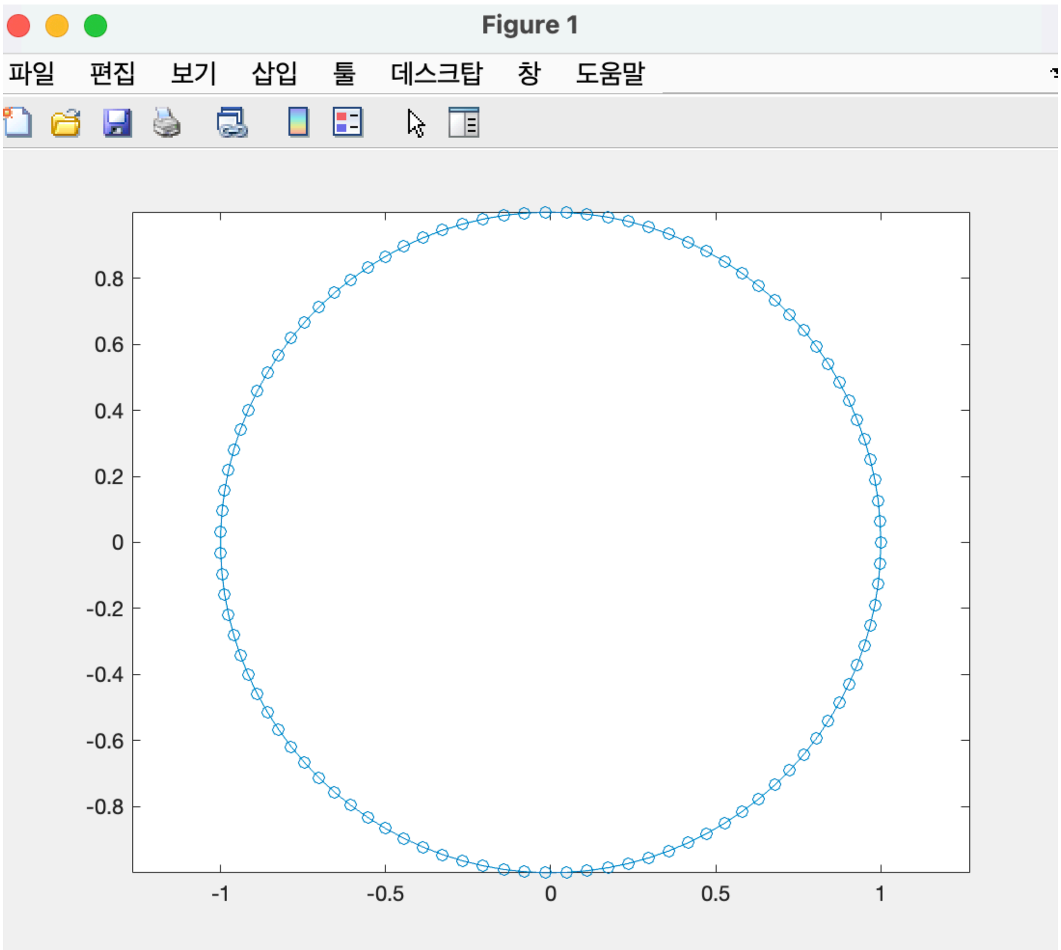

```
>> a = 1;
>> while a < 4
a = a+1
end

a =

     2


a =

     3


a =

     4
```

Inline function

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

f =

     인라인 함수:
     f(x) = x.^3+6*x-2

>> f([3 4 5])

ans =

    43    86   153

>> x = linspace(0, 100, 10)

x =

  1 ~ 8번 열

         0   11.1111   22.2222   33.3333   44.4444   55.5556   66.666

  9 ~ 10번 열

   88.8889  100.0000
```

Plot

```
>> t = linspace(0, 2*pi, 100); x = cos(t); y = sin(t);
>> plot(x,y,'-o'); axis('equal')
```



Matrix indexing

```
>> A = rand(3, 5);
A(:,1:3)

ans =

    0.1707    0.3111    0.1848
    0.2277    0.9234    0.9049
    0.4357    0.4302    0.9797

>> A(2, 3)

ans =

    0.9049

>> A(2:3, 1:4)

ans =

    0.2277    0.9234    0.9049    0.1111
    0.4357    0.4302    0.9797    0.2581
```

Size and Length

```
>> a = [1 2 3 4];
A = ones(3,4);
length(a)

ans =

     4

>> size(A)

ans =

     3     4

>>
```

Matrix Aggregation (sum and max)

```
>> sum(A,1) % columnwise sum

ans =

     3     3     3     3

>> sum(A,2) % rowwise sum

ans =

     4
     4
     4

>> sum(A, "all")

ans =

    12
```

```
>> max(A) % columnwise max

ans =

     1     1     1     1

>> max(A, [], 2) % rowwise max

ans =

     1
     1
     1

>> max(A, [], 'all') % global max

ans =

     1
```

Absolute value

```
>> A = rand(3,4)-0.5;
>> abs(A)

ans =

    0.1028    0.3826    0.0758    0.2375
    0.2112    0.2033    0.0079    0.3010
    0.2783    0.1812    0.4145    0.4708
```

Read and Write

```
>> fp = fopen('test1.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('test1.m');
>> a

a =

   1.0e+03 *

    0.0010    0.0020
    0.0035    0.0045
    0.1000    1.0000
```