

E0

Creació de vectors fila

```
vector_fila = [1 3 5]
```

```
vector_fila = 1×3  
1      3      5
```

Creació de vector columna

```
vector_columna = [1;3;5]
```

```
vector_columna = 3×1  
1  
3  
5
```

Creació de matrius

```
matrix = [1 2 3; 1 2 3]
```

```
matrix = 2×3  
1      2      3  
1      2      3
```

Size

```
[s_m, s_m2] = size(matrix)
```

```
s_m = 2  
s_m2 = 3
```

```
[s_vf, s_vf2] = size(vector_fila)
```

```
s_vf = 1  
s_vf2 = 3
```

```
[s_vc, s_vc2] = size(vector_columna)
```

```
s_vc = 3  
s_vc2 = 1
```

```
ss = size(vector_columna)
```

```
ss = 1×2  
3      1
```

Ndims

```
dims_vf = ndims(vector_fila)
```

```
dims_vf = 2
```

```
dims_vc = ndims(vector_columna)
```

```
dims_vc = 2
```

```
dims_m = ndims(matrix)
```

```
dims_m = 2
```

Zeros

```
zero = zeros(1,2)
```

```
zero = 1×2
      0      0
```

Ones

```
one = ones(3)
```

```
one = 3×3
      1      1      1
      1      1      1
      1      1      1
```

Scalar product

```
A = [1 2 3]
```

```
A = 1×3
      1      2      3
```

```
B = [2 3 4]
```

```
B = 1×3
      2      3      4
```

```
C = dot(A, B)
```

```
C = 20
```

Norm

```
norm(A)
```

```
ans = 3.7417
```

```
norm(C)
```

```
ans = 20
```

```
norm(matrix)
```

```
ans = 5.2915
```

Producte element a element

```
D = A .* B
```

```
D = 1×3
      2      6     12
```

Accedir a elements de una matriu

```
first = matrix(1,1)
```

```
first = 1
```

```
last = matrix(end, end)
```

```
last = 3
```

Retallar part d'una matriu

Eliminar segona fila

```
fila = matrix
```

```
fila = 2x3
  1  2  3
  1  2  3
```

```
fila(2,:) = []
```

```
fila = 1x3
  1  2  3
```

Eliminar segona columna

```
columna = matrix
```

```
columna = 2x3
  1  2  3
  1  2  3
```

```
columna(:,2) = []
```

```
columna = 2x2
  1  3
  1  3
```

Concatenació de matrius

```
M1 = [1 2 3; 1 2 3]
```

```
M1 = 2x3
  1  2  3
  1  2  3
```

```
M2 = [4 5 6; 4 5 6]
```

```
M2 = 2x3
  4  5  6
  4  5  6
```

```
M3 = [M1 M2]
```

```
M3 = 2x6
  1  2  3  4  5  6
  1  2  3  4  5  6
```

Operacions de buscar i substituir elements d'una matriu

```
M = [0 0 0 0 0 0]
```

```
M = 1x6
  0  0  0  0  0  0
```

```
M(M == 0) = 1
```

```
M = 1×6  
1 1 1 1 1 1
```

Plot

```
V = [1 2 3 4 5 6]
```

```
V = 1×6  
1 2 3 4 5 6
```

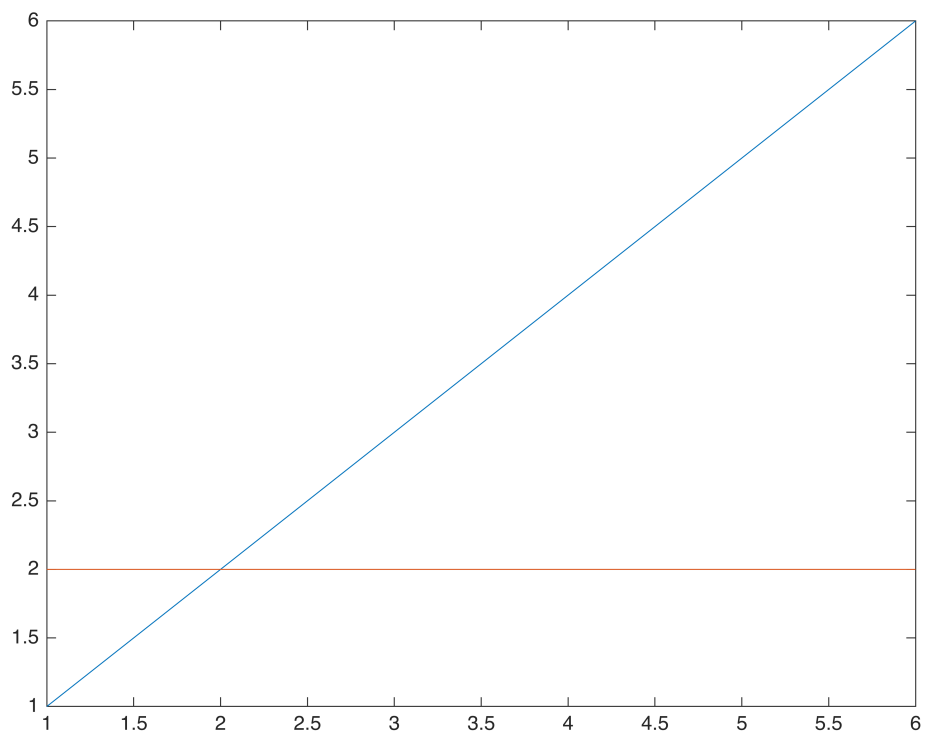
```
plot(V, V)
```

Hold on / Hold off

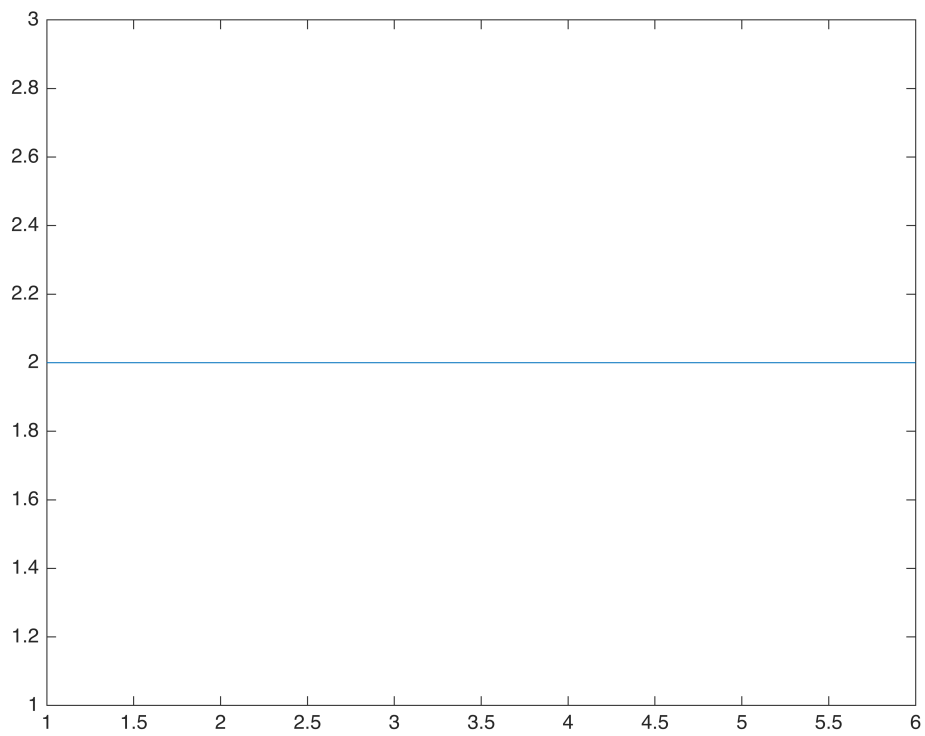
```
hold on  
W = [2 2 2 2 2 2]
```

```
W = 1×6  
2 2 2 2 2 2
```

```
plot(W)  
hold off
```



```
plot(W)
```



Plot3

```
X = [1 2 3]
```

```
X = 1x3  
    1    2    3
```

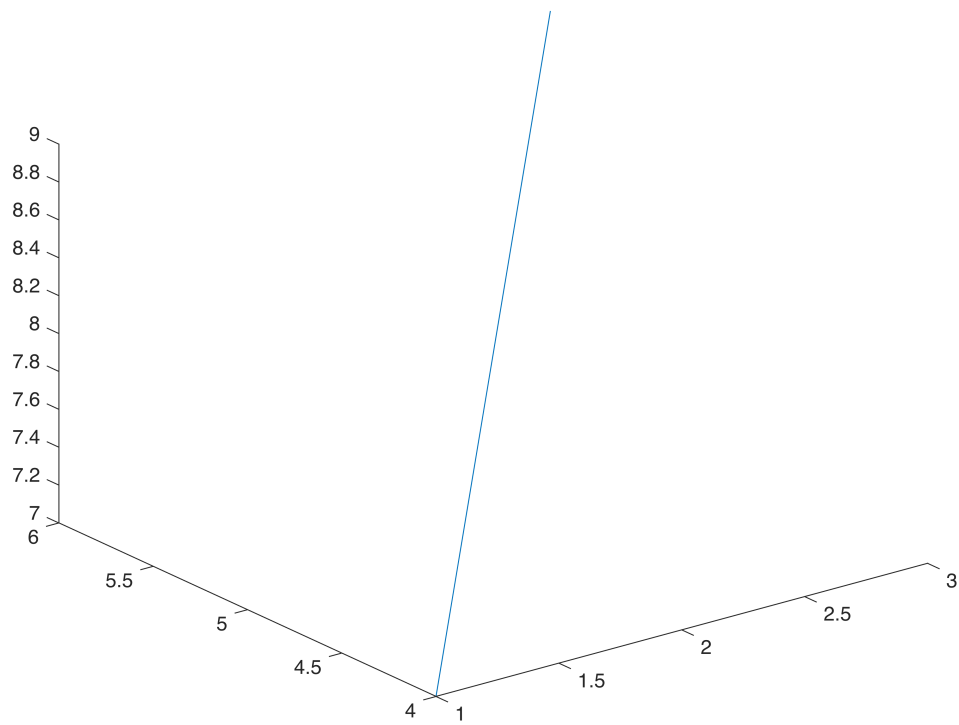
```
Y = [4 5 6]
```

```
Y = 1x3  
    4    5    6
```

```
Z = [7 8 9]
```

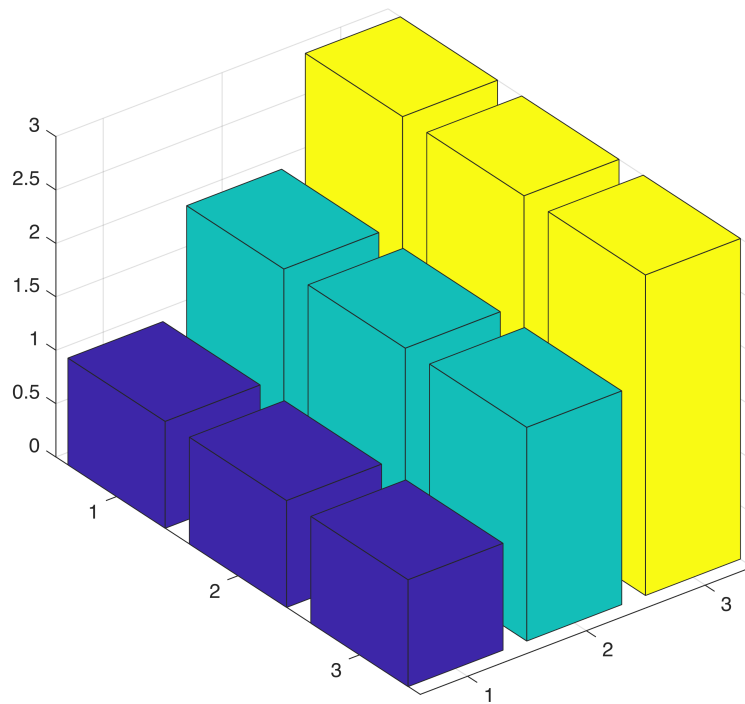
```
Z = 1x3  
    7    8    9
```

```
plot3(X, Y, Z)
```



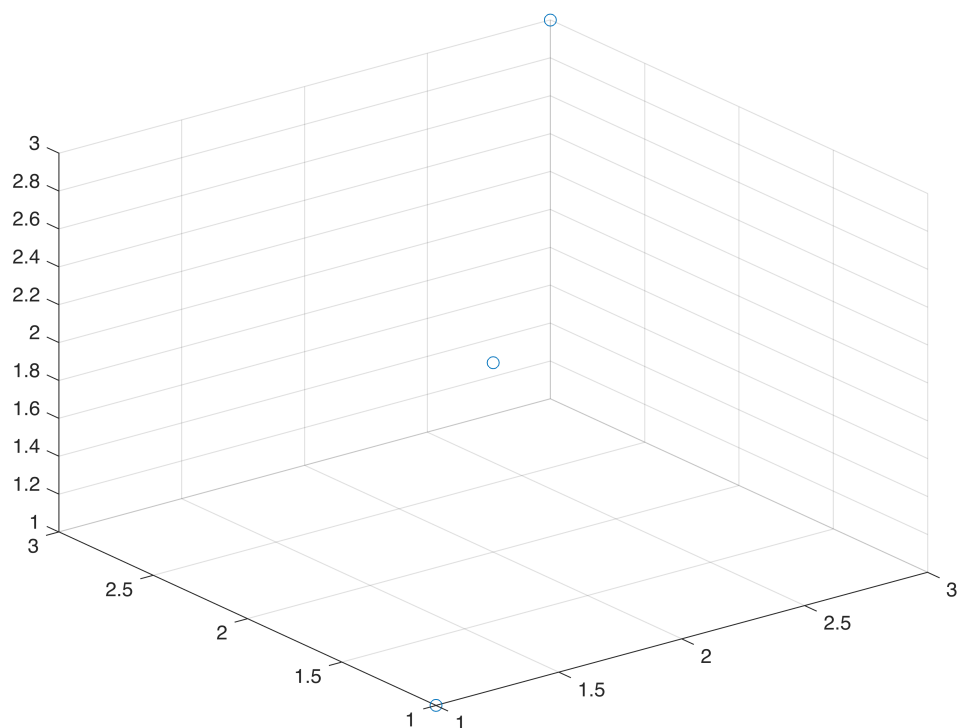
Bar3

```
bar3( [X;X;X] )
```



Scatter3

```
scatter3(X,X,X)
```



Funció max

X

X = 1×3
1 2 3

m = max(X)

m = 3

Funció sum

X

X = 1×3
1 2 3

s = sum(X)

s = 6

Crear funcions pròpies

z = 1:99;
ave = average(z)

ave = 50

Mesura del temps de còmput (tic,toc)

```
tic  
A = rand(12000,4400);  
B = rand(12000,4400);  
toc
```

Elapsed time is 1.032875 seconds.

```
function ave = average(x)  
    ave = sum(x(:))/numel(x);  
end
```