**%Vectores paralelos**

>>n=[12 15 9 13 8 7]

n =

 12 15 9 13 8 7

>>c=[2 3 5 6 2 1]

c =

 2 3 5 6 2 1

>>pp=sum(n.\*c)/sum(c)

pp =

 11.3158

>>n.\*c

ans =

 24 45 45 78 16 7

>>ppa=sum((n.\*c).\*(n>=10))/sum(c.\*(n>=10))

ppa =

 13.3636

>>n(n>=10)

ans =

 12 15 13

>>ppa=sum( n(n>=10).\*c(n>=10))/sum(c(n>=10))

ppa =

 13.3636

>>f=find(n>=10)

f =

 1 2 4

>>n

n =

 12 15 9 13 8 7

>>ppa=sum(n(f).\*c(f))/sum(c(f))

ppa =

 13.3636

**%Matrices**

>>clc

>>a=[4 1;5 2]

a =

 4 1

 5 2

>>a(2,1:2)

ans =

 5 2

>>a(2:-1:1,1)

ans =

 5

 4

>>a(:,1)

ans =

 4

 5

>>a(1,:)

ans =

 4 1

**%Resolver el sistema:**

%X1+X2=7

%2X1+X2+X3=6

%2X2+X3=5

>>A=[1 2 0; 1 1 2;0 1 1];

>>b=[7 6 5]';

>>x=A^(-1)\*b

x =

 -0.3333

 3.6667

 1.3333

>>x=A\b

x =

 -0.3333

 3.6667

 1.3333

>>det(A)

ans =

 -3

>>A

A =

 1 2 0

 1 1 2

 0 1 1

>>sum(A)

ans =

 2 4 3

>>sum(sum(A))

ans =

 9

>>max(A)

ans =

 1 2 2

>>min(A)

ans =

 0 1 0

>>max(max(A))

ans =

 2

>>mean(A)

ans =

 0.6667 1.3333 1.0000

>>prod(A)

ans =

 0 2 0

>>cumsum(A)

ans =

 1 2 0

 2 3 2

 2 4 3

>>sort(A)

ans =

 0 1 0

 1 1 1

 1 2 2

>>A

A =

 1 2 0

 1 1 2

 0 1 1

>>A(2:3)

ans =

 1 0

>>A(7)

ans =

 0

>>find(A>1)

ans =

 4

 8

>> [f c]=find(A>1)

f =

 1

 2

c =

 2

 3

>>clc

>>A

A =

 1 2 0

 1 1 2

 0 1 1

>>A(4,5)

{??? Index exceeds matrix dimensions.}

>>A(4,5)=8

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 0 8

>>A(:,4)=[]

A =

 1 2 0 0

 1 1 2 0

 0 1 1 0

 0 0 0 8

>>A(4,5)=3

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>length(A)

ans =

 5

>> [f c]=size(A)

f =

 4

c =

 5

>>A

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>A(f:-1:1,1:2)

ans =

 0 0

 0 1

 1 1

 1 2

>>A(:,:)

ans =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>A(3:end,3:end)

ans =

 1 0 0

 0 8 3

>>B=[A(1:2,3) [4:8;1:5] A(1,3:4)']

B =

 0 4 5 6 7 8 0

 2 1 2 3 4 5 0

>>B=[A(1:2,3) [4:8;1:5] A(1,3:4)'; 1:7]

B =

 0 4 5 6 7 8 0

 2 1 2 3 4 5 0

 1 2 3 4 5 6 7

>>A

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>A'

ans =

 1 1 0 0

 2 1 1 0

 0 2 1 0

 0 0 0 8

 0 0 0 3

>>flipud(A)

ans =

 0 0 0 8 3

 0 1 1 0 0

 1 1 2 0 0

 1 2 0 0 0

>>A

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>A(4:-1:1,:)

ans =

 0 0 0 8 3

 0 1 1 0 0

 1 1 2 0 0

 1 2 0 0 0

>>fliplr(A)

ans =

 0 0 0 2 1

 0 0 2 1 1

 0 0 1 1 0

 3 8 0 0 0

>>A

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>A(:,5:-1:1)

ans =

 0 0 0 2 1

 0 0 2 1 1

 0 0 1 1 0

 3 8 0 0 0

>>rot90(A)

ans =

 0 0 0 3

 0 0 0 8

 0 2 1 0

 2 1 1 0

 1 1 0 0

>>A

A =

 1 2 0 0 0

 1 1 2 0 0

 0 1 1 0 0

 0 0 0 8 3

>>zeros(2,3)

ans =

 0 0 0

 0 0 0

>>zeros(3)

ans =

 0 0 0

 0 0 0

 0 0 0

>>zeros(3,3)

ans =

 0 0 0

 0 0 0

 0 0 0

>>ones(2,3)

ans =

 1 1 1

 1 1 1

>>ones(2)

ans =

 1 1

 1 1

>>eye(2)

ans =

 1 0

 0 1

>>eye(3)

ans =

 1 0 0

 0 1 0

 0 0 1

>>magic(3)

ans =

 8 1 6

 3 5 7

 4 9 2

>>rand(3)

ans =

 0.8147 0.9134 0.2785

 0.9058 0.6324 0.5469

 0.1270 0.0975 0.9575

>>rand(3)\*10

ans =

 9.6489 9.5717 1.4189

 1.5761 4.8538 4.2176

 9.7059 8.0028 9.1574

>>rand(3)\*10+2

ans =

 9.9221 2.3571 8.7874

 11.5949 10.4913 9.5774

 8.5574 11.3399 9.4313

>>clc

>>b=1:10;

>>e=2:11

e =

 2 3 4 5 6 7 8 9 10 11

>>e(2:2:end)=-e(2:2:end)

e =

 2 -3 4 -5 6 -7 8 -9 10 -11

>>sum(b.^e)

ans =

 3.4926e+009

>>n=factorial(1:8)

n =

 Columns 1 through 8

 1 2 6 24 120 720 5040 40320

>>n(2:2:end)=-n(2:2:end);

>>d=(1:8).^2

d =

 1 4 9 16 25 36 49 64

>>sum(n./d)

ans =

 -542.6762

>>n=factorial(1:8);

>>n(2:2:end)=-n(2:2:end);

>>d=(1:8).^2;

>>sum(n./d)

ans =

 -542.6762

>>m=ones(10);

>>m(1:2:10,1:2:10)=0;

>>m(2:2:10,2:2:10)=0

m =

 0 1 0 1 0 1 0 1 0 1

 1 0 1 0 1 0 1 0 1 0

 0 1 0 1 0 1 0 1 0 1

 1 0 1 0 1 0 1 0 1 0

 0 1 0 1 0 1 0 1 0 1

 1 0 1 0 1 0 1 0 1 0

 0 1 0 1 0 1 0 1 0 1

 1 0 1 0 1 0 1 0 1 0

 0 1 0 1 0 1 0 1 0 1

 1 0 1 0 1 0 1 0 1 0

>>clc

>>m=ones(5)

m =

 1 1 1 1 1

 1 1 1 1 1

 1 1 1 1 1

 1 1 1 1 1

 1 1 1 1 1

>>m(2:2:25)=0

m =

 1 0 1 0 1

 0 1 0 1 0

 1 0 1 0 1

 0 1 0 1 0

 1 0 1 0 1

>>diary off