```
%Se uso el comando diary nombraarchivo, para registrar
%todos los comandos usados

%vectores
x=[3 1,7 6 1+1 5]
x =
     3     1     7     6     2     5
x(2)+3
ans =
     4
x
x =
     3     1     7     6     2     5
x(2)=5
x =
     3     5     7     6     2     5
x(2)=1
x =
     3     1     7     6     2     5
3:6
ans =
     3     4     5     6
3:6.5
ans =
     3     4     5     6
3.3:6
ans =
    3.3000    4.3000    5.3000
3:2:6
ans =
     3     5
5:-1:2
ans =
     5     4     3     2
x(2:5)
ans =
     1     7     6     2
%longitud del vector: length
length(x)
ans =
     6
x(2:6)
ans =
     1     7     6     2     5
x(2:length(x))
ans =
     1     7     6     2     5
x(2:end)
ans =
     1     7     6     2     5
x(end:-1:1)
ans =
```

```
     5     2     6     7     1     3
x
x =
     3     1     7     6     2     5
x=x(end:-1:1)
x =
     5     2     6     7     1     3
x=x(end:-1:1)  %regresamos
x =
     3     1     7     6     2     5
%Invertir el vector: fliplr, flipud,
fliplr(x)
ans =
     5     2     6     7     1     3
x
x =
     3     1     7     6     2     5
%Operaciones globales sobre el vector
%sum, prod, max, min, mean
sum(x)
ans =
    24
mean(x)
ans =
     4
%Otras operaciones vectoriales
%cumsum, cumprod, sort
x
x =
     3     1     7     6     2     5
cumsum(x)
ans =
     3     4    11    17    19    24
sort(x)
ans =
     1     2     3     5     6     7
x
x =
     3     1     7     6     2     5
help sort

x
x =
     3     1     7     6     2     5
sort(x,"descend")
ans =
     7     6     5     3     2     1
sort(x)
ans =
     1     2     3     5     6     7
sort(-x)
ans =
```

```
    -7    -6    -5    -3    -2    -1
-sort(-x)
ans =
     7     6     5     3     2     1
x
x =
     3     1     7     6     2     5
factorial(3)
ans =
     6
factorial(x)
ans =
    6     1  5040   720     2   120
y=2:7
y =
     2     3     4     5     6     7
x
x =
     3     1     7     6     2     5
x*y
{Error }
y'
ans =
     2
     3
     4
     5
     6
     7
x*y'
ans =
   114
x
x =
     3     1     7     6     2     5
y
y =
     2     3     4     5     6     7
%Operaciones por elementos
%  .*  ./  .\  .^
x.*y
ans =
     6     3    28    30    12    35
x.^y
ans =
     9     1  2401  7776    64  78125
x^2
{Error}
x.^2
ans =
     9     1    49    36     4    25
x
```

```
x+1
ans =
     4     2     8     7     3     6
x
x =
     3     1     7     6     2     5
y
y =
     2     3     4     5     6     7
%Operadores relacionales
% > < >= <= ==  ~=
% alt 38: &,   alt 124: |,   alt 126: ~
4>2
ans =
   1
y>4
ans =
   0   0   0   1   1   1
% operadores lógicos:
% y, and, &          o, or,  |        no, not,  ~
x>4
ans =
   0   0   1   1   0   1
(x>4) & (x<7)
ans =
   0   0   0   1   0   1
clc
x
x =
     3     1     7     6     2     5
z=[3+2 x(3) x(3:5) x(end)]
z =
     5     7     7     6     2     5
%eliminar elementos
[]
ans =
     []
x(4)=[]
x =
     3     1     7     2     5
x(1:2:end)=[]
x =
     1     2
x=[3 1,7 6 1+1 5]
x =
     3     1     7     6     2     5
x=[x 3]
x =
     3     1     7     6     2     5     3
length(x)
ans =
     7
```

```
x(9)
{Index exceeds the number of array elements (7)}
x(9)=4
x =
     3     1     7     6     2     5     3     0     4
x(7:9)=[]
x =
     3     1     7     6     2     5
%Cuantos elementos de x son >3
x>3
ans =
   0   0   1   1   0   1
sum(x>3)  %cuantos son
ans =
     3
%Sumar los elementos >3
x.*(x>3)
ans =
     0     0     7     6     0     5
sum(x.*(x>3))
ans =
    18
%residuo de la division entera, funcion  mod
mod(11,4)
ans =
     3
mod(12,4)
ans =
     0
mod(11.5,4.1)
ans =
    3.3000
x
x =
     3     1     7     6     2     5
%cuantos elementos de x son multiplos de 3
mod(x,3)
ans =
     0     1     1     0     2     2
mod(x,3)==0
ans =
   1   0   0   1   0   0
sum(mod(x,3)==0)
ans =
     2
clc
%Cuales son los >3
x
x =
     3     1     7     6     2     5
x.*(x>3)
ans =
```

```
     0     0     7     6     0     5
%filtros
x(x>3)
ans =
     7     6     5
x.*(x>3)
ans =
     0     0     7     6     0     5
x(x==0)=[]
x =
     3     1     7     6     2     5
x(x.*(x>3)==0)=[]
x =
     7     6     5
x
x =
     7     6     5
x=[3 1,7 6 1+1 5]
x =
     3     1     7     6     2     5
y
y =
     2     3     4     5     6     7
x(y>5)
ans =
     2     5
x
x =
     3     1     7     6     2     5
x([0 0 0 1 0 1])          %no funciona
x([2 5 1])
ans =
     1     2     3
clc
%n es el vector de notas de cursos
%c son los creditos de los cursos
n=[15 8 16 9];
c=[4 2 5 3];
%Cuantos cursos aprobó
sum(n>=10)
ans =
     2
%cuantos creditos aprobó
n>=10
ans =
   1   0   1   0
c.*(n>=10)
ans =
     4     0     5     0
sum(c.*(n>=10))
ans =
     9
```

```
c(n>=10)
ans =
     4     5
sum(c(n>=10))
ans =
     9
%promedio ponderado
sum(n.*c)/sum(c)
ans =
   13.0714
pp=sum(n.*c)/sum(c)
pp =
   13.0714
%redondeos round, ceil, floor, fix
floor(pp)
ans =
    13
floor(pp,2)
{Error Too many input arguments.}
round(pp,2)
ans =
   13.0700
floor(pp*100)
ans =
        1307
floor(pp*100)/100
ans =
   13.0700
clc
pp=sum(n.*c)/sum(c)
pp =
   13.0714
%promedio ponderado solo de aprobados
n
n =
    15     8    16     9
c
c =
     4     2     5     3
a=n(n>=10)
a =
    15    16
c=c(n>=10)
c =
     4     5
n
n =
    15     8    16     9
c=[4 2 5 3];
a=n(n>=10)
a =
    15    16
```

```
b=c(n>=10)
b =
     4     5
ppa=sum(a.*b)/sum(b)
ppa =
   15.5556
ppa= sum(n(n>=10).*c(n>=10))/sum(c(n>=10))
ppa =
   15.5556
clc

%prob 4
x
x =
     3     1     7     6     2     5
(sum(x)-min(x))/(length(x)-1)
ans =
    4.6000
y=sort(x)
y =
     1     2     3     5     6     7
mean(y(2:end))
ans =
    4.6000
clc
%prob 5
y=sort(x)
y =
     1     2     3     5     6     7
mean(y(3:end))
ans =
    5.2500
clc
%graficar con plot(x,y)
x=0:0.05:5;
x=linspace(0,5,100);
longitud=(5-0)/99
longitud =
    0.0505
x=linspace(0,5);
exp(1)
ans =
    2.7183
y=exp(3*x)-sin(x)+x.^0.3;
plot(x,y)
clc
%prob 14
N=6;
a=1:N;
num=2.^a;
den=a.^a;
t=num./den;
```

```
t
t =
  Columns 1 through 4
    2.0000    1.0000    0.2963    0.0625
  Columns 5 through 6
    0.0102    0.0014
t(2:2:end)=-t(2:2:end)
t =
  Columns 1 through 4
    2.0000   -1.0000    0.2963   -0.0625
  Columns 5 through 6
    0.0102   -0.0014
S=sum(t)
S =
    1.2427
clc

%prob 14
N=6;
a=1:N;
num=2.^a;
den=a.^a;
t=num./den;
t(2:2:end)=-t(2:2:end);
S=sum(t)
S =
    1.2427
clc
%prob 12
x=1:6
x =
     1     2     3     4     5     6
k=3
k =
     3
x=[x(k+1:end) x(1:k)]
x =
     4     5     6     1     2     3
clc
%prob 17
n=4;
F=[2 0 5 1];
C=[1 3 2 1];
V=[1 2 1 2];
P=[3 0 3 2]; %Hallarlo con operaciones
(F>C)*3
ans =
     3     0     3     0
(F>C)*3+(F==C).*V
ans =
     3     0     3     2
P=(F>C)*3+(F==C).*V
```