

1. Variabili, vettori, matrici

```
>a=6
>b=[1, 2, 3]
>d=[7 7 2]
>e=[7 a 2]
>f=[1; 2; 3; 4]
>g=f(2)
>E=[1 2 3; 2 1 3]
>h=E(1,2)
>F(3,4)=7
>F(4,3)=2
>F(1,2)=3
>F(1:2,3:4)=[1 3 2 7]
>who
>clear a b
>who
>clear
>help clear
>A=[1 2]
>pi
>A=eye(3)
>b=[1 2 3]
>B=diag(b)
>C=diag([1 7 8])
>D=diag([1;7;8])
>E=ones(4)
>F=ones(2,3)
>G=zeros(4)
>H=zeros(2,3)
>I=[A B; zeros(3) A]
>I'
>x=0:1/3:2
>for j=1:10, y(j)=2*j; end
>A=[1 2 3; 2 1 0]
>B = [2 2; 1 0; 0 1]
>C = [0 1 0; 5 1 3]
>size(A)
>[m,n]=size(A)
>b=[2 1 3]
>x=[2;1;3]
>A*B
>A*C
>A
>C
>A*C'
>diag(A*C')
>who
>D=A+C
>E=A+B
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>E=A-B'
>g=A*x
>g=A*b
>A
>b
>B
>f=b*B
>C=[1 2 3]'

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2. Manipolazione di matrici

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>A=[1 2;3 4]
>A(3,2)=7
>A(1:2,2)
>A(3,1:2)
>B(3:4,3)=[5;6]
>C(4:5,4)=A(1:2,2)
>B(:,3)
>d=C(1,:)
>E=[1 2 3; 4 5 6; 7 8 9; 10 11 12]
>E(1:2:4,3)
>F=[1 2 3; 4 5 6; 7 8 9; 10 11 12]
>G=F(1:2:3,1:2:5)
>H=[1 3; 9 11]
>H^(-1)
>inv(H)
>inv(H)*H
>b=rand(3,1); A=[1 2 3;4 5 6;0 1 0]; x=A\b
>b-A*x
>H\H
>det(H)
>b=[99 100 101]
>F(1,1:3)=b

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3. Grafica

```

>x=linspace(1,10,100);
>y=x.^2; plot(x,y)
>hold on
>z=x.^(1/2); plot(x,z,'r')
>title('My plot')
>xlabel('valori in x')
>ylabel('valori in y')
>hold off

```

4. Autovalori e autovettori

```

> A=[1 2 3; 4 5 6; 7 8 9];
> [X,E]=eig(A)
> A*X - X*E
> plot(diag(E),'*')

```

5. Statistica

```

> x = randn(1000,1);
> hist(x)
> histc(x)

```