PRACTICA 0

1.3
Up Arrow and command "commandhistory"
1.4
Is the current folder where the files are stored. Visualization modes can be changed by clicking the arrow next to the Current Folder title.

2. MATRIX

2.1
v1 = [12 23 54 8 6]

2.2
v2 = v1 + 10

2.3
plot(v2)

2.4
M = [1 4 22 7; 9 2 3 11; 49 55 6 3; 24 7 9 12]

2.5
Mt = M'

2.6
Mi = inv(M)

2.7
id = M*Mi =
   1.0000   0   0.0000   0
  -0.0000   1.0000 -0.0000   0
   0.0000   0.0000   1.0000 -0.0000
        0   0.0000   0.0000   1.0000

id == eye(4)

2.8
ans = 4×4 logical array
   1 1 0 1
   0 1 0 1
   0 0 1 0
   1 0 0 0
(is not all ones because it doesn't recognize 0.0000 and negative zeros as 0)

GRAPHICS

3. 2D PLOTS

3.1
Creates an array of consecutive elements starting for value 0 and adding 0.05 until 'x' reaches 5.

3.2
Displays a 2D graphic bar

3.3
Displays a stairstep graphic (only the top of each bar)

4. 3D PLOTS

4.1
Is a function of two variables, obtained by translating and scaling Gaussian distributions.
Is a 25x25 matrix.

4.2
mesh(X,Y,Z) creates a mesh plot, which is a three-dimensional surface that has solid edge colors and no face colors. The function plots the values in matrix Z as heights above a grid in the *x-y* plane defined by X and Y. The edge colors vary according to the heights specified by Z.
The waterfall function draws a mesh similar to the meshz function, but it does not generate lines from the columns of the matrices. This produces a "waterfall" effect.

4.3
surf(X,Y,Z) creates a three-dimensional surface plot, which is a three-dimensional surface that has solid edge colors and solid face colors. The function plots the values in matrix Z as heights above a grid in the *x-y* plane defined by X and Y. The color of the surface varies according to the heights specified by Z.
surfl is the same as surf but adds highlights from a light source.

5. IMAGES AND MATRICES

5.1
colormap summer: green tones
colormap winter: blue tones
colormap spring: red tones

6. LINE PLOTTING

6.1
first line: creates an array called x that goes from 0 to 1 increasing 0.02 each element.
second line: stores in a variable called hndl a plot where X axis is the previous array and Y axis is the function humps(x), that attempts to find a root of one equation with one variable.
third line: assigns cyan color to the plot.

6.2
hndl =
  Line with properties:

          Color: [0 0.4470 0.7410]
      LineStyle: '-'
      LineWidth: 0.5000
         Marker: 'none'
     MarkerSize: 6
  MarkerFaceColor: 'none'
          XData: [1×51 double]
          YData: [1×51 double]
          ZData: [1×0 double]

6.3
set(hndl, 'Color', 'green')

6.4
set(hndl, 'LineWidth', 2)

6.5
hndl = plot(x,humps(x),'o')

6.6
hndl = plot(x,humps(x),'o','MarkerSize',12)

7. 3D SURFACE PLOTS

7.1
first line: function of two variables, obtained by translating and scaling Gaussian distributions
second line: displays a shaded surface based on a combination of ambient, diffuse, and specular lighting models.
third line: varies the color in each line segment and face by interpolating the colormap index or true color value across the line or face

fourth line: indicates the colour of the figure
fifth line: disable the axis

11. MULTIDIMENSIONAL ARRAYS

11.2
Creates a matrix where each ';' indicates a new row

11.3
Creates a second dimension A matrix

11.4
A(3,2,2)