1. Make the following variables:
   a. aVec = [5 4.8 ... -4.8 -5] (all the numbers from 5 to -5 in increments of -0.2)
   b. bMat = a 9x9 matrix full of 2’s (use ones or zeros)
   c. cMat = a 9x9 matrix of all zeros, but with the values [1 2 3 4 5 4 3 2 1] on the main diagonal (use zeros, diag)

2. Random variables.
   a. Generate a random 4x7 matrix G which is formed by the numbers between 0 and 1.
   b. Make a vector of 500 random numbers from a Normal distribution with mean 2 and standard deviation 5 (randn). After you generate the vector, verify that the sample mean and standard deviation of the vector are close to 2 and 5 respectively (mean, std).

3. Plot
   a. Open a script and name it PlotQuestion.m. Write the following commands in this script.
   b. Make a new figure using figure
   c. We’ll plot a sine wave and a cosine wave over one period
i. Make a time vector t from 0 to 2π with enough samples to get smooth lines

ii. Plot sin(t)

iii. Type hold on to turn on the ‘hold’ property of the figure. This tells the figure not to discard lines that are already plotted when plotting new ones. Similarly, you can use hold off to turn off the hold property.

iv. Plot cos(t) using a red dashed line. To specify line color and style, simply add a third argument to your plot command (see the plot help).

This argument is a string specifying the line properties as described in the help file. For example, the string ‘k:’ specifies a black dotted line.

d. Now, we'll add labels to the plot

i. Label the x axis using xlabel

ii. Label the y axis using ylabel

iii. Give the figure a title using title

iv. Create a legend to describe the two lines you have plotted by using legend and passing to it the two strings ‘Sin’ and ‘Cos’.

e. If you run the script now, you'll see that the x axis goes from 0 to 7 and y goes from -1 to 1. To make this look nicer, we'll manually specify the x and y limits. Use xlim to set the x axis to be from 0 to 2π and use ylim to set the y axis to be from -1.4 to 1.4.