

This assignment is to be completed as a script in cell mode. For an example, please see blackboard. The file should be published through Matlab as a pdf once you complete the assignment. The script should be **well commented** so that it is easy for someone else to follow along with what you are doing.

Question 1

- a) Plot a sine function with amplitude of 2 and frequency of π radians through the range of 0 to 5π . Use a sampling rate of $\pi/100$. Set the scaling for the plot axis as $x_{\max} = 5\pi$, $x_{\min}=0$, $y_{\max}=3$, $y_{\min}=-3$. Plot the sine wave as a solid red line. Label x axis as "Time" and y axis as "Amplitude". Title the graph with your first and last name.
- b) On the same plot, plot a cosine function with amplitude 0.75 and frequency of $\pi/2$ radians through the same range. Plot the cosine wave as a dashed black line.
- c) Create a legend for your plot. Make sure it is labeled correctly.

Question 2

1. Generate a 1 by 500 vector of random numbers with a Gaussian distribution, using a mean of 5 and a standard deviation of 3. Plot these as discrete values. The x axis should be labeled 'Sample Number,' and the y axis should be labeled 'Value'.
 - a. **Hint:** the `randn(m,n)` function generates values from a Gaussian distribution.
2. Identify the value and index of the maximum and minimum values in your data set. Mark these on the same plot as red circles.
3. What are the actual mean and standard deviation of your sample? Print out these values to the command window.

To publish your script:

1. Go to the publish tab in Matlab.
2. Select the drop-down under 'Publish'
3. Edit Publishing Options
4. Output file format should be pdf. This is the only change you need to make.

5. Press publish, and save the resulting pdf with your name and the assignment number in the title.

Please submit the completed assignment as a PDF file through blackboard.