

Intro To MATLAB Exercises to be Turned in (PH320 Version)

Assignment #1- Plotting Functions

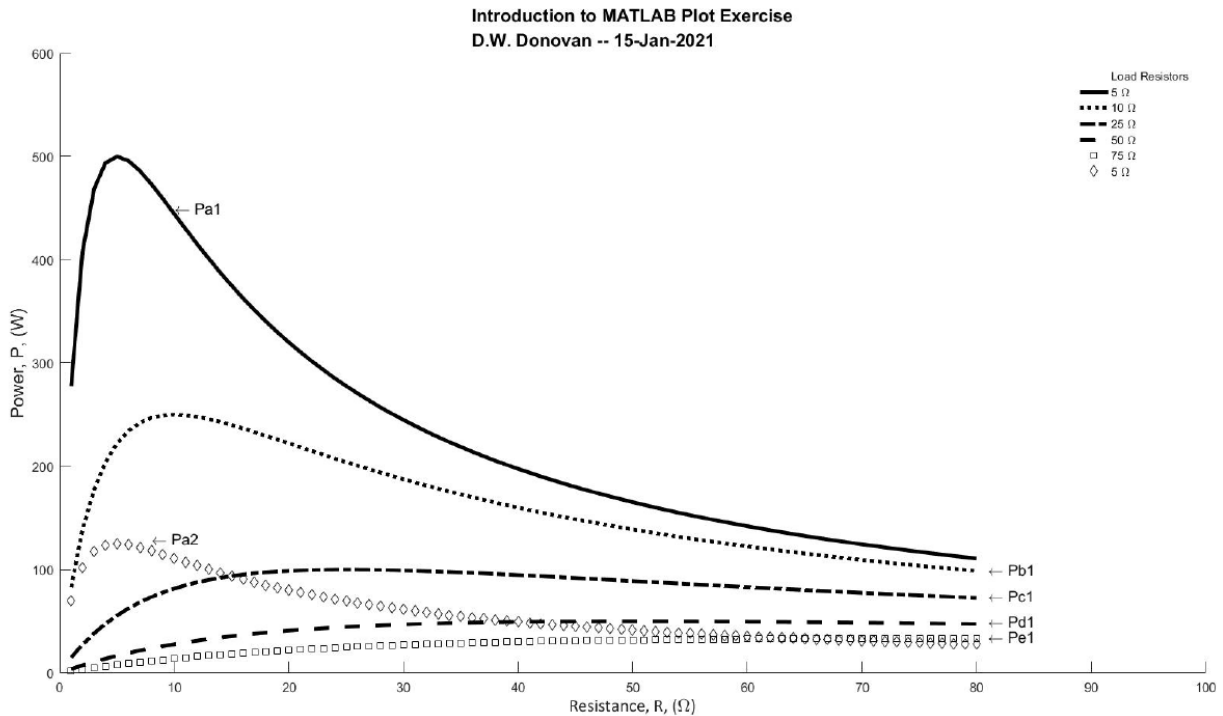
Use the following information to produce the plot shown below.

$$\text{Basic equation is } P = \left(\frac{V}{R+R_0} \right)^2 R$$

Let R vary from 1 to 80 in steps of 1.

Find 6 P's: Let V be 100 and R₀ be 5, 10, 25, 50, 75 and let V be 50 and R₀ be 5

Produce the plot using LineWidth of 3; MarkerSize of 6, FontSize of 14 for title, and axis labels, and use FontSize of 12 for text commands.



Assignment #2- Linear Regression

For the set of data points below, plot the data and calculate the best straight line. Plot the line with the data. Be sure to note the slope and y intercept on the graph, as well as in the m-file. Use LineWidth of 3, MarkerSize of 7, and FontSize of 14 for title and axis labels. Make the line colored red and the markers colored blue.

x (unitless)	y (unitless)
-20.0000	-51.1100
-16.0000	-41.7900
-12.0000	-32.4700
-8.0000	-23.1500
-4.0000	-13.8300
4.0000	4.8100
8.0000	14.1300
12.0000	23.4500
16.0000	32.7700
20.0000	42.0900
24.0000	51.4100
28.0000	60.7300
32.0000	70.0500
36.0000	79.3700
40.0000	88.6900

Assignment #3 - Solving Simultaneous Equations

Solve the system of equations given below. Find the values of the variables and show that they do indeed solve the set of equations

$$\begin{aligned}11.61 x_1 - 6.80 x_2 &= 6 \\2.40 x_3 - 6.70 x_4 &= 24 \\x_3 - x_2 &= 300 \\11.52 x_2 - 6.80 x_1 + 9.80 x_3 - 2.40 x_4 &= -15\end{aligned}$$

Items to turn in:

Each m-file should be named in the form "DonovanPH320Lab01E01.m" you would obviously replace my name with your name and you would have E01 for the plot exercise, E02 would be the regression exercise and E03 would be the simultaneous equation exercise.

Put all 3 m-files into a zip file use the file name of the form "DonovanPH320Lab01.zip" and email it to me at ddonovan@nmu.edu