MECH 307 Numerical Methods for Mechanical Engineering
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Homework #4

FORMAT of the file to be submitted:
1. All the m-files should be named as pr1.m, pr2.m and so.
2. The results (figure, table, or individual result such as x = 2.653, ..., and any comment) should be placed in a WORD file named as yourlastname_HW_04.doc
3. All the m-files should be inserted at the end of the WORD file using COURIER 9 font.
4. The WORD file and all the m-files should ZIPPED together, and the file should be named as yourlastname_HW_04.zip or (yourlastname_HW_04.rar).
5. Place the file to the following folder:
   F:\COURSES\UGRADS\MECH\MECH307\HOMEWORK\...

Problem 1.
An experimental data was collected as follows:

x	0	1	2	3	4	5	6	7
y	810	639	498	389	306	241	190	139

It is expected that x and y are related as follows: $y = Ae^{-Bx}$.
Calculate these: A = _____, B = _____, y(0.30) = _____.

Problem 2.
An experimental data was collected as follows:

x	0	1	2	3	4	5	6	7
y	1250	1700	1945	2160	2370	2545	2710	2890

It is expected that x and y are related as follows: $y = A + B\sqrt{x} + Cx$.
Calculate these: A = _____, B = _____, C = _____, y(8.0) = _____

Problem 3.
An experimental data was collected as follows:

x	10	20	30	40	50
y	705	926	948	1039	1538

It is expected that x and y are related as follows: $y = A + Bx^2 + C\sin(0.1x)$.
Calculate these: A = _____, B = _____, C = _____, y(0) = _____.