

EXAM 1 – Computer PORTION

Put all of your code in one m-file and name it: `lastname_firstname.m` (all lower case).

Include your name, section number, and CM number in the header section of your code. There should be no output other than what is asked for.

Problem (50 pts)

Download the Excel spreadsheet named “coal.xls” from the course web page at <http://www.rose-hulman.edu/ME123/courseware.shtml>

It contains two rows of data. The first row lists the date in November while the second row lists the amount of coal (in tons) delivered to a small power plant for 14 days from Nov 15 to Nov 28.

Write a MATLAB code to

- a) Read in the data stored in the Excel spreadsheet. Print the contents of the file to a text file `lastname_firstname1.txt`, where `lastname` and `firstname` should be replaced by *your* last and first names, respectively. Do not forget to use the **fclose** command in your code. The first 3 lines of the text file should be:

```
Date      Tons of Coal
15        350
16        280
..        ..
..        ..
```

- b) Plot amount of coal delivered as a function of the date from 15 to 28. Properly label both axes, and give your plot a title.
- c) Assume that the price of coal for the first week is \$51.23 per ton and for the second week is \$57.48 per ton. Use the concept of a for loop to compute the power plant’s total coal cost for week #1 and for week #2. Print the answers to the screen using the following format:

```
Week      Cost of Coal
1         $#####.##
2         $#####.##
```

When you are done, post your m-file answer to the correct folder:

1. Double-click on “My Network Places”. If it is not on your desktop, look in your start menu.
2. Double-click on “[DFS] Root”. *Not [AFS] Root.*
3. Log in with your email address and password.
4. Double-click on Academic Affairs.
5. Double-click on ME.
6. Double-click on ME123.
7. Double-click on Exams.
8. Double-click on the folder with your section number.
9. Copy and paste your m-file to this folder.

NOTE: All programming must stop at 8:30pm. You will have a few minutes after that to post your file if you need that time.