ME 120 Experimental Methods

Homework #3: LabView, and Calibration

1. (15 pts.) Create a sub-VI to convert kPa to psi.
   - Make the input on the front panel to be a slider, and also show the corresponding digital display.
   - Make the output a dial gage, and also show the corresponding digital display output.
   - Make sure you edit the sub-VI icon and wire the terminals. Add appropriate documentation about the VI (such as what it does, what the input is, what the output is, etc.) under the Documentation menu pick (File → VI Properties → Documentation category).
   - Verify that you can use your sub-VI in another VI by creating another VI and using your sub-VI in it.
   - Turn in hardcopy showing the Front Panel, Block Diagram, and documentation for your sub-VI, and hardcopy showing the Front Panel of the VI that uses the sub-VI. When you go to print, follow the print wizard and select, 'Complete Documentation' at the 'Print contents' step.
2. (10 pts.) EMfE Prob. 6.2. Use a spreadsheet program to build the histogram. (In Excel, there is an 'Add-In' function called 'Histogram' available for you to do this. Look under the menu item, 'Tools' → 'Data Analysis'. If it does not appear, go to 'Tools' → 'Add-Ins' and select, 'Analysis Toolpak'. For more information, see the Excel help files, 'Data Analysis Tools', under 'Analysis Toolpak' in the Help Contents.)
   - To save ink when you print out your histogram, select 'none' for Area Format in 'Format Plot Area' and in 'Format Data Series'
3. (10 pts.) EMfE Prob. 6.4
4. (10 pts.) EMfE Prob 6.17
5. (10 pts.) EMfE Prob 6.32