Homework #1

Due in class, Thursday, 9/7.

Text Problems from Chapter 2:

2-1C, 2-10C, 2-14C, 2-21C, 2-24, 2-35.

AND

A typical utility bill is is on the class website (http://ceae.colorado.edu/~silverst/aren2110/) you may use this bill or one of your own to answer the following questions.

1. Charges for usage of natural gas (CH$_4$) are based on a unit called a therm. What is a therm?
2. For the utility bill, convert the charges for therms used during the month to kilojoules and to kilowatt hours.
3. Compare the cost per kwh for electricity and for natural gas at the base rates.
4. Excess use of electricity over the baseline usage amount can result in significantly higher rates (almost double the baseline rate/kwh for usage from 131-200% over the baseline and almost triple the baseline rate/kwh for usage over 300% of the baseline). However for natural gas, the higher rate for use over the baseline is a uniform rate/therm increase of 18% regardless of how much excess gas is used during the month. Explain why are the excess use charges for electricity so much higher than for natural gas?