Chem 155 Homework #1 Due in class, before the bell rings, on Mon. Jan. 12

Reading: Review/Skim Chapter 9, Read Chapter 10

Problems:

1) List seven strong acids
2) List six strong bases

3)A) Find at least one solution to the following 2nd order equation using successive approximations (also known as iterations). The answer(s) to within 1% is fine. Show your result after each step.

$$\frac{x^2}{.06 - x} = 2.14 \cdot 10^{-3}$$

3B) Find at least one solution to the following equation using the "graphing" method in Appendix C2 (or by graphing with a calculator—if you follow the graphing calculator method you must provide two solutions and a sketch of the graph). The answer(s) to within 1% is fine.

$$x^2 \frac{(4.00 - x)}{(5.00 + x)} = 1.23$$

4) Under what range of conditions is the "buffer equation" (Henderson-Hasselbalch equation) a reasonable approximation?

Chapter 10 Problems
10.1
10.2
10.4
10.9
10.15
10.27
10.39
10.43
10.48
10.50 – Also answer: Why might you want to avoid using this buffer in practice? Use table 10.2 to select a suitable alternative.
10.52
10.67