Chem 155 Homework #1 Due in class, *before the bell rings* on Mon. Jan. 9
No late homework will be accepted—see syllabus
Some of this material won't be covered until after the assignment is due. That is intentional.
Reading: Review Chapter 9, Read Chapter 10
Problems. Note: the problems each week are the *minimum* set to start you learning the material—it is expected that after working these problems you will be more proficient, and able to tackle even more difficult problems (in other words, the exam problems are usually harder than the homework). You might consider working additional problems such as *'ed problems in Oxtoby and problems from previous midterm exams to prepare for the exams.

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 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.

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

Chapter 10 Problems
10.1
10.2
10.9
10.15
10.27
10.39
10.43
10.48 -- Also answer: if you have access to stock solutions of 1.00 M H_2CO_3, 1.00 M H_3PO_4, and 1.00 M NaOH solutions, what concentrations of each would you use to prepare the desired pH 7.40 buffer with a final total concentration of 50 mM of X (X= either carbon or phosphorous species depending on your answer to 10.48)
10.50 – Also answer: Why might you want to avoid using this buffer in practice – *specifically what pH conditions could be very hazardous*? Use table 10.2 to select a suitable alternative.
10.52
10.67