

Chem 155 Homework #1 Due at the start of class on Jan 14

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 would you want to avoid using this buffer? Use table 10.2 to select a suitable alternative.

10.52**10.67**