Chem 155 Homework #2 Due at the start of class on Weds Jan 18 (MLK day Mon Jan 16)

Reading: Finish Chapter 15 (if you haven't already!), Read all of Chapter 16

Problems:

Chapter 15 Problems
15.77
15.116
15.118

Chapter 16 Problems
16.3
16.14
16.22
16.29
16.34
16.52
16.54
16.35
16.59
16.76 (Note: Oxtoby typo: amphoteric equilibrium is section 15.9 not 10.8!)

Extra Problem:
The article by R.A. Feely et al. Science, v305 p362-366 (2004) gives a complicated account of the various processes that take place as CO_2 is dissolved in the ocean. You will need to use information provided in this paper to answer the following two questions. The UW libraries homepage has instructions for accessing library journals from off campus http://www.lib.washington.edu/help/connect.html. *Part of the homework assignment is to access the journal yourself, please do not post the article to the discussion board, or share your copies with your classmates.*

1a) According to wikipedia, seawater has a density of 1.025 g/mL and is 0.04% calcium by mass. Assuming k_{sp} for calcite is 3.3×10^{-9}, determine the concentration of dissolved $[CO_3^{-2}]$ off the Washington state coast at a depth of ~500 m using the data in the paper.

1b) At this same depth, is Ω larger or smaller for aragonite (explain briefly)?