Chem 155 Homework #8 Due at the start of class on Mon. March 2
Reading: Chapter 16

Chapter 15 Problems:
15.38
15.44
15.46
15.54
15.55
15.60
15.62
15.74
15.86 a)
15.93

Chapter 16 Problems:
16.2
16.4
16.6

Additional Problems:
1) Use the radial probability distribution to calculate the most probable distance of finding an electron from the nucleus of a hydrogen atom.

2) Quantum tunneling occurs when the wave function of a particle "leaks through" a potential energy barrier that it could not cross classically. This is a very important process in chemistry—tunneling is common in redox (electron transfer) reactions, and also in some proton motion (the umbrella inversion of ammonia is an example). Tunneling also forms the basis for an important form of microscopy (see the images on the first page of Oxtoby Unit 1, on page 502). However, tunneling events involving atoms such as C are generally much rarer, and I have never been able to successfully tunnel through my office door no matter how fast I'm walking. Explain.