UV-vis Pre Lab

1. What is particle in a box? What types of systems in the real world mimic this model and what assumptions make these systems fit the model (what are the assumptions made for the model)?

2. What is the Beer Lambert law? Where does it come from and what information does it give us?

3. When we turn on the spectrometer to take an absorption spectrum, what are we actually measuring with our spectrometer?

EXTRA CREDIT:

Calculate the concentration of your aqueous $CoCl_2$ solutions in moles per cubic Smoot. Explain the significance of the Smoot in MIT history (including a summary of the famous story!) in a paragraph.

Or...

When taking the UV-visible absorption spectrum of $CoCl_2$, you will notice that the peak has two humps, representing two unique electronic transitions. What transitions do these correspond to? Hint: Look up the Jahn-Teller effect (cobalt II is a metal with 7 d-electrons, which is octahedral in water).

5.35 / 5.35U Introduction to Experimental Chemistry
Fall 2012