Results #4 Week 2—Vitamin Pill Name _____

Lab day: M T W Th F

1. How many milligrams of iron did you find in your vitamin pill? Use your class's average extinction coefficient. *Include units for all answers. Absorption has no units. Use correct significant figures (one sig fig for uncertainty; value should be rounded to same digit as uncertainty). Attach calculations.*

	value	uncertainty
Extinction coefficient (class average). Uncertainty = standard deviation.		
Absorption of your measured vitamin pill solution. Uncertainty was estimated when you made your measurement.		
Concentration of phenanthroline complex in measured vitamin pill solution. Recall: For multiplication and division, RU = (sum of RU's) and AU = RU|value|.		
Moles of phenanthroline complex produced from your vitamin pill. Assume volumetric glassware has no error. When you multiply a value by a number with no uncertainty, multiply the uncertainty by that number as well.		
Moles of iron in your vitamin pill.		
Milligrams of iron found in your vitamin pill. Calculate uncertainty. Use 5 sig figs for your molar mass. Assume the molar mass has no error.		

2. How does the amount of iron compare with what is stated on the label? Include units.

mg iron measured	mg iron stated on label	% error

3. Uncertainty gives you a range of possible values for your measurement (e.g. 15 ± 3 means between 12 and 18). Is the mass of iron stated on the label in agreement with the range of possible values for your measurement?

4. List at least two possible sources of error in this experiment. State how each will affect your results (e.g. higher or lower yield). Do not include human error. One of the sources of error should be significant enough to account for the % error stated above.