

Prelab #4 Week 2—Vitamin Pill Lab Name \_\_\_\_\_

Lab section: M T W Th F

- Please put your answers in boxes provided
- Where applicable, report answers with the correct number of significant figures.

1. Attach your Beer's Law plot from last week.
2. What will you add to your vitamin pill solution in order to make your iron-phenanthroline complex solution? List chemicals in the order in which they will be added. Include concentrations and amounts. Indicate what glassware is necessary for each (do not use volumetric glassware unless necessary).

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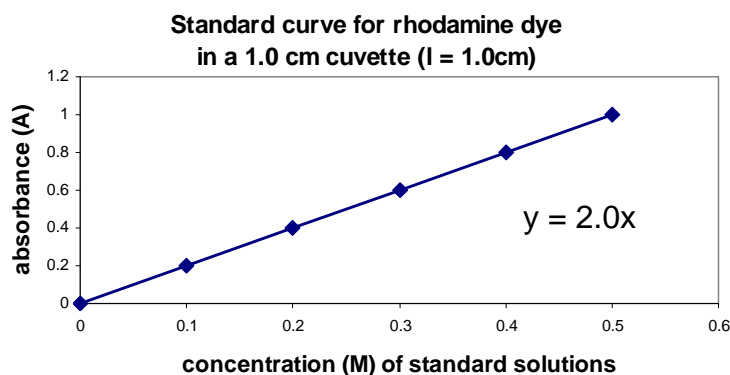
3. Hypothesis. How do you expect your result to compare to the amount of iron reported on the vitamin bottle? Explain.

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4. Let's say you prepared several standard solutions with known concentrations of rhodamine dye. You measured the absorbance of each solution at 550 nm and plotted  $A$  vs.  $c$  as shown below:



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What is the concentration of a solution whose absorbance is 0.32? Use the equation on the plot. Show your work.

5. You crushed and processed your vitamin pill and finally have 100.00 mL of solution in a volumetric flask containing the iron from your vitamin pill. You prepared a dilution by taking 1.00 mL of solution from the 100.00 mL flask and diluting it to 50.00 mL. Let's say the molarity of this 50.00 mL solution was determined to be  $1.289 \times 10^{-6}$  M Fe(II).

- a) What is the molarity of Fe(II) in the original 100.00 mL solution?

- b) How many grams of Fe(II) are in the 100.00 mL solution?