Experiment 2: Spectrophotometric Determination of Iron in Vitamin Tablets

Grading Rubrics for _____

Notebook (**out of 8**): _____

-1: Missing entry in Table of Contents

-1: Printouts not taped to separate pages (this makes it hard for me to write comments!)

-2: Printouts not taped to notebook at all

-1: Incomplete documentation of how calculations were performed

-1: No mention of trends in color intensity

-1: Thin in details

+1 (only to offset notebook points lost): Excellent documentation

Data Analysis (**out of 12**) _____

-1: LINEST error

-1: Wrong x-values for calibration curve data

-1: Draconian rounding of x-values for calibration curve data

-1: Didn't use slope to find ε/wrong ε

-1.5: No 95% confidence interval for ε

-1: Incorrect 95% confidence interval for ε

-1: Wrong $[Fe^{2+}]$ in unknown solution

-1: Incorrect s_x from error propagation

-1: Used wrong s_x value for mg Fe in tablet

-1: Didn't convert s_x value to units of mg Fe in tablet

-1: Redundantly dividing s_x by $\sqrt{n}$

-2: Poor error analysis

Accuracy and Precision of Results (**out of 5**) _____

-1: mg Fe in tablet very far from consensus value

-1: Very inaccurate absorbances

+1: Great precision

TOTAL (**out of 25**) _____

Great suggested improvements: Repeated measurements on standards and sample, use some method (like a Sharpie mark) to help keep cuvet orientation the same, unpack the dense description of the wet chemistry procedure. Look for these improvements in Spring 2010!