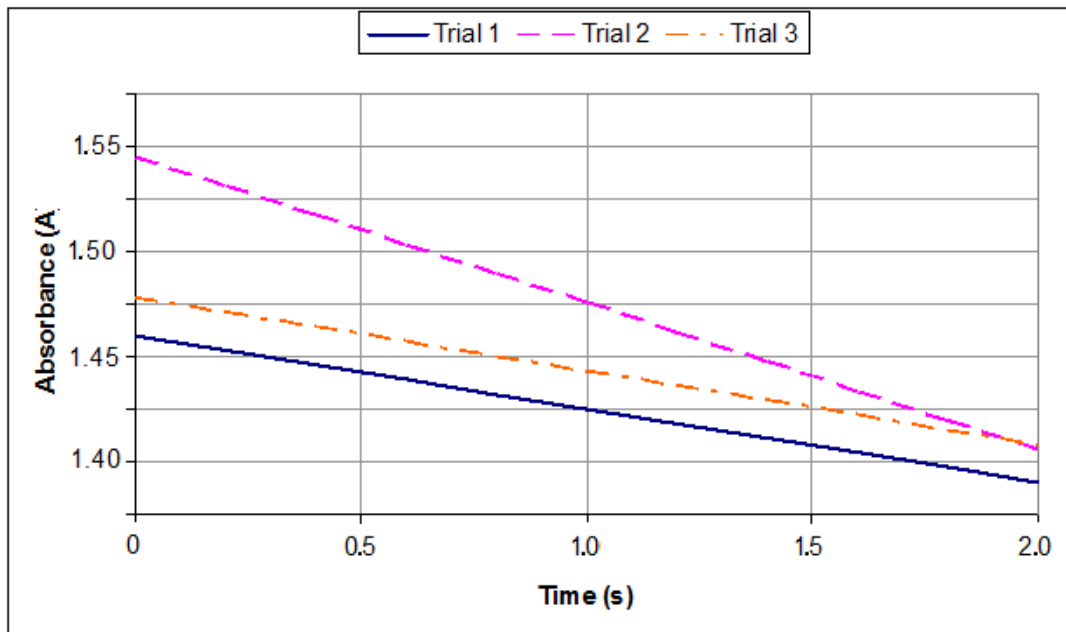


Exp 1 - Pre-lab Questions – The rate of a chemical reaction

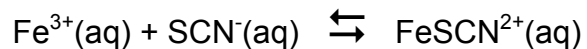
1. Consider the generic reaction found in the introduction ($2A + B \rightarrow C + D$). Given the following data and graph, determine the rate law for the reaction.

	Trial 1	Trial 2	Trial 3
[A]	0.20 M	0.28 M	0.20 M
[B]	0.20 M	0.20 M	0.40 M



Exp 2 - Pre-lab Questions - Determination of an Equilibrium Constant

1. In an experiment, equal volumes and concentrations of FeCl_3 (aq) and NaSCN (aq) were mixed together and reacted according to the equation:



The equilibrium concentration of $\text{FeSCN}^{2+}(\text{aq})$ was 3.0×10^{-4} M and the equilibrium constant was determined to be 95.5. Calculate the initial stock concentration of FeCl_3 (aq) and NaSCN (aq). Show your calculations

Exp 4 - Pre-lab Questions - Electrochemistry Inquiry

1. Calculate all the standard potentials for the different combinations of metals used in the lab. Place a copy here and in your notebook.

2. Using a simple flow chart, determine how you accomplish the dilution required with the given equipment when creating the concentration gradient cell that will be made in part 2 below. Place a copy here and in your notebook.

3. Determine the potential for the concentration gradient cell that will be made in part of the experiment. Record this in your notebook as well.

4. Calculate the concentration of Zn^{2+} (aq) required to produce potential of 1.083 V with an electrochemical cell using a zinc electrode and Zn^{2+} solution in combination with a copper/ Cu^{2+} [0.01 M] half cell.

Exp 5 - Pre-lab Questions - Organic I

1. Calculate the theoretical yield of your Aspirin from the procedure.

2. What is the melting point of pure Aspirin?