Pre-Lab Questions **Redox Titration**

1. The chemistry of this experiment can be broken into four chemical reactions. Predict the products and write the net ionic equation for each of the following steps:
(a) The sodium hypochlorite reacts with hydrochloric acid producing chlorine gas. What is the reducing agent in this reaction?

(b) Chlorine reacts with potassium iodide. What would the color of the resulting solution be? What is the oxidation half-reaction for this step?

(c) Free iodine combines with the excess iodide ion yielding the triiodide ion, I_3^-(aq). Why does the triiodide ion dissolve in water where elemental iodine, I_2 does not? How does the oxidation number of iodine change in this step?

(d) However, this reaction did not occur in steps but rather as one reaction. Write the net equation for reactions (a) through (c) above.

(e) In this experiment, the triiodide ion liberated by the hypochlorite ion is titrated with sodium thiosulfate. Write the net ionic equation for this reaction.

(f) What is the net ionic equation for the overall reaction? That is, what is the summary reaction of the steps above? How many electrons are transferred in this reaction?