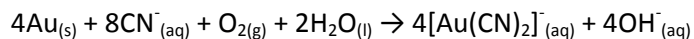


AP Chemistry
Chapter 5 – Solution Chemistry
Additional Sample Problems

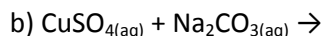
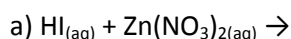
1. Identify the oxidizing agent and the reducing agent in the following reaction:



2. A 0.235g sample of a solid that is 92.5% NaOH and 7.5% $\text{Ca}(\text{OH})_2$, by mass, requires 45.6mL of a $\text{HCl}_{(aq)}$ solution for its titration. What is the molarity of the $\text{HCl}_{(aq)}$?

3. what molarity of $\text{NaF}_{(aq)}$ corresponds to a fluoride ion content of 0.9mg F^{-}/L , the federal government's recommended limit for fluoride ion in drinking water?

4. Predict whether a reaction is likely to occur in each of the following cases. If so, write a net ionic equation.

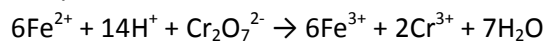


5. A 25.00mL sample of 0.132M HNO_3 is mixed with 10.00mL of 0.318M KOH.

a. Is the resulting solution acidic, basic, or exactly neutralized?

b. What is the pH of the resulting solution?

6. An iron ore sample weighing 0.9132g is dissolved in $\text{HCl}_{(aq)}$, and the iron is obtained as $\text{Fe}^{2+}_{(aq)}$. This solution is then titrated with 28.72mL of 0.05051M $\text{K}_2\text{Cr}_2\text{O}_7_{(aq)}$. What is the % Fe by mass in the ore sample?



7. Explain why the following reaction cannot occur as written:

