

Redox Reactions W/S 1

1. In the reaction $\text{Sn}_{(s)} + \text{Br}_{2(l)} \rightarrow \text{SnBr}_{2(s)}$, what is being oxidized and what is being reduced?
2. Identify the oxidizing agent and the reducing agent in the reaction $\text{CuS}_{(s)} + \text{H}_{2(g)} \rightarrow \text{Cu}_{(s)} + \text{H}_2\text{S}_{(g)}$
3. Use the table of reduction half reactions to determine if the reaction $3\text{Zn}_{(s)} + 2\text{Au}(\text{NO}_3)_3_{(aq)} \rightarrow 2\text{Au}_{(s)} + 3\text{Zn}(\text{NO}_3)_2_{(aq)}$ is spontaneous. Hint: write the reduction half reactions first.
4. Use the table of reduction half reactions to determine if the reaction $\text{Zn}_{(s)} + 2\text{CaCO}_3_{(aq)} \rightarrow \text{Ca}_{(s)} + \text{ZnCO}_3_{(aq)}$
5. Use the table of reduction half reactions to determine if the reaction $\text{Al}_{(s)} + \text{Fe}_2\text{O}_3_{(s)} \rightarrow \text{Fe}_{(l)} + \text{Al}_2\text{O}_3_{(s)}$ is spontaneous
6. If the reaction $\text{Al}_{(s)} + \text{Fe}_2\text{O}_3_{(s)} \rightarrow \text{Fe}_{(l)} + \text{Al}_2\text{O}_3_{(s)}$ is spontaneous, how many electrons are transferred?