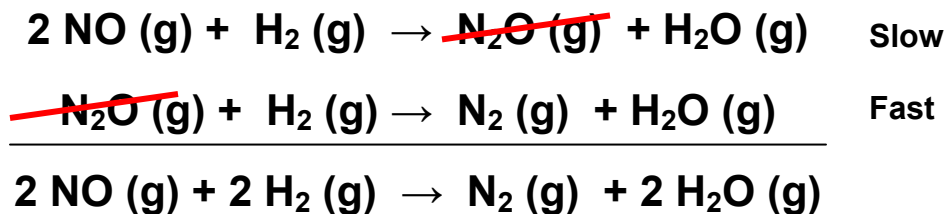
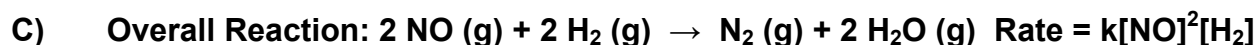
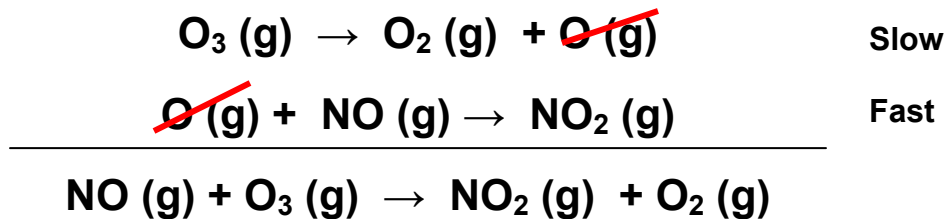
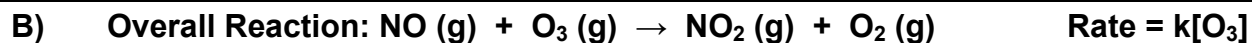
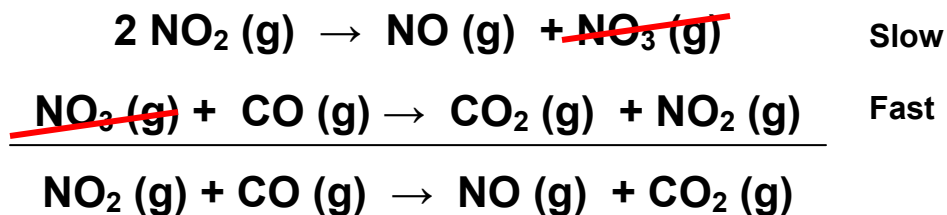
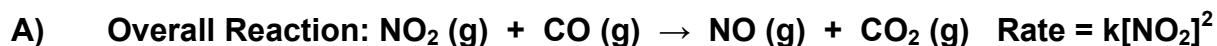
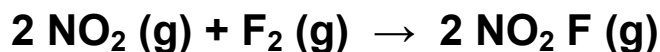


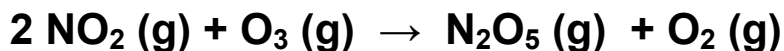
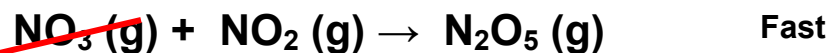
For each of the following reactions, determine a possible mechanism based on the overall reaction and the experimental rate law. Also, identify the rate-limiting step of your mechanism.



D) Overall Reaction: $2 \text{NO}_2 (\text{g}) + \text{F}_2 (\text{g}) \rightarrow 2 \text{NO}_2\text{F} (\text{g})$ Rate = $k[\text{NO}_2][\text{F}_2]$



E) Overall Reaction: $2 \text{NO}_2 (\text{g}) + \text{O}_3 (\text{g}) \rightarrow \text{N}_2\text{O}_5 (\text{g}) + \text{O}_2 (\text{g})$ Rate = $k[\text{NO}_2] [\text{O}_3]$



F) Overall Reaction: $2 \text{NO} (\text{g}) + \text{Cl}_2 (\text{g}) \rightarrow 2 \text{NOCl} (\text{g})$ Rate = $k[\text{NO}][\text{Cl}_2]$

