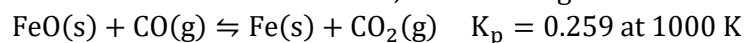
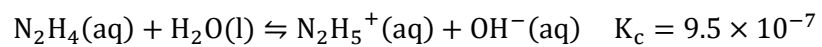


1. When iron(II) and carbon monoxide are mixed, the following reaction occurs

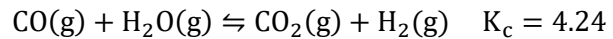


What are the equilibrium partial pressures of CO and CO₂ at 1000 K if the initial partial pressures are $P_{\text{CO}} = 1.000 \text{ atm}$ and $P_{\text{CO}_2} = 0.500 \text{ atm}$? What is the total pressure at equilibrium?

2. A 0.200 solution of N_2H_4 is mixed with water creating a solution initially already close to equilibrium. What are the concentrations of N_2H_4 , N_2H_5^+ , and OH^- once equilibrium is reached?



3. Calculate the equilibrium concentrations of CO_2 , H_2 , CO , and H_2O at 800 K if only CO and H_2O are present initially at concentrations of 0.150 M each.



4. Calculate the equilibrium concentrations of H_2 , I_2 , and HI at 700 K if the initial concentrations are $[\text{H}_2] = 0.100 \text{ M}$ and $[\text{I}_2] = 0.200 \text{ M}$.

