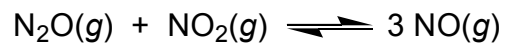


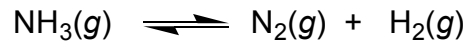
General Chemistry I
Chapter 17: Example Problems on Chemical Equilibrium

1. For the reaction



$K = 1.4 \times 10^{-10}$. In a reaction vessel, the initial concentrations of the three species are $[\text{N}_2\text{O}]_0 = 0.0750 \text{ M}$, $[\text{NO}_2]_0 = 0.0500 \text{ M}$, and $[\text{NO}]_0 = 0$. Find the equilibrium concentration of NO.

2. Consider the unbalanced reaction



When the reaction is balanced with the smallest whole-number coefficients, $K = 9.0$.

- (a) Balance the chemical reaction with the smallest whole-number coefficients.
- (b) A reaction mixture is prepared with $[\text{NH}_3]_t = 1.0 \text{ M}$, $[\text{N}_2]_t = 2.0 \text{ M}$, and $[\text{H}_2]_t = 2.0 \text{ M}$. Predict if the reaction will move left or right to reach equilibrium, and derive the equation one would solve to calculate the equilibrium concentration of all three species.