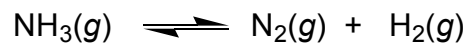


General Chemistry II
Chapter 9: More Example Problems on Chemical Equilibrium

3. 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.