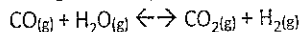


ICE Practice:

1. 1.00 L reaction vessel contained 0.750 mol of CO(g) and 0.275 mol of H<sub>2</sub>O(g). After one hour, equilibrium was reached according to the equation:



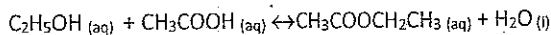
Analysis showed that 0.250 mol of carbon dioxide was present. What is the equilibrium constant for this reaction?

2. Consider the equilibrium  $3\text{I}_2(g) + 6\text{F}_2(g) \leftrightarrow 2\text{IF}_5(g) + \text{I}_4\text{F}_2(g)$

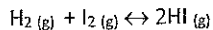
a) At a certain temperature 3.00 mol of F<sub>2</sub> and 2.00 mol of I<sub>2</sub> are introduced into a 10.0 L container. At equilibrium the concentration of I<sub>4</sub>F<sub>2</sub> is 0.0200 M. Calculate K<sub>eq</sub> for the reaction.

b) At a different temperature, 6.00 mol of IF<sub>5</sub> and 8.00 mol of I<sub>4</sub>F<sub>2</sub> are introduced into a 5.00 L container. At equilibrium 6.00 mol of I<sub>4</sub>F<sub>2</sub> are left. Calculate K<sub>eq</sub> for the reaction.

3. 1.00 mol of ethanol and 1.00 mol of acetic acid are dissolved in water and kept at 100°C. The volume of the solution is 250mL. At equilibrium, 0.25mol of acetic acid has been consumed in producing ethyl acetate. Calculate K<sub>eq</sub> at 100°C for the reaction. Are products or reactants favored?



4. 0.0175 mol of H<sub>2</sub> and I<sub>2</sub> are placed in a 1.00L flask at 1000K. When equilibrium has been reached, 0.0276mol of HI has been formed. Calculate K<sub>eq</sub> at 1000K for this reaction. Are products or reactants favored?



5. 1.00 mol of SO<sub>2</sub> and 1.00 mol of O<sub>2</sub> are placed in a 1.00L flask at 1000K. When equilibrium has been achieved, 0.925 mol of SO<sub>3</sub> has formed. Calculate K<sub>eq</sub> at 1000K for this reaction. Are products or reactants favored?

