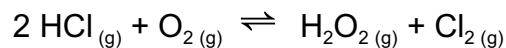
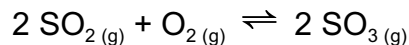


## ICE tables - Chemistry is cool!!

1. Initially 4.00 mol of  $\text{HCl}_{(g)}$  and 4.00 mol of  $\text{O}_{2(g)}$  were placed in a 1.00 L vessel and allowed to establish equilibrium. If the vessel contained 0.500 mol of  $\text{Cl}_{2(g)}$  at equilibrium, what is the value of  $K_{\text{eq}}$ ? **(0.00794)**

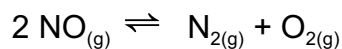


2. Consider the equilibrium:



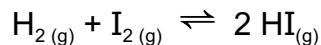
An initial mixture composed of 0.040 mol of  $\text{SO}_2$  and 0.0250 mol of  $\text{O}_2$  were put in an empty 2.00 L reaction vessel. After equilibrium was reached, the concentration of  $\text{SO}_3$  was 0.014 mol/L. What is the equilibrium constant  $K_{\text{eq}}$  for this system? **(990)**

3. The equilibrium below occurs when nitrogen monoxide is placed in a closed container and decomposes.



When 0.250 mol of  $\text{NO}_{(g)}$  is placed in a sealed 1.0 L container at a constant temperature, 40.0% of it decomposes. Calculate the equilibrium constant at this temperature. **(0.111)**

4. 2.50 mol of  $\text{H}_{2(g)}$  and 2.50 mol of  $\text{I}_{2(g)}$  are placed in a 1.00 L container at 127 °C. When the equilibrium below is reached, 35.5 % of  $\text{I}_{2(g)}$  has reacted. Calculate the value of the equilibrium constant at 127 °C. **(1.21)**



0.500 mol of  $\text{H}_2\text{O}_2(\text{g})$  are placed in a 2.00 L flask at a certain temperature and allowed to establish the equilibrium below. If there are 0.150 mol of  $\text{O}_2(\text{g})$  in the flask at equilibrium, what is  $K$  for the reaction?

