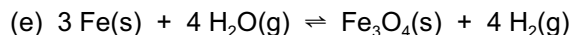
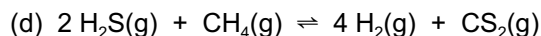
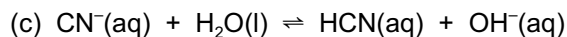
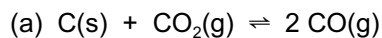
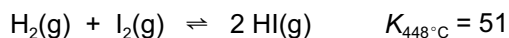


EQUILIBRIUM PRACTICE 4

1. Write the equilibrium constant expression for each of the following chemical systems.

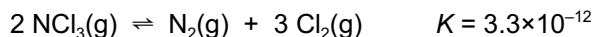


2. Consider the following equilibrium.



Initially, 0.40 mol of $\text{H}_2\text{(g)}$ and 0.40 mol of $\text{I}_2\text{(g)}$ are put into a closed 2.0-L container. Find the equilibrium concentration of HI(g) at 448°C .

3. Consider the following equilibrium.



Initially, 1.00 mol of nitrogen trichloride is put into a closed 4.0-L container. Find the equilibrium concentrations of the chlorine gas.

4. At 25°C , the solubility of lead(II) fluoride, $\text{PbF}_2\text{(s)}$, is 1.9×10^{-3} mol/L. Find the solubility product constant, K_{sp} , for lead(II) fluoride at this temperature.
5. Find the molar solubility of magnesium carbonate, $\text{MgCO}_3\text{(s)}$ in water.
6. For each of the following solutions, first write the chemical equation representing what happens to the compound in aqueous solution, then find the pH of the solution.
- (a) 0.20 mol/L hydrocyanic acid, HCN(aq)
- (b) 0.20 mol/L pyridine, $\text{C}_5\text{H}_5\text{N(aq)}$

ANSWERS

2. 0.31 mol/L
3. 8.9×10^{-4} mol/L
4. 2.7×10^{-8}
5. 2.6×10^{-3} mol/L
6. (a) 4.95
(b) 9.24