Name _____ AP Chemistry
Chapter 15 Equilibrium Practice problems

Section 15.1 – 15.3

1. Write the equilibrium expression for Kc for the following reactions:

(a) $2O_3(g) \rightleftharpoons 3O_2(g)$

(b) $2NO(g) + Cl_2(g) \rightleftharpoons 2NOCl(g)$

2. Write the equilibrium-constant expression for $H_2(g) + I_2(g) \rightleftharpoons 2HI(g)$

3. In the synthesis of ammonia from nitrogen and hydrogen, Kc = 9.60 at 300°C:

$$N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$$

Calculate Kp for this reaction at this temperature

4. For the equilibrium $2SO_3(g) \rightleftharpoons 2SO_2(g) + O_2(g)$ at a temperature of 1000 K, Kc has the value of 4.08×10^{-3}. Calculate the value for Kp.

5. Write the equilibrium-constant expressions for Kc and Kp for each of the following reactions.

(a) $CO_2(g) + H_2(g) \rightleftharpoons CO(g) + H_2O(l)$

b) $SnO_2(s) + 2CO(g) \rightleftharpoons Sn(s) + 2CO_2(g)$