Name ___________________________ Date _____________ Class ___________

Practice Problems

1. Write the equilibrium expression for the oxidation of hydrogen to form water vapor.
   \[ 2H_2(g) + O_2(g) \rightleftharpoons 2H_2O(g) \]
   \[ K_e = \frac{[H_2O]^2}{[H_2]^2[O_2]} \]

2. Write the equilibrium expression for the formation of rubryosyl bromide.
   \[ 2NO(g) + Br_2(g) \rightleftharpoons 2NOBr(g) \]
   \[ K_e = \frac{[NOBr]^2}{[NO]^2[Br_2]} \]

3. Write the equilibrium expression for the following reaction.
   \[ NO(g) + O_2(g) \rightleftharpoons O_3(g) + NO_2(g) \]
   \[ K_e = \frac{[O_3][NO_2]}{[NO][O_2]} \]

4. Write the equilibrium expression for the following reaction.
   \[ CH_4(g) + Cl_2(g) \rightleftharpoons CH_4Cl + HCl(g) \]
   \[ K_e = \frac{[CH_4Cl][HCl]}{[CH_4][Cl_2]} \]

5. Write the equilibrium expression for the following reaction.
   \[ CH_3(g) + H_2O(g) \rightleftharpoons CO(g) + 3H_2(g) \]
   \[ K_e = \frac{[CO][H_2]^3}{[CH_3][H_2O]} \]

6. Write the equilibrium expression for the following reaction.
   \[ CO(g) + 2H_2(g) \rightleftharpoons CH_3OH(g) \]
   \[ K_e = \frac{[CH_3OH]}{[CO][H_2]^2} \]

7. Write the equilibrium expression for the combustion of ethane at high temperature.
   \[ 2C_2H_6(g) + 7O_2(g) \rightleftharpoons 4CO_2(g) + 6H_2O(g) \]
   \[ K_e = \frac{[CO_2]^4[H_2O]^6}{[C_2H_6]^2[O_2]^7} \]

8. Write the equilibrium expression for the decomposition of ethane.
   \[ C_2H_6(g) \rightleftharpoons C_2H_4(g) + H_2(g) \]
   \[ K_e = \frac{[C_2H_4][H_2]}{[C_2H_6]} \]