Worksheet: Calculating K$_{eq}$ Name_____

1. What is equal in a state of equilibrium?

2. When equilibrium is reached, the concentration of reactants _____ (*increases, decreases, remains the same*) and the concentration of products _____ (*increases, decreases, remains the same*).

3. What does the value (the number) of K$_{eq}$ tell you?

4. Write a balanced equation for the synthesis of ammonia from its elements, including the word "energy" as a product:

   Write the K$_{eq}$ expression for the reaction above:

5. For the reaction, $2SO_3 \rightleftarrows 2SO_2 + O_2$, [SO$_3$]=0.37M, [SO$_2$]=0.25M, [O$_2$]=0.86M. Write the K$_{eq}$ equation, calculate K$_{eq}$, and explain what this value means.

6. For the equilibrium system $PCl_5 \rightleftarrows PCl_3 + Cl_2$, K$_{eq}$ = 35. If the concentrations of PCl$_5$ and PCl$_3$ are 0.025M and 0.68M respectively, what is the concentration of the Cl$_2$?