**Magnet Chemistry IB – Equilibrium Worksheet**

1. At 100oC, **KEQ = 0.135** for the following reaction: 3 H2(g) + N2(g) < -- > 2 NH3(g). In a reaction mixture at this temperature and at equilibrium calculate the [H2] if the equilibrium concentrations of [NH3] is 0.030M and [N2] = 0.50 M. SHOW ALL WORK!!!

2.  For the reaction CO(g) + H2O(g) → ← CO2(g) + H2(g), Kc = 23.3 at 600 K.

If 0.250 mol each of CO and H2O are introduced into a 1.00 L reaction vessel and equilibrium is established, how many moles each of CO2 and H2 will be present at equilibrium?

3. At high temperature, 2.00 mol HBr was placed in a 4.00 L container where it decomposed to give the following equilibrium equation: 2 HBr(g) < -- > H2(g) + Br2(g)

The equilibrium [Br2] = 0.0955 M. What is the value of KEQ at this temperature?

4. A mixture of 0.200 mol CO2, 0.100 mol H2, and 0.200 mol CO and 0.160 mol H2O gases are all added to a 2.00L flask and allowed to come to equilibrium. What is the concentration of every gas at equilibrium if Kc = 0.11??