Lab # 16

Pre-lab Questions: 3, 6

Post-lab questions:

1. a) Write down the equilibrium constant expression for the following reaction:

Co2+(aq) + 4 Cl-(aq) CoCl42-(aq)

## b) In which direction will the equilibrium shift if you

1. Add Cl-
2. Add CoCl42-
3. Remove Co2+
4. Predict the direction of the net reaction in each of the following equilibrium systems as a result of increasing the pressure by decreasing the volume
5. H2(g) + I2(g) 2 HI(g)
6. 2 SO3(g) 2 SO2(g) + O2(g)
7. CO(g) + H2(g) C(s) + H2O(g)
8. What effect does an increase in temperature have on each of the following systems in equilibrium?

I. H2(g) + I2(g) 2 HI(g) H = -9.45 kJ/mol

II. 2 SO3(g) 2 SO2(g) + O2(g) H = 198 kJ/mol

III. CO(g) + H2(g) C(s) + H2O(g) H = -131 kJ/mol