Unit 7 – Chapter 13: Chemical Equilibrium **Name _____**

Assignment #3: Equilibrium & Partial Pressures with ICE Charts **Period _____**

1) For the reaction

$N_2O_{4\,(g)} \longleftrightarrow 2\ NO_{2(g)}$ $K_p = 0.25$

Calculate the equilibrium partial pressures of both species when the initial pressure of NO_2 is 0.050 atm.

2) At 35^0C, $K_c = 1.6 \times 10^{-5}$ mol/liter for the reaction:

$2\ NOCl_{(g)} \longleftrightarrow 2\ NO_{(g)} + Cl_{2(g)}$

Calculate the concentrations of all species at equilibrium for each of the following original mixtures.

a. 2.0 mol pure NOCl in a 2.0-liter flask
b. 2.0 mol NO and 1.0 mol Cl_2 in a 1.0-liter flask
c. 1.0 mol NOCl and 1.0 mol NO in a 1.0-liter flask
d. 3.0 mol NO and 1.0 mol Cl_2 in a 1.0-liter flask
e. 2.0 mol NOCl, 2.0 mol NO, and 1.0 mol Cl_2 in a 1.0-liter flask
f. 1.0 mol/liter concentration of all three gases