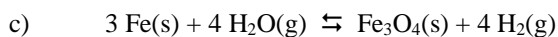
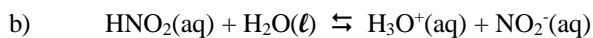
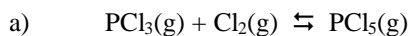


WORKSHEETS ARE DUE AT THE BEGINNING OF CLASS ON THE DATE GIVEN ON THE WORKSHEET. LATE WORKSHEETS WILL NOT BE ACCEPTED.

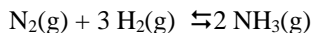
NAME \_\_\_\_\_ Panther ID \_\_\_\_\_

For problems involving calculations you must show your work for credit.

1) For each of the following reactions give the expression for  $K_C$  (the equilibrium constant in terms of concentrations). For cases where it is possible to do so, also given the expression for  $K_p$  (the equilibrium constant in terms of partial pressures). If it is not possible to give an expression for  $K_p$ , write n/a (not applicable).



2) At high temperatures and in the presence of a catalyst ammonia ( $\text{NH}_3$ ) exists in equilibrium with nitrogen and hydrogen gas. The reaction can be written as

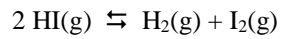


For a system at equilibrium at some temperature T the following partial pressures are observed

$$p_{\text{N}_2} = 0.85 \text{ atm} \quad p_{\text{H}_2} = 0.0031 \text{ atm} \quad p_{\text{NH}_3} = 0.031 \text{ atm}$$

Find the numerical value for  $K_p$  for the above reaction at temperature T.

3) The equilibrium constant for the reaction

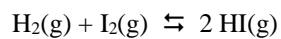


is  $K_C = 1.84$  at  $T = 425. \text{ }^\circ\text{C}$ .

a) A system at equilibrium at  $T = 425. \text{ }^\circ\text{C}$  has  $[\text{H}_2] = 3.2 \times 10^{-3} \text{ mol/L}$  and  $[\text{I}_2] = 4.1 \times 10^{-4} \text{ mol/L}$ .  
What is the concentration of HI in the system?

b) What is the numerical value for  $K_p$  for the above reaction at  $T = 425. \text{ }^\circ\text{C}$ ?

c) What is the numerical value for  $K_C$  for the reaction



at  $T = 425. \text{ }^\circ\text{C}$ ?