ASSIGNMENT 8  CHE 3473

DUE: August 3. -5 pm.

#Problem 1:
Read Chapter 13. Time yourself and report the time.

#Problem 2:
13.1 Solve the problem assuming no products in the initial reactant mixture. Repeat assuming you start with a 50%-50% molar mixture of reactant and hydrogen.

#Problem 3:
Use the data of problem 13.2 to solve the following. Assume CO is an ideal gas and Ca carbonate as well as calcium oxalate are present and an initial state P,V and T. Assume the T is kept constant, what is the new pressure if the volume is doubled.

#Problem 4:
Write the number of moles of Ca oxalate as a function of V in problem 13.2 and establish the volume at which the Ca oxalate completely decomposed as a function of the initial amount. What happens if the volume is increased after that value?

#Problem 5:
13.47

#Problem 6:
Assume that in addition to the oxidation reaction if 13.47 you have the burning of zinc sulfide. What is the equilibrium composition as a function of the initial oxygen composition and zinc sulfide amount?

#Problem 7: BONUS PROBLEM. Weight is triple of the others
It is well known that in any furnace, changes in the amount of air, per mole of methane, will give different flame temperature. Assume that you are conducting the burning of methane at constant pressure and with excess air so that you would get almost complete methane combustion. Explain how you would calculate the final temperature of the mixture.

Use data from the book to compute the flame temperature as a function of excess air.