Chem 534 Name________________

Take-Home Lab

Purpose: **to calculate the Kp(based on pressure) and Kc(regular K based on concentration) for**

$$NaHCO_{3\ (s)} \rightleftarrows NaOH_{\ (s)} + CO_{2\ (g)}$$

1. **Go to**

http://www.chm.davidson.edu/ChemistryApplets/equilibria/EquilibriumConstant.html

2. Scroll down to the bottom of the page until you see a flask.(part 1 only, not part 2)

3. Click the "Add Sodium Hydrogen Carbonate" button.

4. Click the "Evacuate Bulb" button.

5. Click the "Heat the system" button. It will bring you to 800K.

6. Now read the equilibrium pressure off the manometer (u-shaped tube)by subtracting the right- hand column reading from the left- hand column. Record it here_______________ -___________________=______________________

7. Convert mm of Hg to kPa by multiplying by 101.3 / 760.

8. If the number of gas molecules were the same on each side of the equation, then Kp = Kc.
   Kp = equilibrium constant based on pressure.
   Kc = normal equilibrium constant based on concentration.

   In our case Kp = Pressure of CO_2. =_____________________________________
   (note: if you check your answer, it will not match numerically because they are not using kPa)

9. To calculate Kc, use $Kp = Kc\ (RT)^{\Delta n}$
   Where Δn = difference in gaseous moles between the right side and left hand side of the equilibrium equation.

   Kc =

10. Write a conclusion.____
    ____
    ____
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