**Name: Period: Seat#:**

**S-30, 31, 32**

**Directions:** Try these problems. If you can DO them, check the box (🗹).
If you CANNOT do them, write some notes TO YOURSELF about what you need to study to succeed at these problems.

**S30 – Quick Check #1**

* **Kc and Kp**

 Write the equilibrium expression (Kc) for: ZnCO3(s) ⮀ Zn2+(aq) + CO32(aq)

 Kc =

 Write the equilibrium expression (Kp) for: 2 NO(g) + Br2(g)  2 NOBr(g)

 Kp =

* **Manipulations**

O2(g) ⮀ 2 O(g) Kp = 1.2 x 10-10 What is the Kp for: O(g) ⮀ ½ O2(g)

* **Adding Reactions**

 Calculate Kc for the reaction: SnO2(s) + 2 CO(g) ⮀ Sn(s) + 2 CO2(g)

 given the following information:

 SnO2(s) + 2 H2(g) ⮀ Sn(s) + 2 H2O(g) Kc = 8.12

 H2(g) + CO2(g) ⮀ H2O(g) + CO(g) Kc = 0.771

**S31 – Quick Check #2**

* **Reaction Quotient**

 H2(g) + Br2(g)  2 HBr(g) Kc = 5.5 x 103

 [H2]=0.10 M [Br2]=0.20 M [HBr]=8.5 M

 What will happen to the [HBr] as this reaction approaches equilibrium? (Show your calculation.)

* **Kp & Kc**

 2 NO(g) + Br2(g)  2 NOBr(g) Kc = 1.2 x 10-10 at 25 °C

Write the Kp expression for this reaction and calculate its value. [R = 0.0821 L·atm/mol·K]

* **Le Châtelier’s’ Principle Demo**

 Co(H2O)62+(aq) + 4 Cl(aq)  CoCl42(aq) + 6 H2O(l)

 pink blue

 a) add HCl(aq) \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

 b) add H2O(l) \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

 c) increase the temperature \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

 d) decrease the temperature \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

 e) add AgNO3(aq) \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

*Note:*

 Predict (a) and (b) before the demonstration.

 Watch (c) and determine whether the reaction is endo- or exo-thermic.

 Predict (e) before the demonstration.

**S33 – Quick Check #3**

* **ICE Box Problem**

A solution is prepared by dissolving 0.050 mol of diiodocyclohexane, C6H10I2, in the solvent CCl4.
The total solution volume is 1.00 L. When the reaction, C6H10I2 ⮀ C6H10 + I2, comes to equilibrium, the concentration of I2 is 0.035 mol/L. What is are the concentrations of C6H10I2 and C6H10 at equilibrium?

 C6H10I2 ⮀ C6H10 + I2­­

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