**Name:­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Ksp and Keq Quiz**

**You must show all work to get credit for any part of this quiz.**

1. **H2 (g) + I2 (g) 🡨🡪 2 HI (g)**

**The [H2] = 0.528 M and [I2] = 0.528 M and [HI] = 4.823**

**If the Keq = 54.0 at 427 C, is the reaction at equilibrium. Explain your answer. If it's not at equilibrium, state in which direction the reaction is running.**

1. **Write the Equilibrium expression (Keq) (1pt)**
2. **Calculate Q (1pt)**
3. **Is the reaction @ equilibrium? If it isn’t. Explain if it is favoring the forward or reverse reaction.(3pt)**

**2.) What are the equilibrium concentrations of the dissolved ions in a saturated solution of Mg(OH)2 at 25 0C. (Ksp 3.5 x 10-8)**

* 1. **Write the dissolution (dissolving reaction) (1pt)**
  2. **Write the Ksp expression (1pt)**
  3. **Calculate the [ ]’s of the ions (2pts)**

**3.) A solution is prepared by adding 50 mL of 7.5 x 10-2  M of CaCl2 to 50 mL of 5.0 x 10-2  M of Na2CO3 at 25 0C.**

**The excpected precipitate has a Ksp = 2.8x 10-9**

1. **Write the dissolution (dissolving) reaction for the expected precipitate. (1pt)**
2. **Write the Ksp expression for the expected precipitate. (1pt)**
3. **Calculate the moles of Ca+2 in its initial solution (1pt)**
4. **Calculate the moles of CO3-2 in its initial solution (1pt)**
5. **Calculate the Molarity of of Ca+2 after the solutions are mixed (1pt)**
6. **Calculate the Molarity of CO3-2 after the solutions are mixed (1pt)**
7. **Solve for Q (1pt)**
8. **Relate Q to Ksp and explain if a precipitate forms (1pt)**