Unit 7 – Chapter 13: Chemical Equilibrium **Name _____**

Assignment #4: Solubility Predictions Using K_{sp} & Q **Period _____**

1) Calculate the solubility of each of the following compounds in moles per liter. Ignore any acid-base properties.
    a. PbI_2, $K_{sp} = 1.4 \times 10^{-8}$
    b. $CdCO_3$, $K_{sp} = 5.2 \times 10^{-12}$
    c. $Sr_3(PO_4)_2$, $K_{sp} = 1 \times 10^{-31}$

2) The K_{sp} for silver sulfate (Ag_2SO_4) is 1.2×10^{-5}. Calculate the solubility of silver sulfate in each of the following.
    a. Water
    b. 0.10 *M* $AgNO_3$
    c. 0.20 *M* K_2SO_4

3) Will a precipitate form when 75.0 mL of 0.020 *M* $BaCl_2$ and 125 mL of 0.040 *M* Na_2SO_4 are mixed together?

4) Will a precipitate form when 100.0 mL of 4.0×10^{-4} *M* $Mg(NO_3)_2$ is added to 100.0 mL of 2.0×10^{-4} *M* NaOH?