

Unit 9 – Chapter 15: Acid-Base Equilibrium & Buffers

Name _____

Assignment #7: Solubility Calculations

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. $\text{Sr}_3(\text{PO}_4)_2$ $K_{sp} = 1 \times 10^{-31}$
- 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. $0.20 \text{ M K}_2\text{SO}_4$
- 3) Will a precipitate form when 75.0 mL of 0.020 M BaCl_2 and 125 mL of $0.040 \text{ M Na}_2\text{SO}_4$ are mixed together?
- 4) Will a precipitate form when 100.0 mL of $4.0 \times 10^{-4} \text{ M Mg(NO}_3)_2$ is added to 100.0 mL of $2.0 \times 10^{-4} \text{ M NaOH}$?