Name _____ Date _____ Period _____

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7.11 Introduction to Solubility Equilibria

AP Chemistry

Write the solid on the left and the ions on the right. K_{sp} leaves out the solid. Molar solubility, s, is the moles of salt that dissolve per liter.

1. Write the dissolving equation and the K_{sp} expression for each salt.

(a) $BaSO_4$

(b) Ag_2CO_3

(c) $Ca_3(PO_4)_2$

2. K_{sp} for $BaSO_4$ is 1.1×10^{-10}. Calculate its molar solubility.

3. K_{sp} for Ag_2CO_3 is 8.1×10^{-12}. Find s and $[Ag^+]$.

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4. The molar solubility of $Mg(OH)_2$ is 1.1×10^{-4} M. Calculate K_{sp}.

5. Which is more soluble in water, BaF_2 ($K_{sp} = 1.0 \times 10^{-6}$) or $BaSO_4$ ($K_{sp} = 1.1 \times 10^{-10}$)? Justify with s.

6. Convert the molar solubility of $BaSO_4$ from question 2 to grams per liter (233.40 g/mol).

7. A student writes $K_{sp} = 2s^3$ for Ag_2CO_3. Find and fix the mistake.

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