Practice with Ksp and Common Ions
AP Chem

Helpful Sites:
Solubility Equilibrium Help Step by Step---> http://users.stlcc.edu/gkrishnan/solubilityproduct.html
Ksp Basic---> http://web.mst.edu/~gbert/Aj2.HTML?JAVA/Aksp.HTM
Ksp with Common Ions ---> http://web.mst.edu/~gbert/Aj2.HTML?JAVA/Aksp2.HTM

*Part I. Solve for the **solubility** of this compound at 25 deg C. Write the dissociation equation and equilibrium expression first.*

1. CuCl Ksp= 1.0×10^{-6}
2. Zr(NO3)2 Ksp = 1.4×10^{-23}
3. aluminum sulfate $K_{sp} = 3.5 \times 10^{-4}$

*Part II. Solve for the **Ksp** for these compounds at 25 deg C. Write the dissociation equation and equilibrium expression first.*

4. Given: The solubility of lead(II) iodide in water at 25° C is 1.4×10^{-3} moles/Liter.
5. Given: The solubility of scandium (III) sulfate in water at 25° C is 2.72×10^{-1} moles/Liter.

*Part III. Calculate **solubility of the common ion** in solution.*

6. The solubility product constant of aluminum sulfate in water at 25° C is $K_{sp} = 3.5 \times 10^{-4}$.
Calculate the solubility of this compound in 1.00 M $Al(NO_{3)3}$(aq) at 25°C.
$Al_2(SO_4)_3(s) = 2\ Al^{3+}(aq) + 3\ SO_4^{2-}(aq)$

7. The solubility product constant of tin(II) hydroxide in water at 25° C is $K_{sp} = 1 \times 10^{-14}$.
Calculate the solubility of this compound in 0.020 M KOH(aq) at 25°C.
$Sn(OH)_2(s) = Sn^{2+}(aq) + 2\ OH^-(aq)$

Answers:

1. S = 1.0 E -3 moles/L
2. S = 8.9 E -6 moles/L
3. S = 8.0 E -2 moles/L
4. Ksp = 1.1 E -8
5. Ksp = 1.6 E -1
6. S = 2.3 E -2 moles/L
7. S = 2.5 E -11 moles/L