1. The $K_{sp}$ for LaF$_3$ is $2 \times 10^{-19}$. Calculate the solubility of LaF$_3$ in 0.01 M KF?

2. Will Ag$_2$SO$_4$ ($K_{sp} = 1.5 \times 10^{-5}$) precipitate when 100 mL of 0.050 M AgNO$_3$ is mixed with 10 mL of $5.0 \times 10^{-2}$ M Na$_2$SO$_4$ solution?

3. (a) What is the charge of the complex formed by a platinum (II) metal ion surrounded by two ammonia molecules and two bromide ions? (b) Write a formula for this complex?

4. What are the geometries most commonly associated with (a) coordination number 4, (b) coordination number 6?

5. (a) What is the difference between a monodentate ligand and a bidentate ligand? (b) how many bidentate ligands are necessary to fill the coordination sphere of a six coordinate complex?

6. Indicate the coordination number of the metal and the oxidation number of the metal in each of the following complexes: (a) $K_4[Fe(CN)_6]$, (b) $[Co(en)_2(C_2O_4)]^+$, (c) $[Ni(CN)_3]^{3-}$. 

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CH 223 – Worksheet 3

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