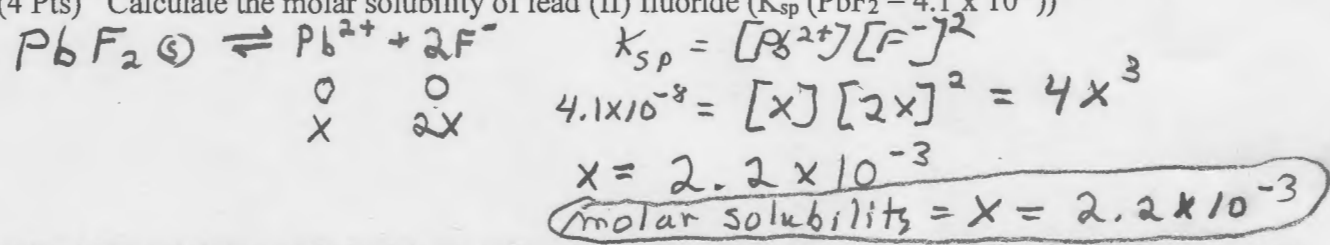


1. (4 Pts) Calculate the molar solubility of lead (II) fluoride ($K_{sp}(\text{PbF}_2) = 4.1 \times 10^{-8}$)



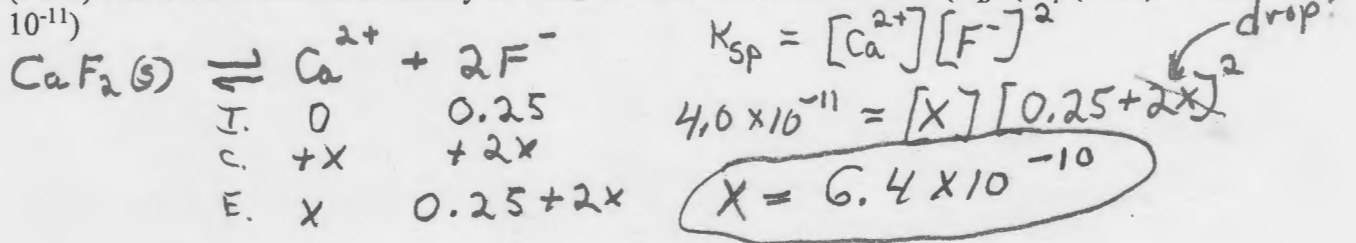
2. (4 Pts) The solubility of $\text{Ba}(\text{NO}_3)_2$ is 130.5 g/L at 0°C. How many moles of dissolved salt are present in 4.0 L of a saturated solution of $\text{Ba}(\text{NO}_3)_2$ at 0°C? Molar masses: Ba 137.2, N 14.01, O 16.00.

4.0 L	130.5 g $\text{Ba}(\text{NO}_3)_2$	mol	=	2.0 moles
	Δ	261.22 g		

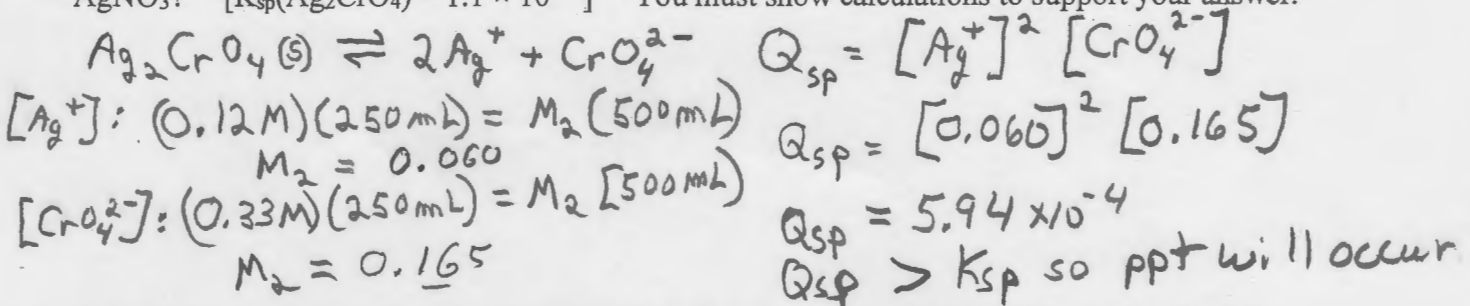
3. (2 Pts) NaCl is added slowly to a solution that is 0.010 M each in Cu^+ , Ag^+ , and Au^+ . The K_{sp} 's for CuCl , AgCl , and AuCl are 1.9×10^{-7} , 1.8×10^{-10} , and 2.0×10^{-13} , respectively. Which compound will precipitate first?

AuCl

4. (5 Pts) Calculate the molar solubility of CaF_2 in a 0.25 M solution of $\text{NaF}(\text{aq})$. ($K_{sp}(\text{CaF}_2) = 4.0 \times 10^{-11}$)



5. (5 Pts) Will a precipitate form when 250 mL of 0.33 M Na_2CrO_4 are added to 250 mL of 0.12 M AgNO_3 ? [$K_{sp}(\text{Ag}_2\text{CrO}_4) = 1.1 \times 10^{-12}$] You must show calculations to support your answer.



6. (5 Pts) The molar solubility of manganese(II) carbonate is 4.2×10^{-6} M. What is K_{sp} for this compound?

