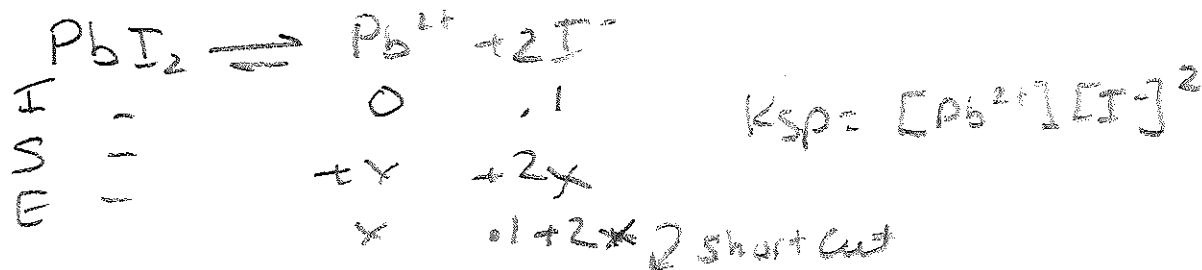


K_{sp}: Common ion

Problem

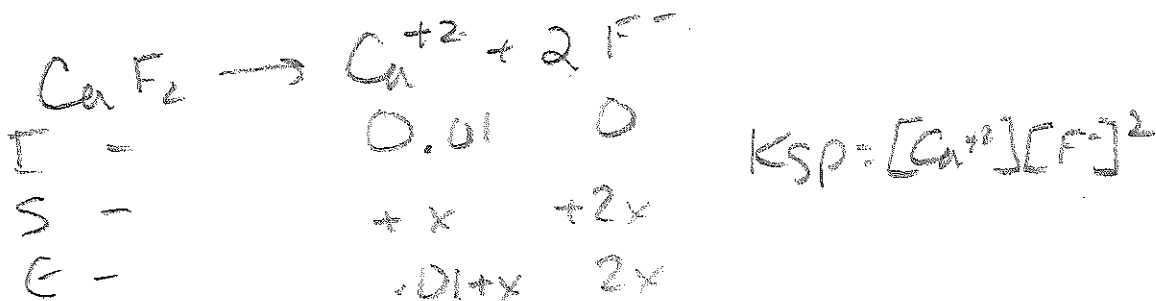
1. (brady768) What is the molar solubility of PbI₂ in a 0.10M NaI solution? K_{sp} = 7.9 E-9M



$$7.9 \text{ E-}9 = [x][.1]^2$$

$$x = 7.9 \text{ E-}7 \text{ M}$$

2. (brown664) Calculate the molar solubility of CaF₂ at 25°C in a solution that is 0.010M in Ca(NO₃)₂
K_{sp} = 3.9E-11 CaF₂.



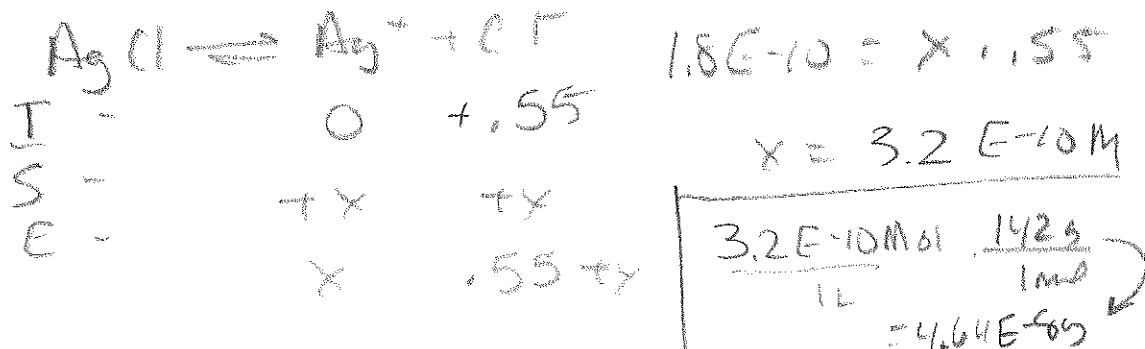
$$3.9 \text{ E-}11 = (.01)(2x)^2$$

$$3.9 \text{ E-}9 = 4x^2$$

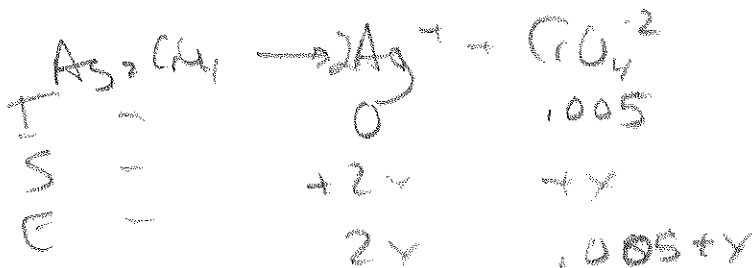
$$\sqrt{\frac{3.9 \text{ E-}9}{4}} = x$$

$$x = 3.1 \text{ E-}5$$

3. (Kotz890) The solubility of AgCl is $1.3 \times 10^{-5} \text{ M}$ (0.001 g/L). If some AgCl is placed in 1.00 L of a 0.55 M solution of NaCl, how many grams of AgCl will dissolve? ($K_{sp} = 1.8 \times 10^{-10}$)
(Last modified 05-14-05)



4. (Kotz891) Calculate the solubility of silver chromate, Ag_2CrO_4 , at 25°C in pure water and in the presence of 0.0050 M K_2CrO_4 . ($K_{sp} = 9.0 \times 10^{-12}$) (Last modified 05-14-05)



$$K_{sp} = [\text{Ag}^+]^2 [\text{CrO}_4^{2-}]$$

$$9.0 \times 10^{-12} = [2x]^2 [0.005]$$

$$4x^2 \cdot 0.005$$

$$x = 2.12 \times 10^{-5} \text{ M}$$