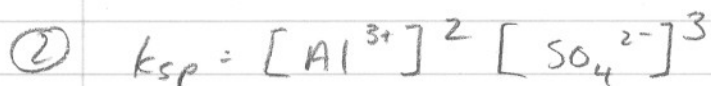
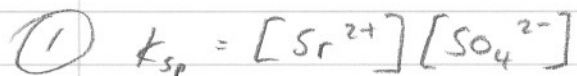
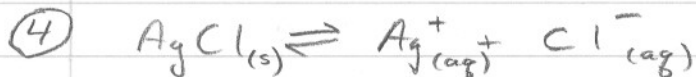


Solubility Product Worksheet #1



$$\begin{aligned} K_{sp} &= [\text{Ba}^{2+}][\text{OH}^{-}]^2 \\ &= (0.108 \text{ mol/L})(0.216 \text{ mol/L})^2 \\ &= \underline{5.04 \times 10^{-3}} \end{aligned}$$

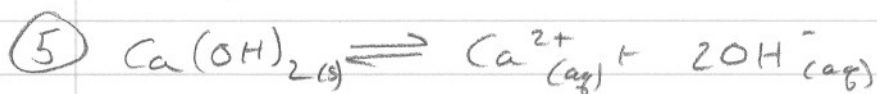


	Ag^{+}	Cl^{-}
I	0	0
C	+x	+x
E	x	x

$$\begin{aligned} K_{sp} &= [\text{Ag}^{+}][\text{Cl}^{-}] \\ 1.6 \times 10^{-10} &= (x)(x) \\ 1.6 \times 10^{-10} &= x^2 \end{aligned}$$

$$x = 1.26 \times 10^{-5}$$

Molar solubility of AgCl is $1.26 \times 10^{-5} \text{ mol/L}$



	Ca^{2+}	OH^{-}
I	0	0
C	+x	+2x
E	x	2x

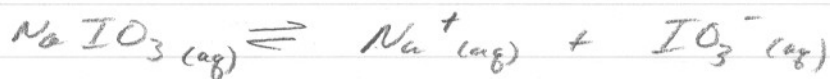
$$\begin{aligned} K_{sp} &= [\text{Ca}^{2+}][\text{OH}^{-}]^2 \\ 1.3 \times 10^{-6} &= (x)(2x)^2 \\ 1.3 \times 10^{-6} &= 4x^3 \end{aligned}$$

5 continued

$$x = 6.88 \times 10^{-3}$$

$$[Ca^{2+}] = x = 6.88 \times 10^{-3} \text{ mol/L}$$

$$[OH^-] = 2x = 1.38 \times 10^{-2} \text{ mol/L}$$



	Ca^{2+}	IO_3^-
I	0	0.06 mol/L
C	+x	+2x
E	x	0.06 + 2x

$$K_{sp} = [Ca^{2+}][IO_3^-]^2$$
$$7.1 \times 10^{-7} = x(0.06 + 2x)^2 \quad \text{but } 0.06 \gg 2x$$
$$7.1 \times 10^{-7} = x(0.06)^2$$
$$x = 4.7 \times 10^{-5}$$

Molar solubility of $Ca(IO_3)_2 \rightarrow 4.7 \times 10^{-5} \text{ mol/L}$