

0-1 89-94

5-1 68-71

Ionic

70 ^{S-I}

$$K_{sp} = 4(10^{-3})^3 = 4 \times 10^{-9}$$

$$[Ag^+] = 2 \times 10^{-3}$$



$$(2s)^2(0.1) = 4 \times 10^{-9}$$

$$[Ag^+]^2 = 4 \times 10^{-8}$$

$$\underline{[Ag^+] = 2 \times 10^{-4}}$$

$$2 \times 10^{-3} - 2 \times 10^{-4}$$

$$\underline{18 \times 10^{-4} \text{ mol}}$$

$$n_{Ag_2CrO_4} = \frac{18 \times 10^{-4}}{2}$$

(92)

$$[Ag^+] = \frac{10^{-5}}{100} = 10^{-7}$$

$$[Br^-] = \frac{2 \times 10^{-7} \times 50}{100}$$
$$= 10^{-7}$$

$$Q = 10^{-7} \times 10^{-7} = 10^{-14} < K_{sp}$$

(94)



$$(\text{Ag}^+) (10^{-5}) = 10^{-10}$$

$$[\text{Ag}^+] = 10^{-5}$$

$$= 4 \times 10^{-5} - 10^{-5}$$

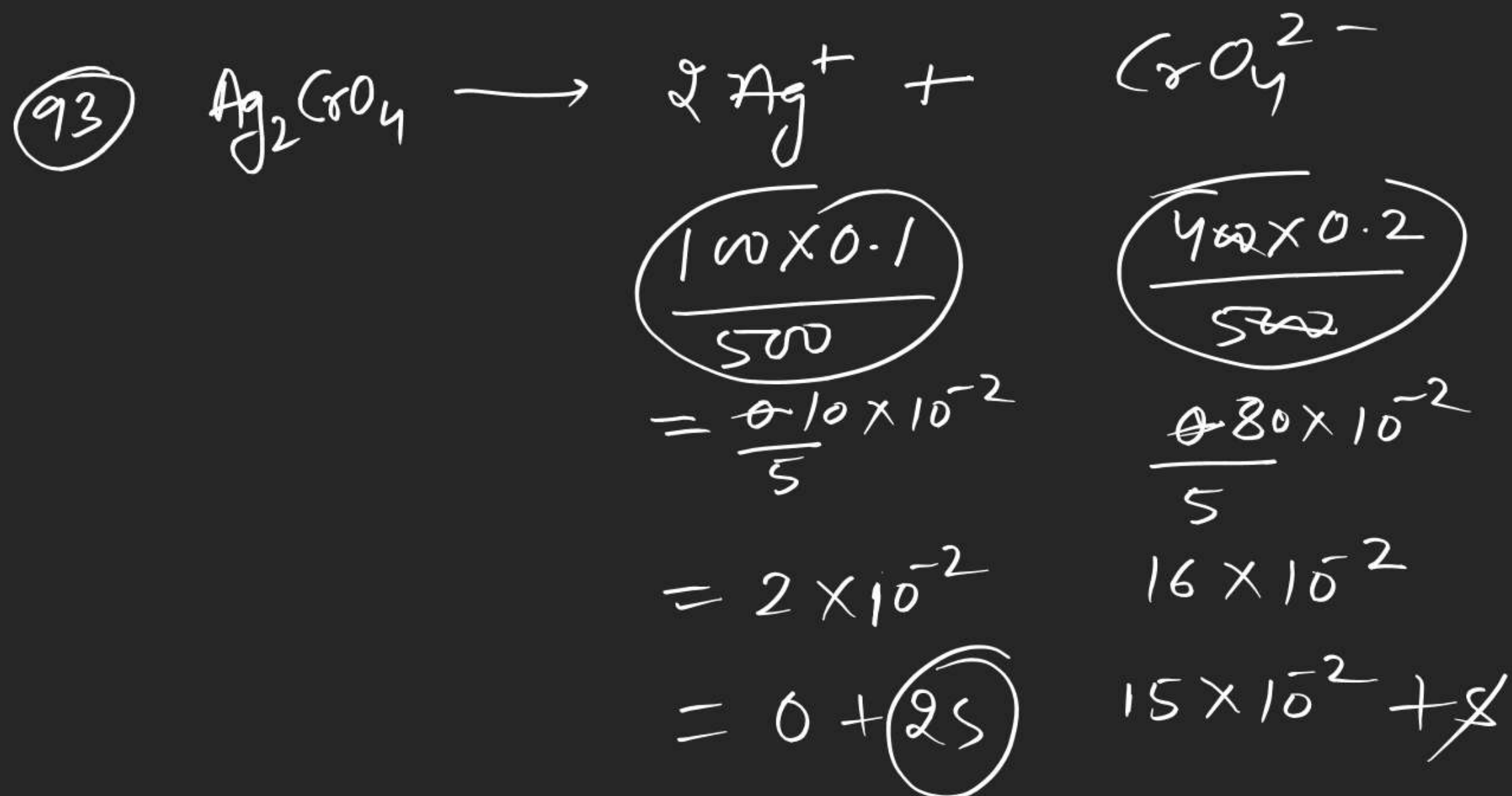
change
in conc

$$= 3 \times 10^{-5}$$

$$\underline{\text{mole ppt}} = 3 \times 10^{-5} \times \frac{1000}{1000} = 3 \times 10^{-6}$$

$$\frac{10^{-5} \times 1000}{1000} = 10^{-6}$$

$$4 \times 10^{-6}$$



$$[\text{Ag}^+]^2 [\cancel{15 \times 10^{-2}}] = \cancel{15 \times 10^{-12}} \quad 10^{-10}$$

$$[\text{Ag}^+] = 10^{-5}$$

Q.

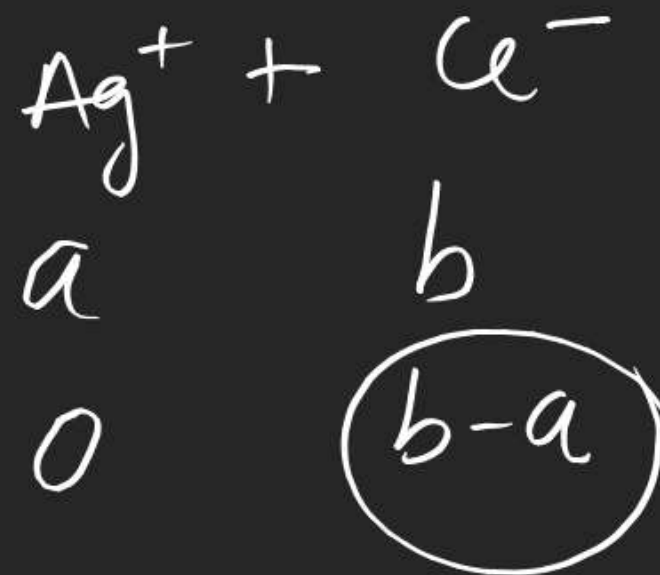
In 0.1 M AgNO_3 solⁿ Cl^- are added
such that its conc. becomes 0.01 M.

find final Ag^+ conc. $K_{sp}(\text{AgCl}) = 10^{-10} \text{ M}^2$

$$10^{-10} = K_{sp} = [\text{Ag}^+][\text{Cl}^-]$$

$$10^{-10} = [\text{Ag}^+](0.01)$$

$$10^{-8} = [\text{Ag}^+]$$



Selective pptn:

$[Ag^+]$	$[Ag^+] = 10^{-9}$ $K_{sp} = 10^{-10}$ $[Cl^-]$ ✓	$[Ag^+]_{min} = 10^{-13}$ $K_{sp} = 10^{-14}$ $[Br^-]$? (10^{-5}) ✓	$[Ag^+]_{min} = 10^{-16}$ $K_{sp} = 10^{-17}$ $[I^-]$? (10^{-8}) 10^{-4}
10^{-13}	_____	_____	_____
10^{-14}	_____	0.1M	10^{-3}
10^{-15}	_____	0.1M	10^{-2}
10^{-18}	_____	0.1M	0.1M
	0.1M	0.1M	0.1M

$$[Ag^+][I^-] = 10^{-17}$$

$$(10^{-16})(\underline{I^-}) = 10^{-17}$$

$$[Ag^+][Br^-] = 10^{-14}$$

$$10^{-9}(\underline{Br^-}) = 10^{-14}$$



Ag^+ ions are added to a solⁿ containing
 0.1M Cl^- & 0.1M CrO_4^{2-} . find

$$K_{sp}(\text{AgCl}) = 10^{-10}$$

$$K_{sp}(\text{Ag}_2\text{CrO}_4) = 10^{-13} \quad \checkmark$$

① Sequence of pptⁿ

② conc. of already ppting
 ion when other ion starts
 ppting. $\underline{10^{-4}} = [\text{Cl}^-]$

$$(10^{-6}) [\text{Cl}^-] = 10^{-10}$$

$$\underline{[\text{Cl}^-] = 10^{-4}}$$

$$[\text{Ag}^+] (0.1) = 10^{-10}$$

$$[\text{Ag}^+]_{\min} = 10^{-9}$$

$$[\text{Ag}^+]^2 (0.1) = 10^{-13}$$

$$\underline{[\text{Ag}^+]_{\min} = 10^{-6}}$$

NCERT $eq 16^m$