

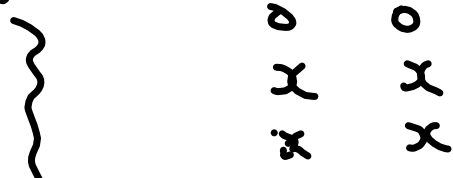
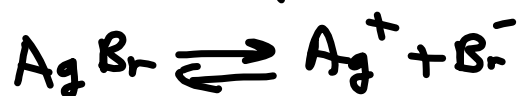


1. add $\text{NH}_3 \uparrow$ shift products
2. consequence $[\text{NH}_4^+] \uparrow$ and $[\text{OH}^-] \uparrow$
3. To increase $[\text{OH}^-]$ what could be added to the reaction?
 $[\text{NH}_3] \uparrow$

1. K_{sp} - find solubility

- x used

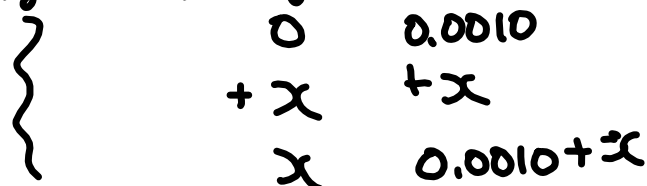
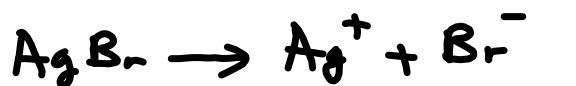
What is solubility of AgBr ? $K_{sp} = 5.4 \times 10^{-13}$



$$K_{sp} = \underline{\quad x \quad}$$

Common ion-

What is the solubility of AgBr in a solution of 0.0010 NaBr ? (5.4×10^{-13})



Calculations with K_a -continued

Given - $[H_3O^+]$

- $[acid]$

Find - (K_a or K_b)

Example 2 - Calculate K_a for a 0.15 mol/L acid-HA which has $[H_3O^+] = 0.0080$ mol/L

$$HA + H_2O \rightleftharpoons H_3O^+ + A^-$$

I	0.15		0	0
C	-0.0080		+0.0080	+0.0080
E	0.142		0.0080	0.0080

$$K_a = \frac{[H_3O^+][A^-]}{[HA]}$$

$$= \frac{(0.0080)(0.0080)}{0.142}$$

$$= 4.5 \times 10^{-4}$$

Handouts -
18B, 18C
p. 850 (text)
↳ table

Calculating With % Ionization

Definition- % - "out of" a hundred
divide

$$\% \text{ ionization} = \frac{[\text{H}_3\text{O}^+]}{\text{initial [Acid]}} \times 100\%$$

Example- What is % ionization if an acid's initial concentration is 1.5 mol/L and $[\text{H}_3\text{O}^+] = 0.075 \text{ mol/L}$?

$$\% \text{ ionization} = \frac{0.075}{1.5} \times 100\% = 5.0\%$$