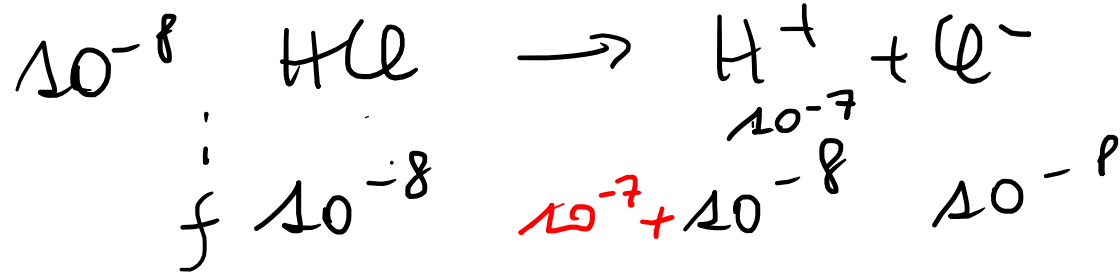
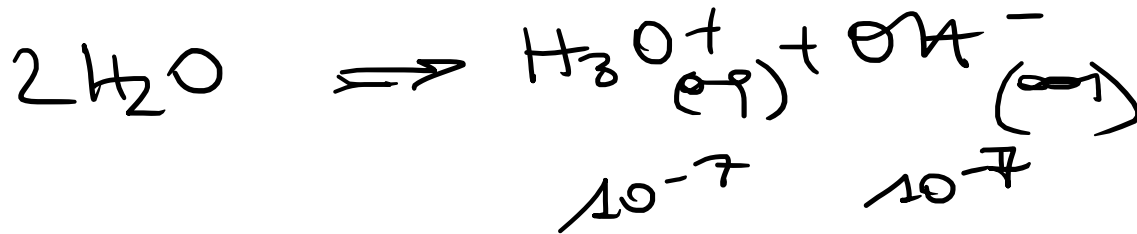


Ex 1
pH



$$\text{pH} = -\lg [\text{H}_3\text{O}^+] = 8$$

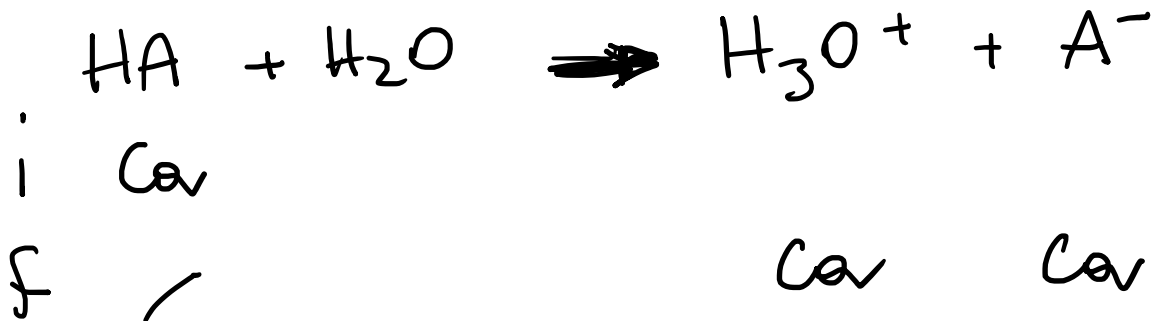
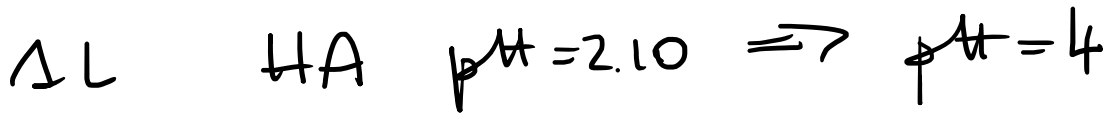


$$\text{pH} \sim 7$$

Ex 2



$$V_{\text{H}_2\text{O}} = ?$$



$$C_{\text{a,i}} = 10^{-2.10} \text{ M} = 7.94 \cdot 10^{-3} \text{ M}$$

$$C_{\text{a,f}} = 10^{-4} \text{ M}$$

$$C_{\text{a,i}} \cdot V_{\text{i}} = C_{\text{a,f}} \cdot V_{\text{f}}$$

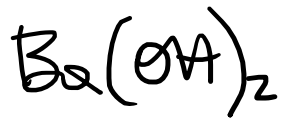
$$7.94 \cdot 10^{-3} \text{ M} \cdot 1 \text{ L} = 10^{-4} \text{ M} \cdot V_{\text{f}}$$

$$V_{\text{f}} = 79.4 \text{ L}$$

$$V_{\text{H}_2\text{O}} = 79.4 \text{ L} - 1 \text{ L} = 78.4 \text{ L}$$

EX3

↓ Cbi

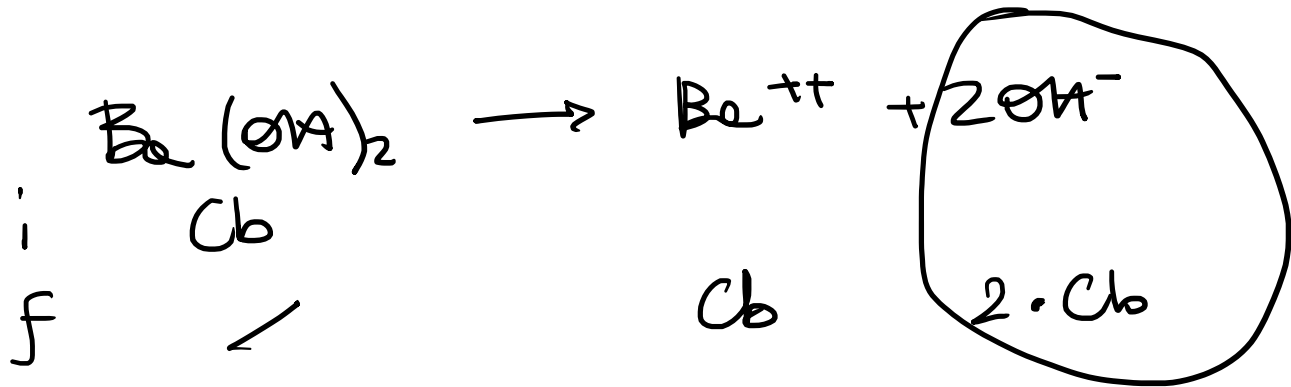
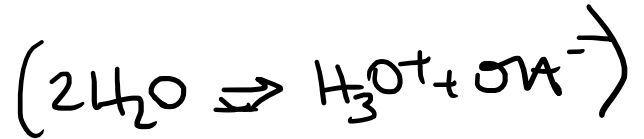


$4.52 \cdot 10^{-3} \text{ M}$

$V_{\text{mL}} = ?$

100 mL ↓

$\text{pH} = 10.250$



$\text{Cb}_f \Rightarrow \text{pH}_{\text{fu}}$

$[\text{H}_3\text{O}^+] = 10^{-10.250} = 5.62 \cdot 10^{-11} \text{ M}$

$[\text{OH}^-]_f = \frac{10^{-14}}{5.62 \cdot 10^{-11}} = 1.78 \cdot 10^{-4} \text{ M}$

$1.78 \cdot 10^{-4} \text{ M} = 2 \cdot \text{Cb} \Rightarrow \text{Cb}_f = \underline{\underline{8.9 \cdot 10^{-5} \text{ M}}}$

$$C_{bi} V_i = C_{bf} \cdot V_f$$

$$4.52 \cdot 10^{-3} \text{ M} \cdot V_i = 8.9 \cdot 10^{-5} \text{ M} \cdot 0.100 \text{ L}$$

$$V_i = 1.97 \cdot 10^{-3} \text{ L} = 1.97 \text{ mL}$$

$\text{Ba}(\text{OH})_2$
conc