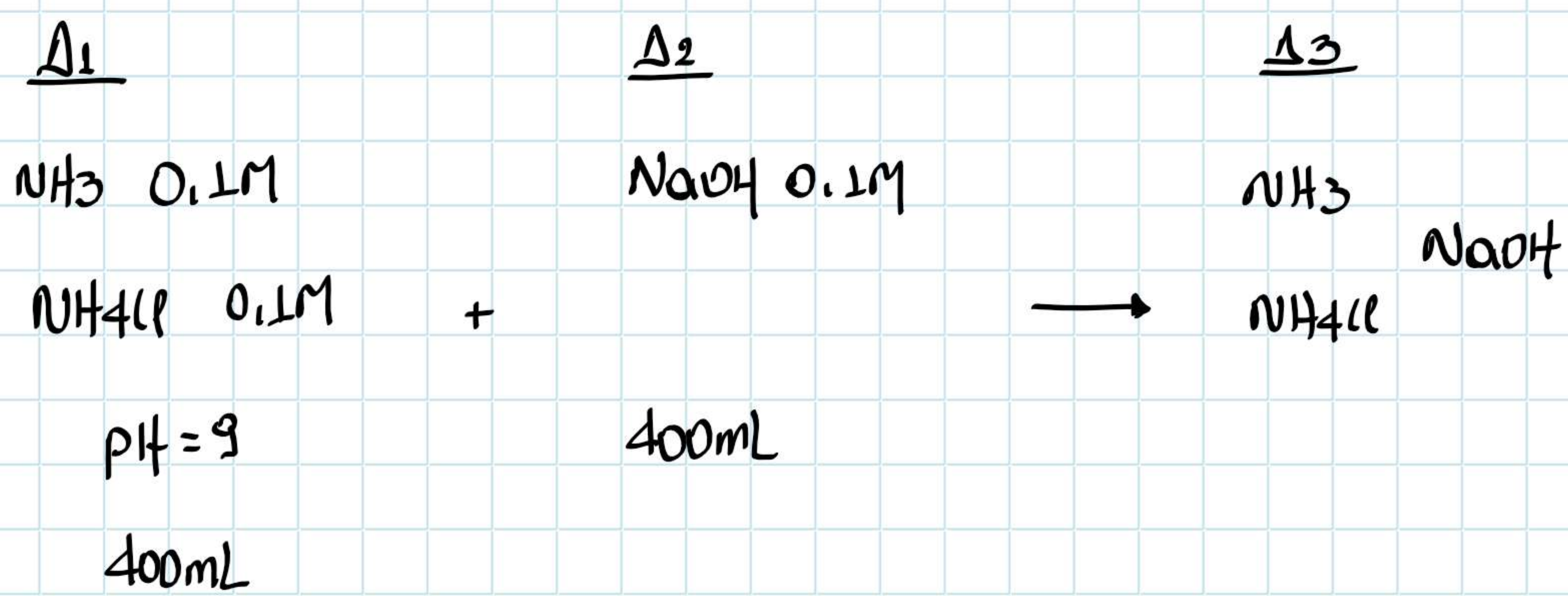


Άσκηση 11.18.

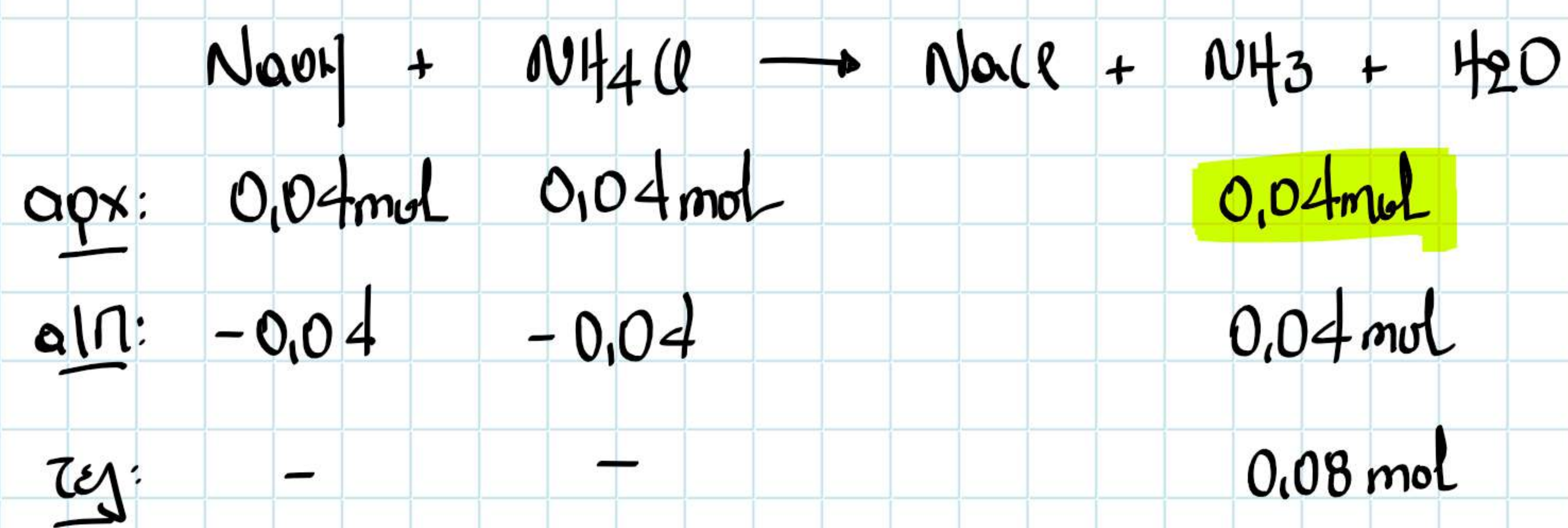


Δ<sub>1</sub>:  $n_{\text{NH}_3} = 0,1 \cdot 0,4 = 0,04 \text{ mol}$

$n_{\text{NH}_4\text{Cl}} = 0,1 \cdot 0,4 = 0,04 \text{ mol}$

Δ<sub>2</sub>:  $n_{\text{NaOH}} = 0,1 \cdot 0,4 = 0,04 \text{ mol}$

Δ<sub>3</sub>:



$$C_{\text{NH}_3} = \frac{0,08}{0,8} = 0,1 \text{ M}$$



$$K_b = \frac{[\text{OH}^-]^2}{c-x} \approx \frac{[\text{OH}^-]^2}{c} \Rightarrow K_b = \frac{[\text{OH}^-]^2}{0,1} \quad (1)$$

Από το αρχικό Δία:

$$\text{pH} = 9 \text{ άρα } \text{pOH} = 5 \Rightarrow \text{pOH} = \text{p}K_b + \log \frac{C_{\text{OH}^-}}{C_{\text{NH}_3}} \Rightarrow$$

$$\Rightarrow 5 = \text{p}K_b + \log \frac{0,1}{0,1} \Rightarrow \underline{K_b = 10^{-5}}$$

επιβ (1):  $10^{-5} = \frac{[\text{OH}^-]^2}{0,1} \Rightarrow [\text{OH}^-] = 10^{-3} \text{ M} \quad \text{pOH} = 3 \quad \underline{\underline{\text{pH} = 11}}$