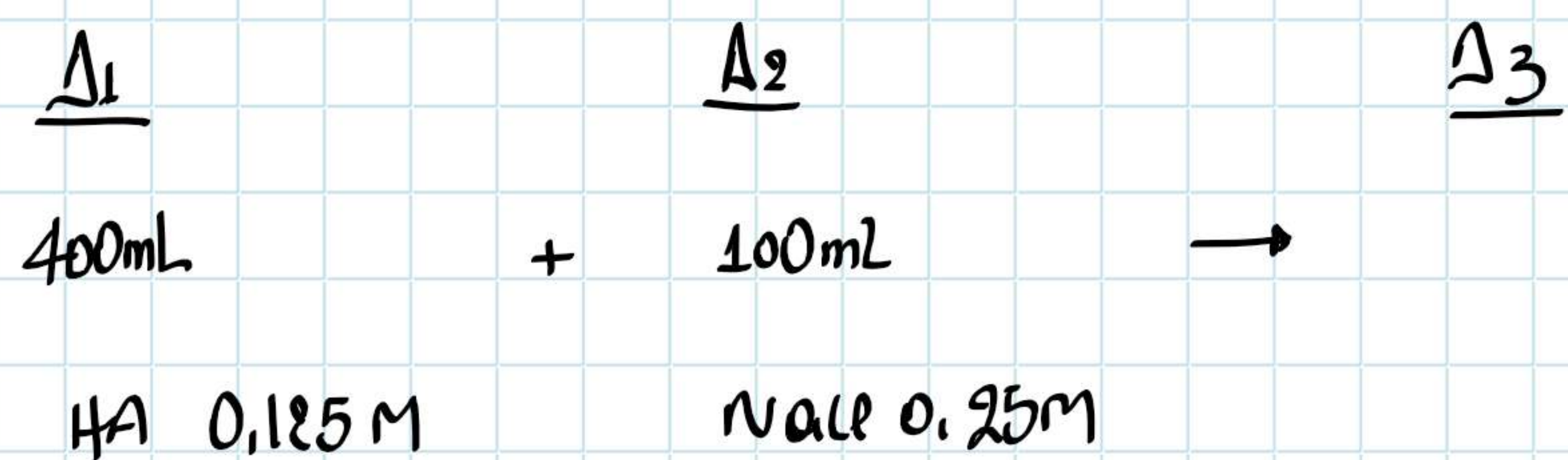


Άσκηση 10.14.



$$\Delta_1: \eta_1 = 0,125 \cdot 0,4 = 0,05\text{mol}$$

$$\Delta_2: \eta_2 = 0,025\text{mol}$$

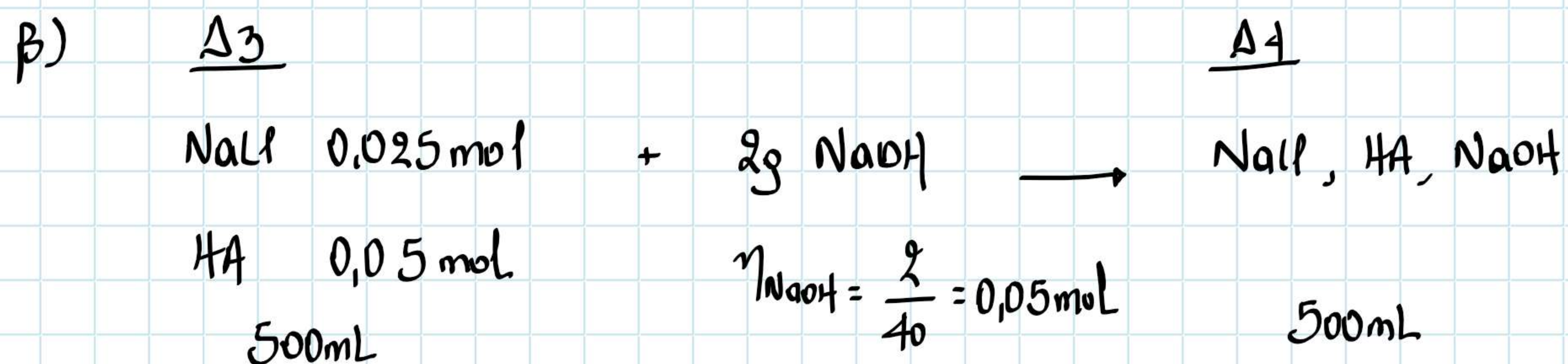
Δ_3 : Τα βιολτα ΔΕΝ αντιδρούν μεταξύ τους:

$$C_1' = \frac{0,05}{0,5} = 0,1\text{M} \quad C_2' = \frac{0,025}{0,5} = 0,05\text{M}$$

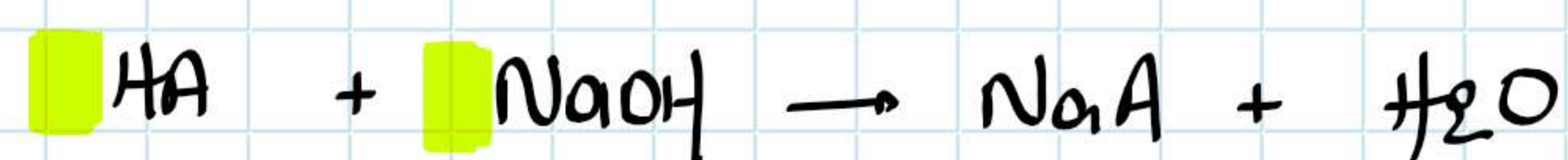


$$K_a = \frac{x^2}{0,1-x} \approx \frac{x^2}{0,1} \Rightarrow x = 10^{-3} \quad \boxed{\text{pH}=3}$$

$$[\text{Na}^+] = [\text{Cl}^-] = 0,05\text{M} \quad [\text{HA}] \approx 0,1\text{M} \quad [\text{A}^-] = [\text{H}_3\text{O}^+] = 10^{-3}$$



$\underline{\Delta_4}$: Το HA αντιδρά με το NaOH σύμφωνα με την αντίδραση:

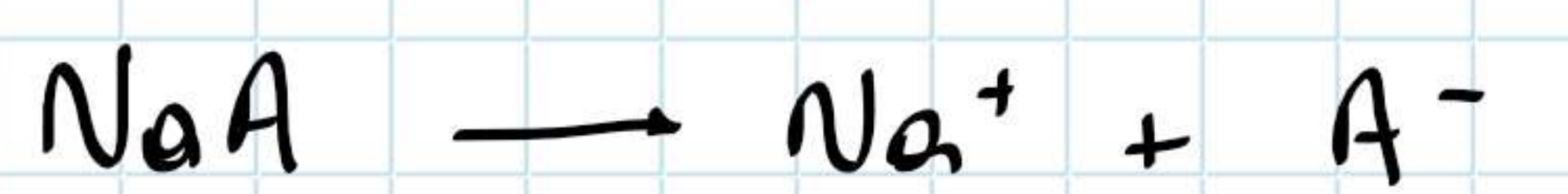


$$\underline{\text{αρχ}}: 0,05\text{mol} \quad 0,05\text{mol}$$

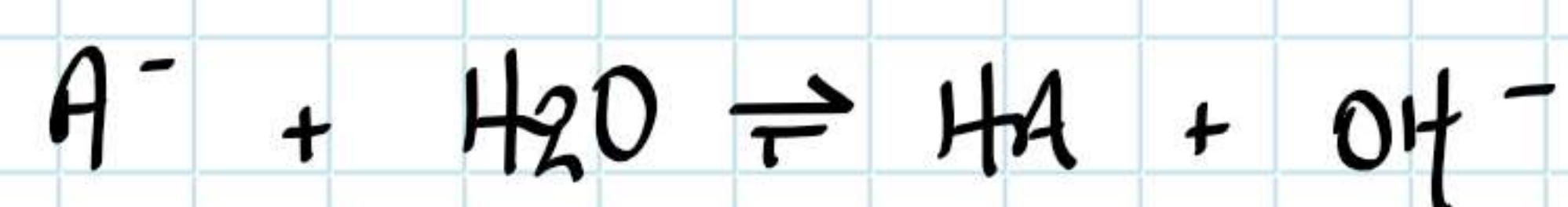
$$\underline{\text{αλη}}: -0,05\text{mol} \quad -0,05\text{mol} \quad 0,05\text{mol}$$

$$\underline{\text{τελ}}: \quad \quad \quad \quad \quad \quad \quad \quad \quad \quad 0,05\text{mol}$$

$$\text{στο τελ. Δμια: NaA} \Rightarrow C = \frac{0,05}{0,5} = 0,1\text{M}$$



$$0,1\text{M} \quad \quad 0,1\text{M} \quad 0,1\text{M}$$



$$0,1-y \quad \quad \quad y \quad \quad y$$

$$K_{b\text{A}^-} = \frac{y^2}{0,1-y} \approx \frac{y^2}{0,1} \Rightarrow 10^{-9} = \frac{y^2}{10^{-1}} \Rightarrow y = 10^{-5} \quad \text{pOH} = 5 \quad \text{και} \quad \text{pH} = 9$$