Algorithme Thompson

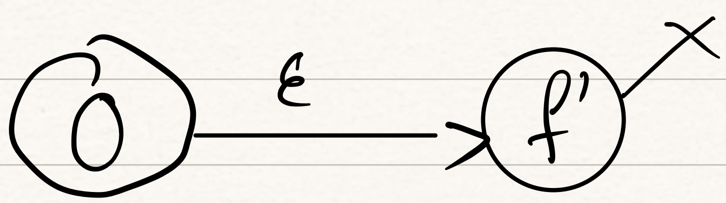
1) Produit un <u>AFNDE</u> A_ε

2) On élimine les ε transition de A_ε
   en construisant A_{ND}

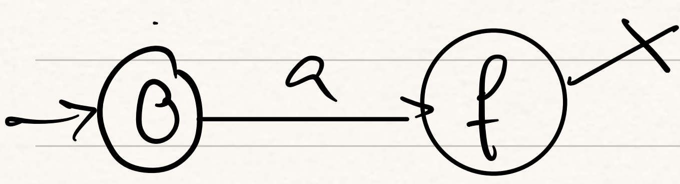
3) Selon la question, on déterministe A_{ND}

Thompson

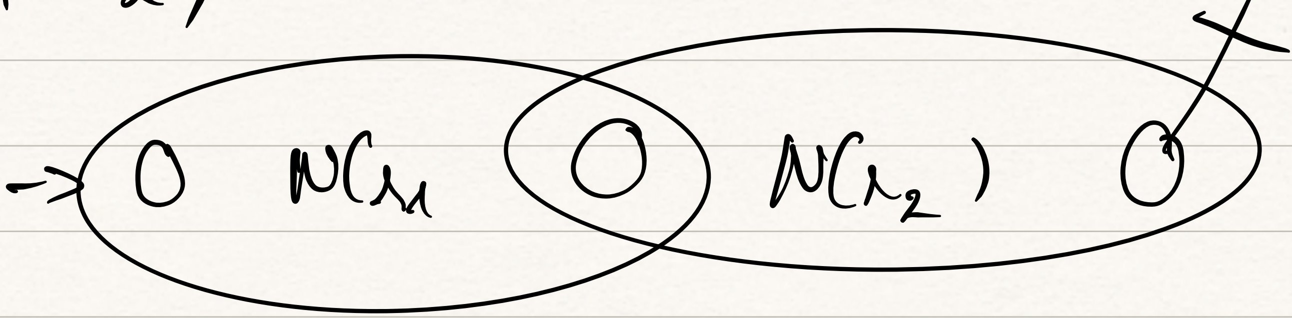
$N(\varepsilon)$



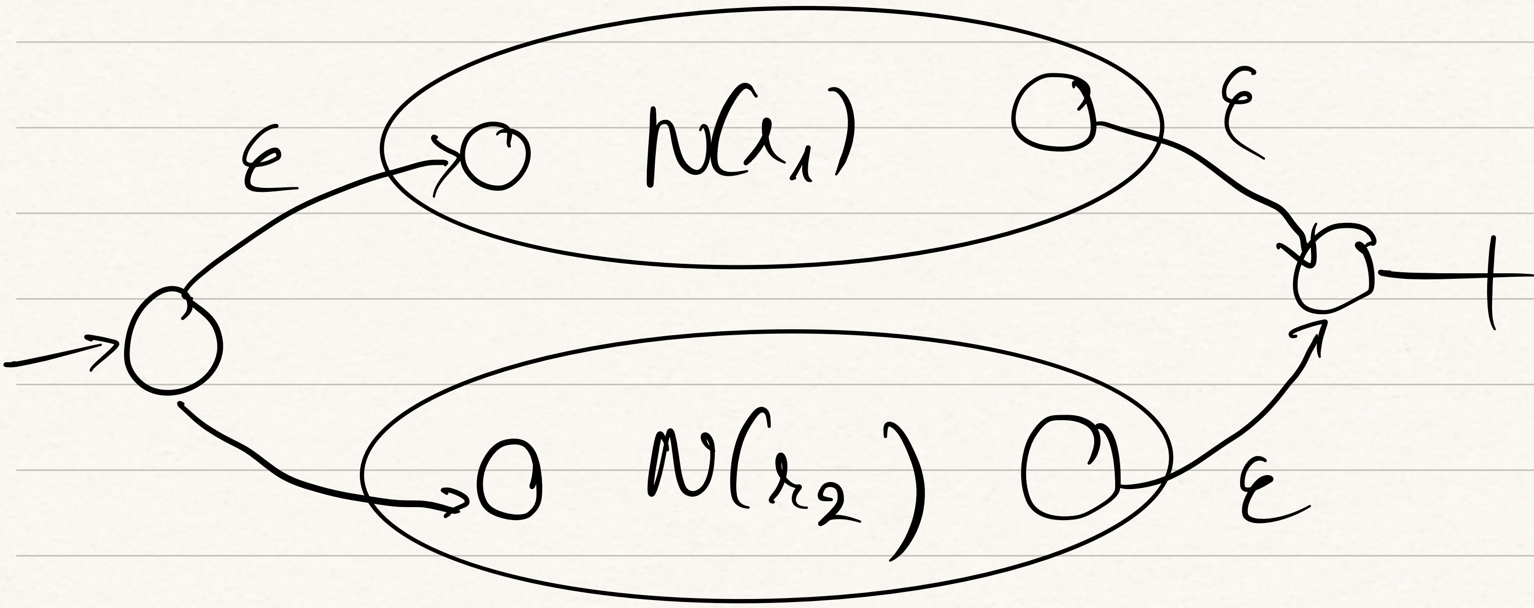
$N(a)$



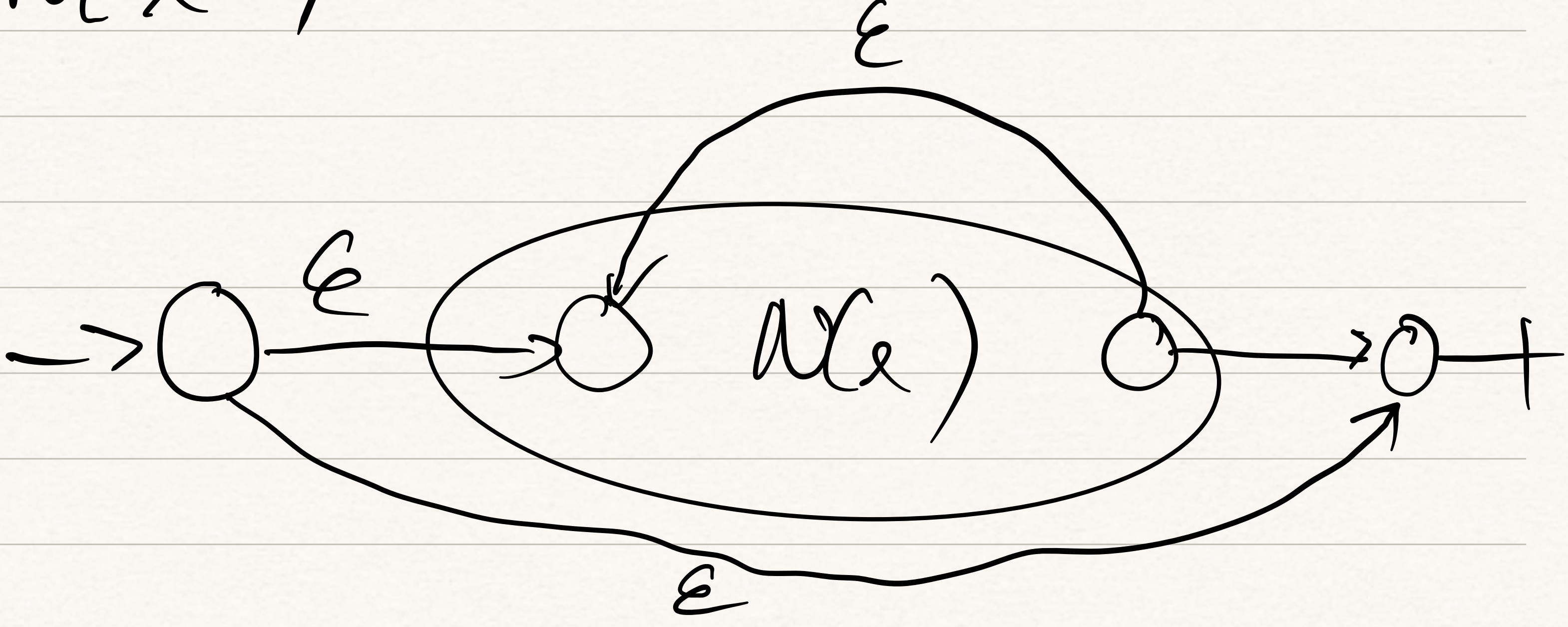
$N(r_1 . r_2)$



$N(r_1 + r_2)$

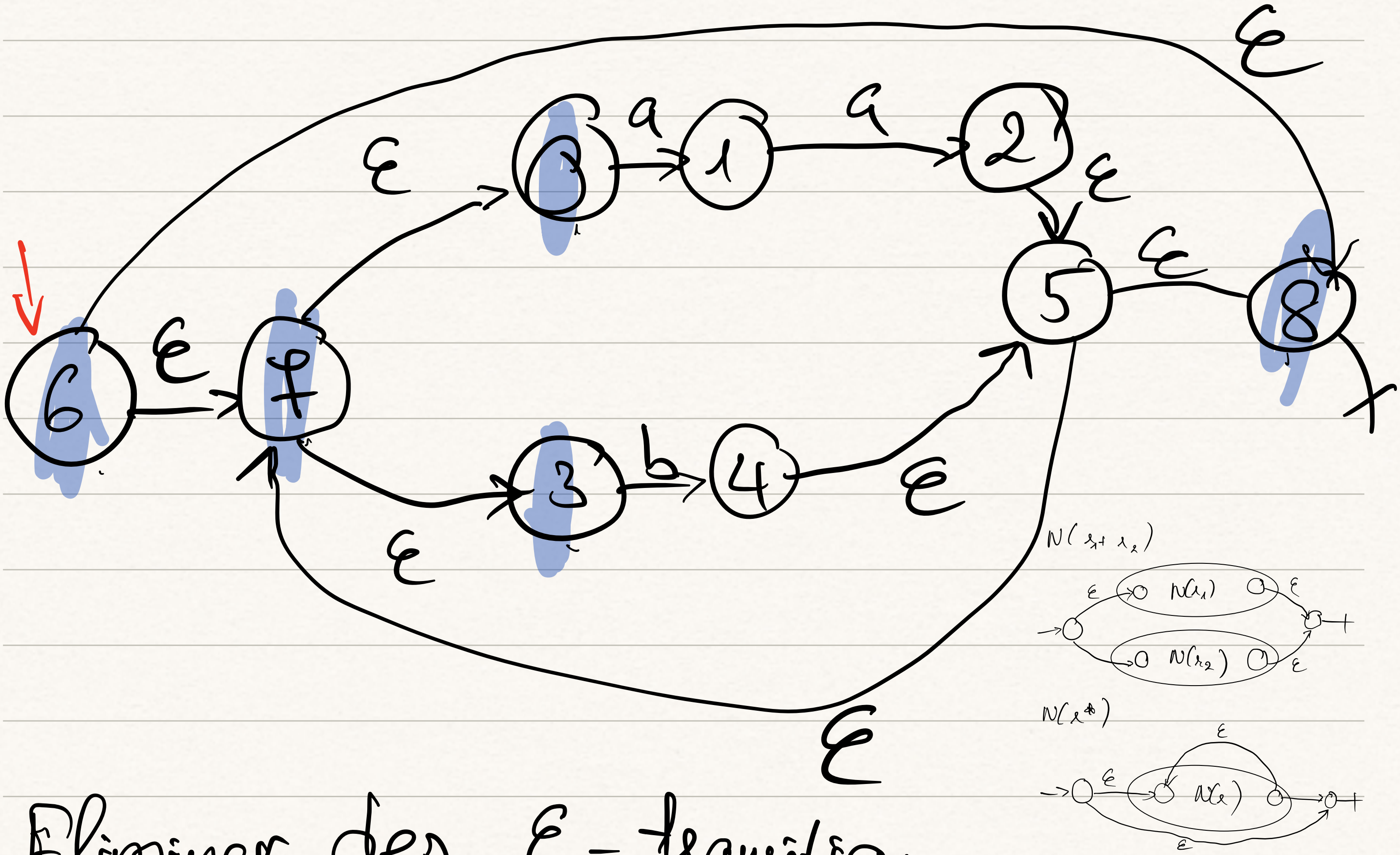


$N(r^*)$



Ex3

$E_1 = (aa + b)^*$



Eliminer des ε-transition

AFNDE$(\Sigma, Q, I, F, \delta)$

$\rightarrow$ AFND$(\Sigma, Q, I', F', \delta')$

$I' = \varepsilon\text{-clôture}(I)$
$= \{6, 7, 0, 3, 8\}$

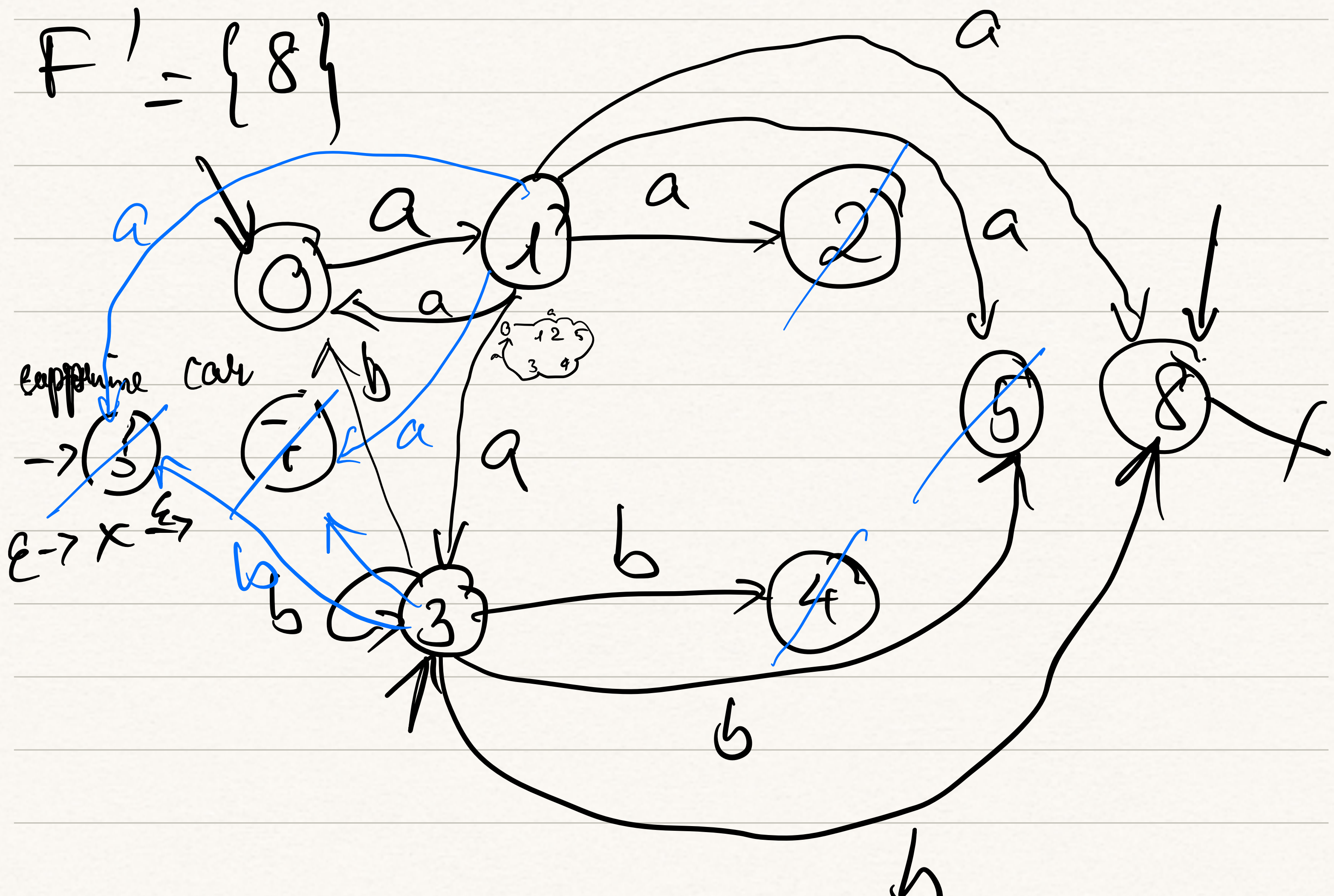
ε. clôture (q) = Tous les états accessible depuis q en tant ε en 1 étape

$F' = F$ état acceptant

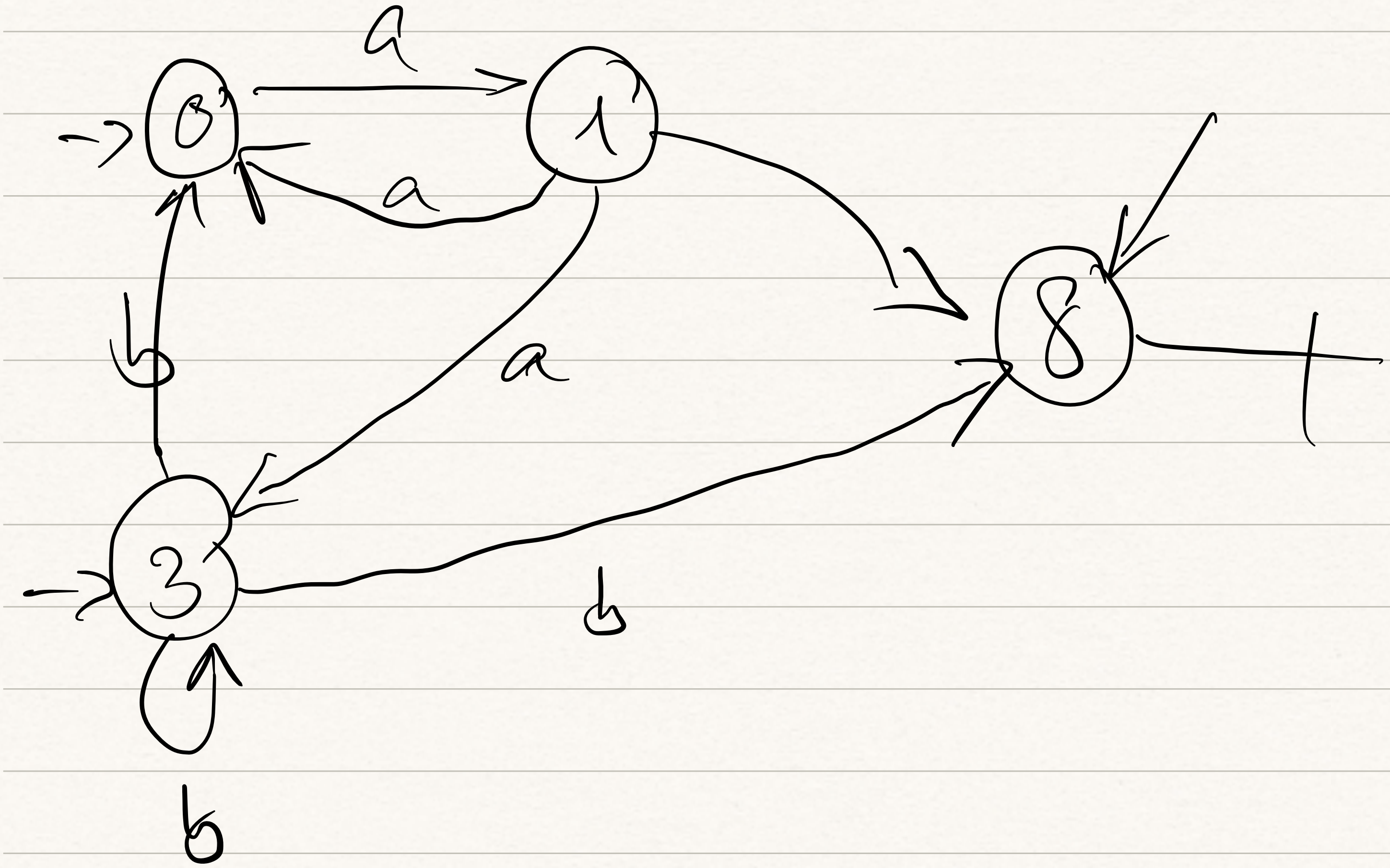
$\delta'(q, a) = \varepsilon$- clôture $(\delta(q, a))$

ε- clôture $(Q) = \bigcup_{q \in Q} \varepsilon$. clôture (q)

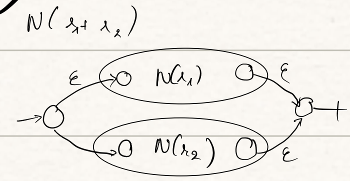
$F' = \{8\}$

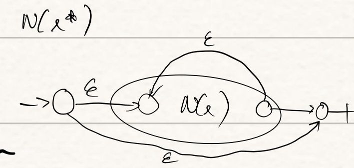


On enlève les états inutiles



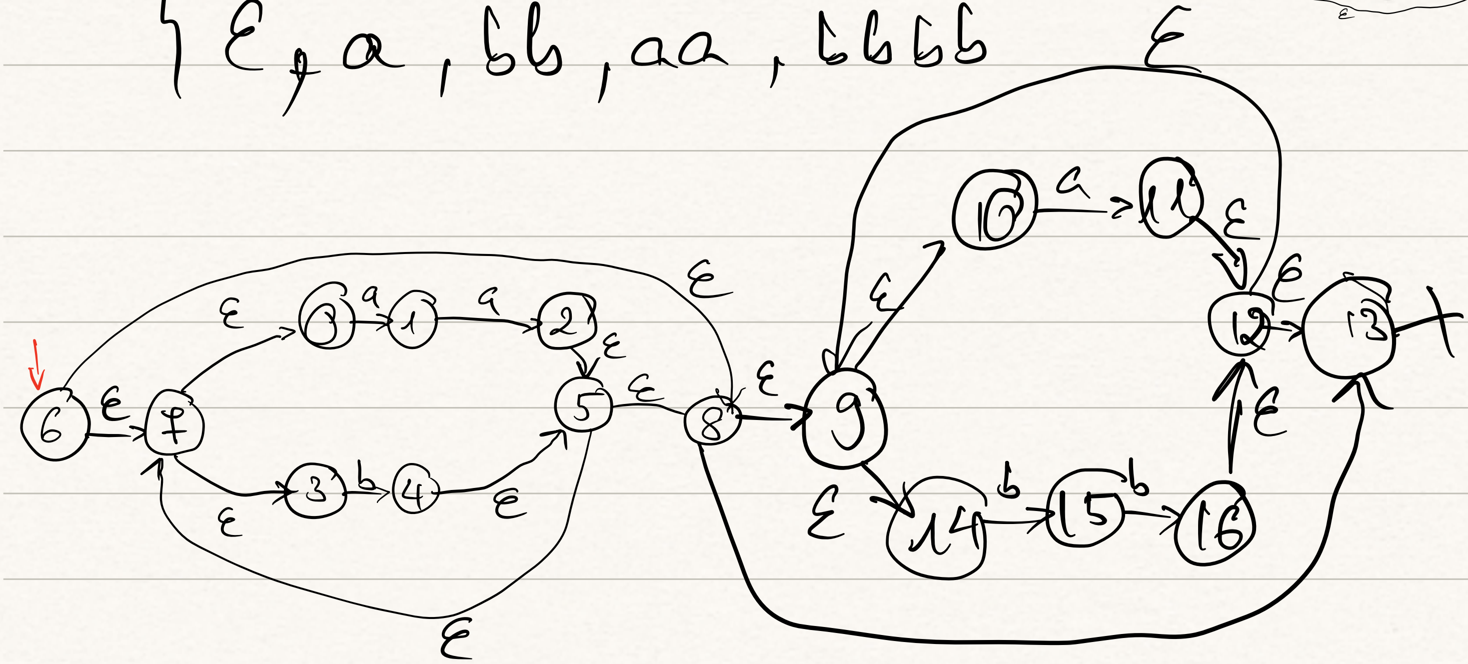
$E_2 = (aa + b)^*(a + bb)^*$



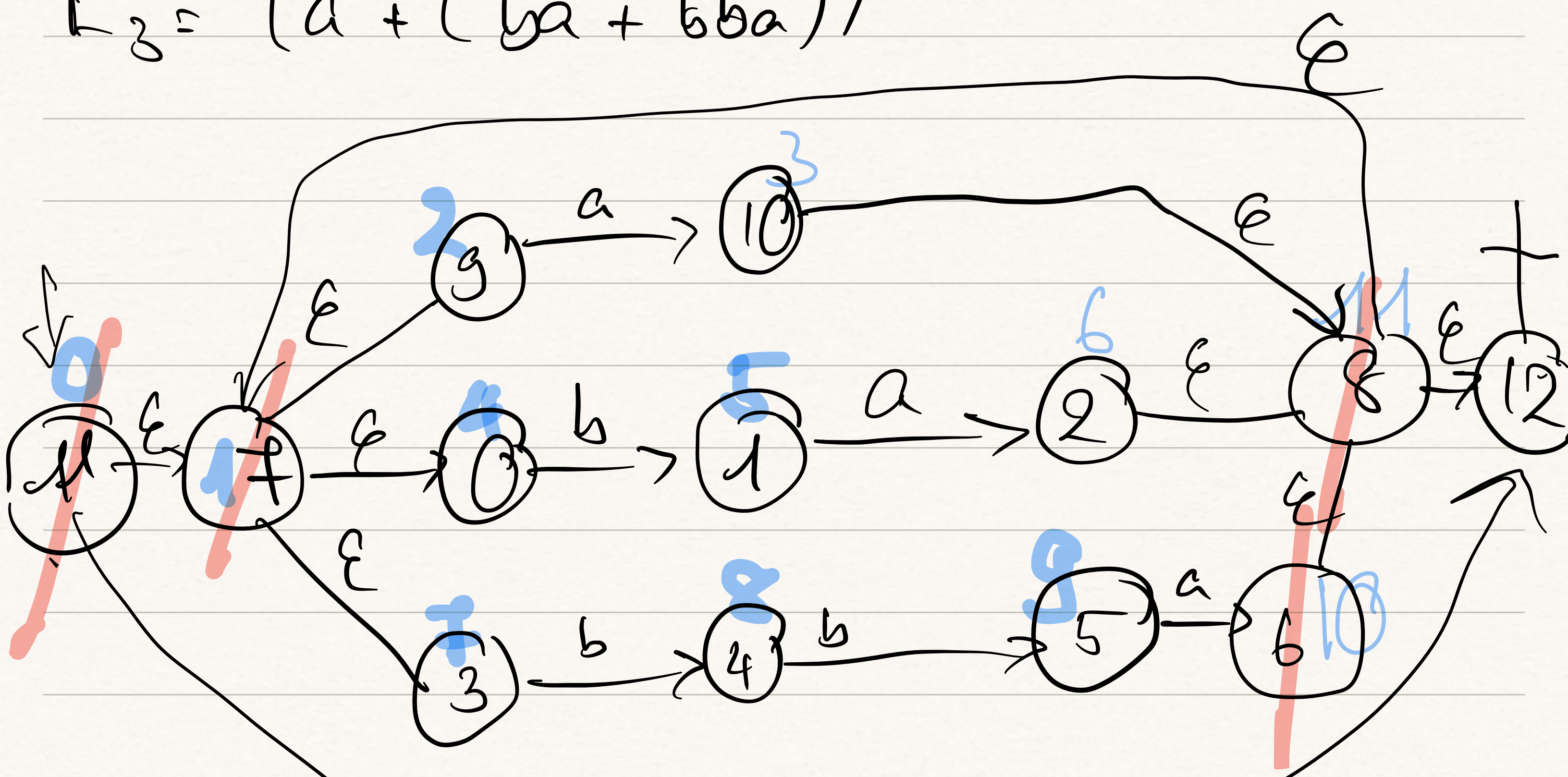


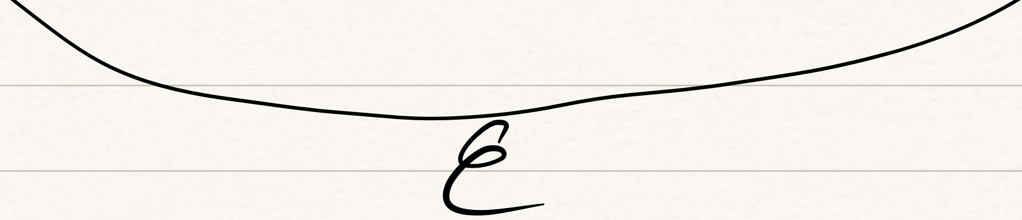
$\{\varepsilon, aa, b, aaaa, bb$

$\{\varepsilon, a, bb, aa, bbbb$



$E_3 = (a + (ba + bba))^*$

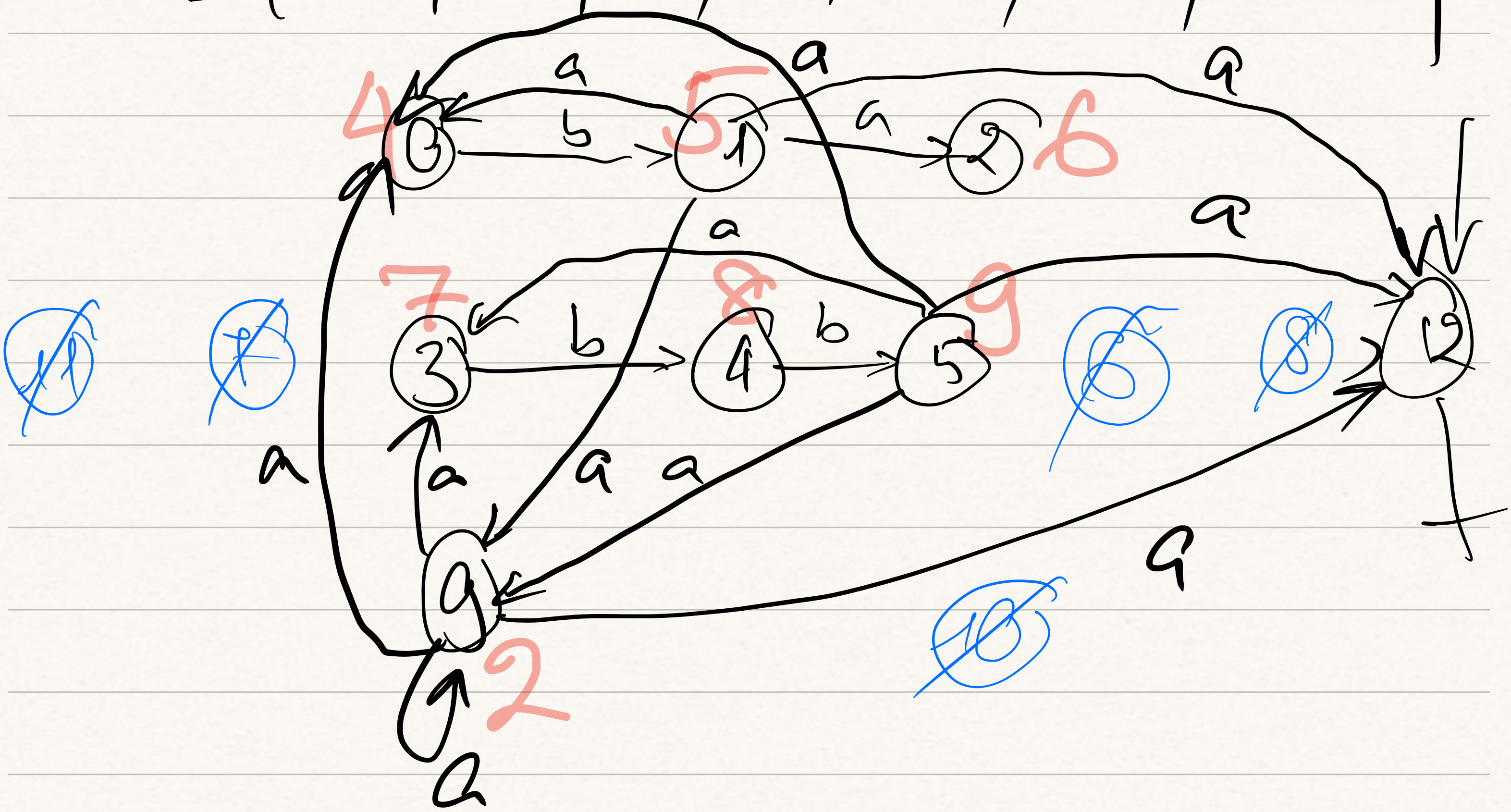




$Q' = \{0, 1, 3, 9, 4, 5, 2, 12\}$

$I' = \varepsilon.\text{clôture}(I)$

$= \{11, 7, 9, 0, 3, 8, 12\}$



ER - Automate

Glushkov

Soit r une ER

1) Linéariser

$\text{lin}(a + ba + bba)^*$

$= (a_1 + b_2 a_3 + b_4 b_5 a_6)^*$

2) Est ce que $\varepsilon \in \mathcal{L}_{in}(r)$? Oui

b) $\text{first}(r') =$ toutes les lettres qui peuvent commencer par un mot de $\mathcal{L}(r')$

c) $\text{last}(r') =$ ________
______ finir par ________

b) first $= \{a_1, b_2, b_4\}$

c) last $= \{a_1, a_3, a_6\}$

d_Y next = tous les couples de lettres peuvent se suivre dans un mot de $\mathcal{L}(e')$ =

(a_1, b_2) (a_1, b_4) (a_1, a_1)

(b_2, a_3)

(a_3, b_2) (a_3, b_4) (a_3, a_1)

(b_4, b_5)

(b_5, a_6)

(a_6, b_2) (a_6, b_4) (a_6, a_1)

Next

$A = (\Sigma, Q, I, F, \delta)$

Q = les lettres de lin(e)

$F = \text{last}(e') \cup \begin{cases} \{0\} & \text{si } \varepsilon \in \mathcal{L}(e) \\ \emptyset & \text{sinon} \end{cases}$

δ | Transition de 0 à a_i ssi $a_i \in$ first(L)

| Transition de a_1 à b_1 ssi $(a_i b_j)$ next