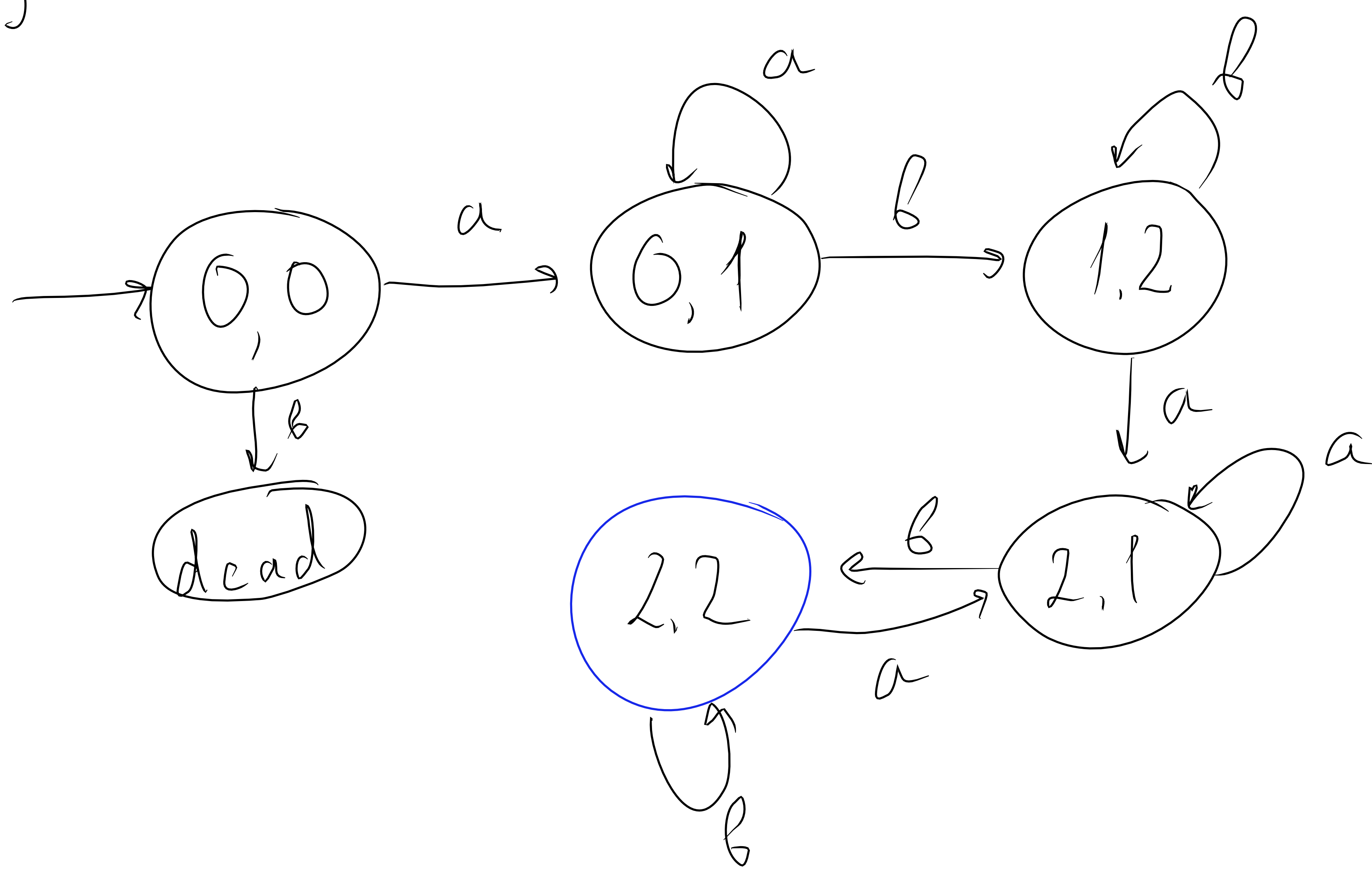
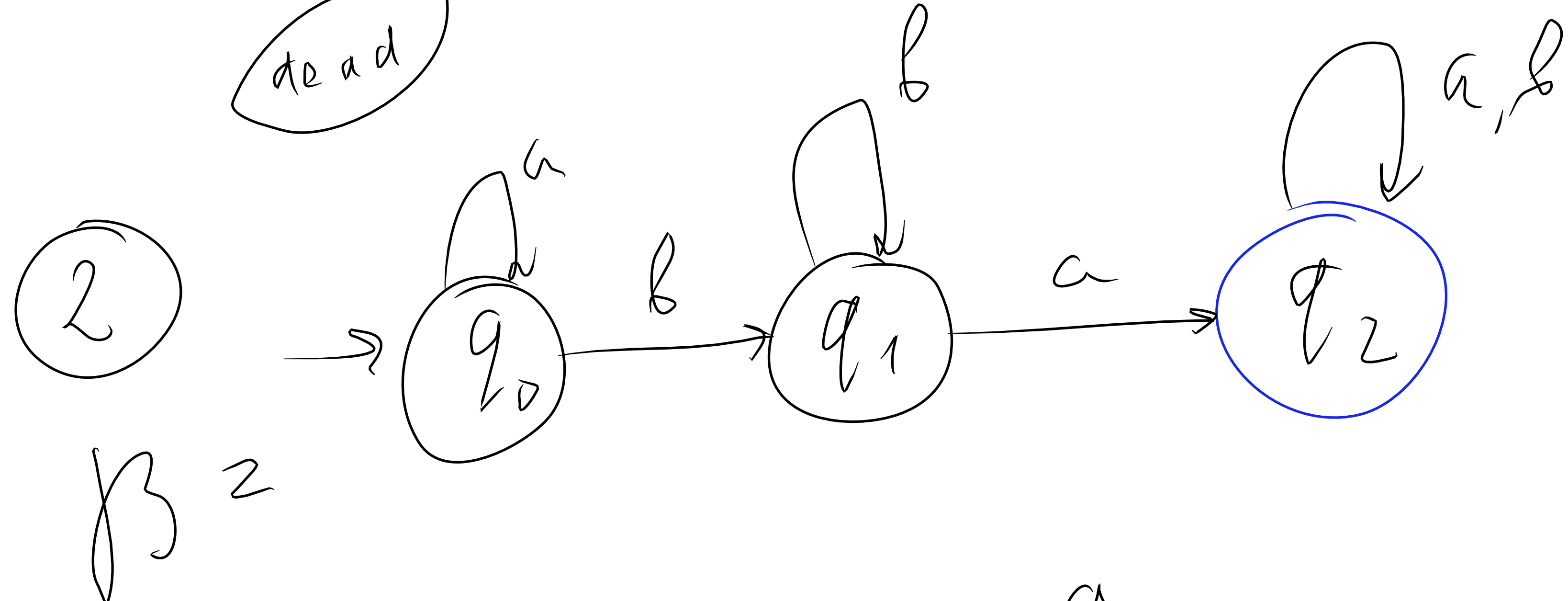
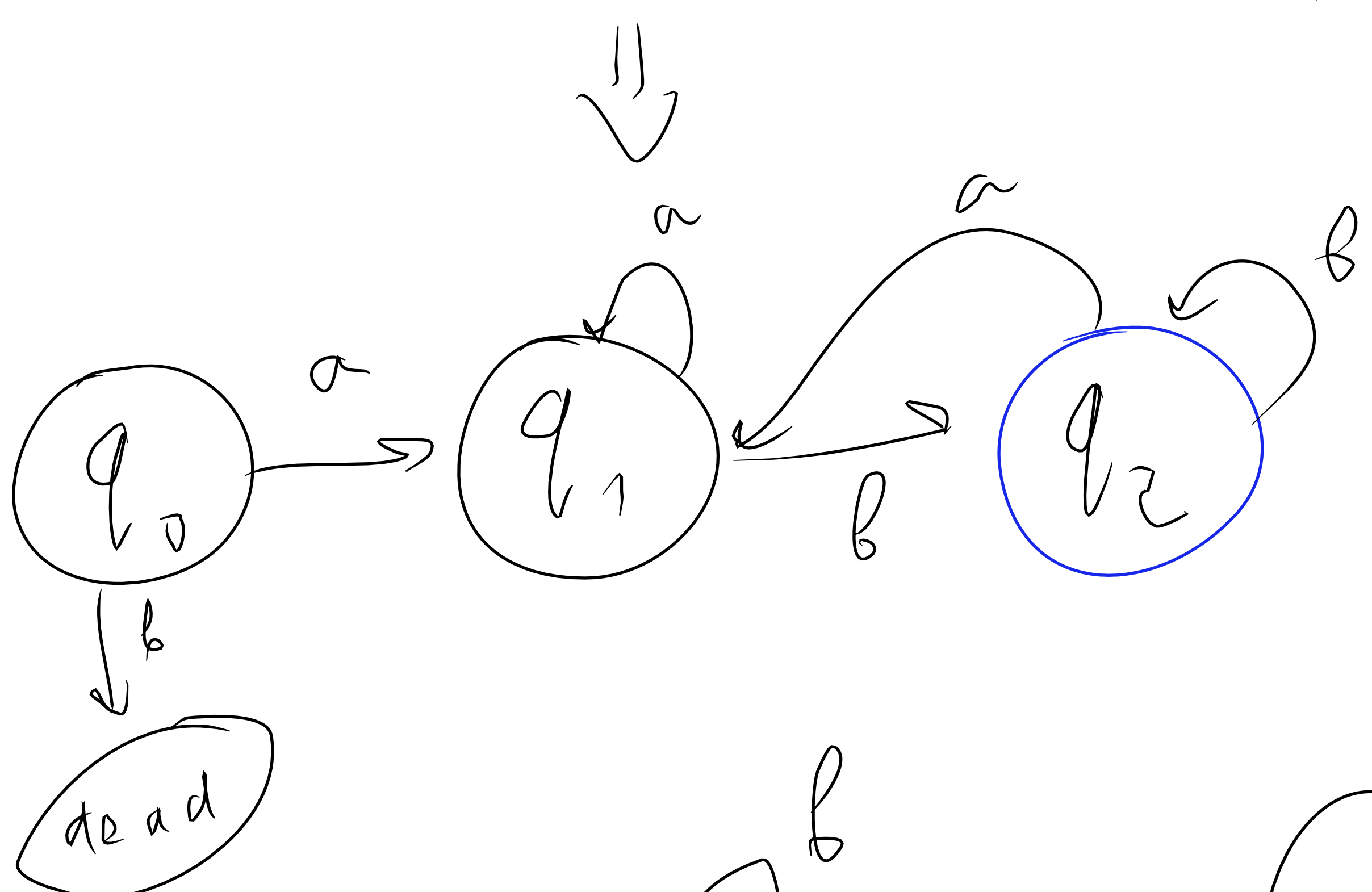


	q_0	q_1	q_2	q_3
q_3	.	.	.	X
q_2	.		X	X
q_1	.	X	X	X
q_0	X	X	X	X



Лемма о накачке: L - регуляр. $\Rightarrow \exists \text{const } n = n(L) \mid \forall w \in L, |w| \geq n, \exists x, y, z \mid w = xyz, y \neq \varepsilon, |xy| \leq n, \forall k > 0, xy^kz \in L$

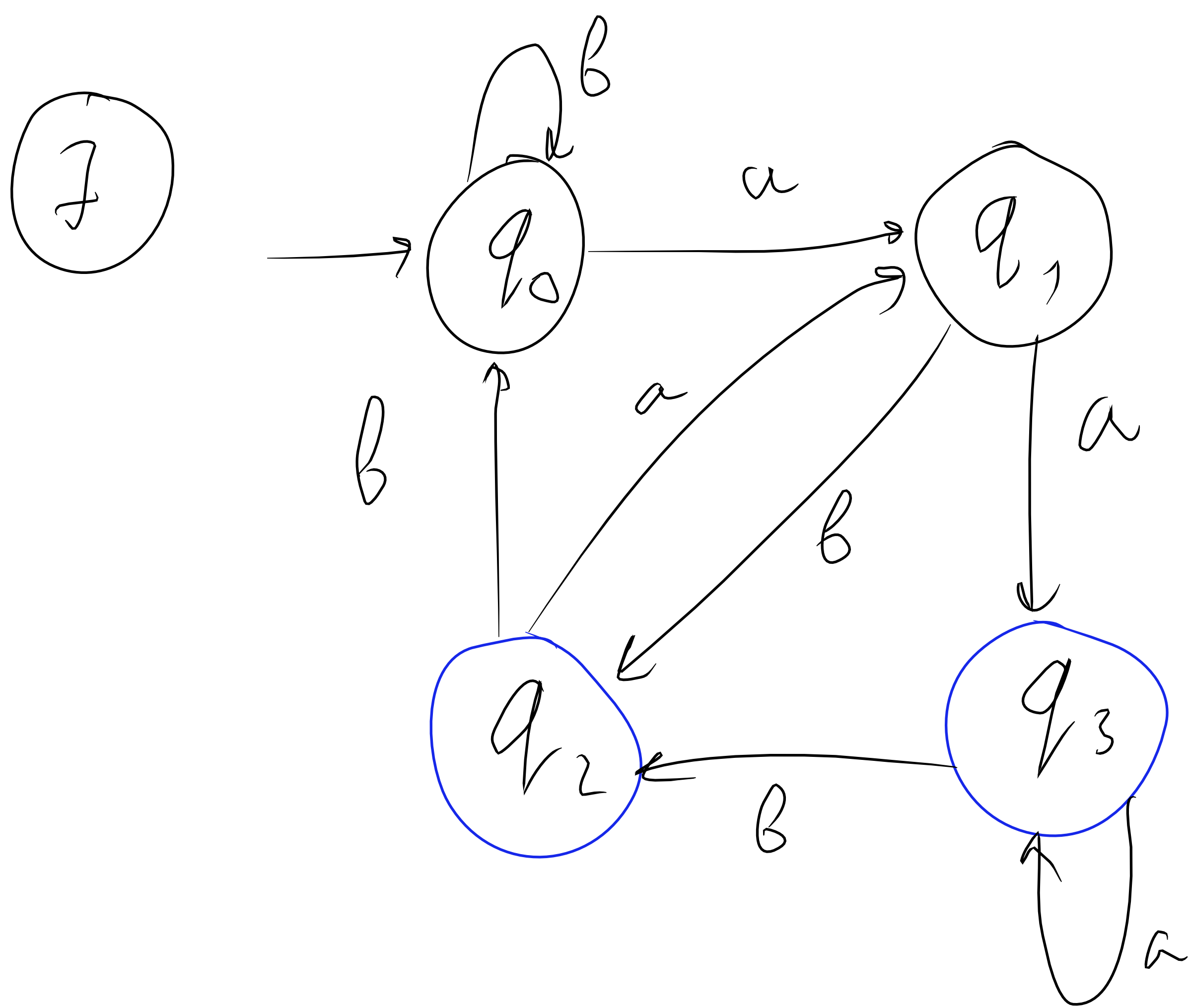
$$PAL = \{w \mid w = w^R\}$$

$\forall n \exists w = 0^n 1 0^n \in PAL \quad \forall x, y, z \mid w = xyz, y \neq \varepsilon, |xy| \leq n \Rightarrow$

$\Rightarrow x = 0^N, y = 0^M, z = 0^{n-N-M} 1 0^n, M > 0$

$\nexists xy^0z = xz = 0^{n-M} 1 0^n, n-M \neq n \Rightarrow 0^{n-M} 1 0^n \notin PAL$

$q_0 = S, q_1 = A, q_2 = B, q_3 = C$



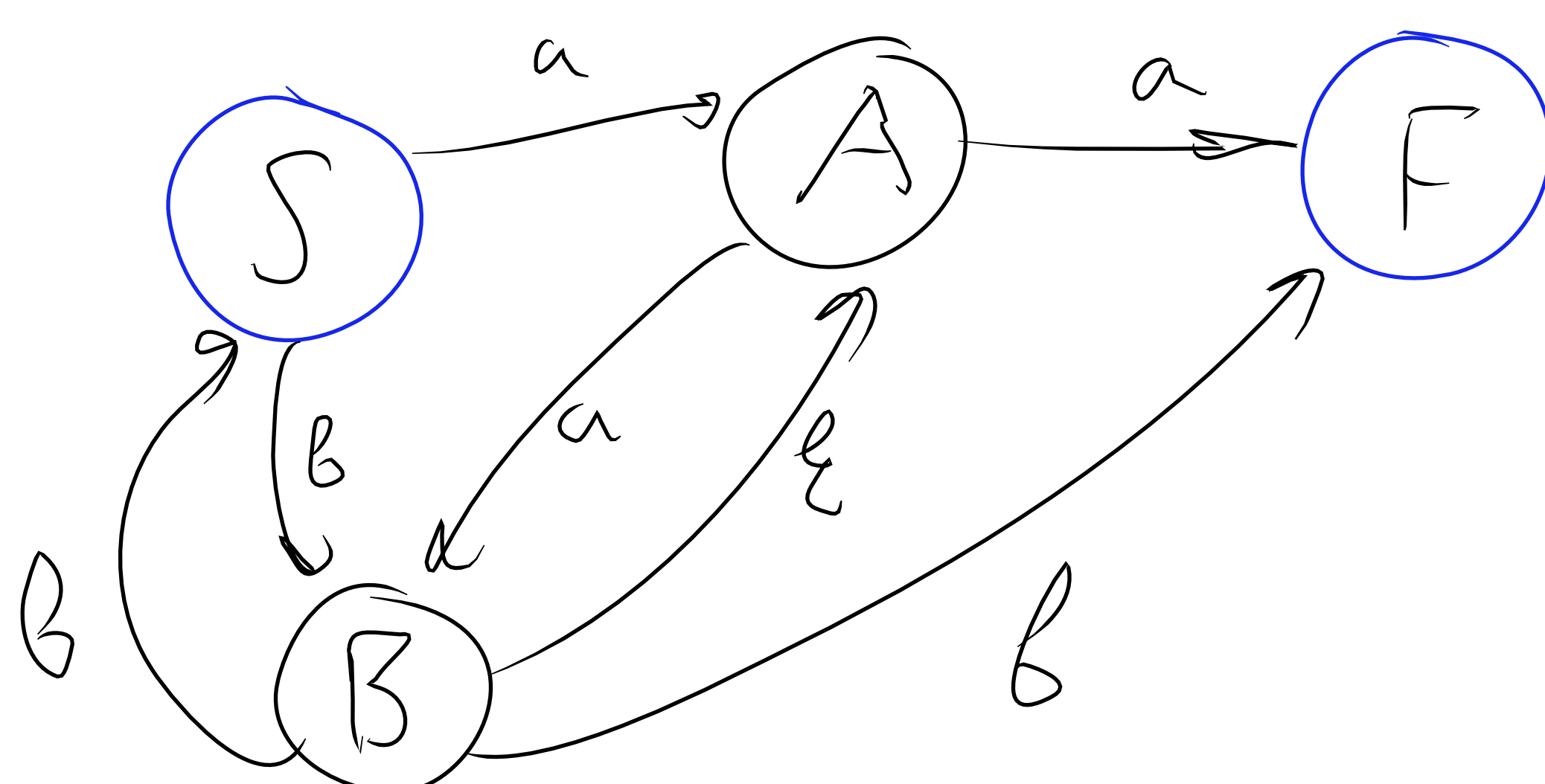
$S \rightarrow aA \mid bS$

$A \rightarrow a \mid aC \mid b \mid bB$

$B \rightarrow aA \mid bS$

$C \rightarrow a \mid bB \mid aC \mid b$

8 $S \rightarrow aA \mid bB \mid \varepsilon$
 $A \rightarrow a \mid aB$
 $B \rightarrow b \mid bS \mid A$



9 $\Sigma^* \setminus \{a^n b^n \mid n \geq 0\}$