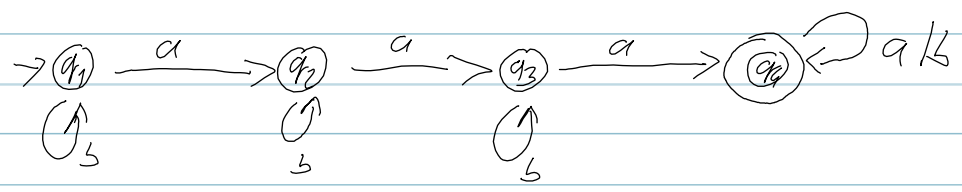
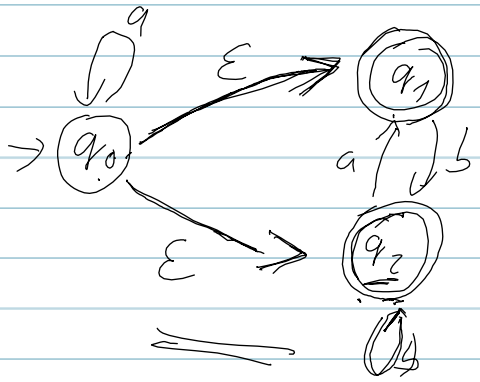


A1) $\Sigma = \{a, b\}$ $L = \{\omega \in \Sigma^* \mid |\omega|_a \geq 3\}$



A2) a)

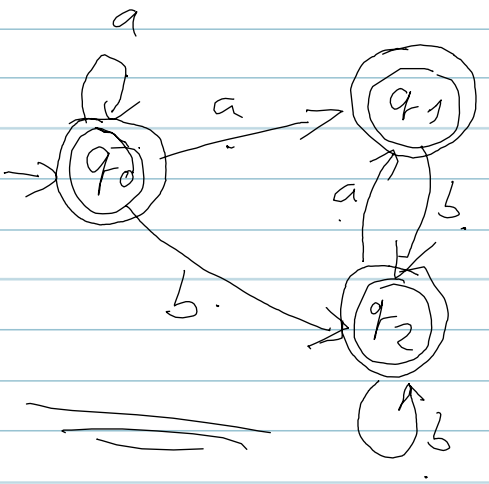


$$\delta'(z, a) = \bigcup_{z' \in [z]_{\epsilon}^*} \delta(z', a)$$

$$\delta'(q_0, a) = \bigcup_{z' \in [q_0]_{\epsilon}^*} \delta(z', a) = \{q_0, q_1, q_2\}$$

$$= \delta(q_0, a) \cup \delta(q_1, a) \cup \delta(q_2, a)$$

$$= \{q_0\} \cup \{ \} \cup \{q_1\} = \{q_0, q_1\}$$



$$E' = \{z \in Z \mid \exists z_0 \in E : z_0 \in [z]_{\epsilon}^*\}$$

b) ~~(Z, Σ, δ, q0, E)~~

$$Z = \{q_0, q_1, q_2\}$$

$$\Sigma = \{a, b\}$$

$$E = \{q_0, q_1, q_2\}$$

$$\delta(q_0, a) = \{q_0, q_1\}$$

$$\delta(q_0, b) = \{q_2\}$$

$$\delta(q_1, b) = \{q_2\}$$

$$\delta(q_2, a) = \{q_1\}$$

$$\delta(q_2, b) = \{q_2\}$$