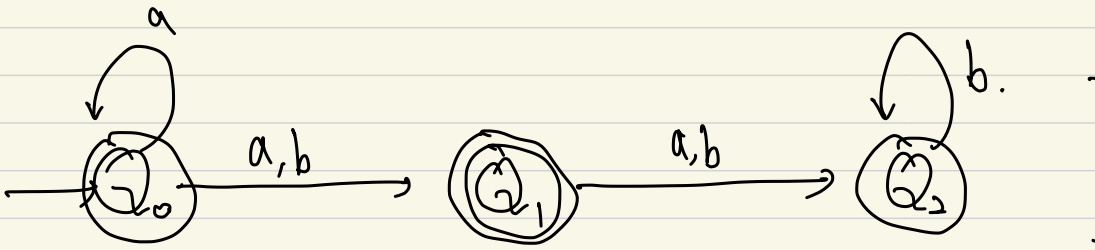
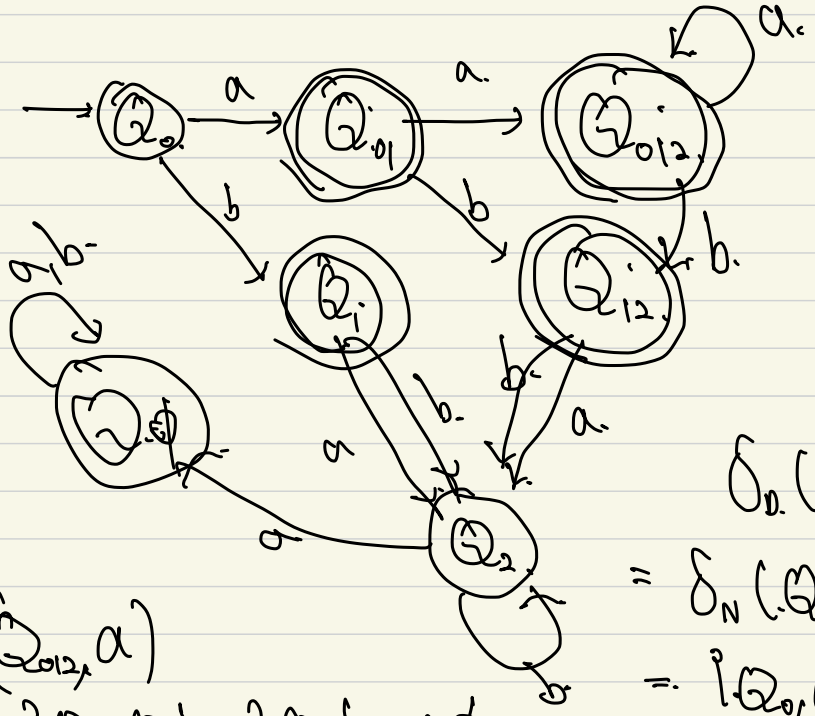


dfa.



$\delta_N(Q_0, a) = \{Q_0, Q_1\}$.

$\delta_N(Q_0, b) = \{Q_1\}$.

$\delta_D(Q_{01}, a)$

$= \delta_N(Q_0, a) \cup \delta_N(Q_1, a)$

$= \{Q_0, Q_1\} \cup \{Q_2\}$

$= \{Q_0, Q_1, Q_2\}$.

$\delta_D(Q_{01}, b)$

$= \delta_N(Q_0, b) \cup \delta_N(Q_1, b)$

$= \{Q_1\} \cup \{Q_2\}$

$= \{Q_1, Q_2\}$.

$\delta_N(Q_1, a) = \{Q_1\}$

$\delta_N(Q_1, b) = \{Q_2\}$

$\delta_N(Q_2, a) = \emptyset$

$\delta_N(Q_2, b) = \{Q_2\}$.

$\delta(Q_{012}, a)$

$= \{Q_0, Q_1\} \cup \{Q_2\} \cup \emptyset$

$= \{Q_0, Q_1, Q_2\}$.

$\delta(Q_{012}, b)$

$= \{Q_1\} \cup \{Q_2\} \cup \{Q_2\}$

$= \{Q_1, Q_2\}$

$\delta(Q_{12}, a)$

$= \{Q_2\} \cup \{\emptyset\}$

$= \{Q_2\}$

$\delta(Q_{12}, b)$

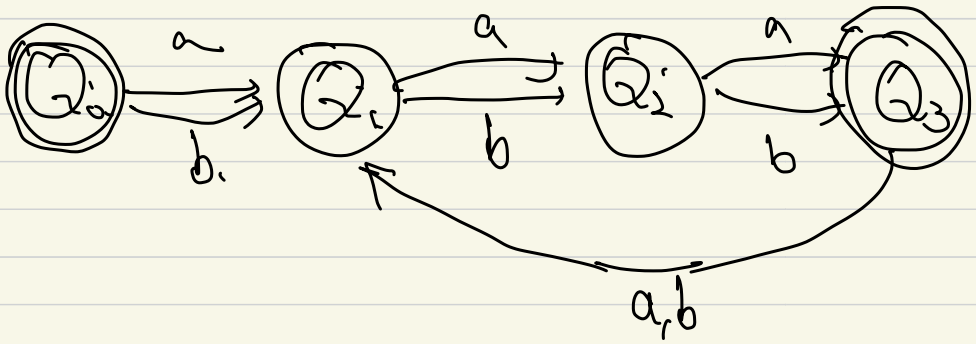
$= \{Q_2\} \cup \{Q_2\}$

$= \{Q_2\}$

#2 find the dfa. for the following language on $\Sigma = \{a, b\}$

$L = \{w : |w| \bmod 3 = 0\}$.

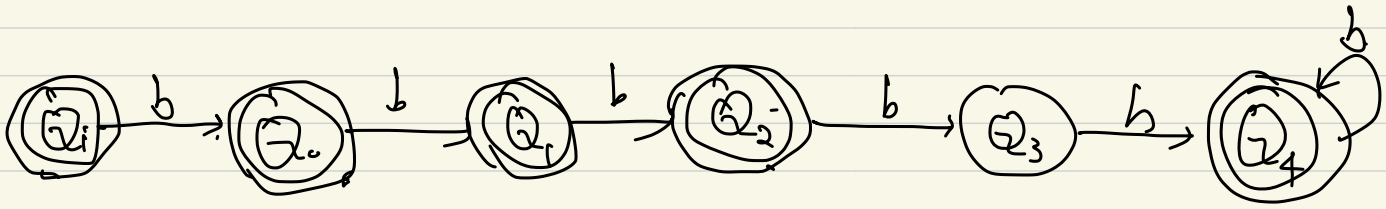
나머지 2개 3의 배수이면 된다.



3. Show that language $L = \{b^n : n \geq 0, n \neq 4\}$ is regular.

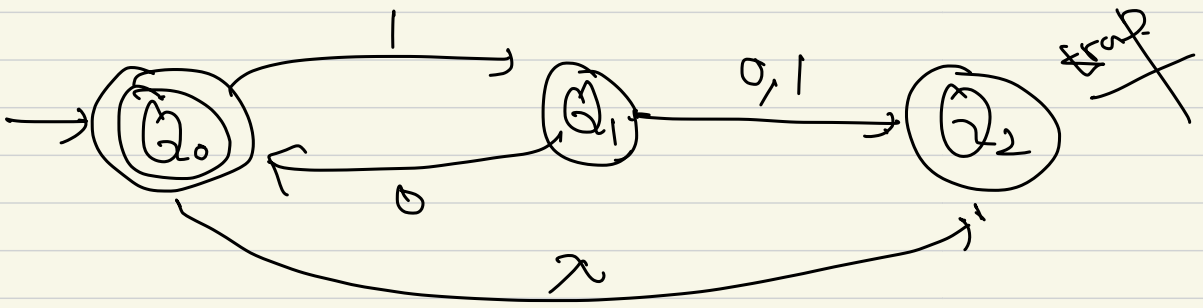
DFA로 표현 가능?

λ b bb bbb bbbb bbbbb.



∴ DFA is regular. //

#4 find $\delta^*(q_0, 1011)$ and $\delta^*(q_1, 0010)$.



$\delta^*(q_0, 1011) = \{q_2, \}$.

$\delta^*(q_1, 0010) = \emptyset$

#5 Find an nfa without λ-transition (complicate.)

and with a single final state that accepts the set

$$\{b \cup \{a^n \mid n > 2\}.$$

b, aaa, aaaa.