Ans 1 Minimize DFA

Compare all states
and arrange
accordingly.

	a	b
→ q_0	q_1	q_2
q_1	q_1	q_3
q_2	q_1	q_2
q_3	q_1	q_4
✱ q_4	q_1	q_2

$\{q_0, q_1, q_2, q_3\}$ $\{q_4\}$

$\{q_0, q_2\}$ $\{q_1\}$ $\{q_3\}$ $\{q_4\}$
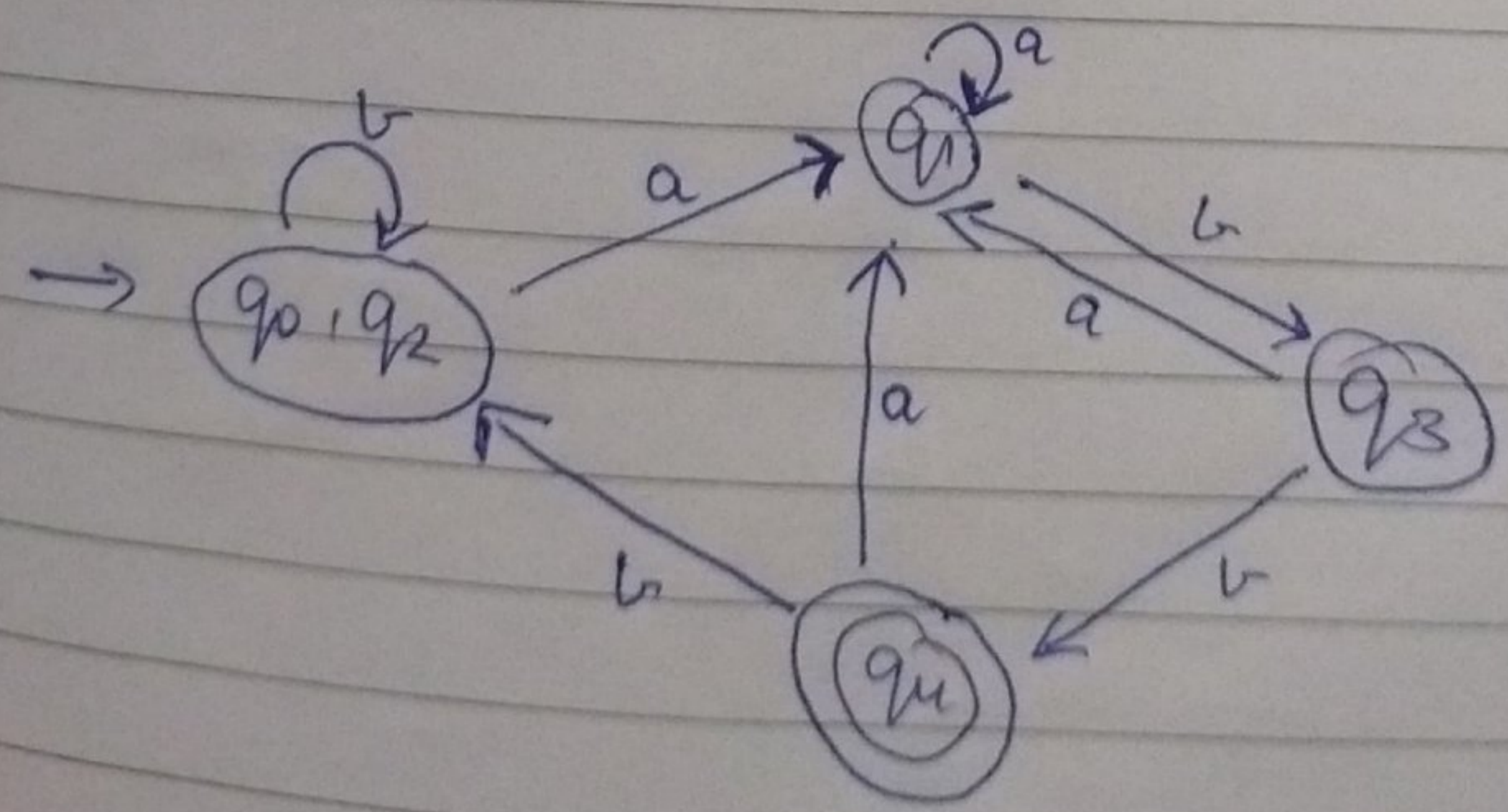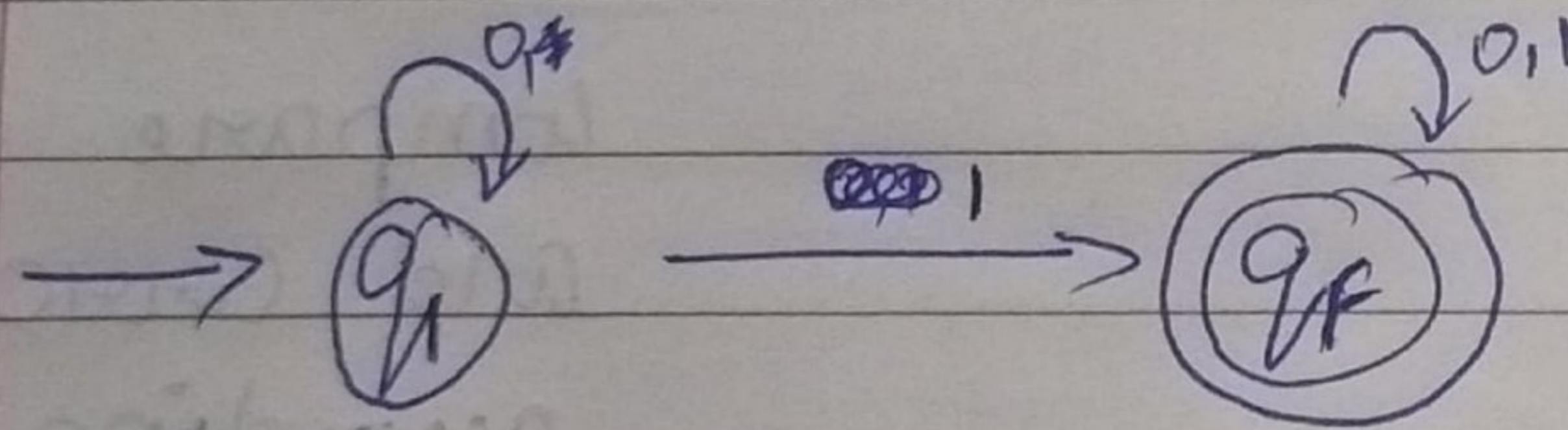

Minimize DFA

2) NFA to Regular Expression
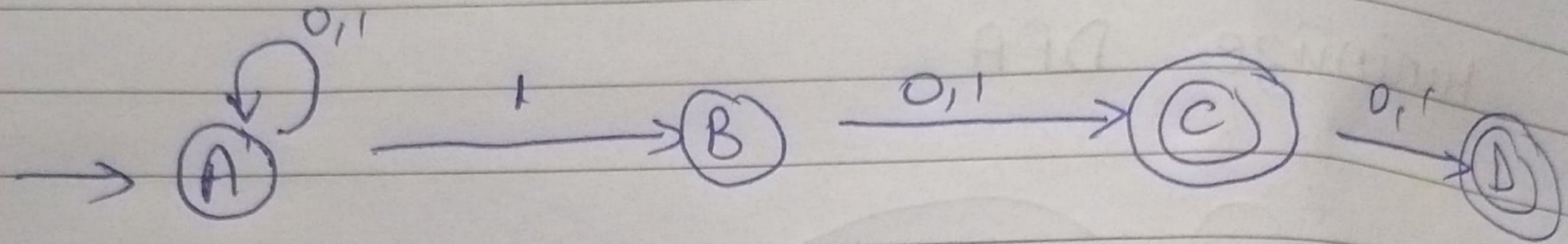
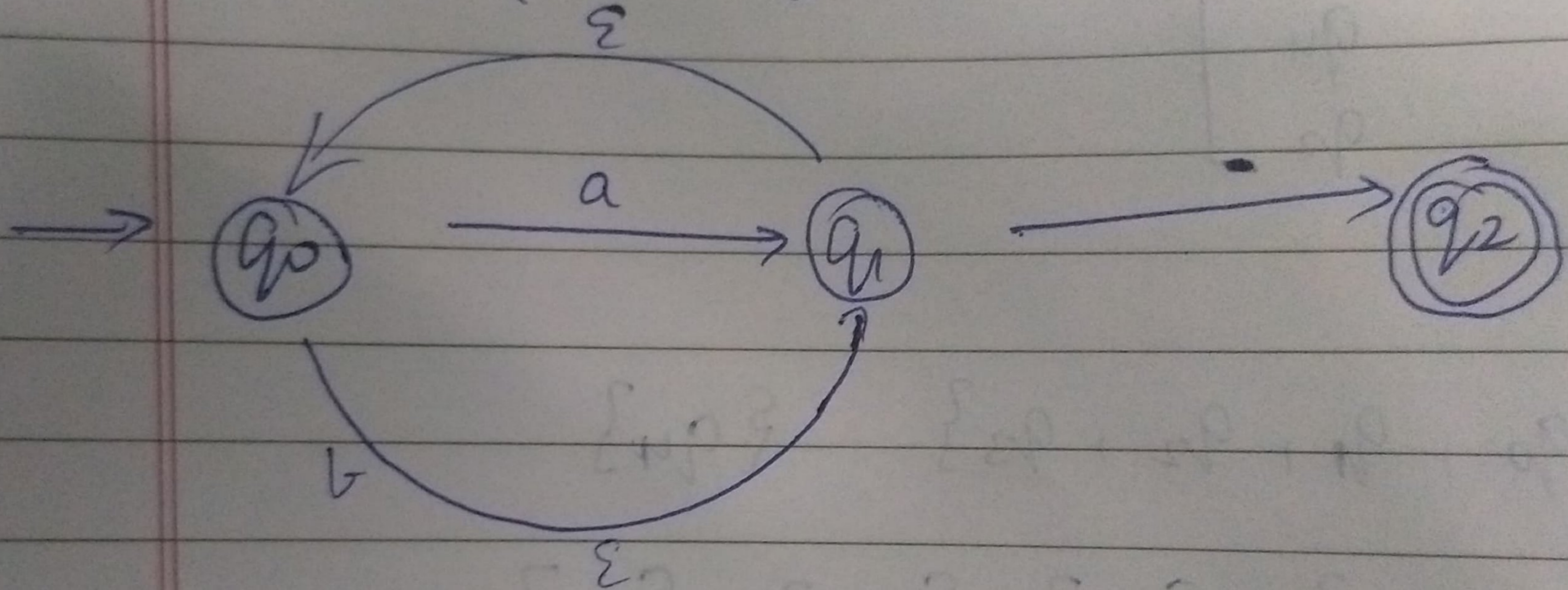$$(0|1)^* \mid (0|1)(0|1)$$

3) $(0+1)\mid(0+1)$ to an NFA

4)

$$a(b+c)^* b$$

Quest Regular expression for one 'a' over $\Sigma = \{a, b, c\}$

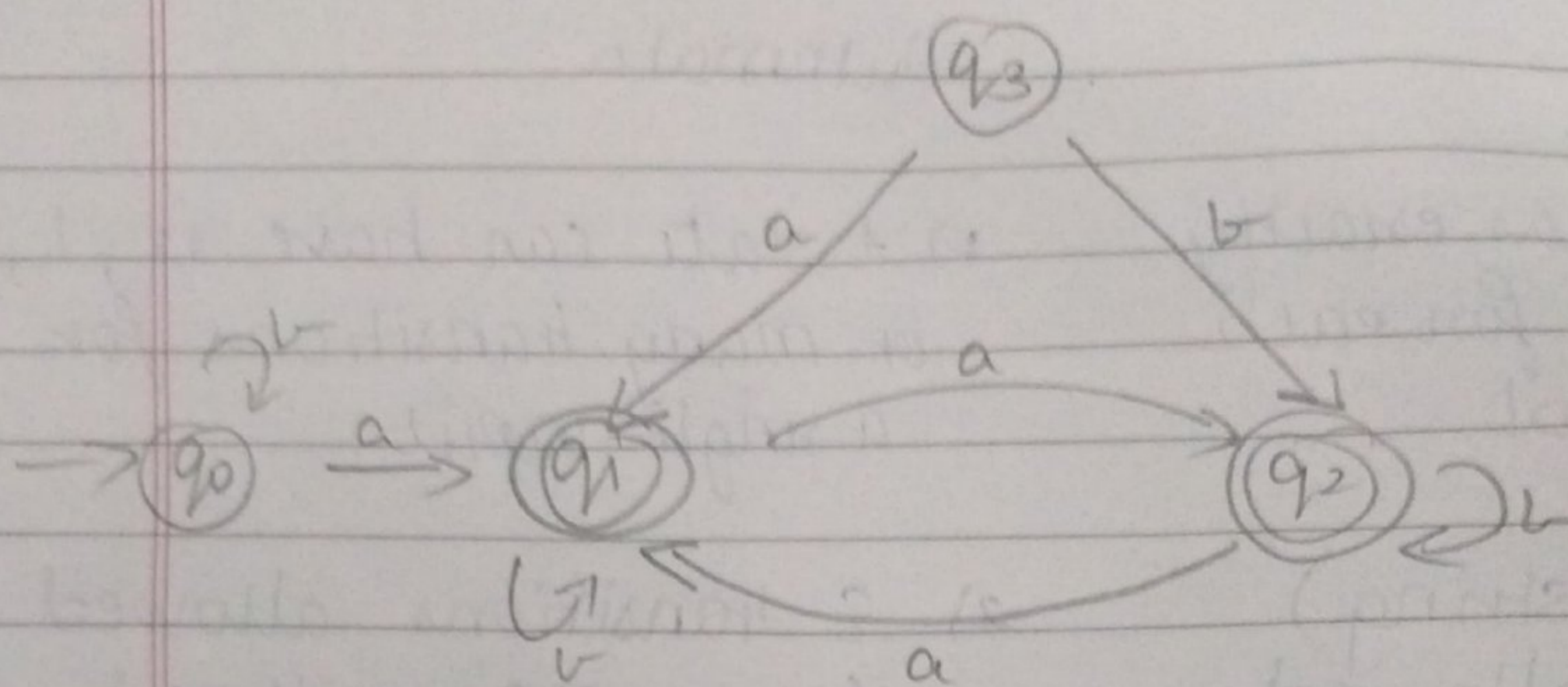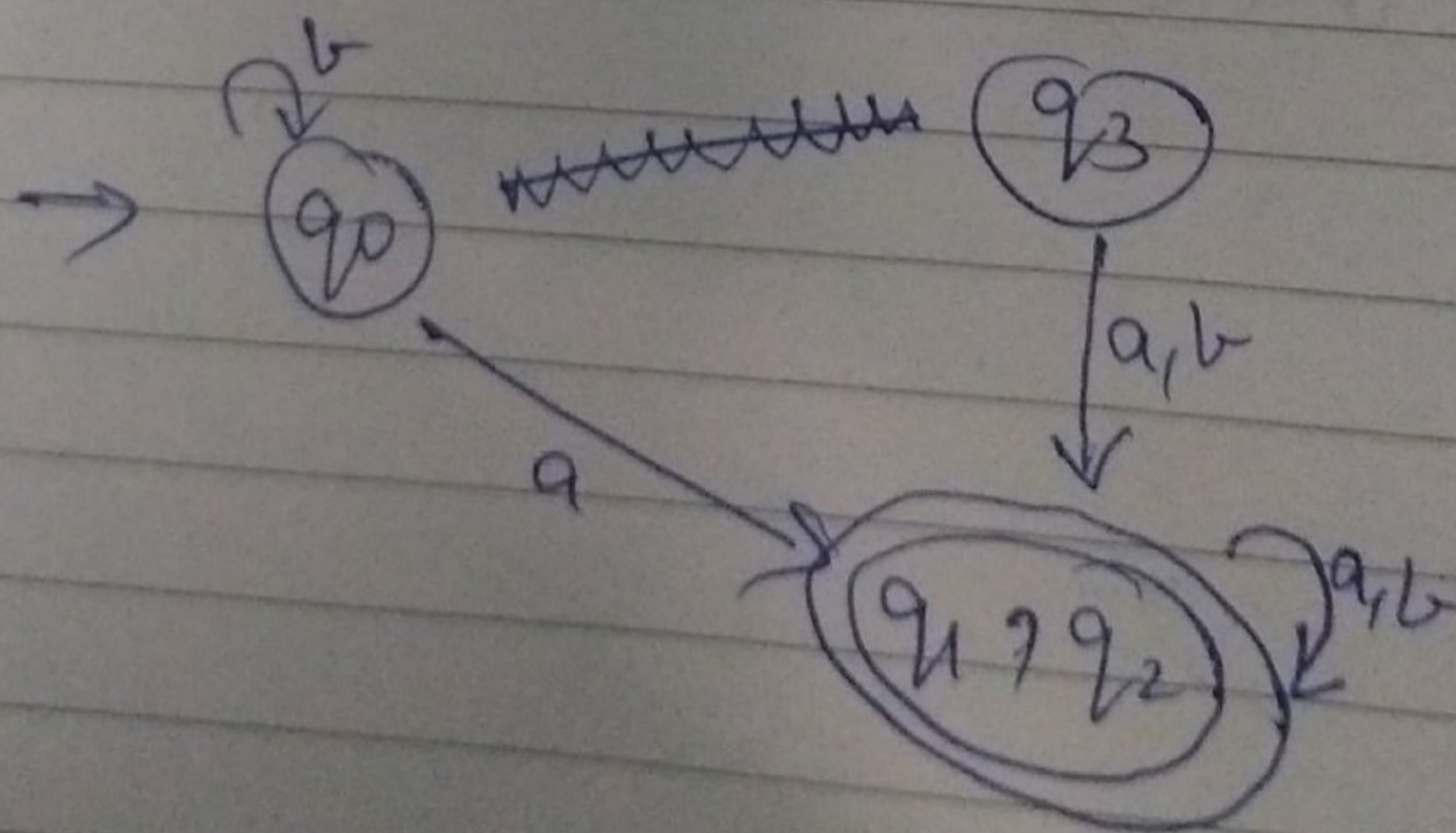**Ans** $(b+c)^* \, a \, (b+c)^*$
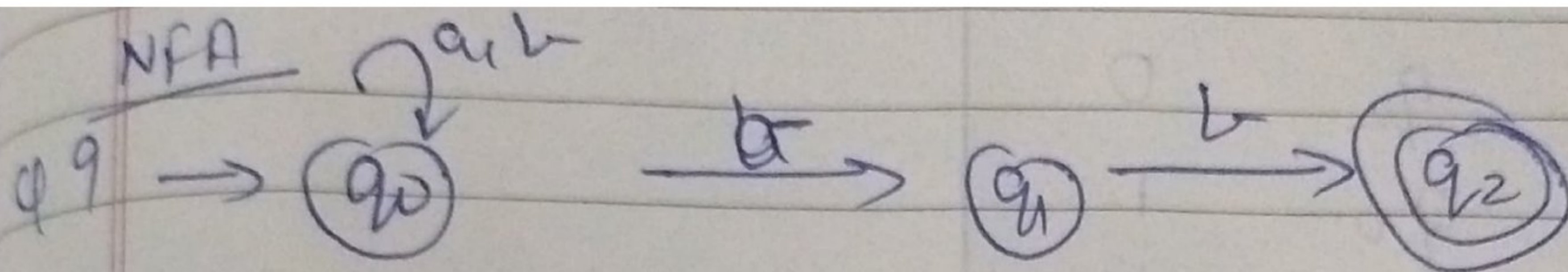
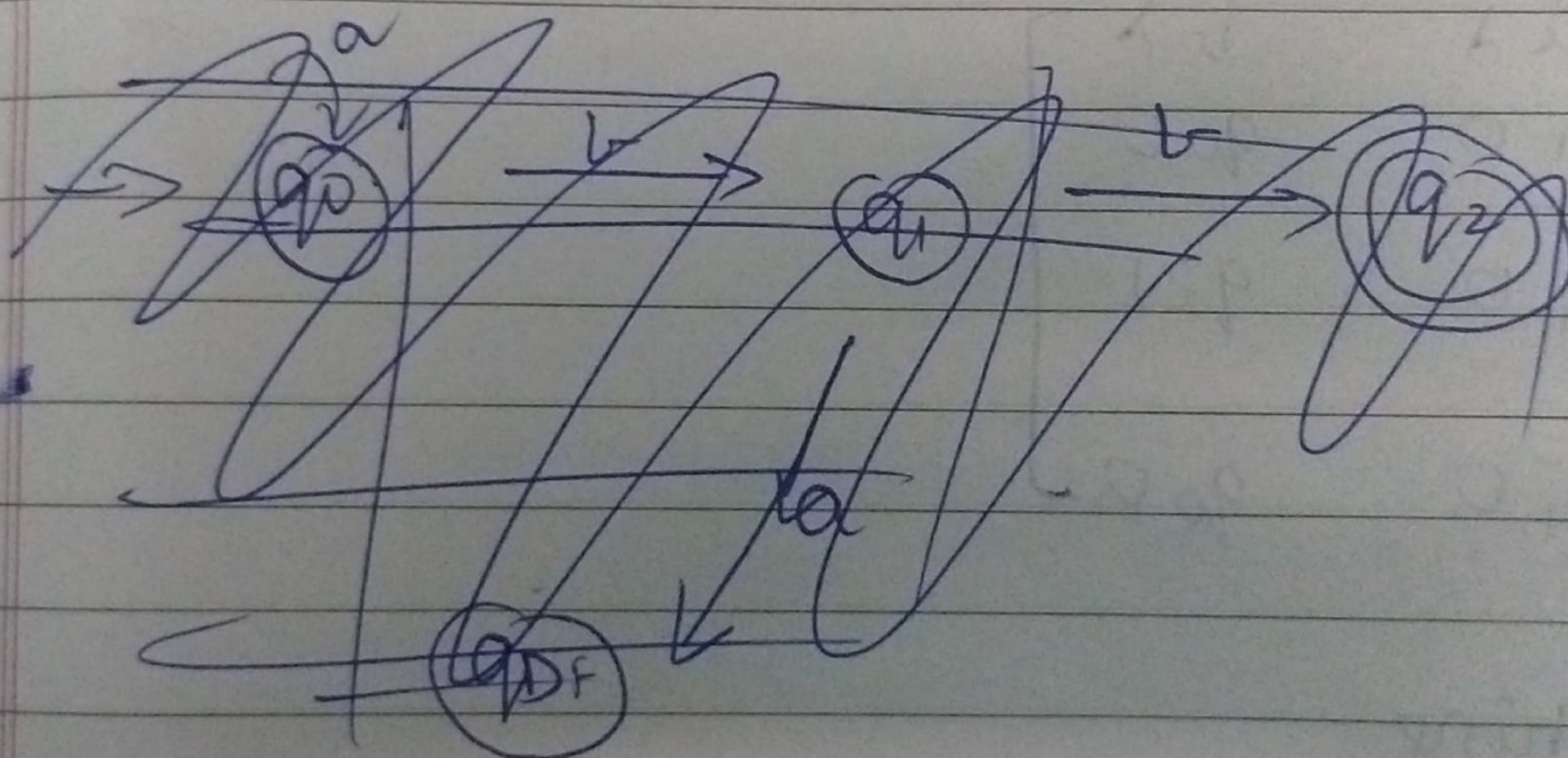accepted strings
a
ba
ca
bca
cab
bbac
cbac

7 Minimize DFA

	a	b
→ q0	q1	q0
→ q1	q2	q1
→ q2	q1	q2
q3	q1	q2

$\{q_0, q_3\}$ *$\{q_1, q_2\}$

$\{q_0\}$ $\{q_3\}$ $\{q_1, q_2\}$

NFA

$qq \rightarrow (q_0) \underset{a,b}{\circlearrowright} \xrightarrow{\quad a \quad} (q_1) \xrightarrow{\quad b \quad} (\!(q_2)\!)$

into DFA

Ans

$\rightarrow (q_0) \underset{a}{\circlearrowright} \xrightarrow{\quad b \quad} (q_1) \underset{a}{\circlearrowright} \xrightarrow{\quad b \quad} (\!(q_2)\!)$

$q_2 \xrightarrow{b} q_1 \qquad q_1 \xrightarrow{a} q_0$
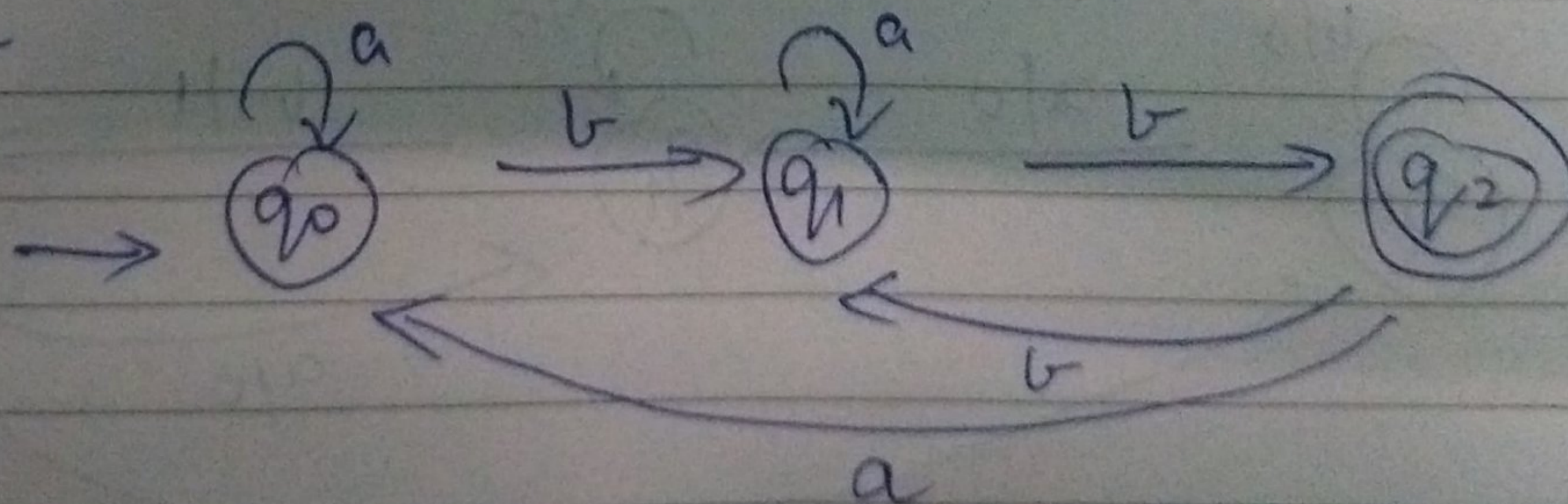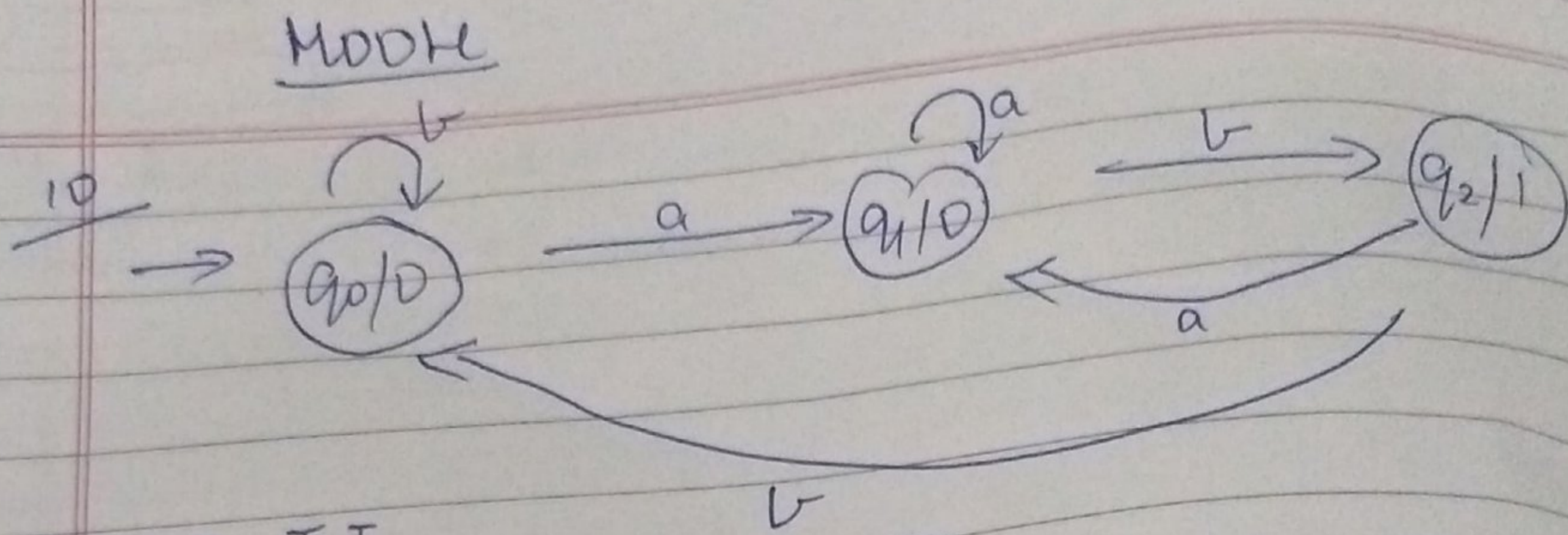
MOORE

Moore T.T

	a	b	λ
q_0	q_1	q_0	0
q_1	q_1	q_2	0
q_2	q_1	q_0	1

Mealy T.T

	a λ	b λ
q_0	q_1 0	q_0 0
q_1	q_1 0	q_2 1
q_2	q_1 0	q_0 0

Mealy Machine