FLAT (Unit- II)

- R.E to DFA
- DFA to R.E
- Pumping lemma
- Minimization
- Equivalence
- Construct R.E

X

expression: a, b, 0, 1, *, +,

a^* ⟶ Any number of a's

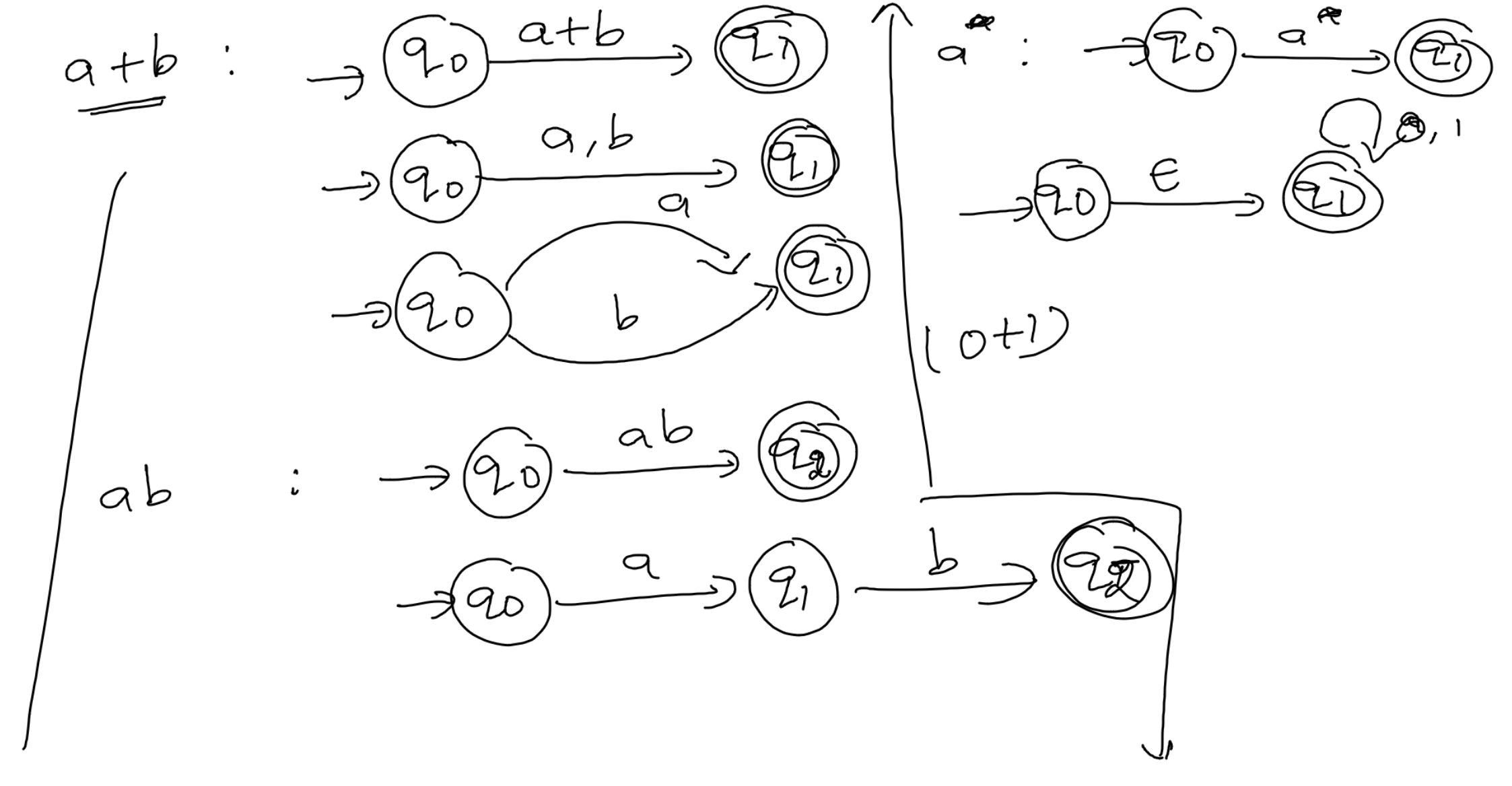
∈, a, aa, aaa, - - - -

a^+ ⟶ a, aa, aaa - - - -

a+b ⟶ either a or b

a.b ⟶ a and b

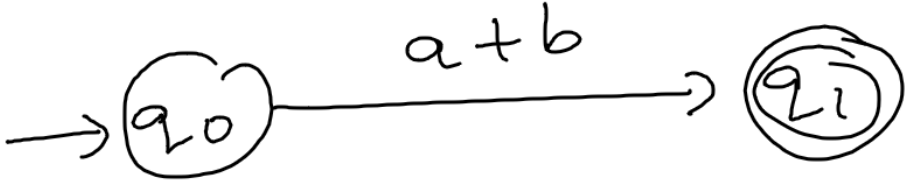
$(a+b)^*$ ⟶ ∈, a, aa, ab - - - or ∈, b, bb, ba

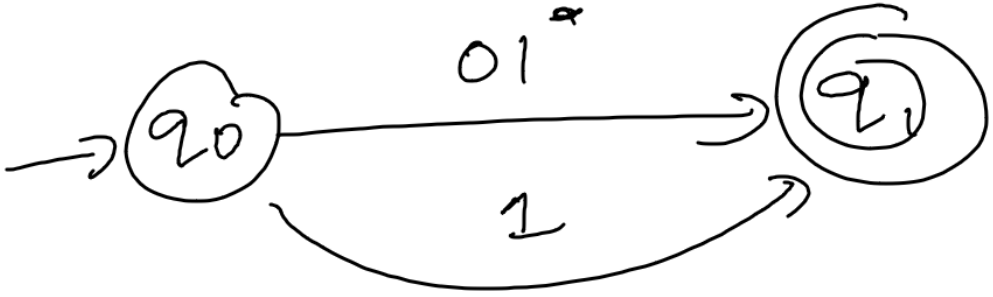

a+b :
q0
a+b
q1
a,b
a
b
ab :
ab
a
b
q2
a* :
a*
ε
0,1
(0+1)*

(Q) Convert $(01^*)+1$ to finite Automata

$a = 01^*$

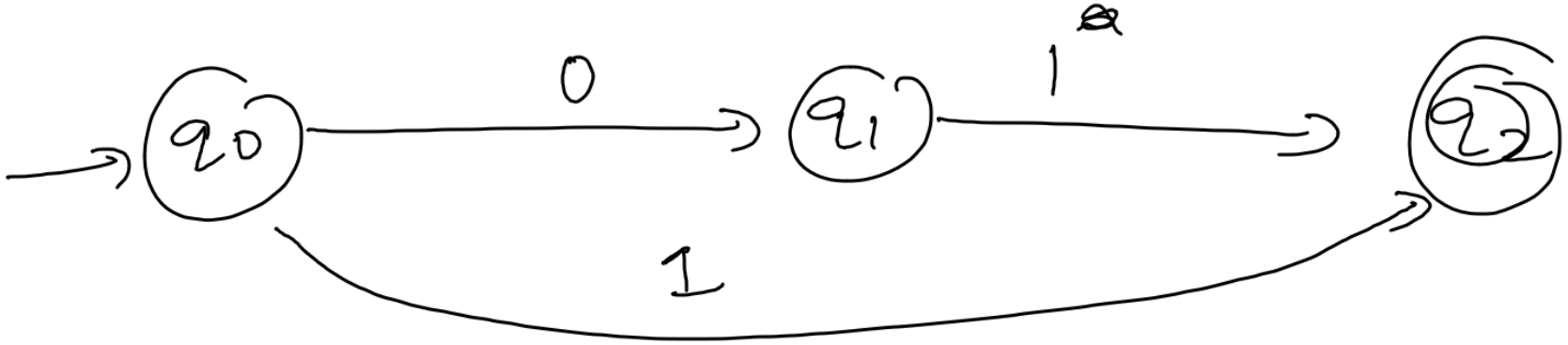
$b = 1$

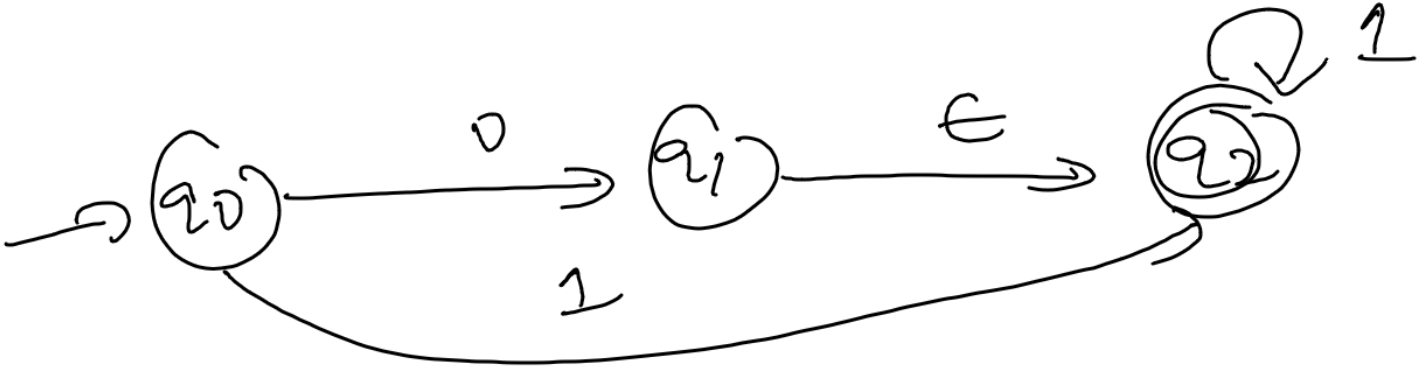




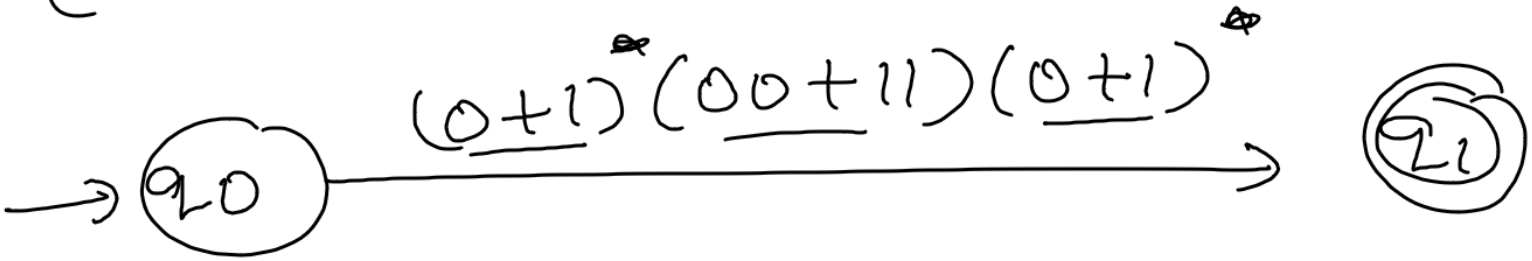
$a = 0$

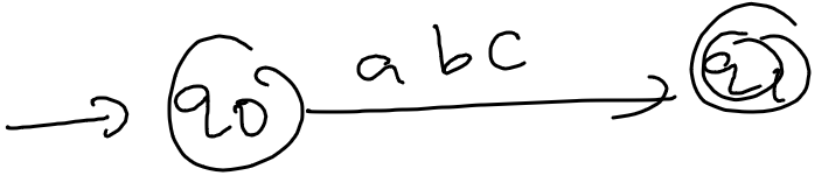
$b = 1^*$

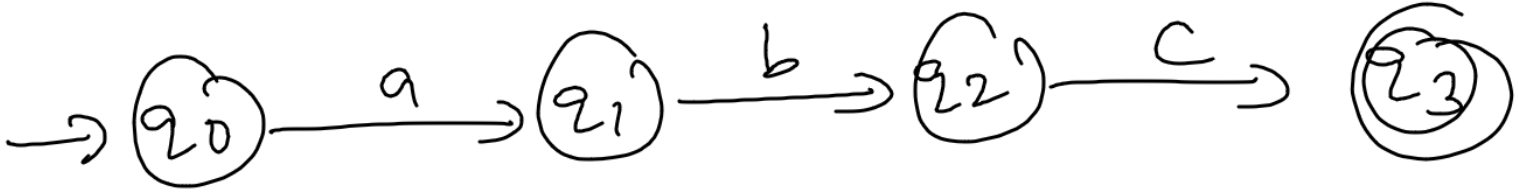

q0
0
q1
1
q2
1


q0
0
q1
ϵ
q2
1
1

Q $(0+1)^*(00+11)(0+1)^*$



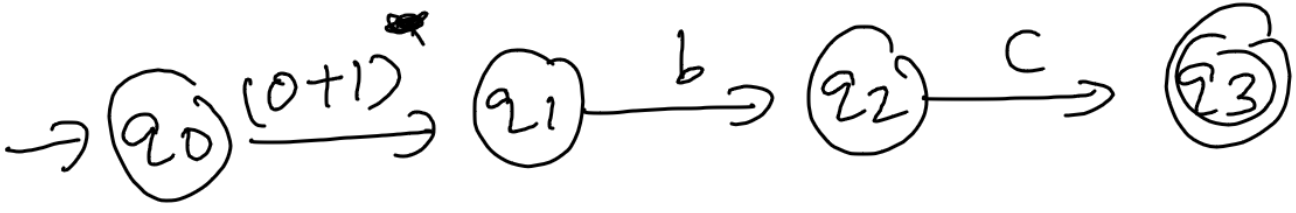


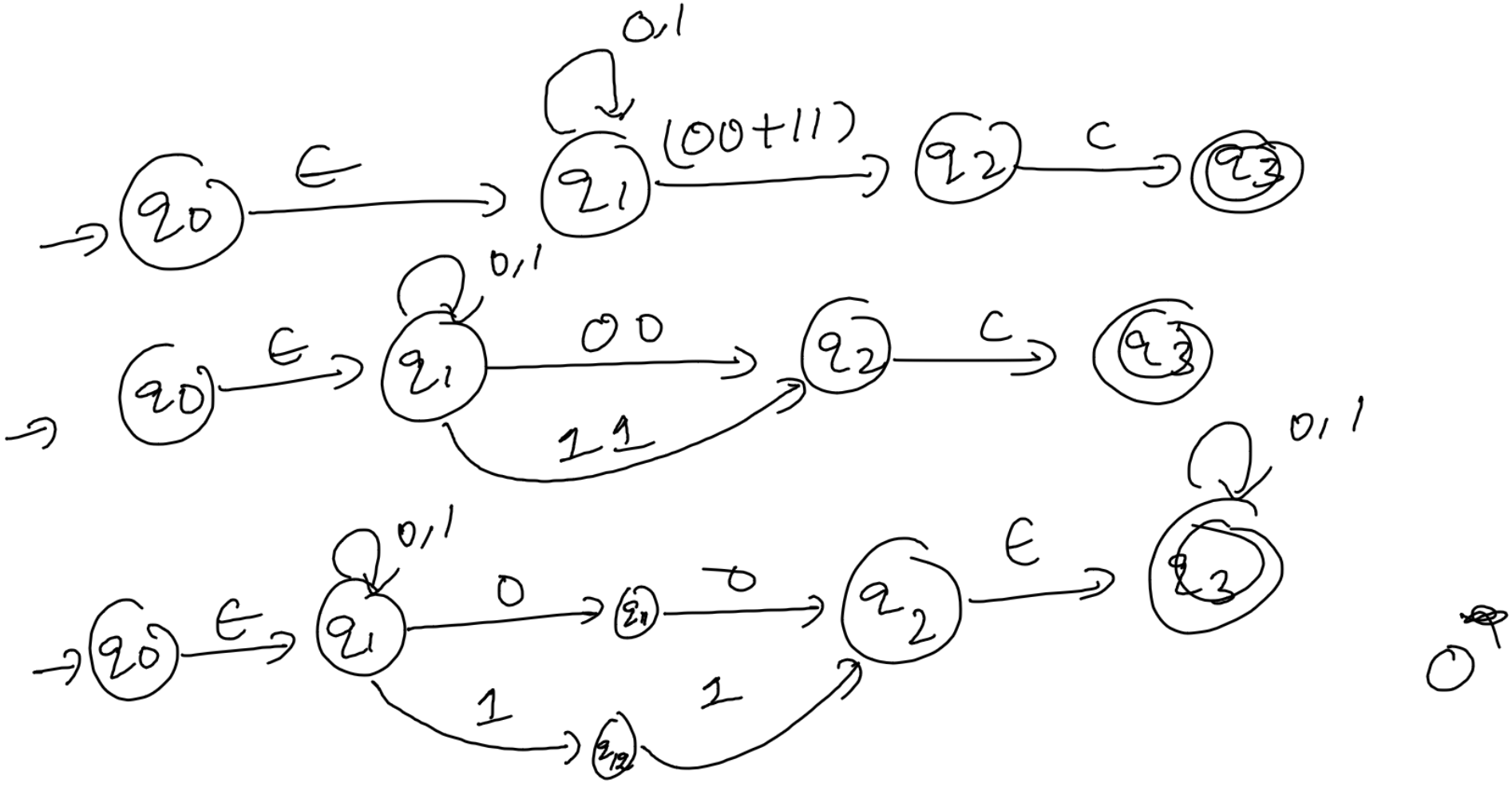


$a = (0+1)^*$

$b = (00+11)$

$c = (0+1)^*$

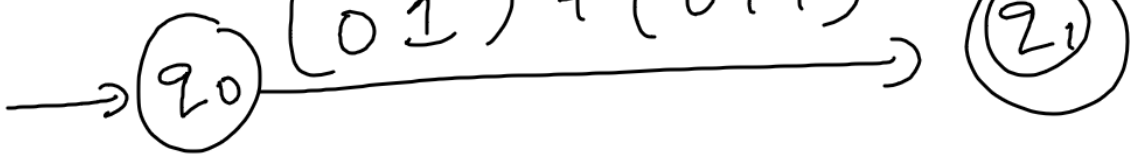



0,1
(00+11)
ε
c
0,1
00
11
0,1
0
0
ε
1
1
0,1

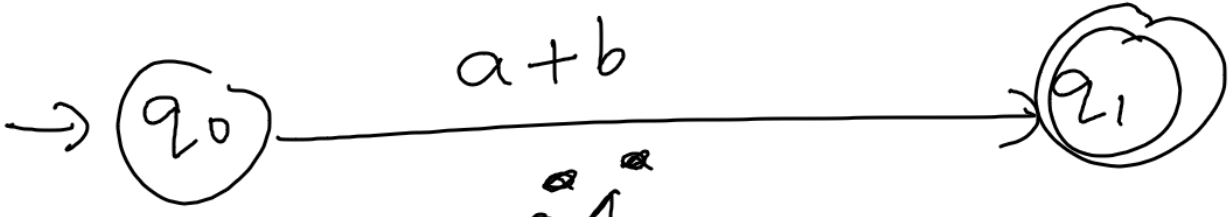
$(0^*1^*)+(0+1)^*$

a b

$(0^*1^*)+(0+1)^*$

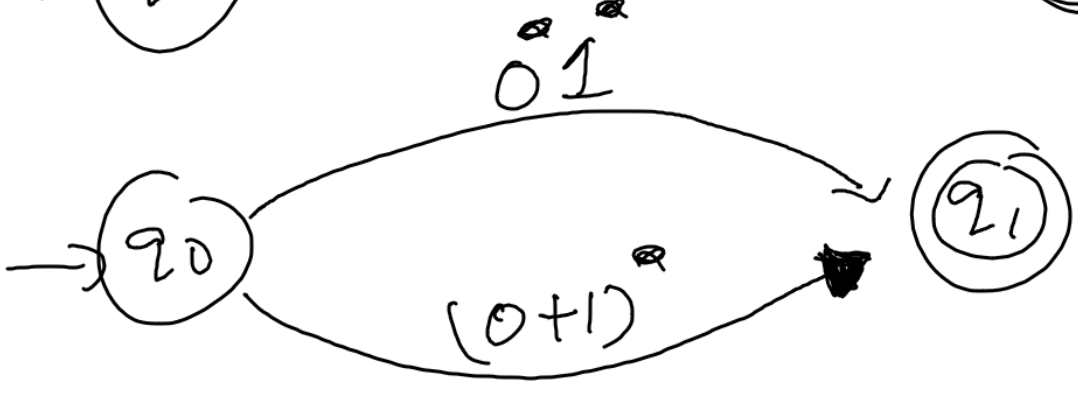


$a+b$



0^*1^*

$(0+1)^*$

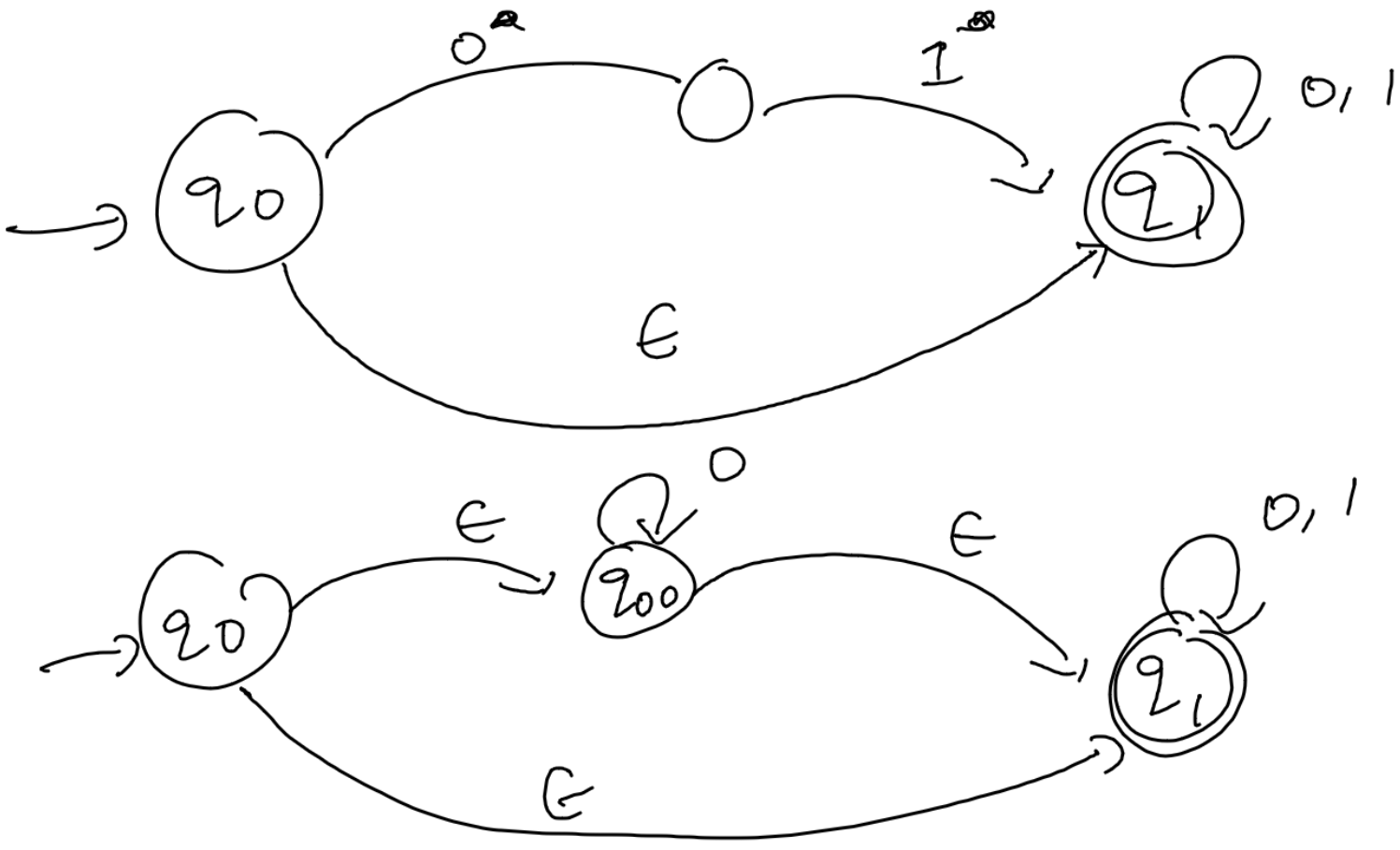


$a = 0^*$

$b = 1^*$

ab

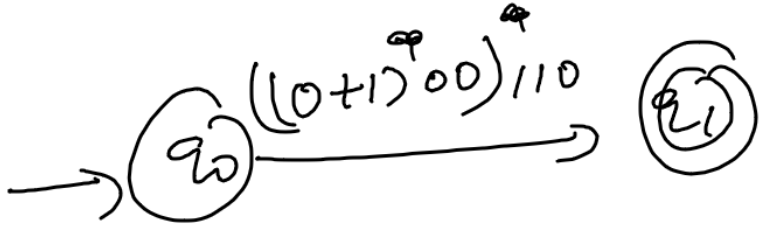
$(a+b)^*$

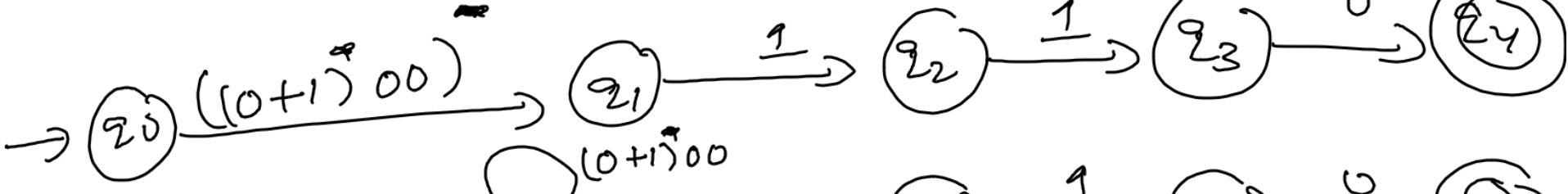

0
1
0, 1
q0
q1
ϵ
ϵ
0
ϵ
0, 1
q0
q00
q1
ϵ

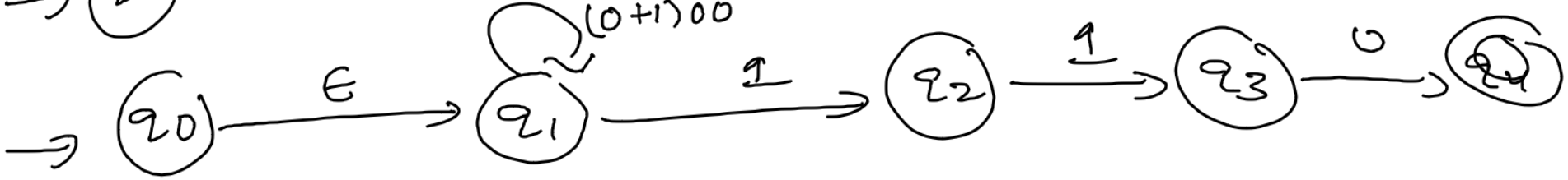
(a) $((0+1)^*00)^*110$

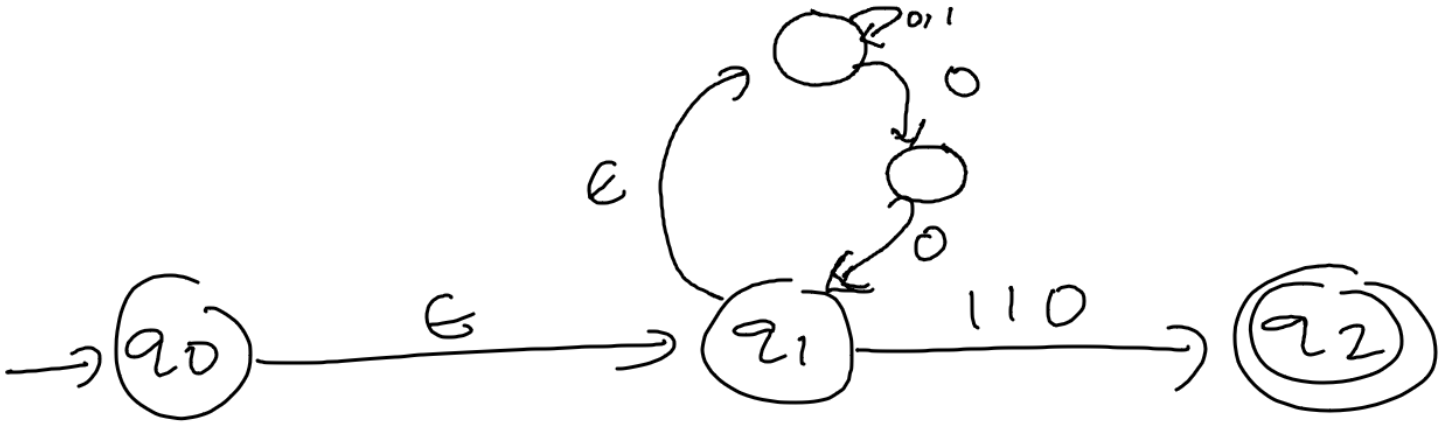
(b) $0^*1^*(00)^*1$

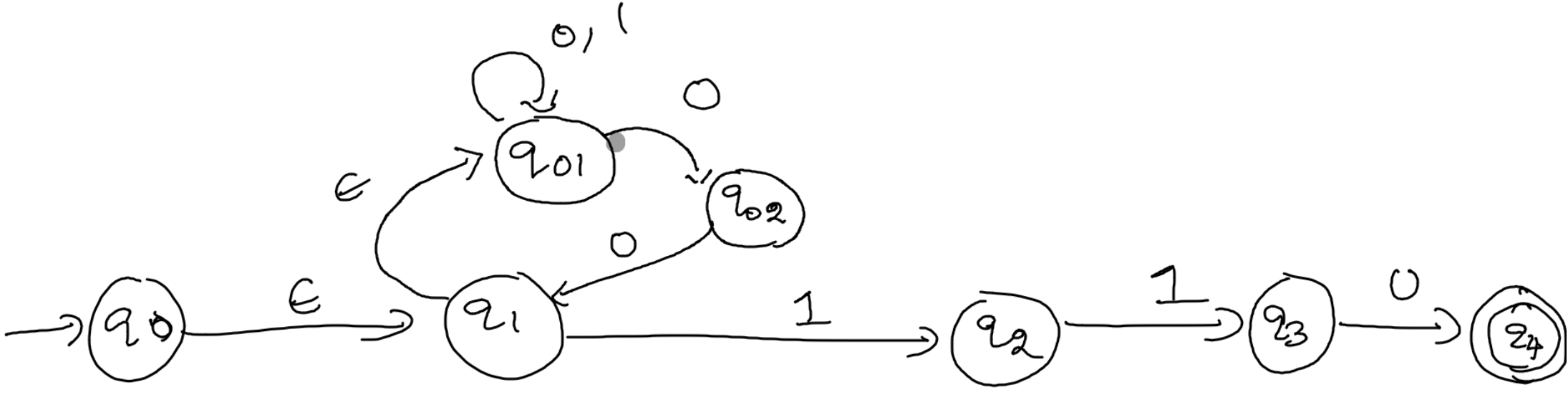
(c) 0^*110^*








0,1
0
ϵ
0
q0
ϵ
q1
110
q2


0,1
0
q01
ϵ
q02
0
q0
ϵ
q1
1
q2
1
q3
0
q4