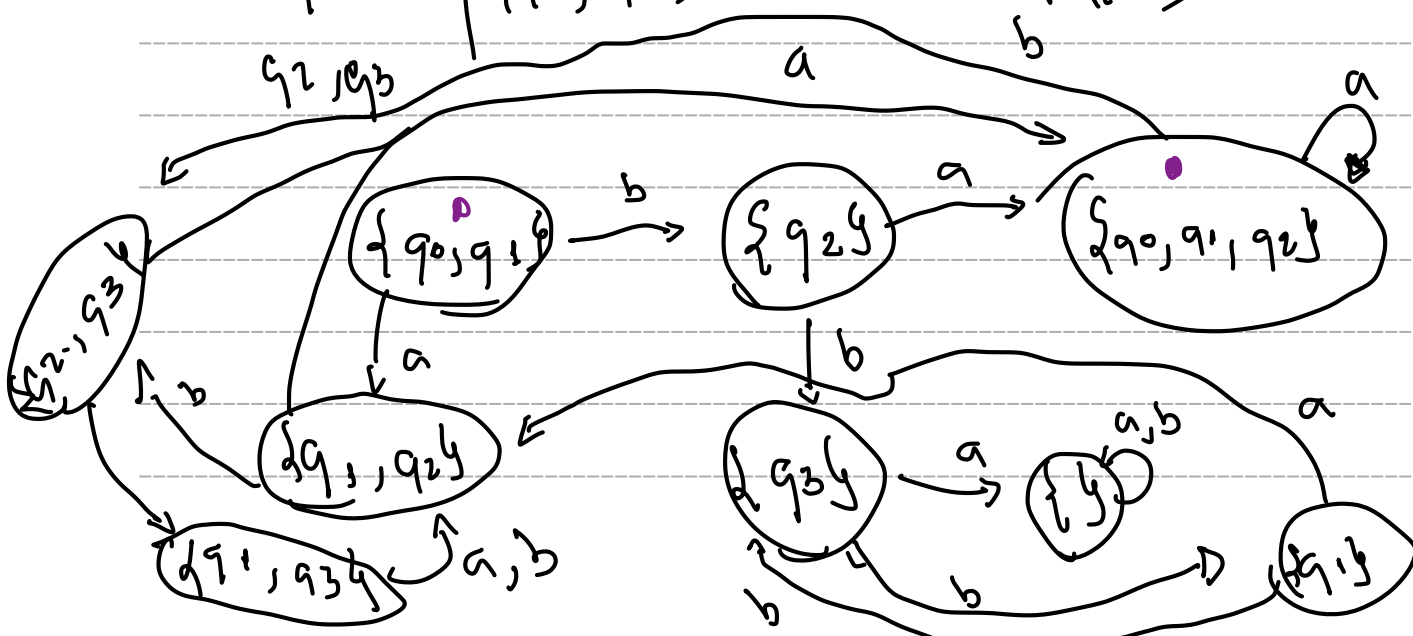
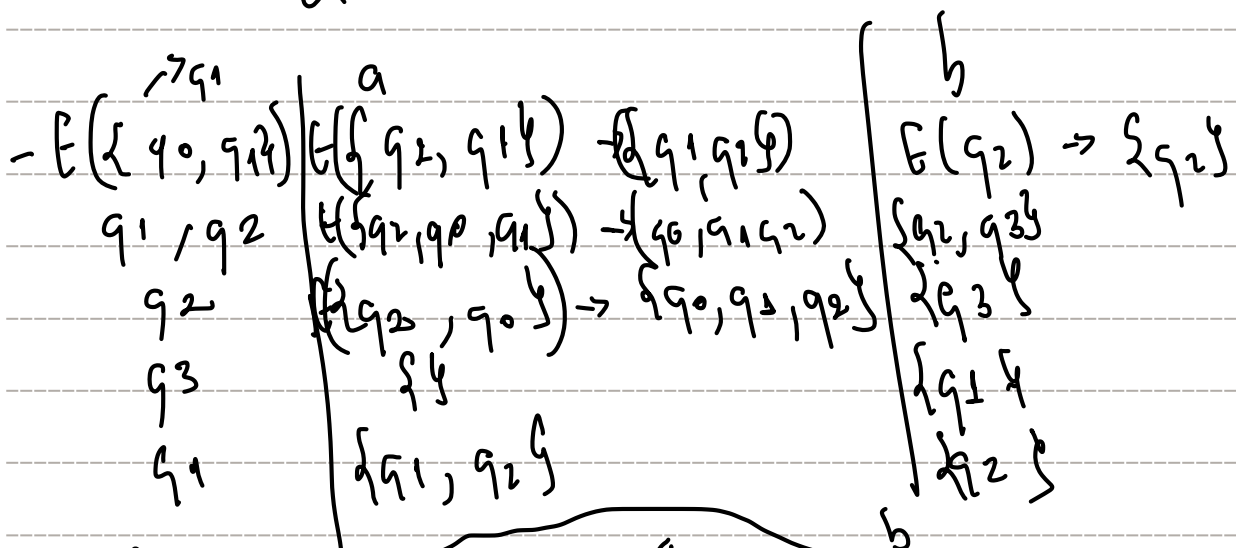
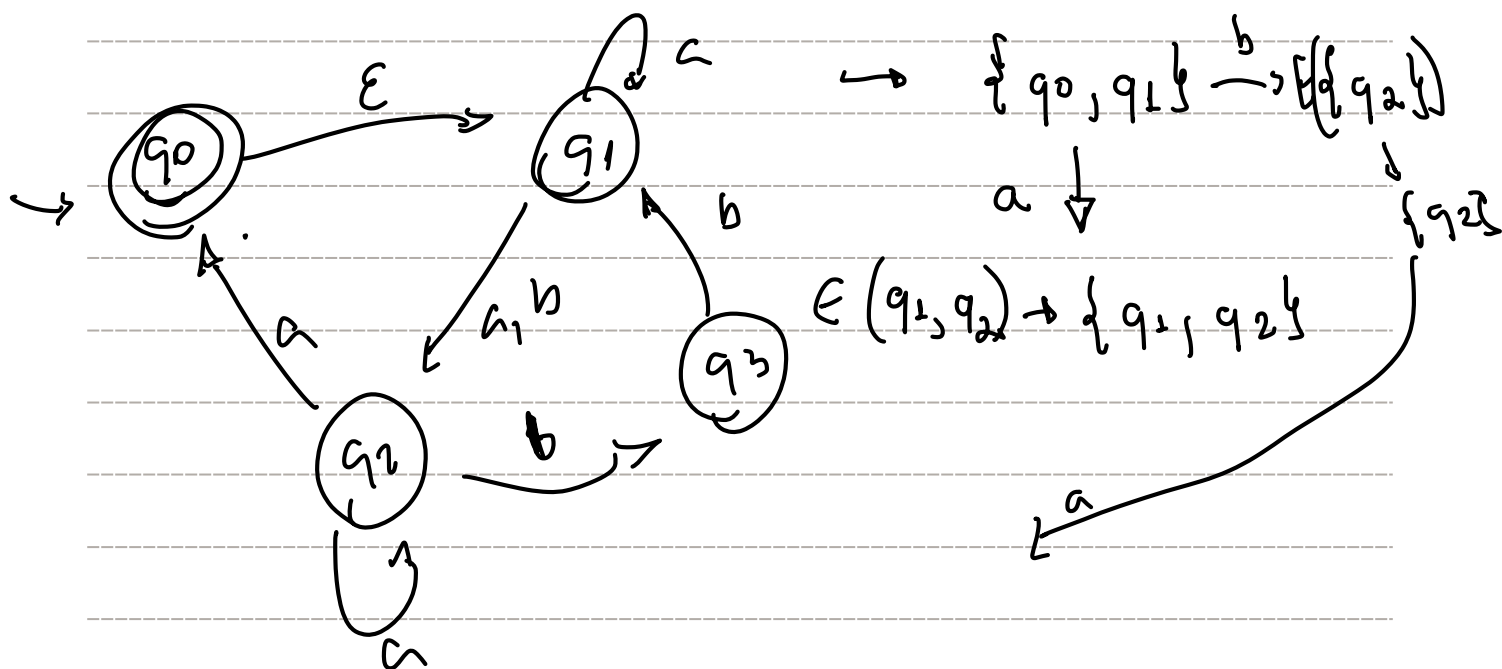




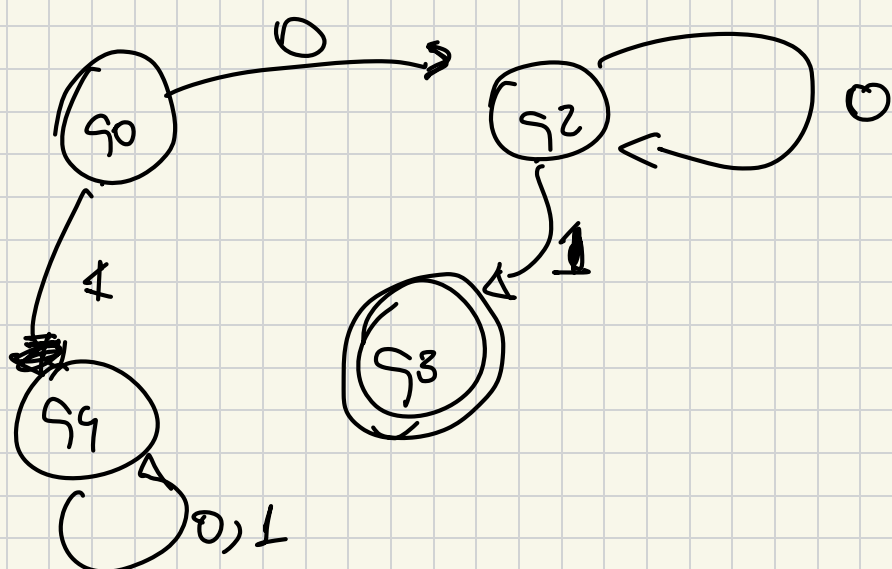
NOTES:

convert this NFA to DFA



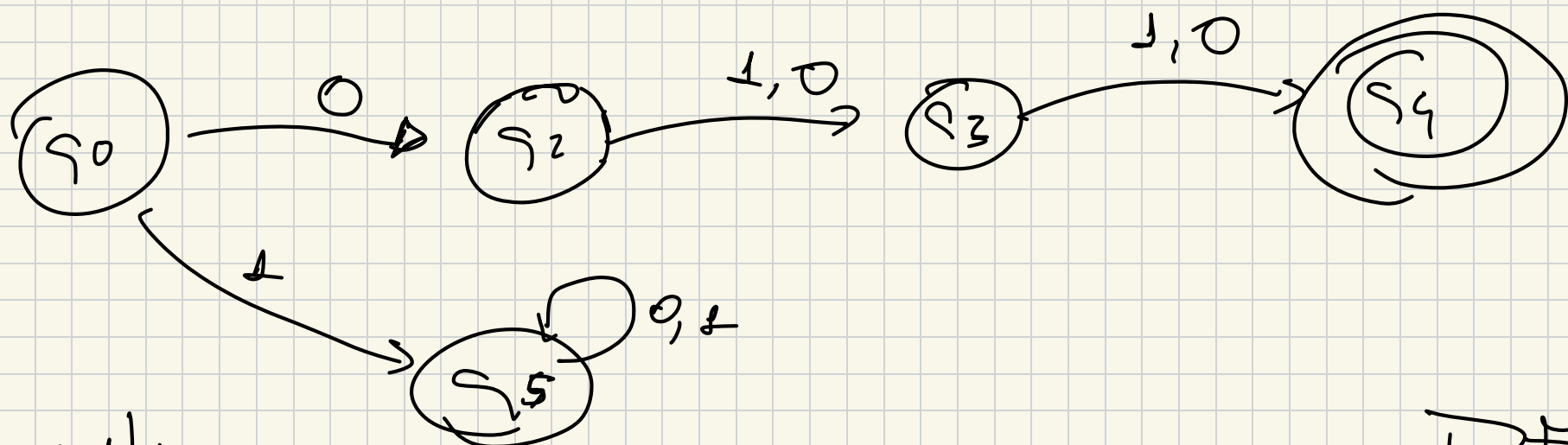
Exercises

1) $L = \{w \mid w \in \{0,1\}^+ \text{ and } w \text{ start with } 0 \text{ and end with } 1\}$



DFA

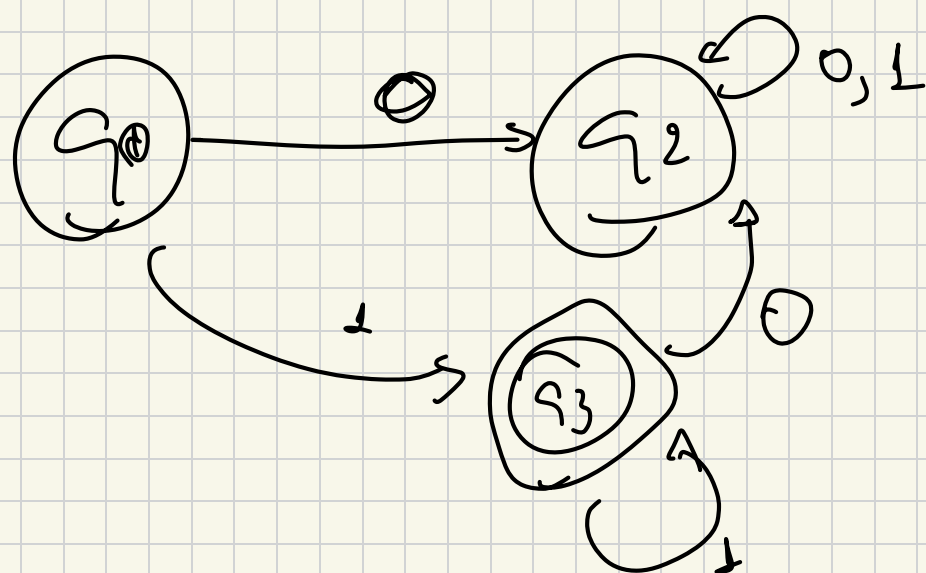
2) $L = \{w \mid w \in \{0,1\}^+ \text{ and } w \text{ starts with } 0 \text{ and } |w| \geq 3\}$



$0 \downarrow 1 \downarrow 1$
 $0 \downarrow 0 \downarrow 1$

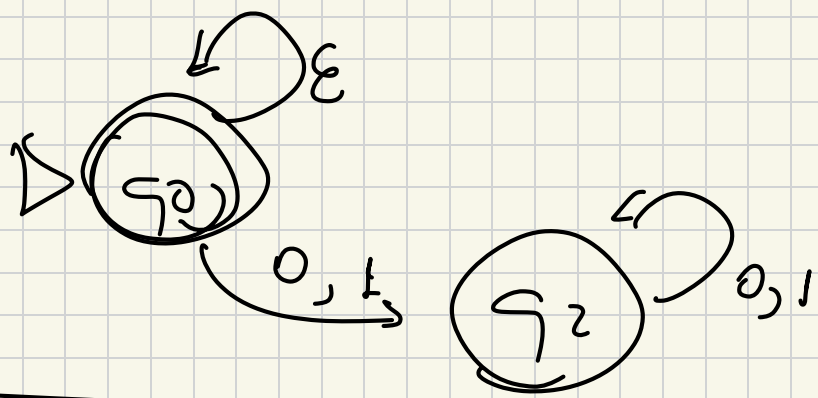
DFA

3) $L = \{w \mid w \in \{0,1\}^+ \text{ and } w \text{ does not contain } 01\}$



DFA

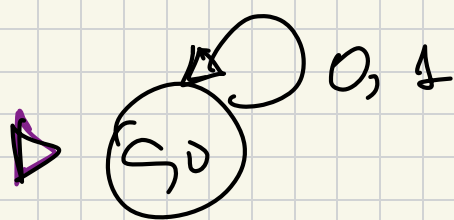
e) $L = \{w \mid w \in \{0,1\}^* \text{ and } w = \epsilon\}$ ** divide*



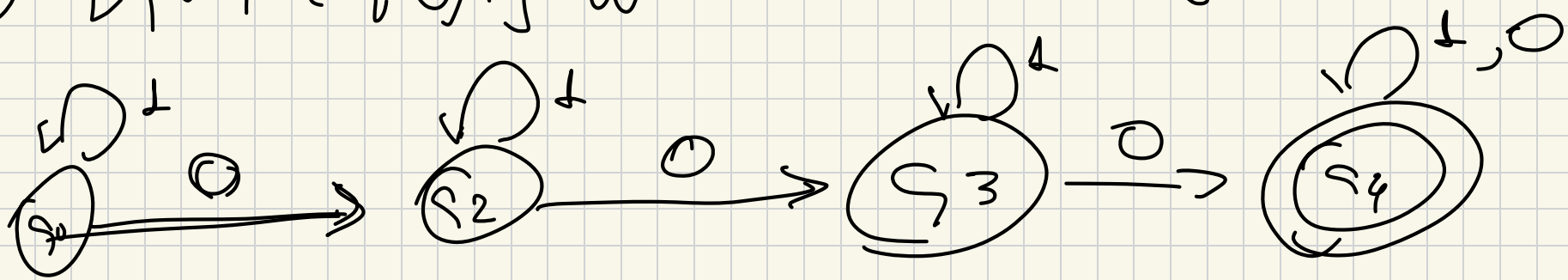
ϵ -NFA

	0	1
q0	q2	q2
q2		

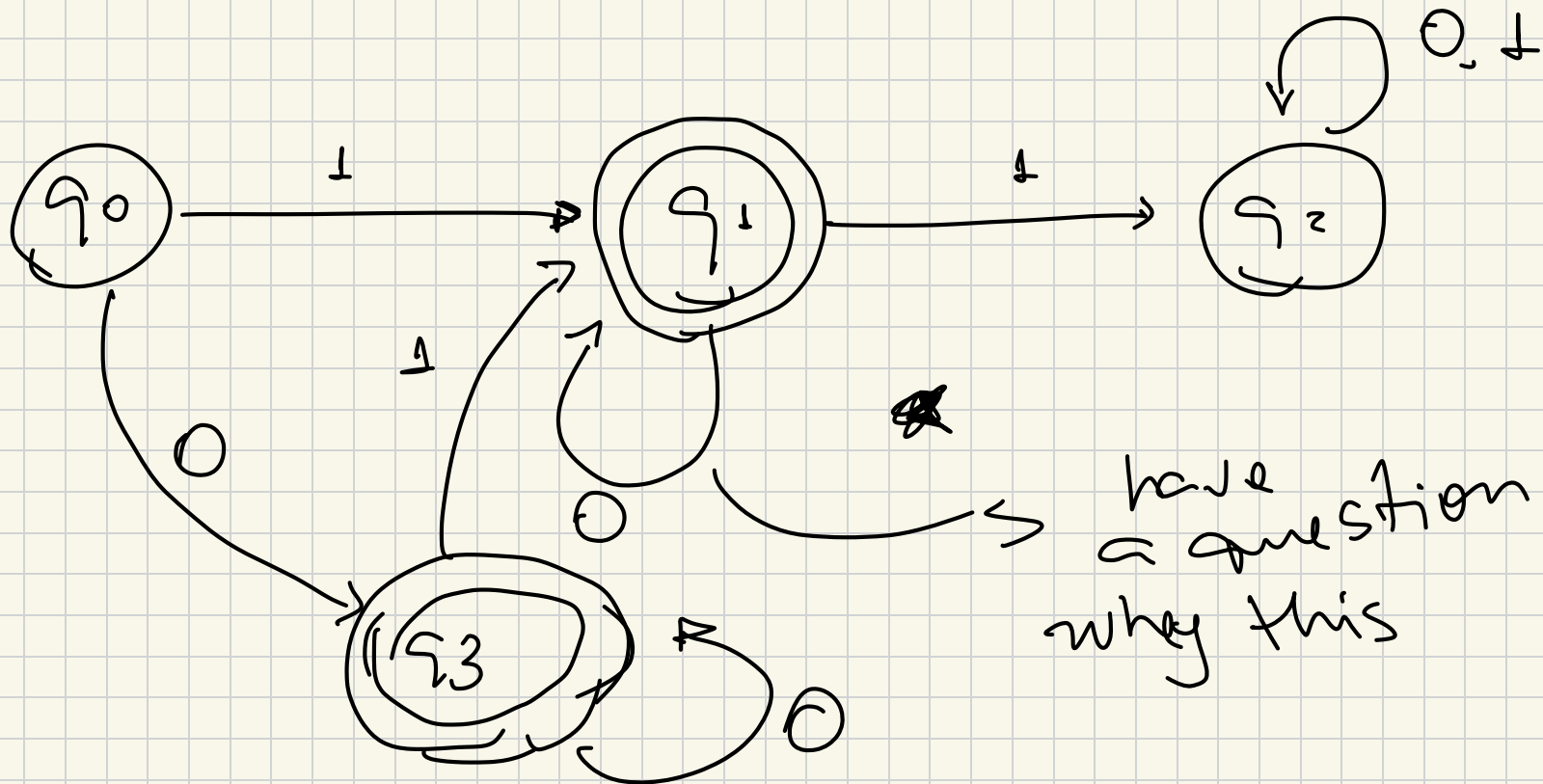
f) $L = \{w \mid w \in \{0,1\}^* \text{ and } |w| \geq 1 \text{ and } w \text{ does not accept } \epsilon\}$ ** divide*



g) $L = \{w \mid w \in \{0,1\}^* \text{ and } w \text{ has at least one 0}\}$



h) $L = \{w \mid w \in \{0,1\}^* \text{ and } w \text{ does not contain } 11\}$



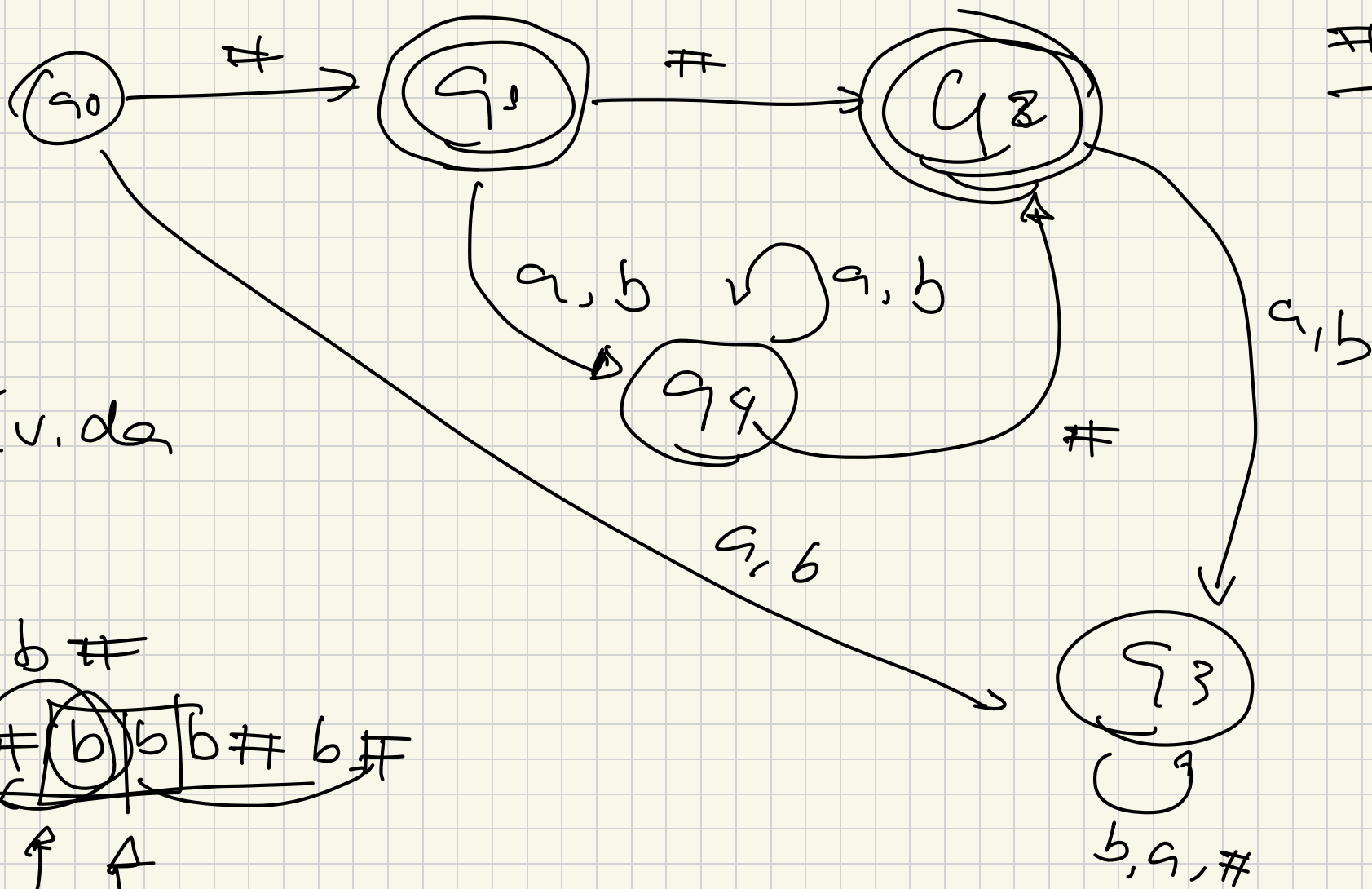
have a question why this

1 ✓
00 ✓
010 ✓
011 ✗
100 ✓
1001 ✗

I)

$L = \{w \mid w \in \{a, b, \#\}^+ \text{ w start on end with } \# \text{ and does not have } \# \text{ in the middle of his word}\}$

#	#	c
#	#	a
#	#	b
#	#	c

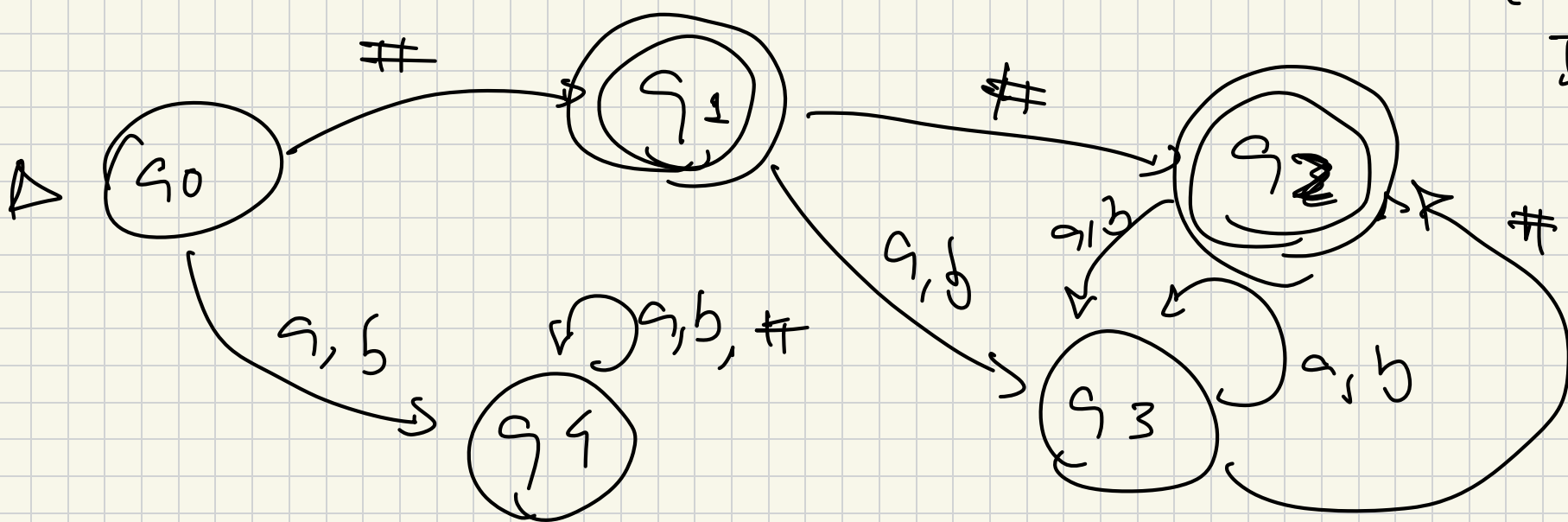


* div. da

a b #
 # a # b b # b #
 ↑ ↑

I am not sure about this answer. b

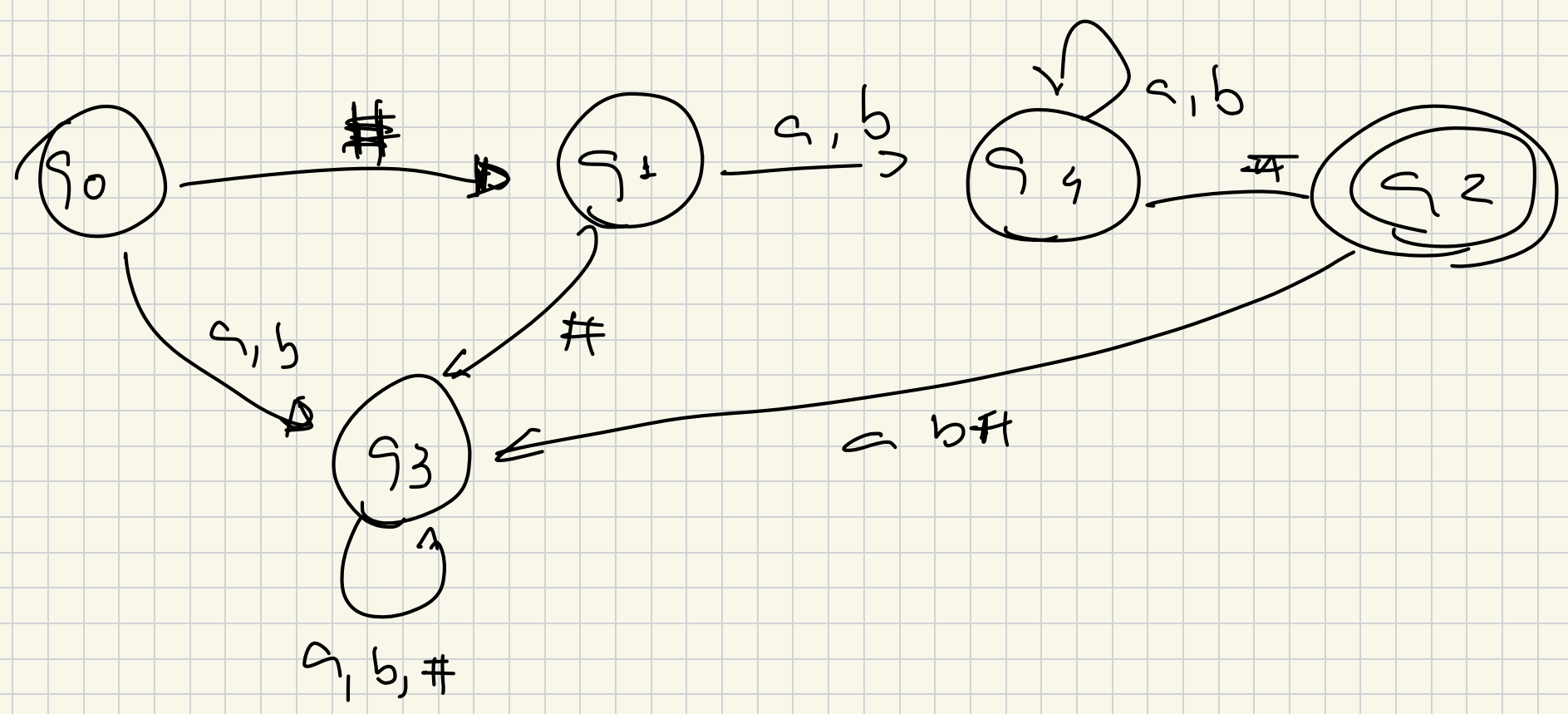
Divida



~~acc~~
 a, b, a, b

a a a a a a a b # a a a a a a a a #
 ↑

5) $L = \{w \mid w \in \{a, b, \#\}^+ \text{ w start \#, end \#, does not have \# in the middle and } |w| \geq 3\}$



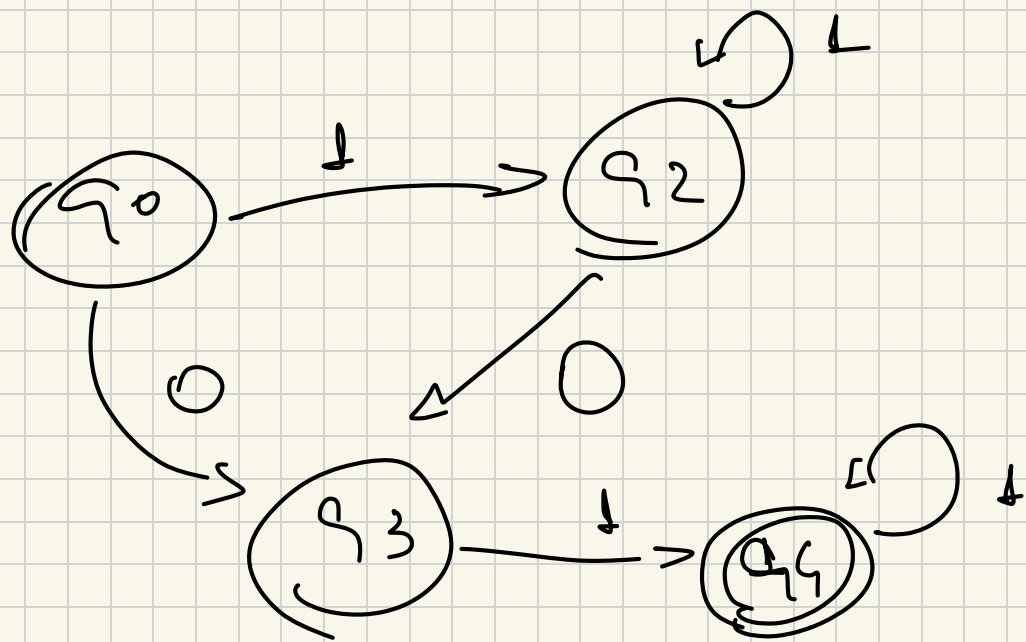
x

x

(# a | b | #)

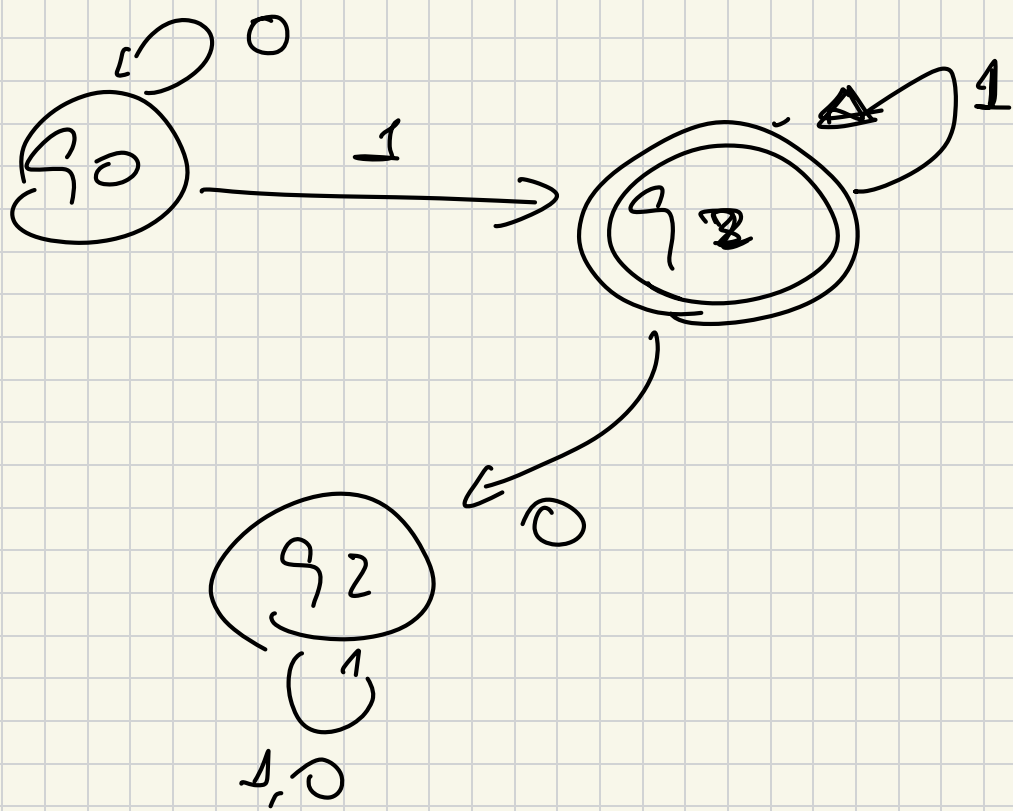
Don't have IDEA if it's correct

K) $L = \{w \mid w \in \{0,1\}^+ \text{ e para todo } p \text{ seguido}$
 $L \text{ ou mais } 1's \}$

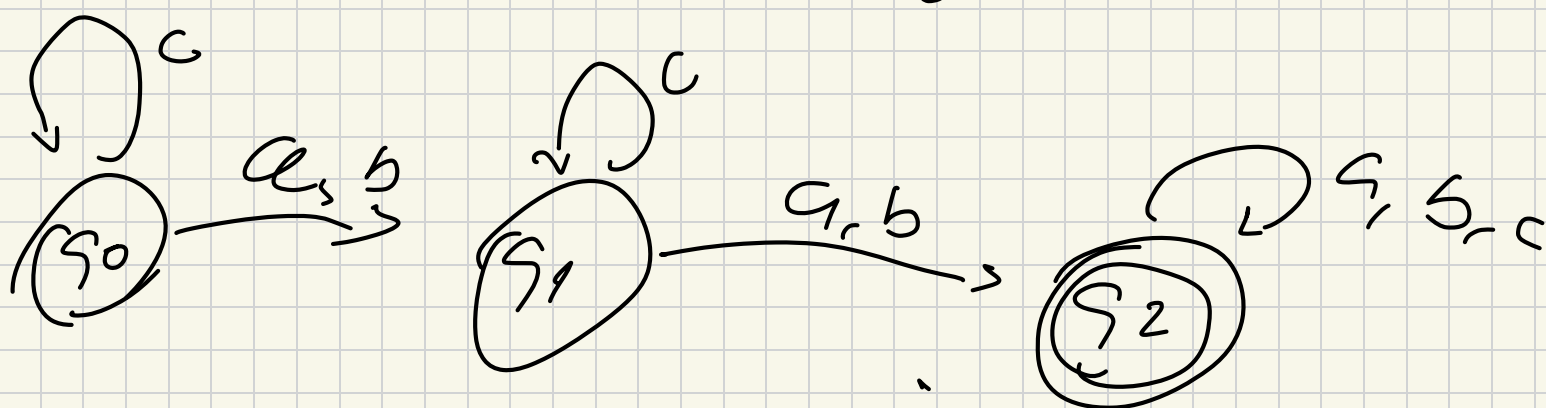


01 ✓
 0001 ✓
 011111 ✓
10111 ✓

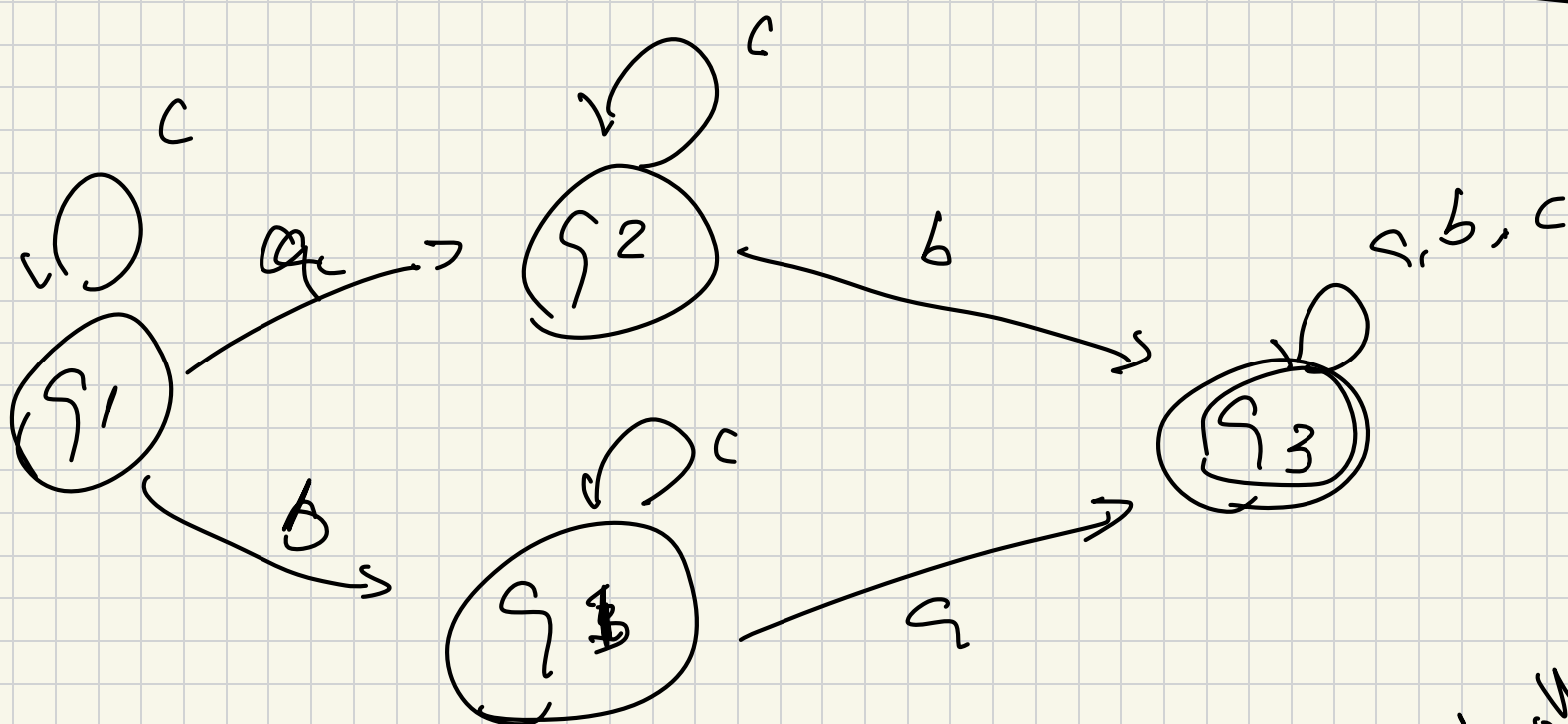
~~*~~



$L = \{ w \mid w \in \{a, b, c\}^+ \text{ and } w \text{ contains at least one } a \text{ and at least one } b \}$



a b



looks like
both work

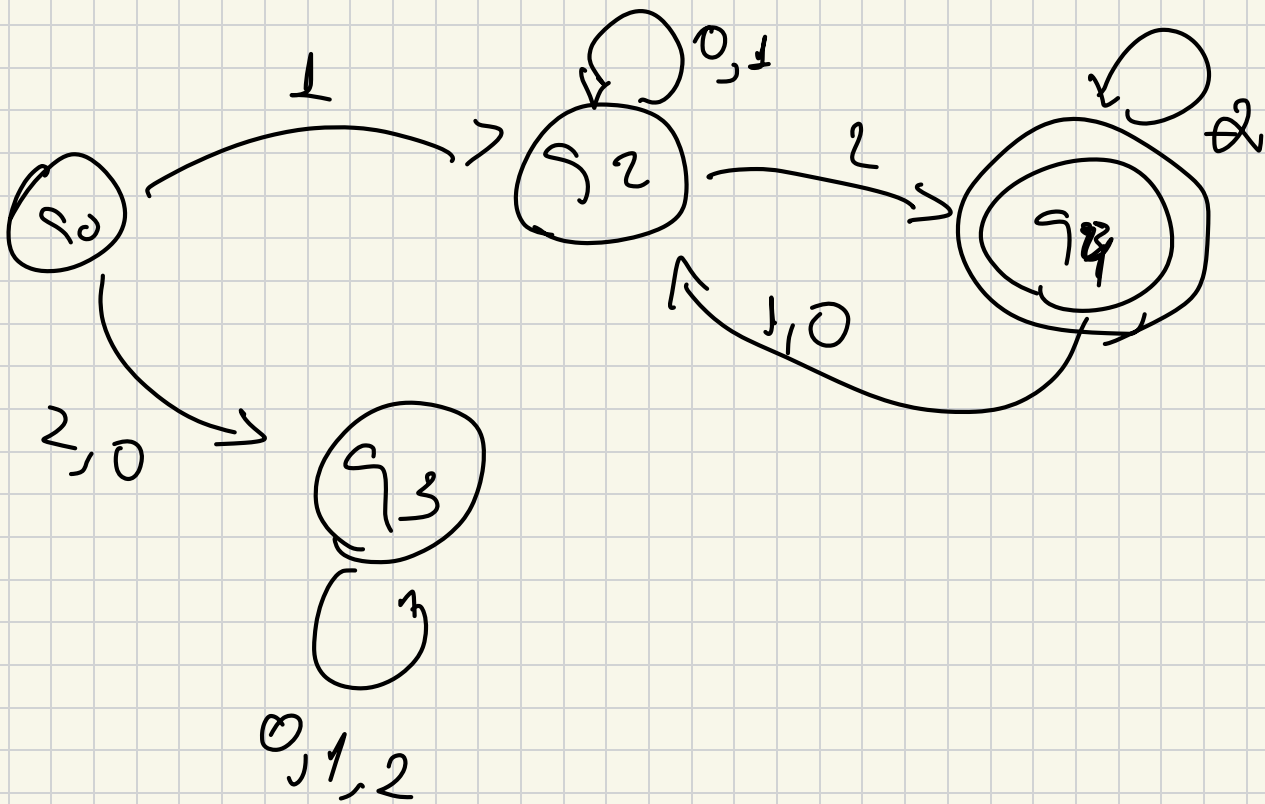
$M = \{ w \mid w \in \{0,1,2\}^+ \text{ } w \text{ começa com } 1 \text{ e termina } 2 \}$

12 ✓

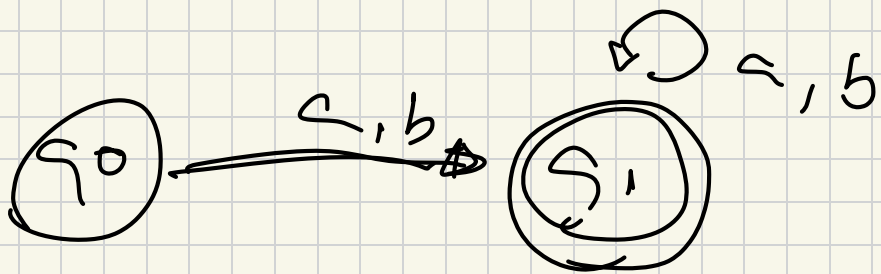
10012 ✓

1.1.1.1.1010002

01x
21x



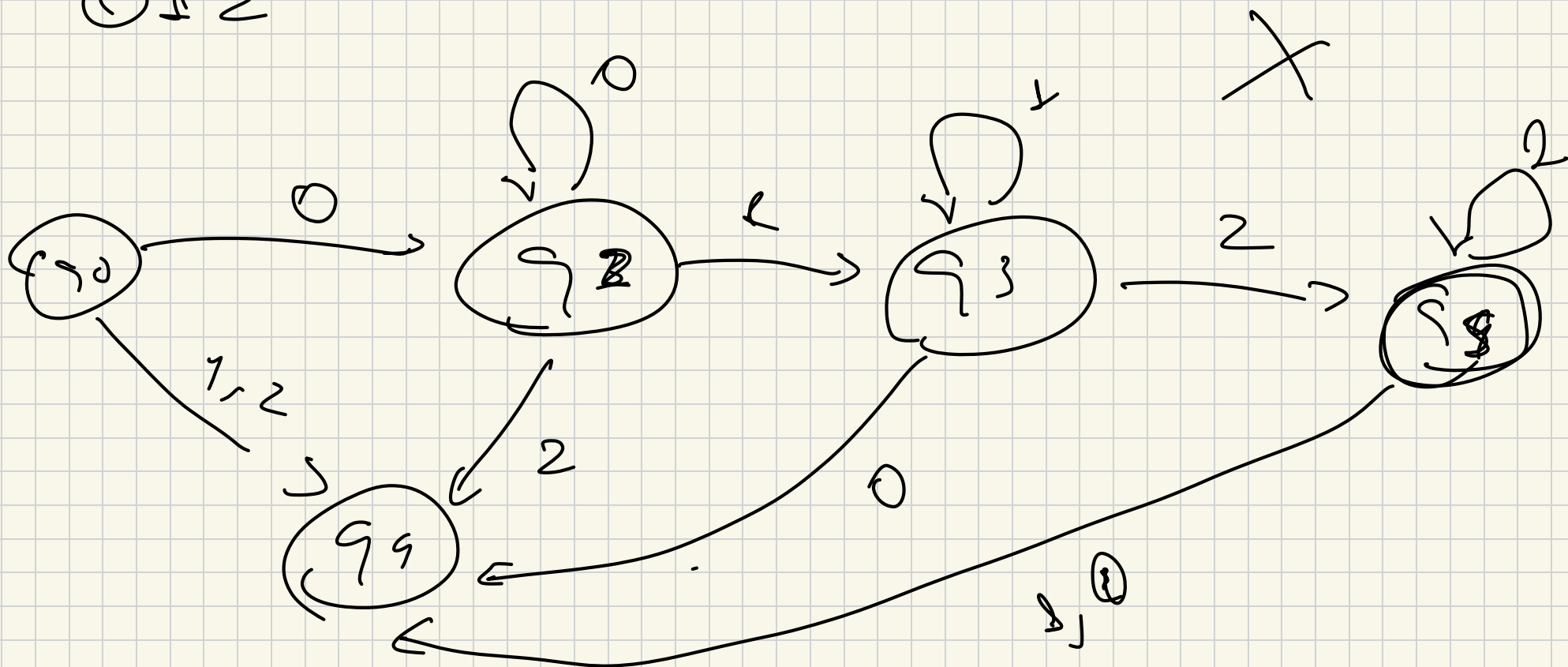
$N = \{ w \mid w \in \{a,b\}^+ \}$



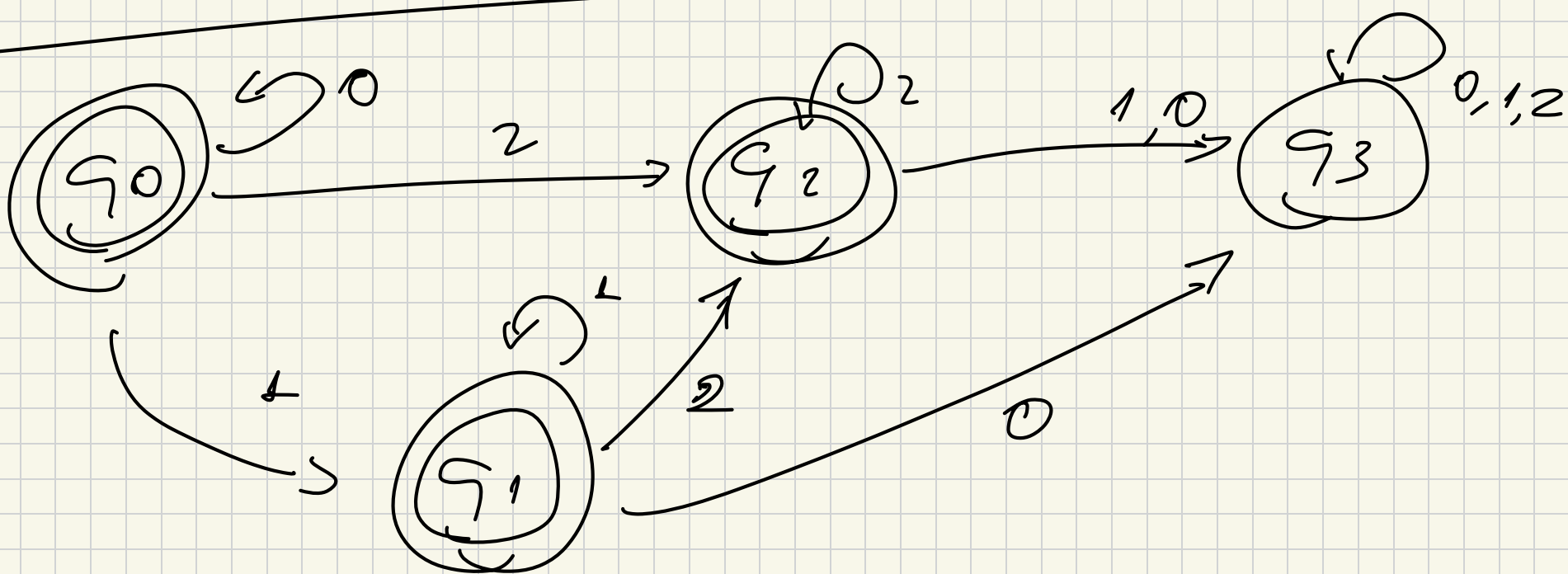
0) $L = \{ w \mid w \in \{0,1,2\}^* \text{ e } w = 0^m 1^n 2^o \text{ } n, m, o \geq 0 \}$

0.00000 1111 2222

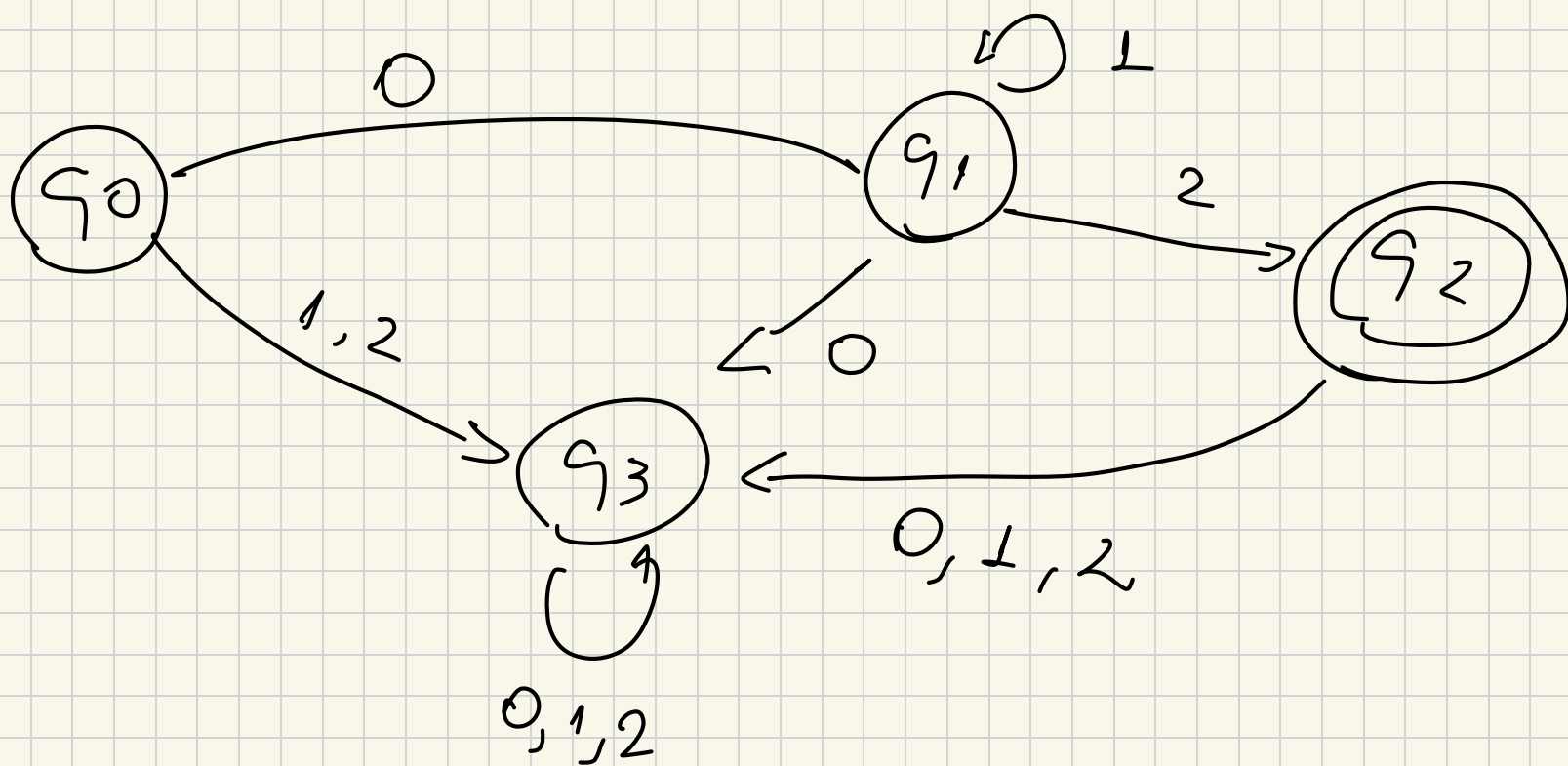
0 1 2



0 1 2

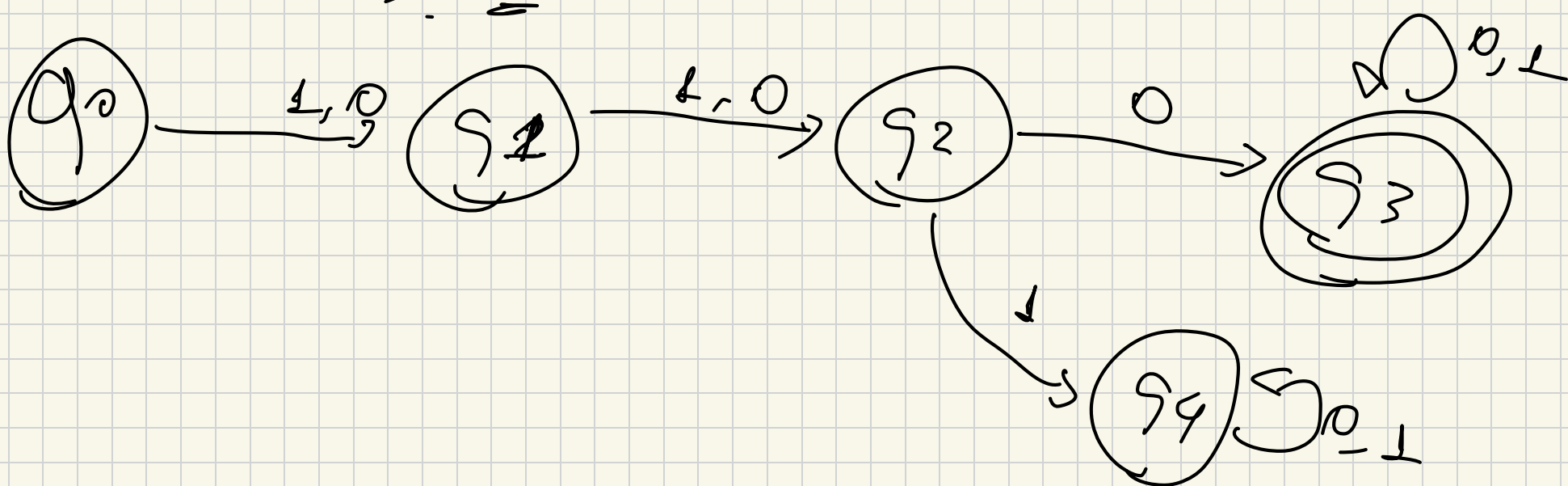


$$P = \{ w \mid w \in \{0,1,2\}^* \text{ e } w = 01^n2 \text{ , } n \geq 0 \}$$

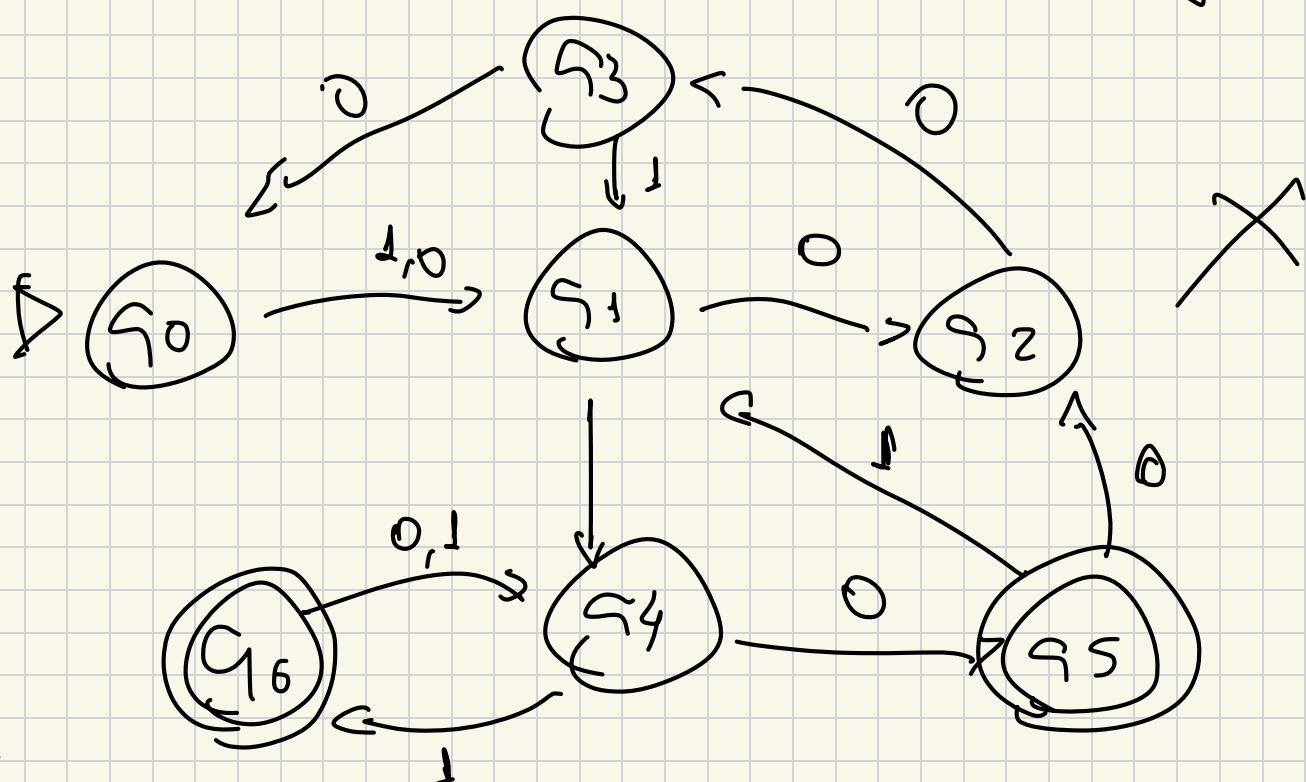


$$Q = \{ w \mid w \in \{0,1\}^+ \text{ e o primeiro símbolo de } w \text{ é } 0 \}$$

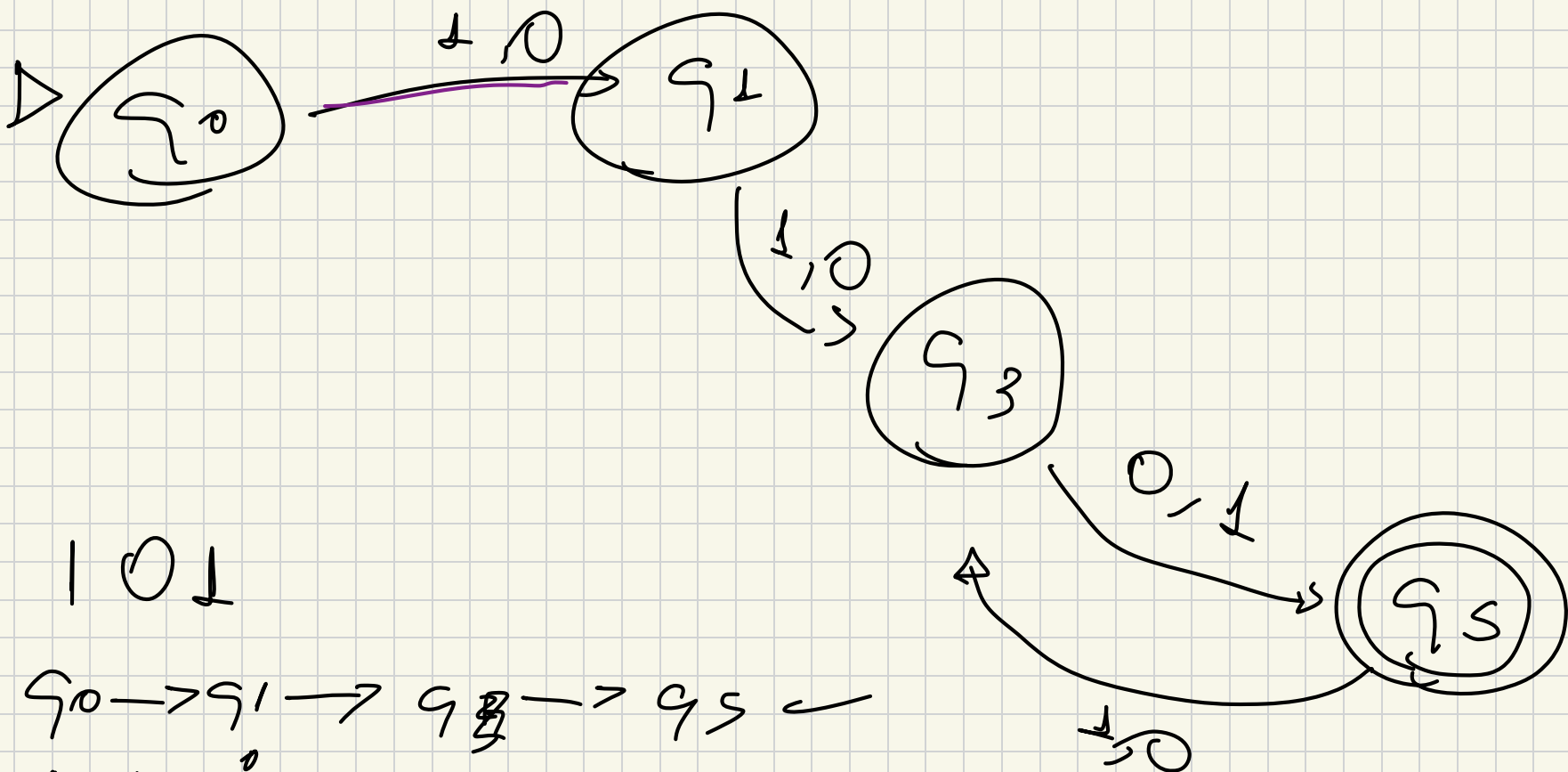
0, 0, 0, 1
1, 1, 0



$R =$ $L = \{w \mid w \in \{0,1\}^+ \text{ e a ante penúltimo símbolo de } w \neq 1\}$



↓
↓ 0 ↓ ↓ ↓ ✓
↓ ↓ 0 0 0



↓ 0 ↓

$q_0 \rightarrow q_1 \rightarrow q_3 \rightarrow q_4 \checkmark$

1 0 1 1 1

$q_0 \rightarrow q_1 \rightarrow q_3 \rightarrow q_4 \checkmark$

1 0 1 0 1

1

1 0 0

$S =$

$L = \{ w \mid w \in \{0,1\}^+ \text{ e } w \text{ possui um número de } 0 \text{ divisível por } 5 \}$

