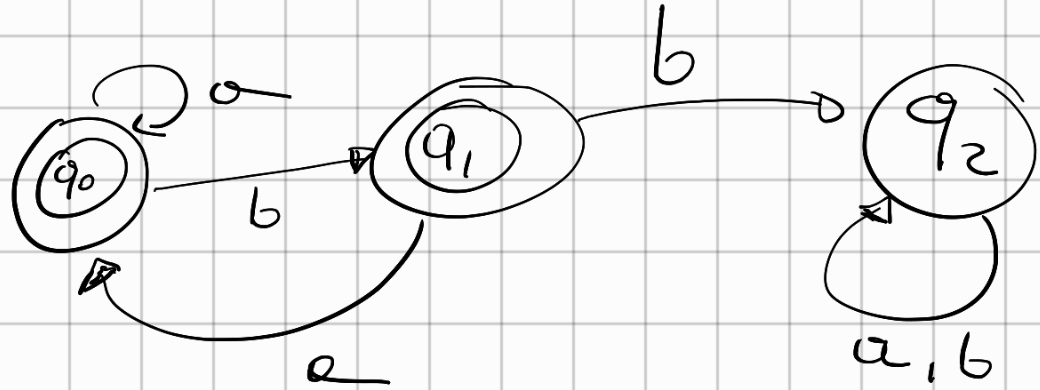
(1)

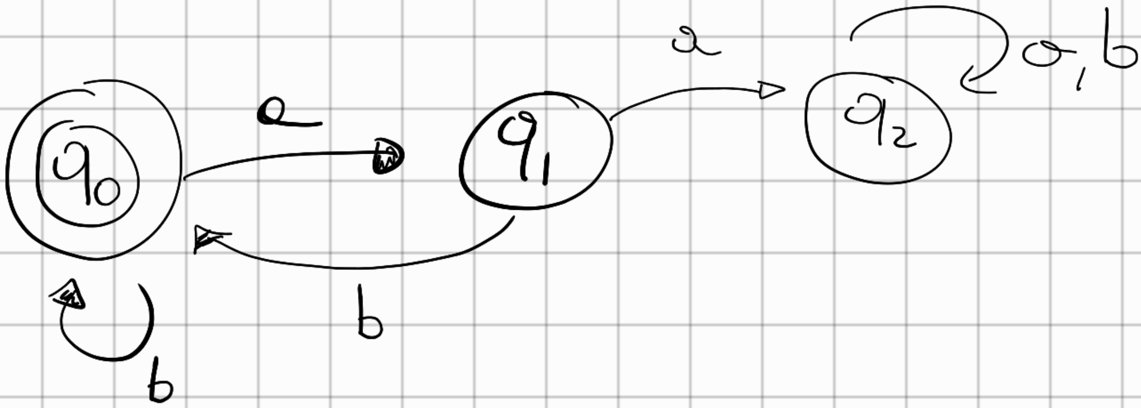


$$(a \mid ba)^* \mid (a \mid ba)^* b \equiv (a \mid ba)^* (\lambda \mid b)$$

$G:\quad NT = \{A, S\} \qquad S \to aS \mid \lambda \mid bA$

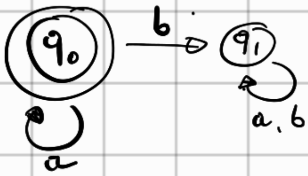
$\qquad T = \{a, b\} \qquad A \to aS \mid \lambda$

(2)



Expr : $b^*(a(b)^+)^*$

$$\begin{cases} S \to bS \mid \lambda \mid aA \\ A \to bS \end{cases}$$



a^* $\quad L = \{a^n \mid n \geq 0\}$
$= \{\lambda, a, a^2, a^3, \dots\}$

$L = \{a^n \mid n > 0\}$

$a(a^*) \equiv a^+$

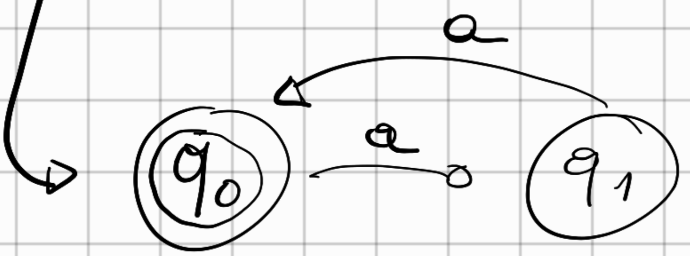
Ejemplo. abbab

$\lambda \qquad S \to aA$

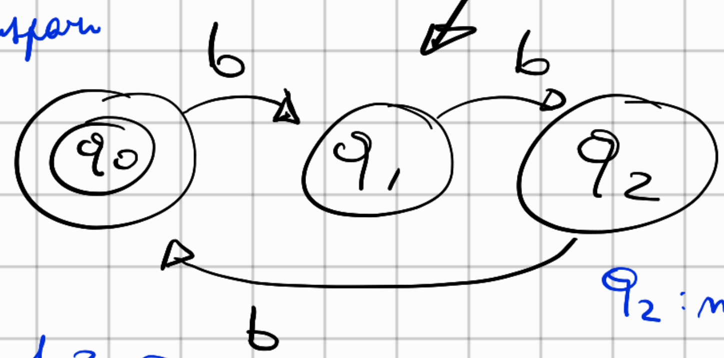
aA	$A \to bS$
abS	$S \to bS$
abbS	$S \to aA$
abbaA	$A \to bS$
abbabS	$S \to \lambda$
abbab	

3 → stringhe in cui #a pari

e #b mod 3 = 0



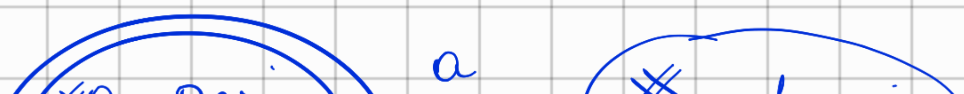
q_0 : a pari q_1 : a dispari

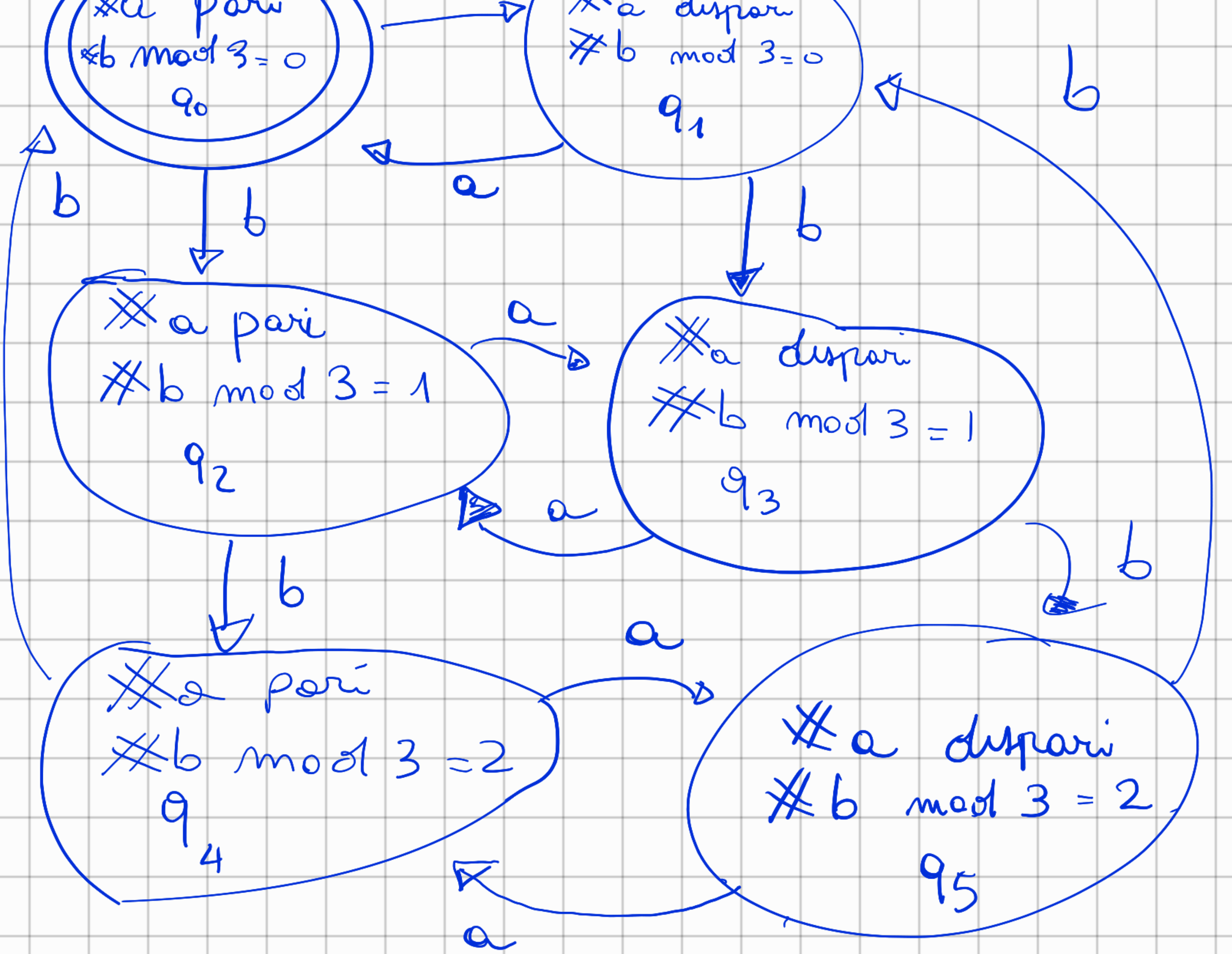


q_2 : mod 3 = 2

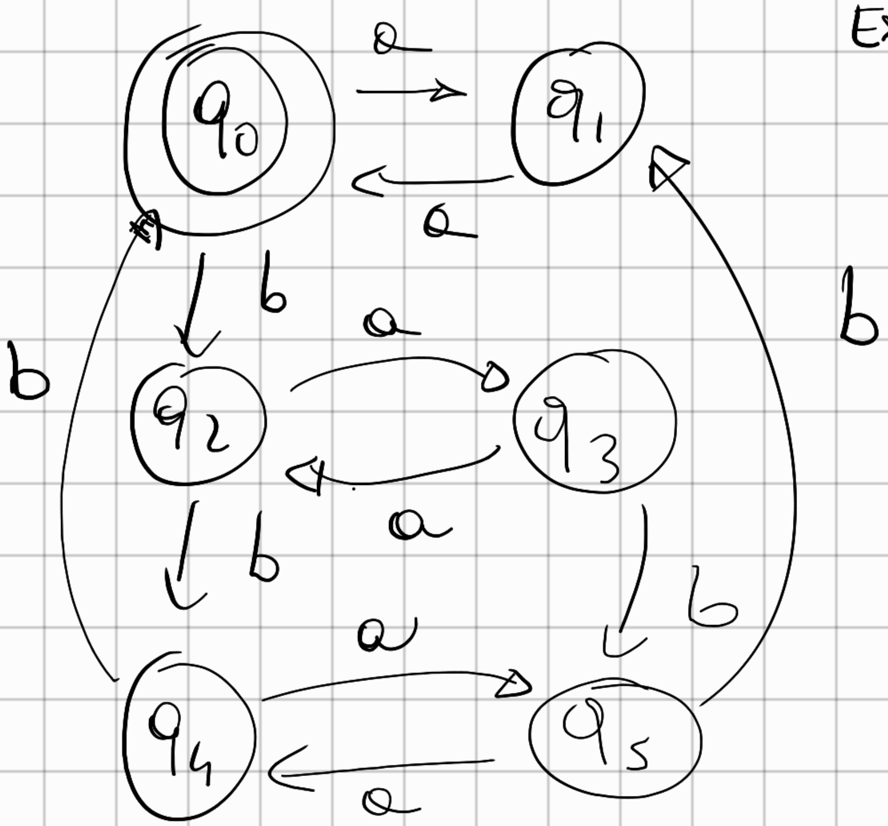
q_0 : mod 3 = 0 q_1 : mod 3 = 1

a pari, mod 3 = 0




#a pari
#b mod 3 = 0
q0
#a dispari
#b mod 3 = 0
q1
a
b
b
b
b
#a pari
#b mod 3 = 1
q2
a
#a dispari
#b mod 3 = 1
q3
a
b
b
a
#a pari
#b mod 3 = 2
q4
#a dispari
#b mod 3 = 2
q5
a

Expr : $(aa)^*(bbb)^* X$


q0
a
q1
a
b
a
b
b
q2
q3
a
b
b
a
q4
q5
a

#a multiplo per 3 e #b dispari

semantica degli stati

1) #a mod 3 = 0, #b dispari

F

2) #a mod 3 = 1, #b dispari

3) #a mod 3 = 2, #b dispari

~~4) #a mod 3 = 3, #b dispari~~

4) #a mod 3 = 0, #b pari

5) #a mod 3 = 1, #b pari

6) #a mod 3 = 2, #b pari

~~8) #a mod 3 = 3, #b pari~~

---

modulo $\quad n \bmod r = p$

$n \% r = h$ resto : p

Esercizi

(1) Costruire un DFA sull'alfabeto $\{a, b\}$ che riconosca le stringhe che contengono <u>aa</u> oppure <u>bb</u>

(2) Costruire un DFA sull'alfabeto $\{a, b\}$ che riconosca le stringhe che contengono <u>aa</u> <u>e</u> <u>bb</u>

(3) Costruire un DFA sull'alfabeto $\{a, b\}$ che riconosca le stringhe che iniziano con <u>ab</u> e finiscono con <u>ba</u>