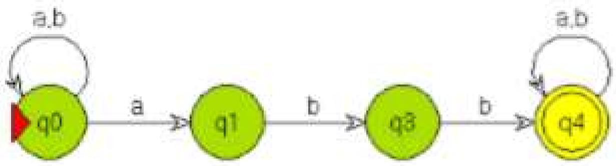
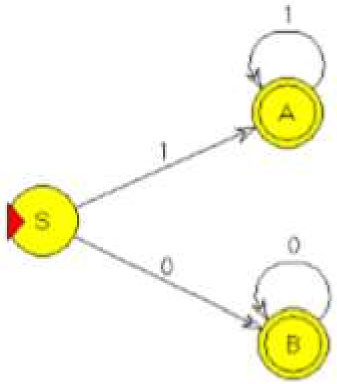
ISAAC DE FREITAS FRANÇA - LISTA 05

1.

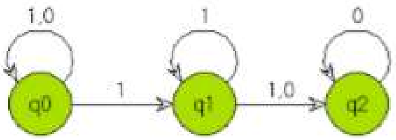


2.

AFN = ({ S, A, B }, { 0, 1 }, S, { A, B })



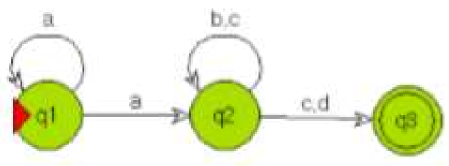
3.



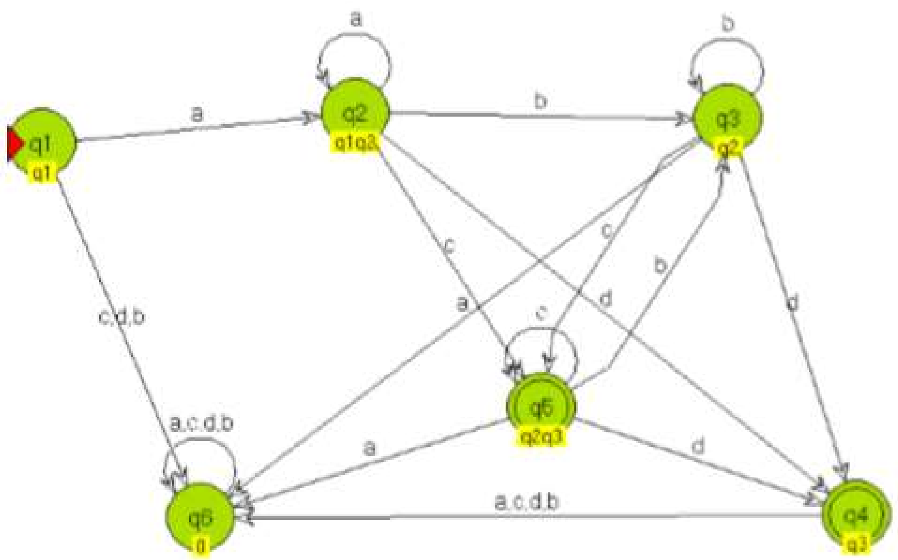
É um AFN, pois tanto no estado q0, como q1, a entrada de um único símbolo pode tanto levar a outro estado, como a permanecer no mesmo estado.

4.

AFN:



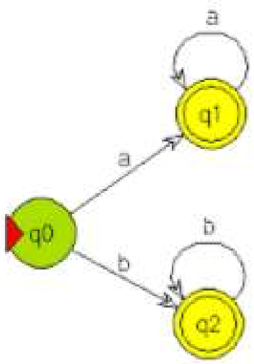
AFD (Convertida pelo software):



5.

a) aa*|bb*

R. -



É uma AFD.

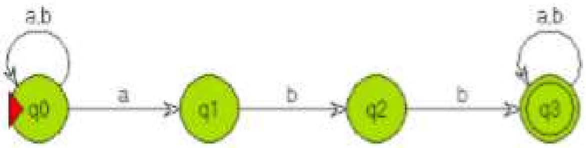
b) (a*|b*)*

R. - (Entendi que (a*)* = quantidade nula ou par do símbolo "a")

É uma AFD.

c) (a|b)*abb(a|b)*

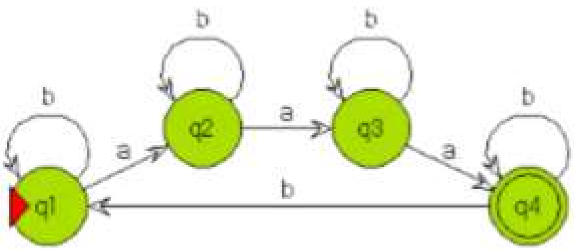
R. -



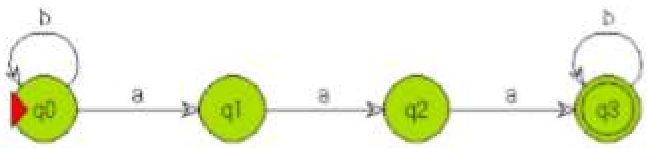
É uma AFN.

6.

a.

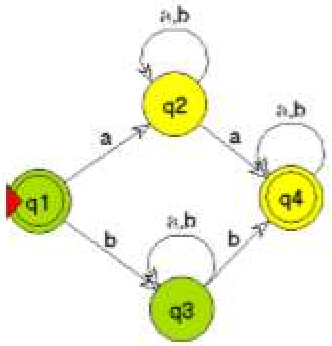


b.



b
b
a
a
a
q0
q1
q2
q3

c.

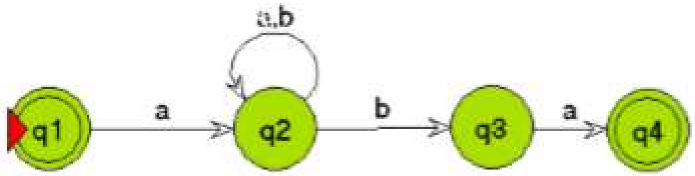


a,b
q2
a
a
a,b
q1
q4
b
a,b
b
q3

.

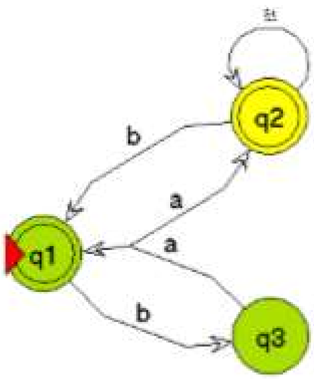
7.

a.



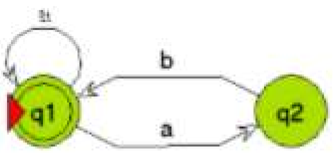
a,b
q1
a
q2
b
q3
a
q4

b.



a
q2
b
a
q1
a
b
q3

c.



a
b
q1
q2
a

8.

a. Em Expressão regular;

(01+10+111+000+1100+0011)*

b.Em Gramática regular.

(Considerando e0 = S, e1- A, e2 = B)

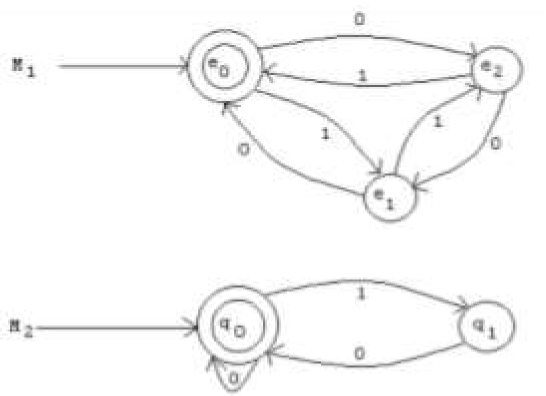
G = ({S, A, B}, {0, 1}*,P, S)

P=> { S -> 1A **|** 0B |ε

A -> 0S **|** 1B

B -> 1S **|** 0B }

9.Sejam:

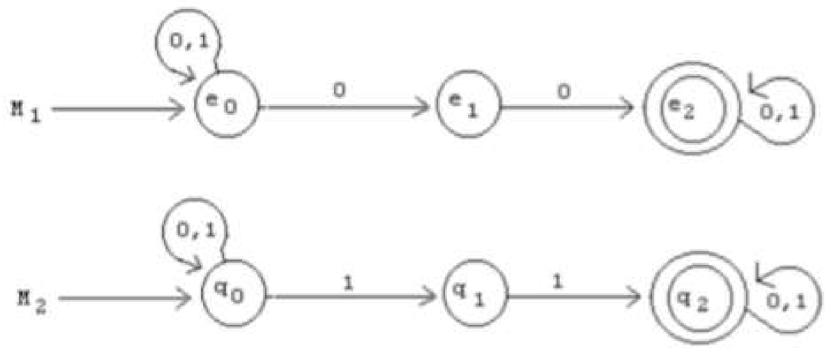


que aceitam as linguagens:

- $L(M_1) = \{x \in \{0,1\}^* \mid |x|_0 \bmod 3 = |x|_1 \bmod 3\}$
- $L(M_2) = \{x \in \{0,1\}^* \mid |x|$ não contem dois 1's consecutivos}

a) M_3 tal que $L(M_3) = L(M_1)^*$
b) M_4 tal que $L(M_4) = L(M_1) . L(M_2)$
c) M_5 tal que $L(M_5) = L(M_1) \cup L(M_2)$
d) M_6 tal que $L(M_6) = L(M_1) \cap L(M_2)$

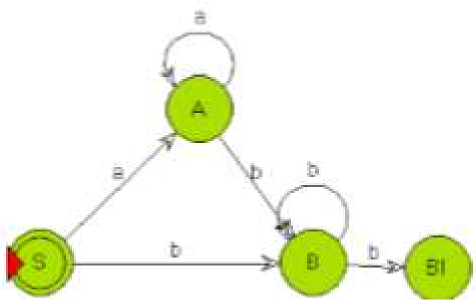
10. Considere os autômatos finitos M_1 e M_2 a seguir:



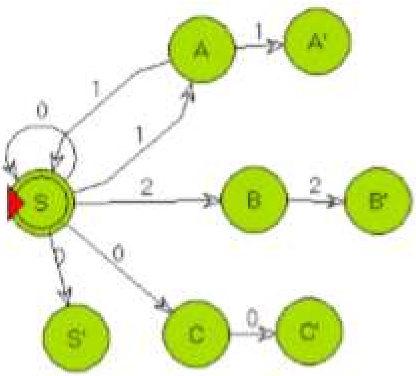
Utilizando as propriedades das linguagens regulares, e a partir de M_1 e M_2, construa os autômatos finitos descritos a seguir:

11.

a. G=({ S, A, B }, { a, b }, P, S)
P = { S => aA|bB|λ, A => aA|bB,
B => bB|b }



b.
G=({ S, A, B, C }, { 0, 1, 2 }, P, S)
P => { S => 0S|1A|2B|0|0C ,
A => 1S|1 ,
B => 2S|2 , C => 0S|0 }


A
A'
S
B
B'
S'
C
C'
0
1
1
1
2
2
0
0
0