Exame Recurso 2015/2016

quarta-feira, 23 de junho de 2021 12:57

1.

a) Linear Direita: A -> w | wB
Linear Esquerda: A -> w | Bw

} K não é linear à direita nem à esquerda pq não satisfaz estas condições

$K \rightarrow SabM$

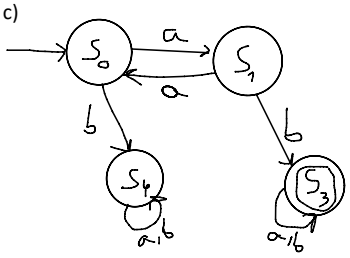
$S \rightarrow aaS \mid \varepsilon$

$M \rightarrow aM \mid bM \mid \varepsilon$

S -> Palavras com número par de a's -> {aa}*
M -> Qualquer palavra constituída por a's, b's ou palavra vazia -> {a,b}*
K -> {aa}*ab {a,b}*

b) (aa)*ab (a+b)*

c)



s0 -> (aa)*
s1 -> (aa)*a
s2 -> (aa)*b(a+b)*
s3 -> (aa)*ab(a+b)*

d)

$[\varepsilon] \neq [a]$ pq se Z = b, εZ ∉ L e aZ ∈ L

$[\varepsilon] \neq [b]$ pq se Z = ab, εZ ∈ L e bZ ∉ L

$[a] \neq [b]$ pq se Z = b, aZ ∈ L e bZ ∉ L

$[ab] \neq [a]$
$\neq [b]$
$\neq [\varepsilon]$

pq ab ∈ L, mas ε ∉ L, a ∉ L e b ∉ L

$[abb] = [ab] = [aba]$ pq para Z = Σ*, abbZ ∈ L, abZ ∈ L e abaZ ∈ L

$[b] = [ba] = [bb]$ pq para Z = Σ*, bZ ∈ L, baZ ∈ L e bbZ ∈ L

2.

r = (aa)*+ (bb)*
s = (aa + bb)*

a)

$S \rightarrow aaK \mid bbT \mid \varepsilon$

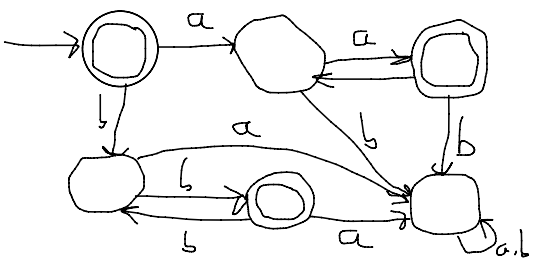
$K \rightarrow aaK \mid \varepsilon$

$T \rightarrow bbT \mid \varepsilon$

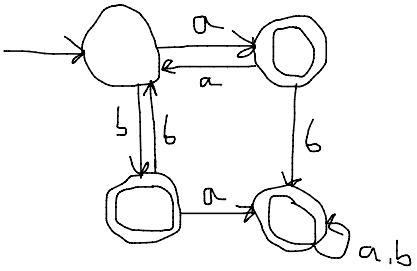
b)

$S \rightarrow \varepsilon \mid aaS \mid bbS$

c)

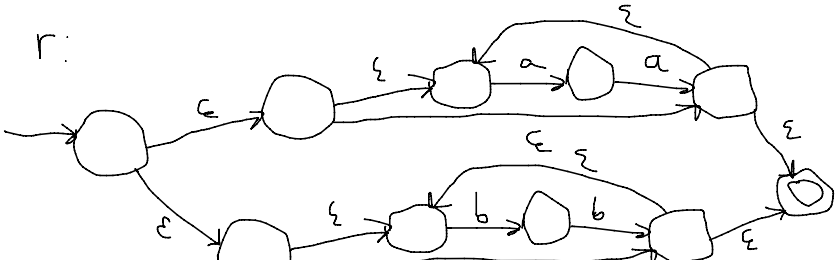


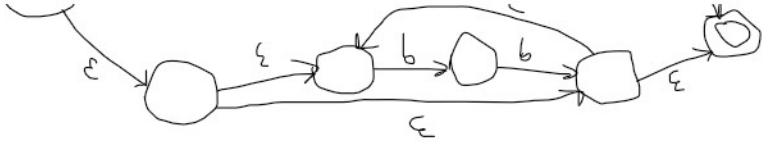
d) Estados finais passam a não o ser e vice-versa, pq Σ* \ L(s)

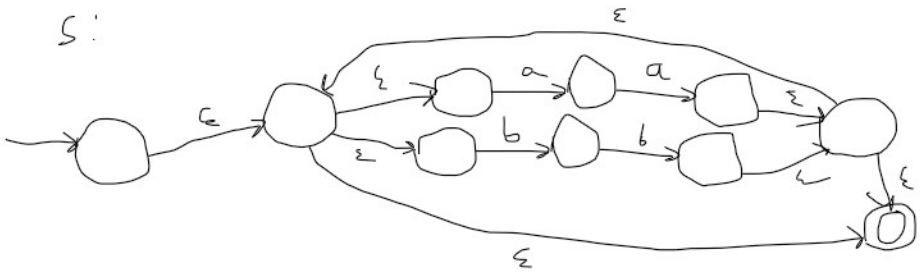


e)

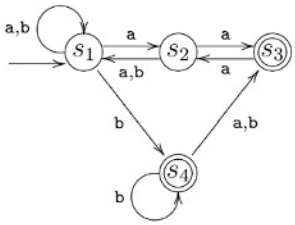
r:



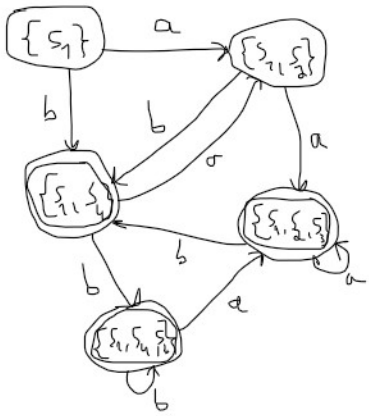




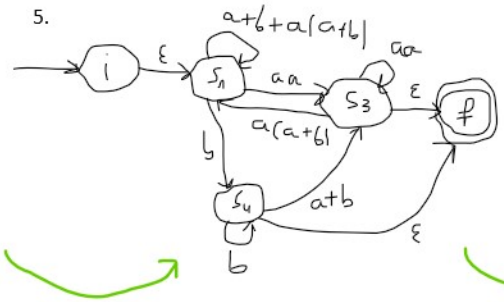
4.



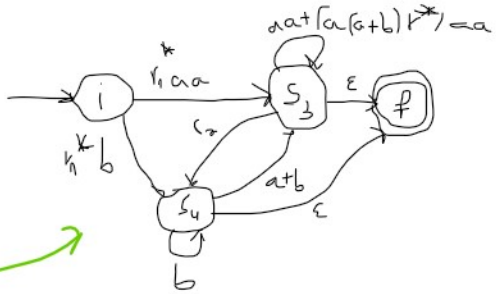
	a	b
S_1	{1,2}	{1,4}
{1,2}	{1,2,3}	{1,4}
*{1,4}	{1,2}	{1,4,3}
*{1,2,3}	{1,2,3}	{1,4}
*{1,4,3}	{1,2,3}	{1,4,3}



5.



Eliminando s2



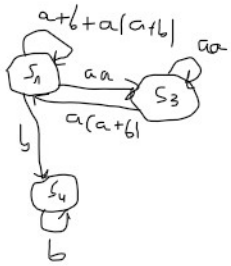
Eliminando s1

$r_1 = a+b+a(a+b)$

$r_2 = a(a+b)r_1^* b$

Transições para s2:

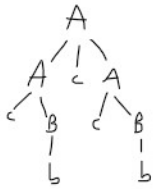
Transições para s1:



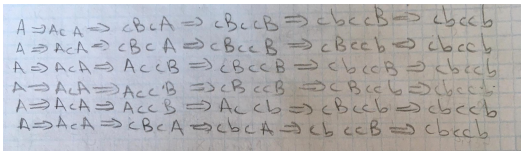
6.
a)
cbccb

A | AcA | cBccB | cbccb

1 árvore:



6 derivações:


A ⇒ AcA ⇒ cBcA ⇒ cBccB ⇒ cbccB ⇒ cbccb
A ⇒ AcA ⇒ cBcA ⇒ cBccB ⇒ cBccb ⇒ cbccb
A ⇒ AcA ⇒ AccB ⇒ cBccB ⇒ cbccB ⇒ cbccb
A ⇒ AcA ⇒ Accb ⇒ cBccb ⇒ cBccb ⇒ cbccb
A ⇒ AcA ⇒ Accb ⇒ Accb ⇒ cBccb ⇒ cbccb
A ⇒ AcA ⇒ cBcA ⇒ cbcA ⇒ cbccB ⇒ cbccb