Lista 2 - Parte 2

Hopcroft

4.1.1.

d) $\{0^i 1^j 2^i \mid i \geq 1,\ i \in \mathbb{Z},\ j \in \mathbb{Z}\} = L_1$

$w = 0^N 1 2^N = 0^u 0^v 0^z 1 2^N$

$i = 0 \therefore |0^u 0^z| < |2^N|$, logo L_1 não é regular

e) $\{0^i 1^j \mid i \leq j\} = L_2$

$w = 0^N 1^{N+1} = 0^u 0^v 0^z 1^{N+1}$

$i = 3 \therefore |0^u 0^{v^3} 0^z| > |1^{N+1}|$, logo $L_2 \notin L$ reg.

f) $\{0^i 1^{2i} \mid i \geq 1\} = L_3$

$w = 0^N 1^{2N} = 0^u 0^v 0^z 1^{2N}$

$i = 2 \therefore 2 \cdot |0^u 0^{v^2} 0^z| > |1^{2N}|$, logo $L_2 \notin L$ reg.

7.1.2.

a)

	Etapa 1	Etapa 2
único	{S}	
1	{S}	

b) $f\text{-}S = \emptyset \mid f\text{-}A = \emptyset \mid f\text{-}B = \{A\}$

Etapa 2

$P_1 = \{S \to ASB \mid \varepsilon$

$A \to aAS \mid a$

$B \to SbS \mid aAS \mid a \mid bb$

v) Etapa 1

unária	∅
1	{A, B}
2	{A, B, S}

Etapa 2

unária	{S}	∅
1	{A, B, S}	∅
2	{A, B, S}	{a, b}
3	{A, B, S}	{a, b}

g.r = ({S, A, B}, {a, b}, {
S → ASB | ε
A → aAS | a
B → SbS | aAS | bb | a}

7.1.3:

Original

$S \to OAO \mid 1B1 \mid BB$
$A \to C$
$B \to S \mid A$
$C \to S \mid \varepsilon$

a)

1

início	$\{C\}$
1	$\{A, C\}$
2	$\{A, C\}$

2

início	$S \to OAO \mid 1B1 \mid BB, A \to C, B \to S \mid A, C \to S$
1	$S \to OAO \mid 1B1 \mid BB \mid 00 \mid 1, A \to C, B \to S \mid A, C \to S$
2	"

3

Induz $S \to \varepsilon$

V1:

$S \to OAO \mid 1B1 \mid BB \mid 00 \mid \varepsilon$
$A \to C$
$B \to S \mid A$
$C \to S$

1

b) f-S = ∅, f-A = {ε, S} f-B = {S, A, C}, f-C = {S}

2

unicad	S → 0A0 | 1B1 | BB | 00 | ε
A	S → S | 0A0 | 1B1 | BB | 00 | ε
C	"
B	S → S | 0A0 | 1B1 | BB | ∞, A → S, B → ε, C → S

c)

1

início	
	∅
1	{S}
2	{S}

} S → S | 0A0 | 1B1 | BB | ∞ | ε

2

início	{S}	{0, 1}

V3

S → 0S0 | 1S1 | SS | ∞ | ε

d) S → ZSZ | USU | SS | ZZ | ε

Z → 0

1 U → 1

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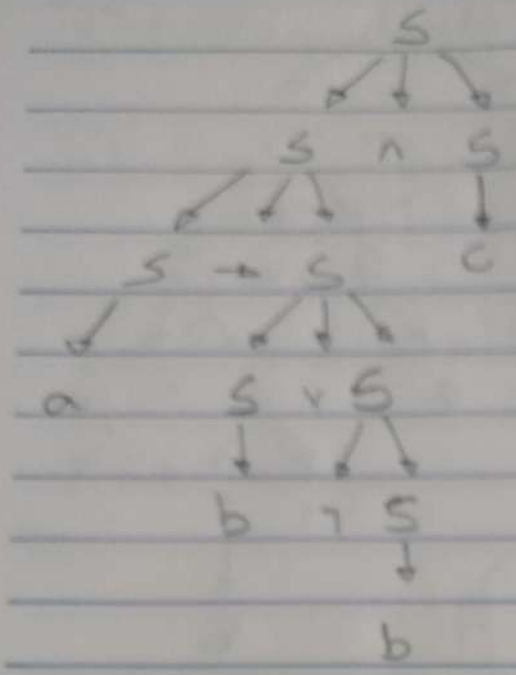
2 S → ZD1 | UD2 | SS | ZZ | ε

D1 → SZ

D2 → SU

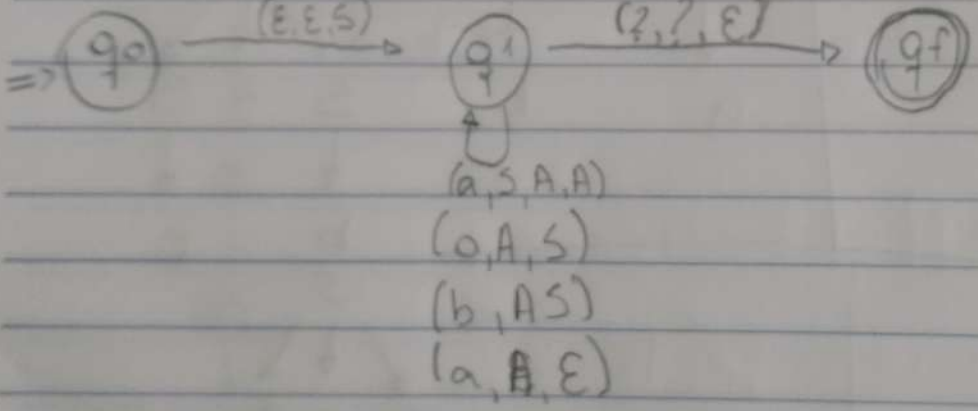
Z → 0

U → 1

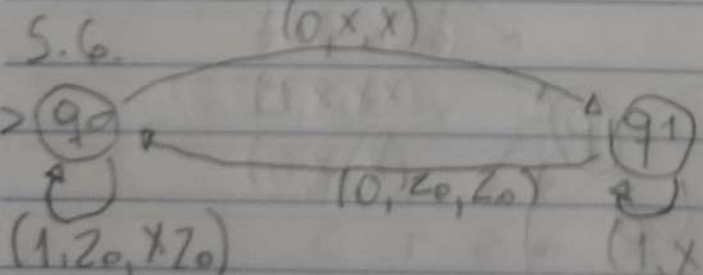


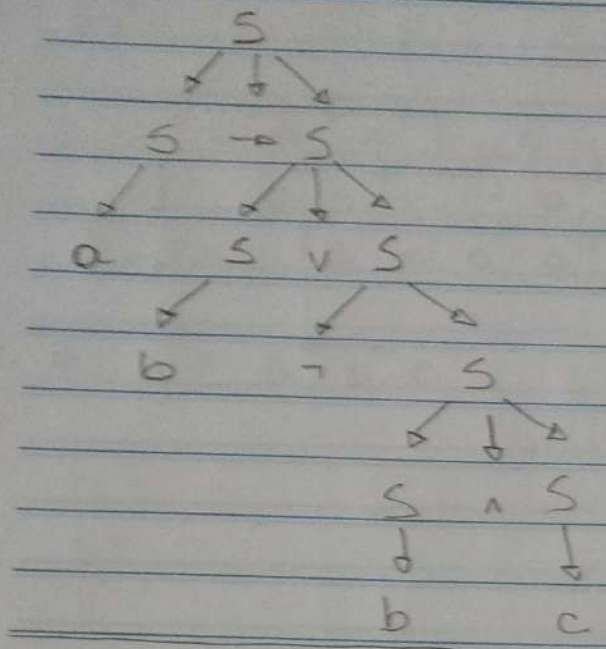
4) Hopcroft e Ullman

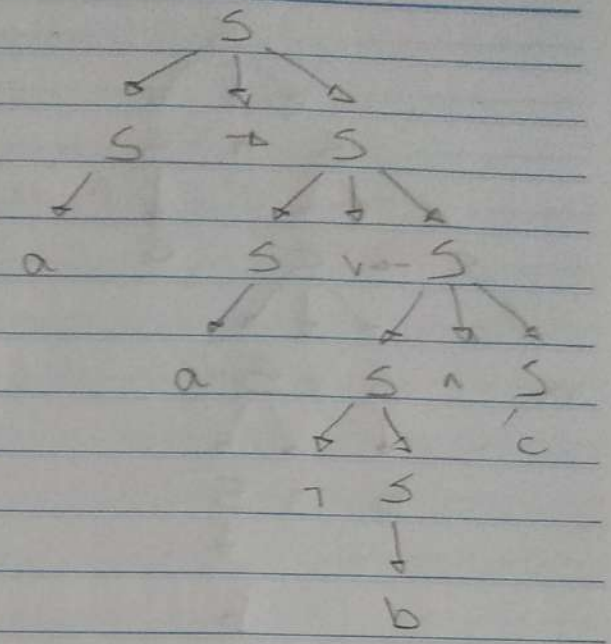
5.2.

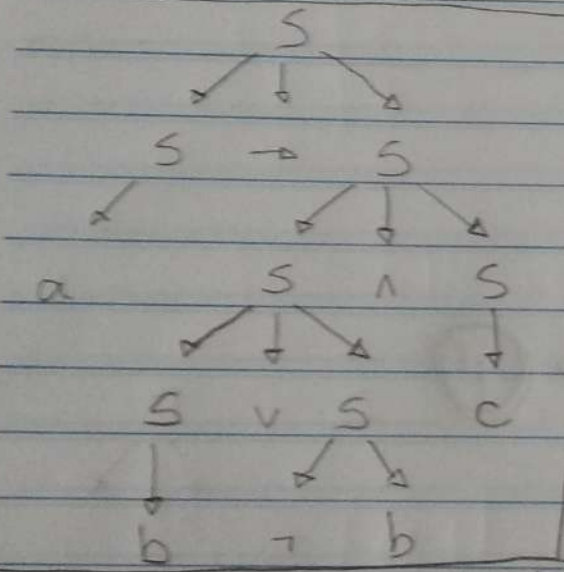


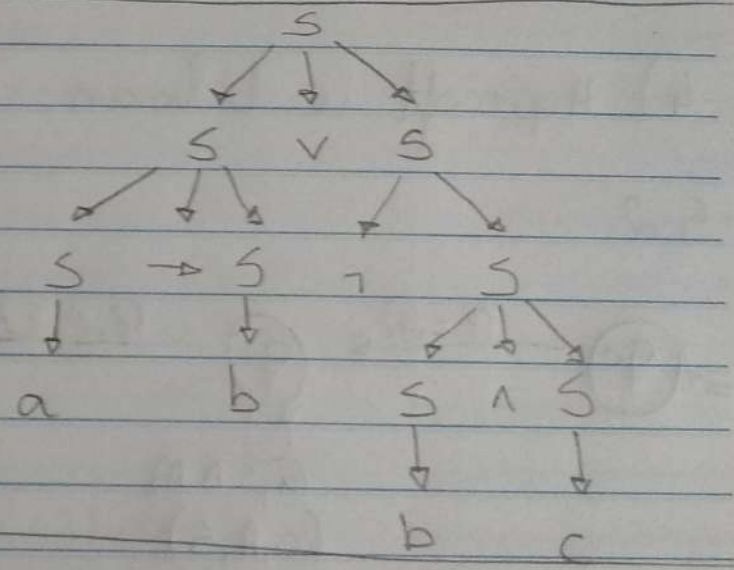
5.6.

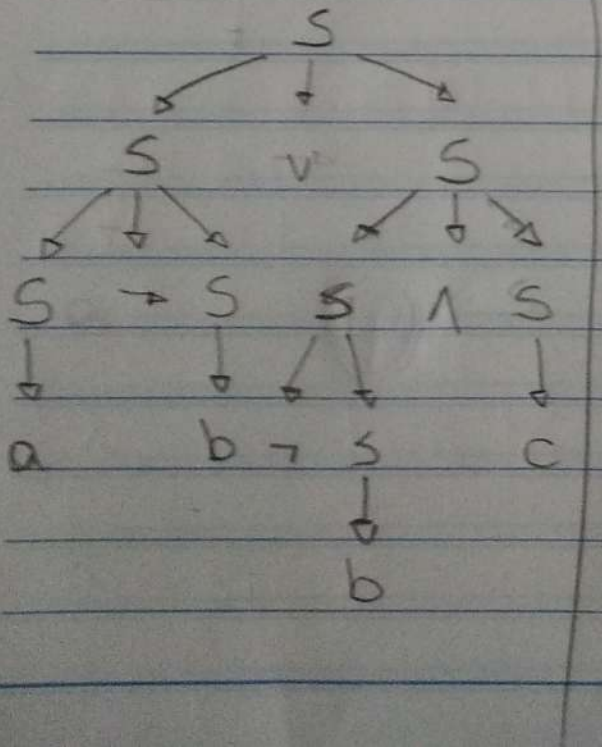


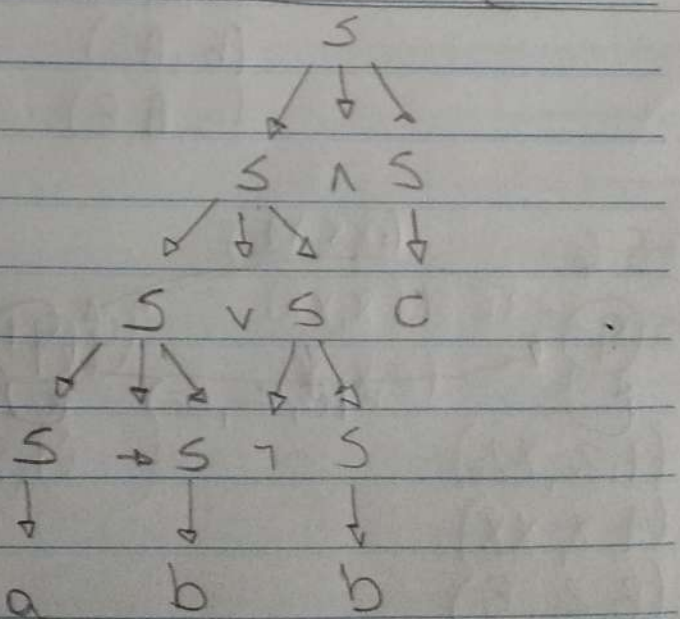

S
S → S
a S ∨ S
b ¬ S
S ∧ S
b c


S
S → S
a S ∨ S
a S ∧ S
c
¬ S
b


S
S → S
a S ∧ S
S ∨ S c
b ¬ b


S
S ∨ S
S → S ¬ S
a b S ∧ S
b c

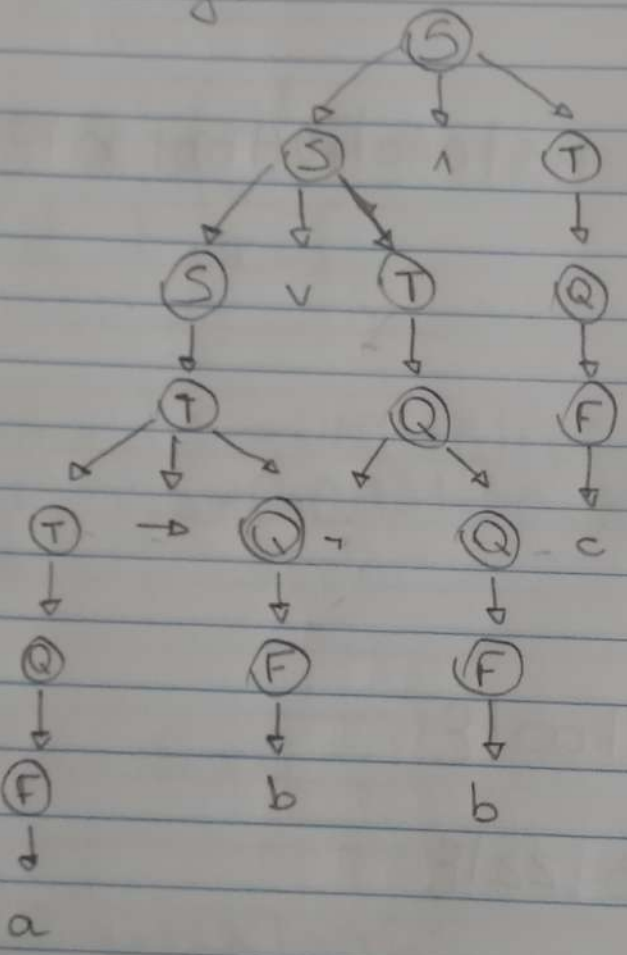

S
S ∨ S
S → S S ∧ S
a b ¬ S c
b


S
S ∧ S
S ∨ S c
S → S ¬ S
a b b

3) Ambiguidade

b) $S \to T \mid S \vee T \mid S \wedge T$
$T \to Q \mid T \to Q$
$Q \to F \mid \neg Q$
$F \to a \mid b \mid c \mid S$

Não ambígua



6.1.

a) $\{a^u b^\delta c^k \mid u < y < K\}$

$w' = a^N b^{N+1} c^{N+2} = a^{u+\delta} a^{x+\delta} a^{y+\delta} a^\delta b^{N+1} c^{N+2}$

$\forall i > 2, \; |a^u a^{x_i} a^{y_i} a^{\delta_i} a^\delta| \geq |b^{N+1}| \therefore$ absurdo

d) $w' = a^N b^N c^N$

Daqui pra frente não deu tempo, tive que render revisão.