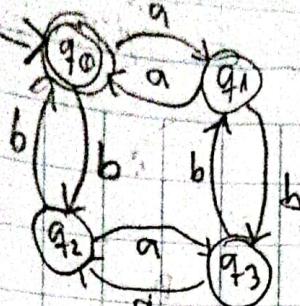


A. EX 1.

1.)



LubG

CFG) G = (V, T, P, S)

V → Non terminals

T → Terminal

P → Productions

S → Initial

1.)

V = {A₀, A₁, A₂, A₃}

2.) P {

A₀ → a A₁,

A₀ → b A₂,

A₁ → a A₀,

A₁ → b A₃,

A₂ → a A₃,

A₂ → b A₀,

A₃ → a A₂,

A₃ → b A₁,

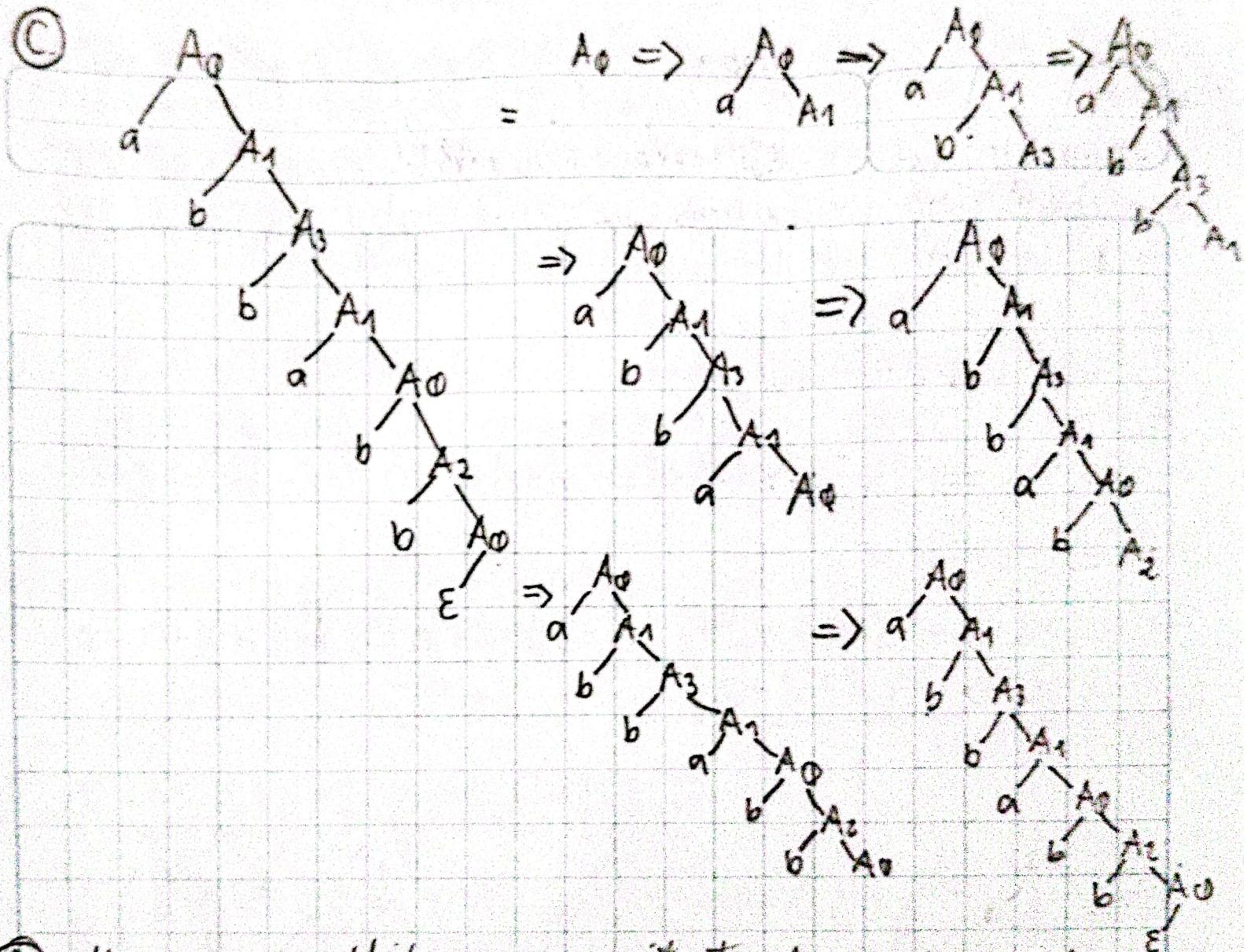
3.) A₀ → ε }

4.) S = A₀

B. w = abbabb

A₀ → a A₁ ⇒ a b A₃ ⇒ a b b A₁ ⇒ a b b a A₀ ⇒ a b b a b A₂ ⇒ a b b a b b A₀
⇒ a b b a b b ε = a b b a b b, Sifatnace al linguage genrate.

[w si ∈ L(M)]



④ No es ambigüo, debido a que no existe otra forma de generar la cadena dada por terminal.

EX2: CFG: $P = \{ S \rightarrow SS, S \rightarrow AB, A \rightarrow Aa, A \rightarrow a, B \rightarrow Bb, B \rightarrow b \}$

$$S = S \quad V = a, b$$

$$P = \{ S \rightarrow SS \mid AB, A \rightarrow Aala, B \rightarrow Bb \mid b \}$$

A. $w = aa\overline{bbabab}$

$$\begin{aligned} S &\Rightarrow SS \Rightarrow SSS \Rightarrow ABSS \Rightarrow AaBSS \Rightarrow aaBSS \\ &\Rightarrow aaBbSS \Rightarrow aabbSS \Rightarrow aabbAB \Rightarrow aabbabs \Rightarrow aabbab \\ &\Rightarrow aabbabAB \Rightarrow aabbabab \Rightarrow \underline{aabbabab} \end{aligned}$$

B.

$$A \rightarrow \underbrace{Aa \mid a}_{A \propto \beta} \quad \left. \begin{array}{l} A \rightarrow aA' \\ A' \rightarrow aA' \mid \epsilon \end{array} \right\}$$

$$B \rightarrow \underbrace{Bb \mid b}_{B \propto \beta} \quad \left. \begin{array}{l} B \rightarrow bB' \\ B' \rightarrow bB' \mid \epsilon \end{array} \right\}$$

$$S \rightarrow \underbrace{SS \mid AB}_{A \propto B} \quad \left. \begin{array}{l} S \rightarrow ABS' \\ S' \rightarrow SS'' \mid \epsilon \end{array} \right\}$$

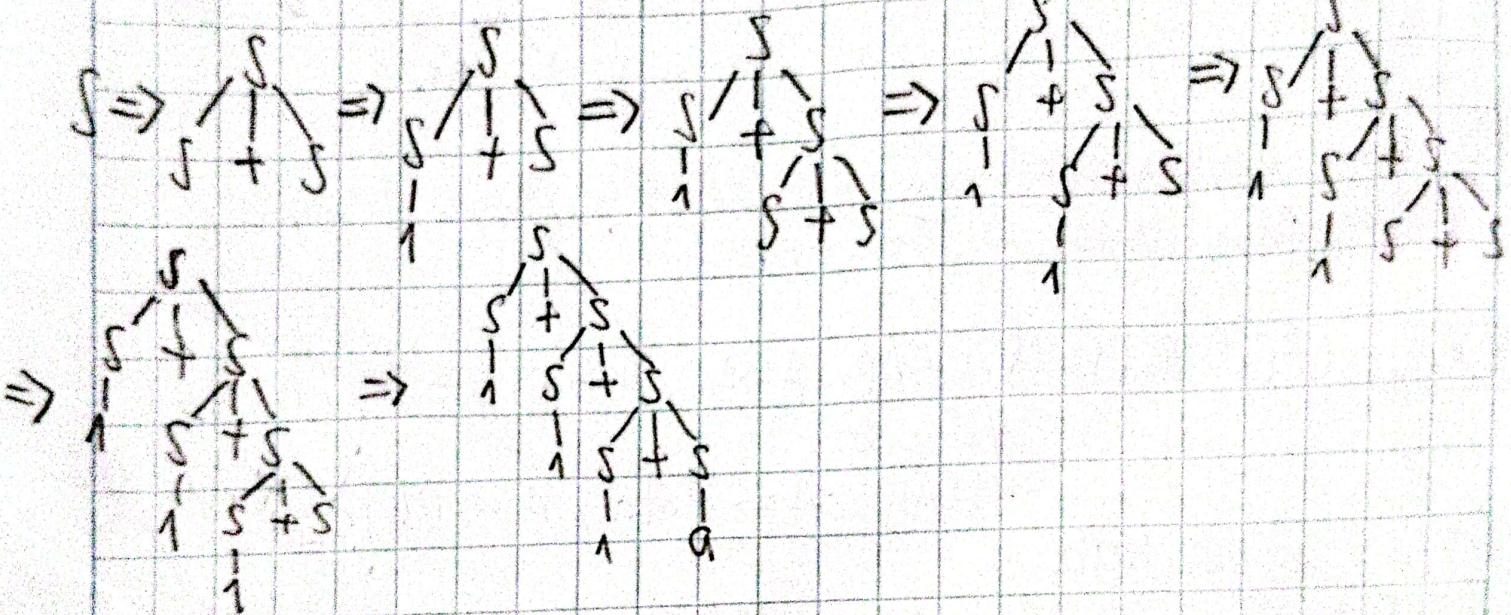
Ex. 11. $S \Rightarrow S + S / 1 / a$

A. $w = 1 + 1 + 1 + a$
 $S \Rightarrow S + S \Rightarrow 1 + S \Rightarrow 1 + S + S \Rightarrow 1 + 1 + S \Rightarrow 1 + 1 + 1 + a$

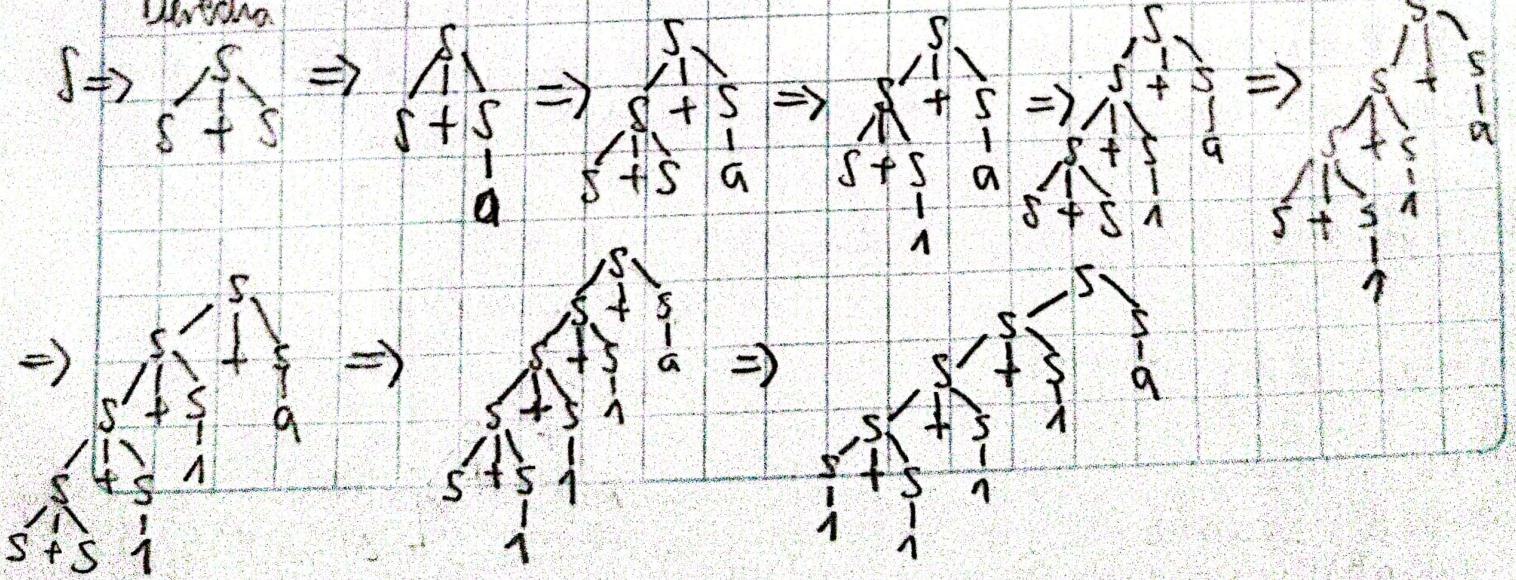
$1 + 1 + 1 + a$

Der: $S \Rightarrow S + S \Rightarrow S + a \Rightarrow S + S + a \Rightarrow S + 1 + a \Rightarrow S + S + 1 + a \Rightarrow$
 $S + 1 + 1 + a \Rightarrow \underline{1 + 1 + 1 + a}$

B. Izquierda



Derecha



C.) Están C y B sí en ambigüedad porque existe reasignación de precedencia que

$$S \rightarrow S \cdot S / \eta / a.$$

Ej. P.: $A \rightarrow AA \mid (A) \mid a$, $E \rightarrow E+E \mid E \cdot E \mid 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8 \mid 9 \}$

A. $|W| > 5$ $w = 0 \times 3 + 1 \times 8$ $E \Rightarrow E+E \Rightarrow 0 \cdot E \Rightarrow 0 \cdot E + E \Rightarrow 0 \times 3 + E \Rightarrow$
 $0 \cdot 3 + E \cdot E \Rightarrow 0 \times 3 + 1 \cdot 8 \Rightarrow \underline{\underline{0 \times 3 + 1 \cdot 8}}$

B. $A \rightarrow AA \mid (A) \mid a$ } $\begin{array}{l} A \rightarrow (A) A' \mid \eta A' \\ A' \rightarrow AA' \\ A' \rightarrow \epsilon \end{array}$

$E \rightarrow E+E \mid E \cdot E \mid 0 \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8 \mid 9 \}$

$E \rightarrow 0E' \mid AE' \mid 2E' \mid 3E' \mid 4E' \mid 5E' \mid 6E' \mid 7E' \mid 8E' \mid 9E'$
 $E \rightarrow E'E' \mid \ast E'E' \mid \epsilon$

C. $|W| > 5$
 $w = 0 \times 3 + 1 \times 8$
 $E \Rightarrow 0E' \Rightarrow 0 \cdot EE' \Rightarrow 0 \cdot 3E'E' \Rightarrow 0 \times 3 + E'E'E' \Rightarrow 0 \times 3 + 1 E'E'E' \Rightarrow$
 $0 \times 3 + 1 \cdot E'E'E'E'E' \Rightarrow 0 \times 3 + 1 \times 8 E'E'E'E'E' \Rightarrow 0 \times 3 + 1 \times 8 E'E'E'E' \Rightarrow$
 $0 \times 3 + 1 \times 8 E'E'E'E' \Rightarrow 0 \times 3 + 1 \times 8 E'E' \Rightarrow 0 \times 3 + 1 \times 8 E' \Rightarrow$
 $\underline{\underline{0 \times 3 + 1 \times 8}}$

D. Si es posible obtener la cadena sin la ambigüedad.