exercice 1 :

. a^*b = $\Sigma = \{a, b\}$ $V = \{S\}$ $R = \{S \to aS ; S \to b\}$

. $a^m b^n$: $\Sigma = \{a, b\}$ $V = \{S, A\}$ $R = \{A \to aS|a ; S \to aSb \mid A\}$

.

.

.

exercice 2 :

$G_1 = (\Sigma_1, V_1, S_1, R_1)$ V_1 et V_2 disjoints

$G_2 = (\Sigma_2, V_2, S_2, R_2)$ $S \in V_1$ $S \in V_2$

$V_1 \cup V_2 \cup \{S_1\}$, S_1, $R_1 \cup R_2 \cup \begin{cases} S \to S_1 \\ S \to S_2 \end{cases}$

exercice 4 :

1. $S \to aSbS \to abS \to abaSbS \to ababS \to abab$

$S \to aSbS \to aSbaSb \to abaSb \to abab$

→ oui elle est ambiguë

2. $L = \{m \in \{a,b\}^* \mid |m|_a = |m|_b\}$

$\mathcal{L}(G) \subset L$

dans chaque règle, quand on a un "a" on engendre un "b" et quand on a un "b" on engendre un "a".

exercice 5 :

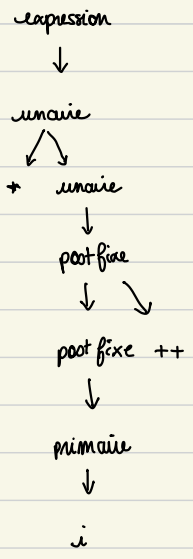
1. $S \to aSb \to aUVb \to aaUbVb \to aaabbVb \to aaabbaUbb \to aaabbaabbb$

$S \to aSb \to aaSbb \to aaUTVbb \to aaabTVbb \to aaabbaVbb \to aaabbabbb$

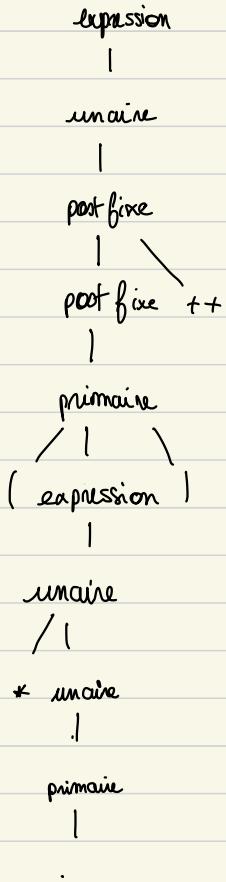
→ oui elle est ambiguë.

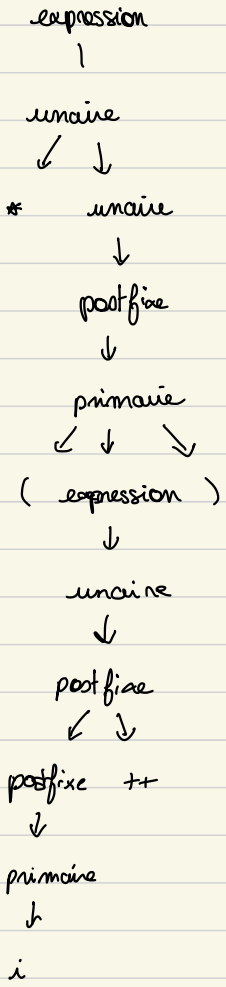
exercice 3 :

1.



2.





exercice 7 :

Les variable productive → A_0 { S_2 , S_4 } , A_1 { S_2 , S_4 , S_1 }

$S_1 \rightarrow S_1 S_1 \mid \sout{S_2 S_3} \mid S_2 a$

$S_2 \rightarrow a S_2 \mid \sout{b S_3} \mid c$

$\sout{S_3 \rightarrow S_1 S_3 \mid S_3 b S_2 \mid S_3 S_3}$

$\sout{S_4 \rightarrow a S_4 \mid b S_4 S_2 \mid c}$

1. on enlève les variable non-productives et leurs règles où elles apparaissent

2. on enlèves les variable non accessibles.