TD3 ex 1

S → A
A → B + A
A → B
B → A * id
B → id

A → A * id + A

A → A * id
A → id + A
A → id

A’ → * id (+ A | ε) A’ | ε

F → (+ A | ε) A’
A → id F
A’ → * id F | ε
S → A

A → Aa | b

A → b A’
A’ → a A’ | ε

A → A (*id + A | * id)
A → id + A | id

A → (id + A | id) A’ = id (+ A | ε) A’
A’ → (*id + A | * id) A’ | ε
S → A

TD 3 Ex 2

1. N → R p C
2. N → R
3. N → C
4. C → i R
5. R → R c
6. R → c

R → c S
S → c S | ε

N → R p C | R | C (régles 1-3)
N → c S p C | c S | C = c (S p C | S) | C
N → c X | i R
X → S p C | S
X → c S p C | c S | ε | p C
X → c X | ε | p C
C → i R

TD3 Ex 3

N_1 → M | E_x | M E_x | s (M | E_x | M E_x)
→ E | D | E D | E_x | (E | D | ED) E_x | s N_2
→ cS | ·E | cS·E | e E_s | cS E_x | ·EE_x | cS·EE_x | sN_2
→ c (S |S·E |S E_x |S·EE_x) | e E_s | ·(EE_x| E)| sN_2
N_1 → c X | e E_s | · Y | s N_2
N_2 → c X | e E_s | · Y
X → S |S·E |S E_x |S·EE_x
→ cS | cS·E | cS E_x | cS·EE_x|ε|·E | E_x |·EE_x
→ c (S | S·E|SE_x|S·EE_x) |ε|·E | E_x |·EE_x
→ cX | ·(E | EE_x) | ε | E_x
X → c X | · Y | ε | e E_s
Y → EE_x| E → cS | c S E_x → c (S | S E_x)
Y → c Z
Z → c (S | S E_x) → c Z
E_s → E | s E → cS | sE

X → S |S·E |S E_x |S·EE_x
Y → EE_x| E

N_1
N_2
E_x
E_s
S_i

S → cS | ε
Z → (S | S E_x)