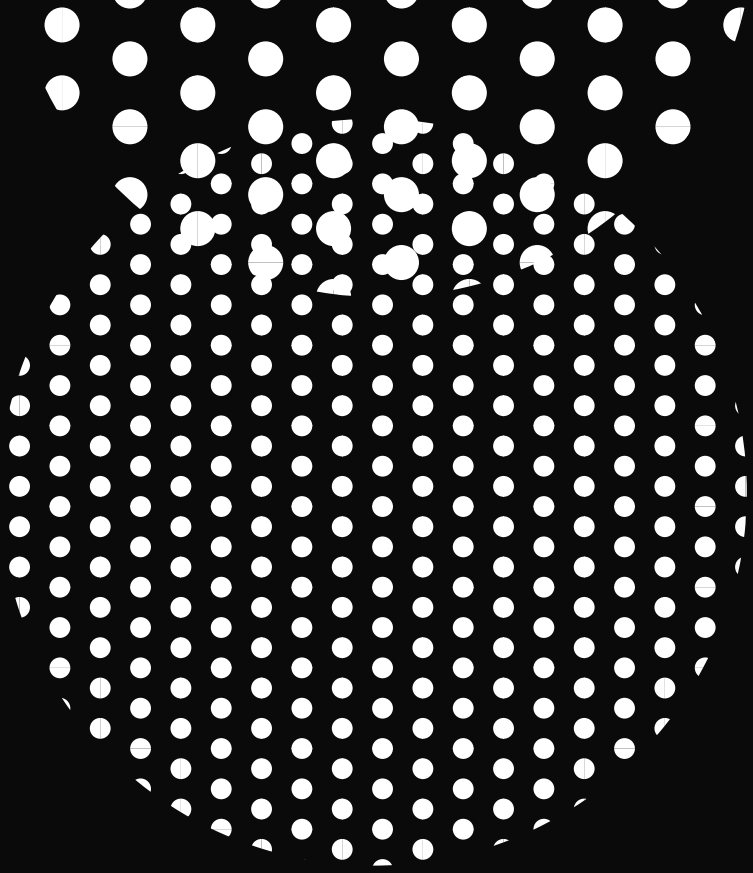


Exercice 1

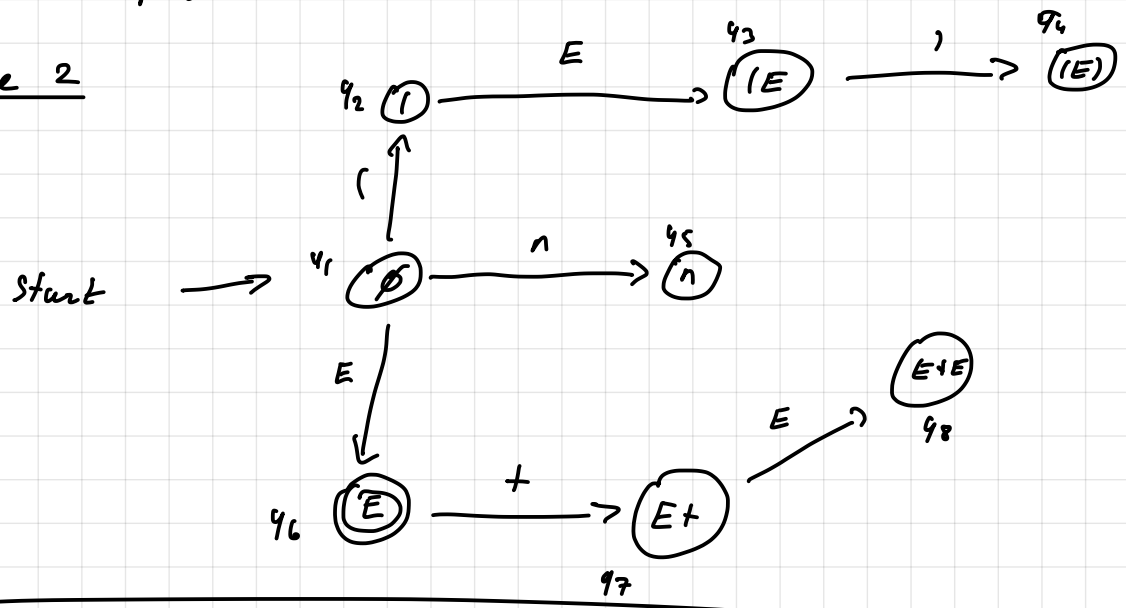
1.

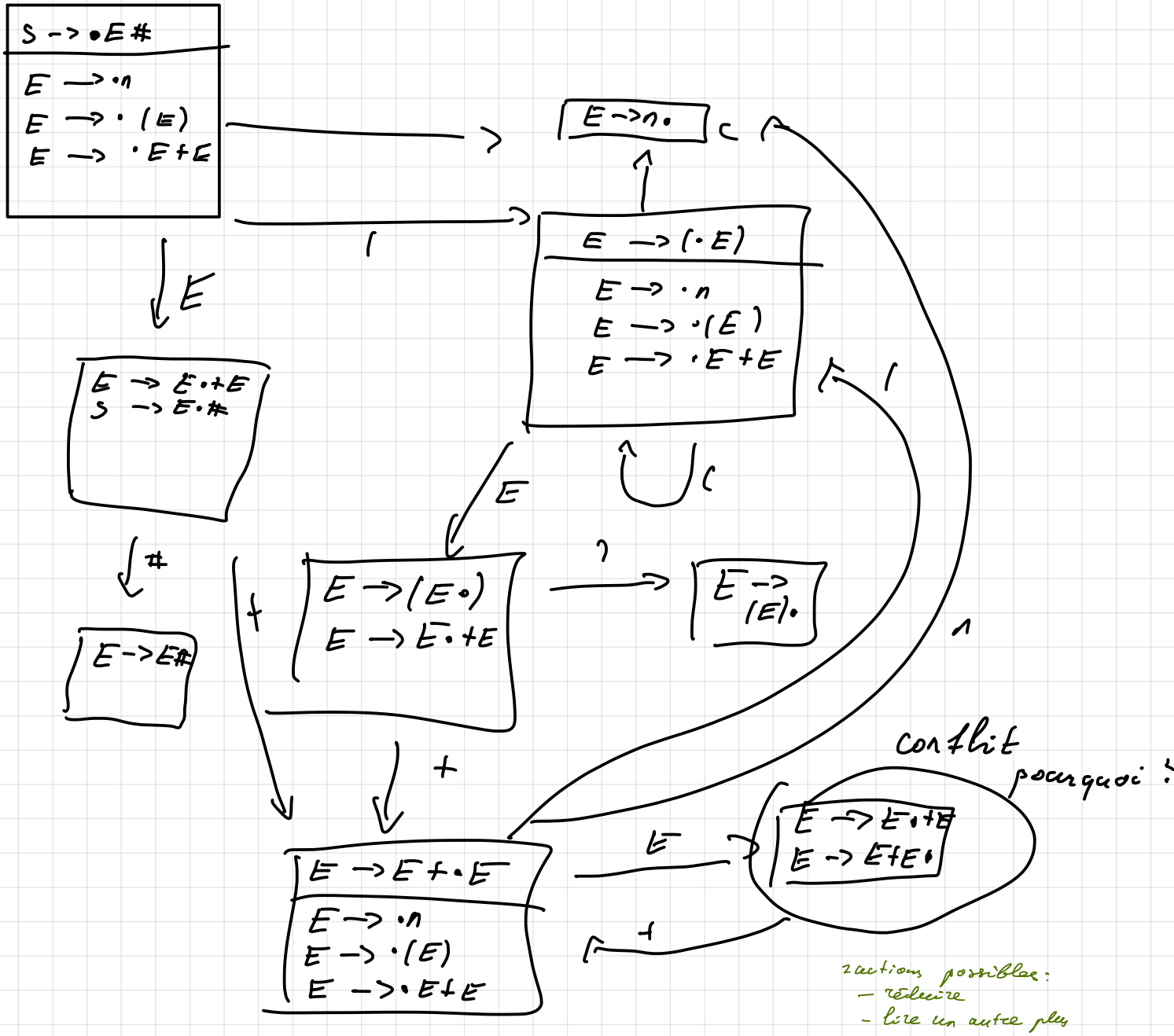
pile	Pile d'états	reste
$\emptyset$	q_1	$(1+2)+(3+4)$
$($	$q_1 q_2$	$1+2)+(3+4)$
$(1$	$q_1 q_2 q_5$	$+2)+(3+4)$
$(E_1$	$q_1 q_2 q_3$	$+2)+(3+4)$
$(E_1+$	$q_1 q_2 q_3 q_7$	$2)+(3+4)$
$(E_1+2$	$q_1 q_2 q_3 q_7 q_5$	$)+(3+4)$
$(E_1+E_2$	$q_1 q_2 q_3 q_7 q_6$	$)+(3+4)$
$(E_1+E_2$	$q_1 q_2 q_3 q_7 q_8$	$)+(3+4)$
(E_1+E_2)	$q_1 q_2 q_3 q_7 q_8$	$+(3+4)$
(E_3)	$q_1 q_2 q_3$	$+(3+4)$
(E_3)	$q_1 q_2 q_3 q_4$	$+(3+4)$
E_4	$q_1 q_6$	$+(3+4)$
E_4+	$q_1 q_6 q_7$	$(3+4)$
$E_4+($	$q_1 q_6 q_7 q_2$	$3+4)$
$E_4+(3$	$q_1 q_6 q_7 q_2 q_5$	$+4)$
$E_4+(E_5$	$q_1 q_6 q_7 q_2 q_3$	$+4)$
$E_4+(E_5+$	$q_1 q_6 q_7 q_2 q_3 q_7$	$4)$
$E_4+(E_5+4$	$q_1 q_6 q_7 q_2 q_3 q_2 q_5$	$)$
$E_4+(E_5+E_6$	$q_1 q_6 q_7 q_2 q_3 q_7 q_8$	$)$
$E_4+(E_7$	$q_1 q_6 q_7 q_2 q_3$	$)$
$E_4+(E_7)$	$q_1 q_6 q_7 q_2 q_3 q_4$	
E_4+E_8	$q_1 q_6 q_7 q_8$	
E_9	$q_1 q_8$	

2.

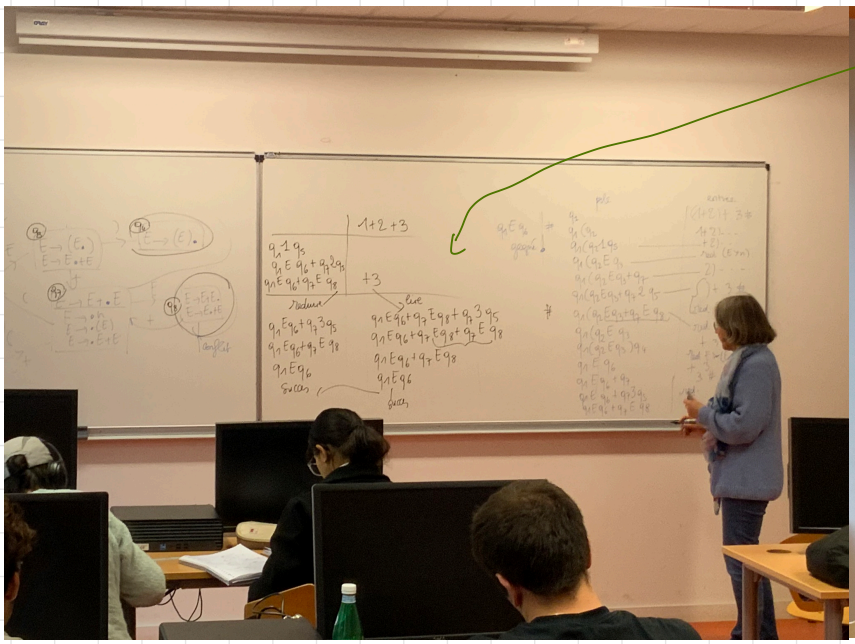
	q_1	(1+2)(3)
(	$q_1 q_2$	1+2)(3)
(1	$q_1 q_2 q_5$	+2)(3)
(E1	$q_1 q_2 q_3$	+2)(3)
(E1+	$q_1 q_2 q_3 q_7$	2)(3)
(E1+2	$q_1 q_2 q_3 q_7 q_5$	)(3)
(E1+E2	$q_1 q_2 q_3 q_7 q_8$	)(3)
(E3	$q_1 q_2 q_3$	)(3)
(E3)	$q_1 q_2 q_3 q_4$	(3)
E4	$q_1 q_6$	(3)
	erreur pas de transition possible	

Exercice 2





actions possibles :
- réduire
- lire un autre plus



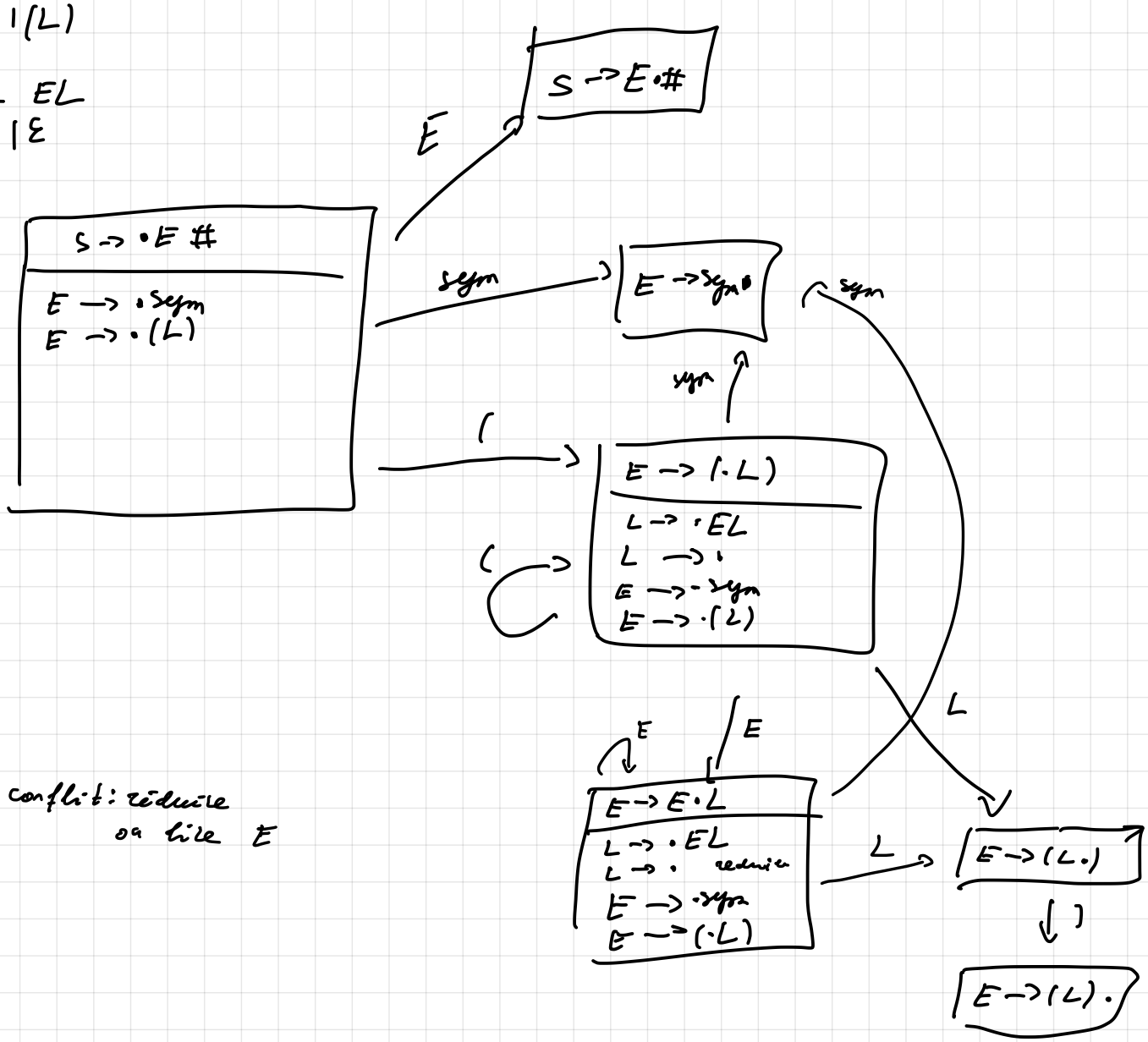
Exercice 3

1) $S ::= E\#$

$E ::= sym$
$\quad | (L)$

$L ::= EL$
$\quad | \varepsilon$

2)



conflit : réduire
ou lire E

Exercice 4

1.

$$\text{if } \underbrace{x}_{E} \text{ then } \overbrace{\text{if } x \text{ then } x \text{ else } x}^{E}$$

$$\text{if } \underbrace{x}_{E} \text{ then } \underbrace{\text{if } x \text{ then } x}_{E} \text{ else } \underbrace{x}_{E}$$

2)

$$\underbrace{\text{if } \underbrace{x}_{E} \text{ then } \underbrace{\text{if } \underbrace{x}_{E} \text{ then } \underbrace{x}_{E} \text{ else } \underbrace{x}_{E}}_{EE'}}_{E}$$

$E' = 2$

$$\underbrace{\text{if } \underbrace{x}_{E} \text{ then } \underbrace{\text{if } \underbrace{x}_{E} \text{ then } \underbrace{x}_{E}}_{E} \text{ else } \underbrace{x}_{E}}_{E'}}_{E}$$