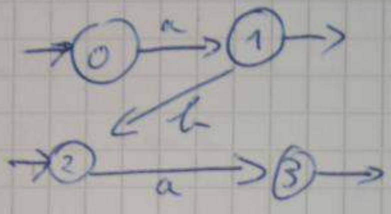
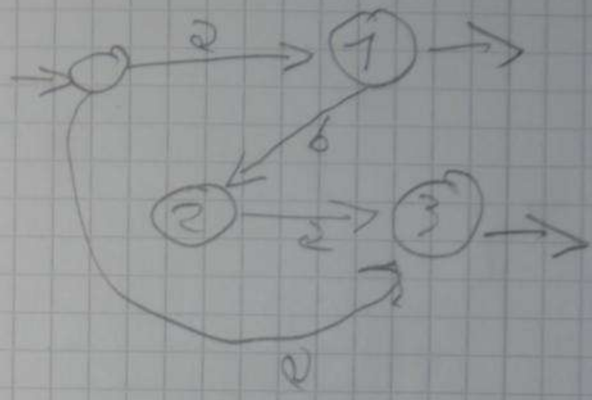
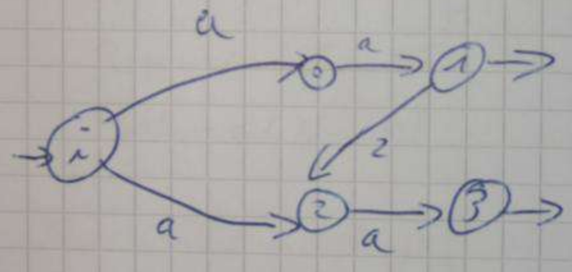
~~Exercice~~

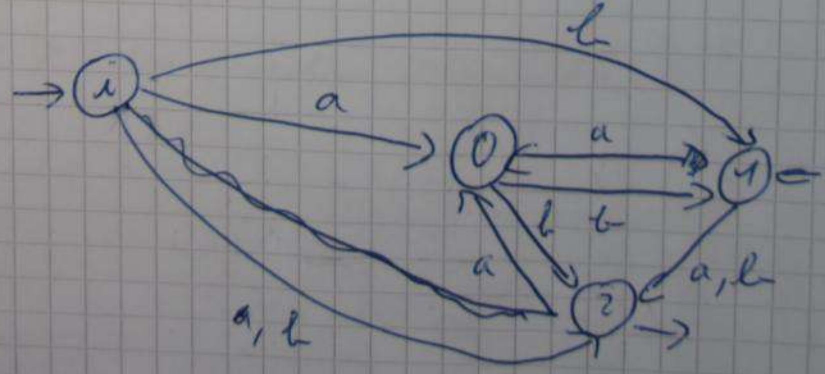
Automate Standard:

- il ne reconnait pas le mot ~~vide~~ ∅
- il ne reboucle sur son entrée
- il a qu'une entrée

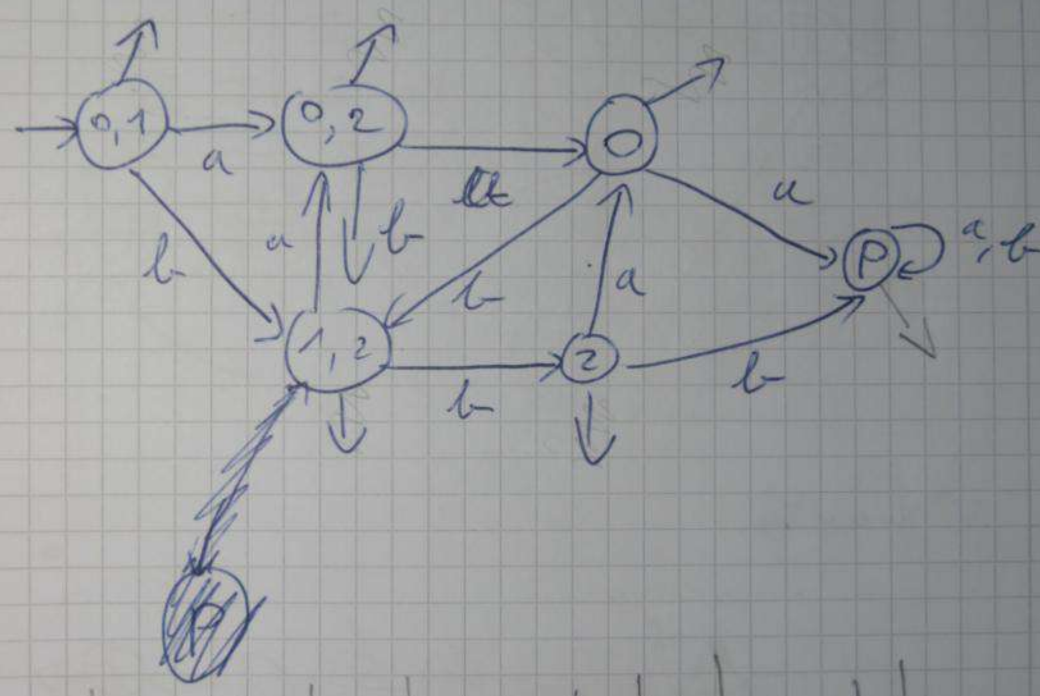






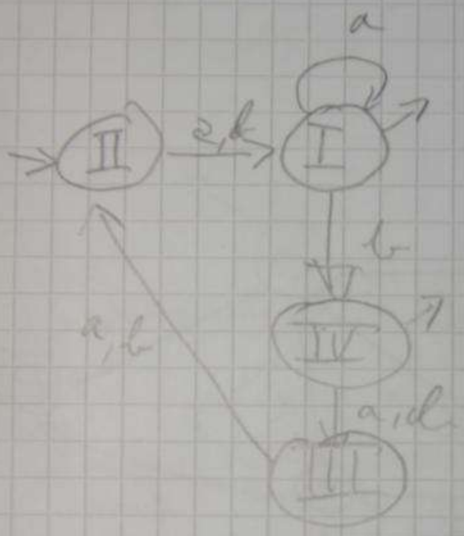


		a	b
EI	0,1	0,2	1,2
EF	0,2	0	2,1
EF	1,2	0,2	2
EF	0	P	1,2
EF	2	0	P
	P	P	P



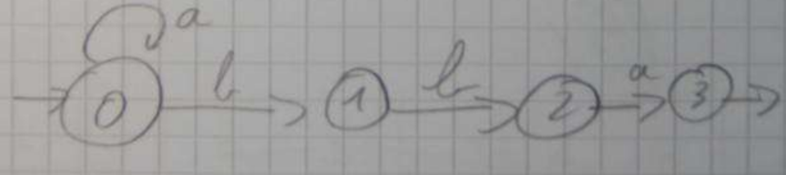
		a	b		a	b		a	b	
EF	0,1	0,2	1,2	I	I	I	I	I	I	I
EF	0,2	0	2,1	I	I	I	I	III	I	V
EF	1,2	0,2	2	I	I	I	I	I	IV	VI
EF	0	P	1,2	I	II	I	III			III
EF	2	0	P	I	I	II	IV			IV
	P	P	P	II	II		II			II

Etat	a	b		a	b		a	b	
EI 0	1	4	II	I	I	II			II
EF 1	2	3	I	I	I	I	I	IV	I
EF 2	2	3	I	I	I	I	I	IV	I
EF 4	P	P	I	I	II	IV	II	III	IV
EF 3	P	P	I	II	II	IV	III	III	IV
P	P	P	II	II	II	III			III

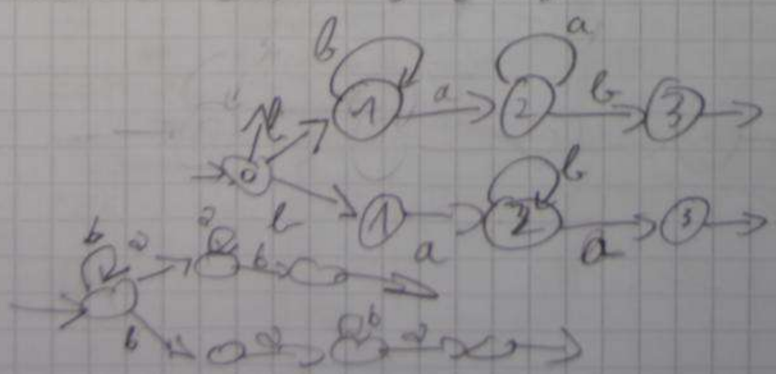


		a	b
EI	II	I	I
EF	I	I	IV
EF	IV	III	III
	III	III	III

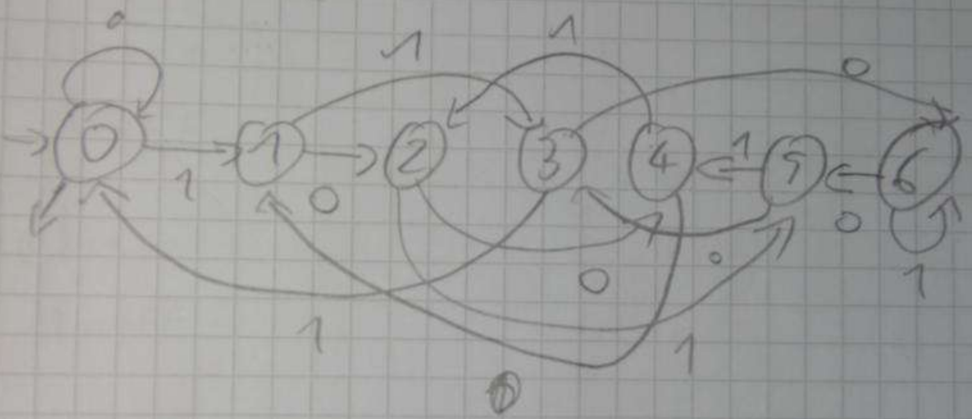
a* b b a

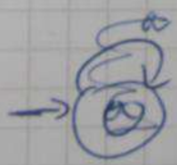


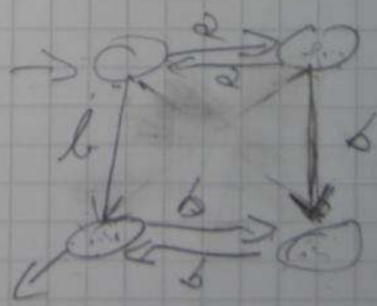
b a b* a ou b* a a* b

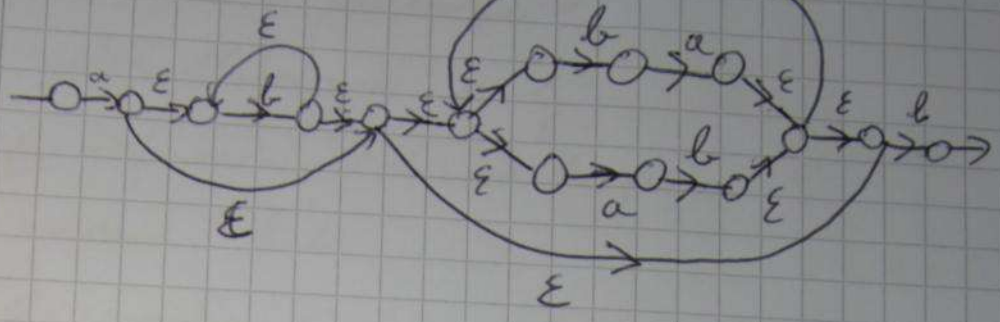


		0		1	
7N	0	14n	0	14n+1	1
7N+1	1	14n+2	2	+3	3
7N+2	2	14n+4	4	+5	5
7N+3	3	14n+6	6	+7	0
7N+4	4	14n+8	1	+9	2
7N+5	5	14n+10	3	+11	4
7N+6	6	14n+12	5	+13	6



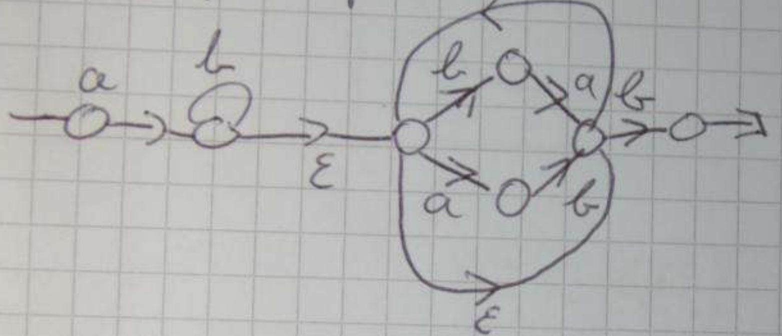




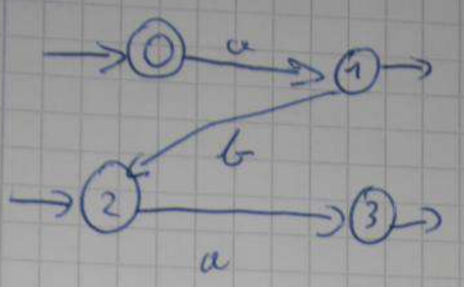


$a\,b^*(ba + ab)^*b$

simplifié graphiquement

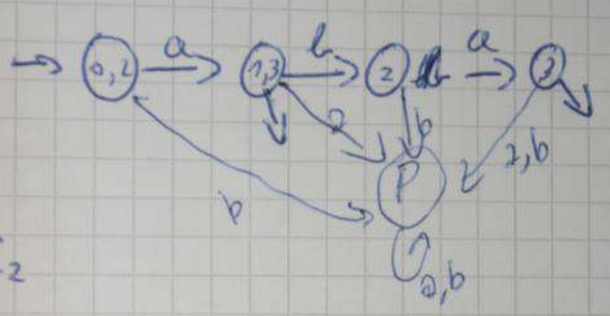


C1)

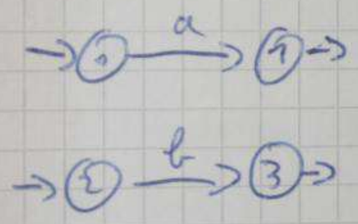


	a	b
0,2	1,3	P
1,3	P	2
2	3	P
3	P	P
P	P	P

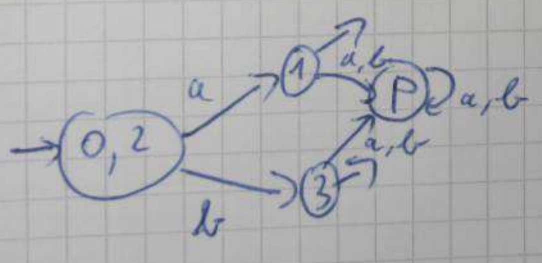
Automate déterministe :



C2



	a	b
0,2	1	3
1	–	–
3	–	–



Mathématique pour l'Information

Séance 3

Exercice 7:

A) (a b) b a b

a) lit tous les mots finissant par b a b

$(a+b)^* \, b a b$

b) Tableau de Transition

	a	b
→0	0	0,1
1	2	-
2	-	3
←3	-	-

Détermination, l'état initial est l'ensemble des états initiaux
ici {0}

	a	b
E 0	0	01
01	02	01
02	0	013
013	02	01

Sortie: tout état dont au moins une composante est sortie de l'automate non déterminisé

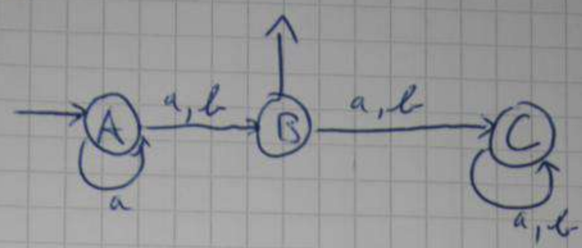
ici 013

TD

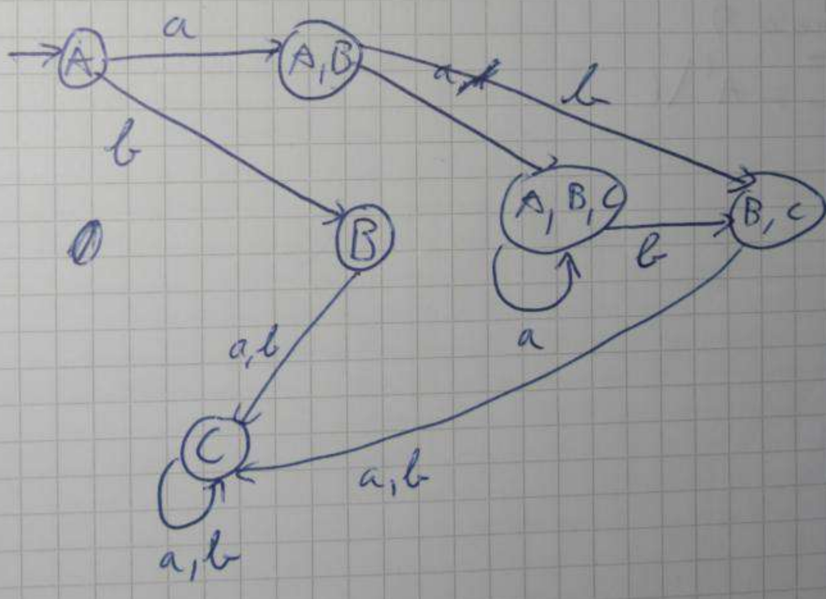
MPI

Exercice 7 :

D



		a	b
EI	A	A,B	B
EF	A,B	A,B,C	B,C
EF	B	C	C
EF	A,B,C	A,B,C	B,C
EF	B,C	C	C
	C	C	C



Minimalisation :

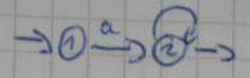
Il existe un unique ~~an~~ automate déterministe

Mathématique pour l'Info

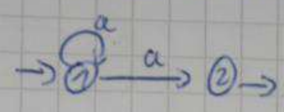
Séance 3

Exercice 6 :

1) Pas standard car transition vers l'état initial

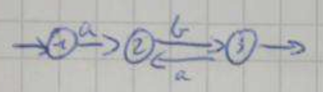


reconnaît le mot vide

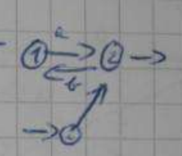


2) Pas standard, ne reconnaît le mot vide

Reconnaît $(ab)^*a$



b) $i \notin T$ car $1 \notin T$

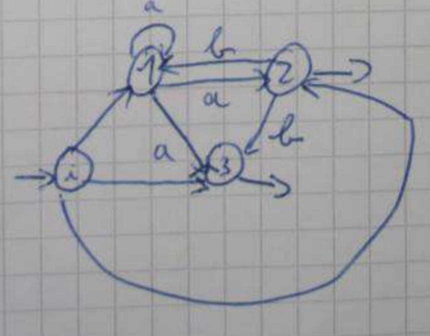


ne lit pas le mot "a"

3) Pas standard, reconnaît le mot vide

reconnaît $ab(ab)^* + (ab)^*a$ c'est $(ab)^* \setminus \varepsilon$

4) Pas Standard, ne reconnaît pas le mot vide

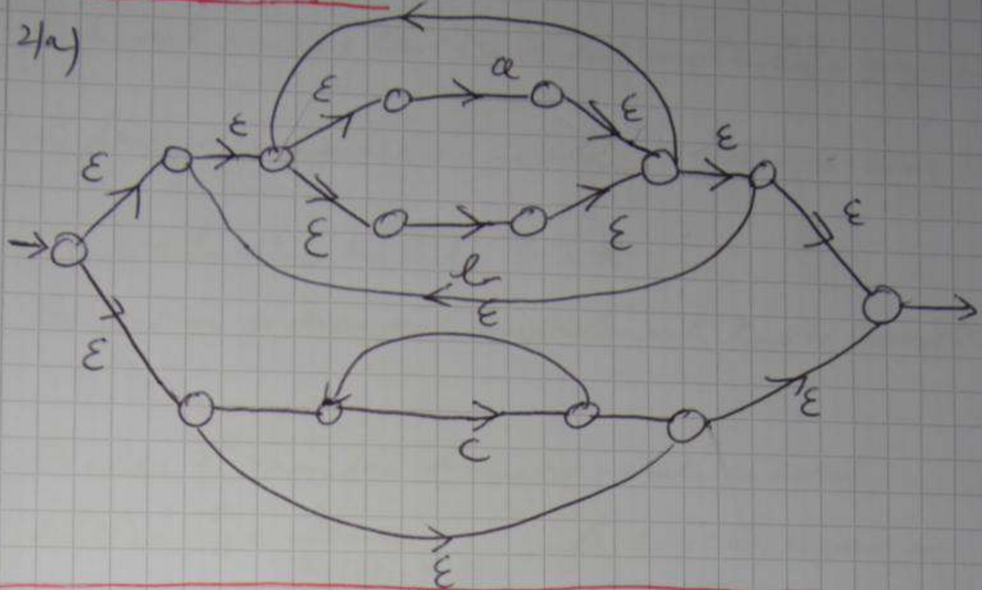


TD

MPI

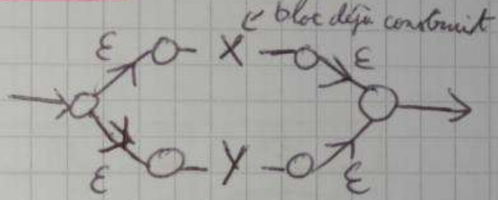
Correction du contrôle :

2/a)



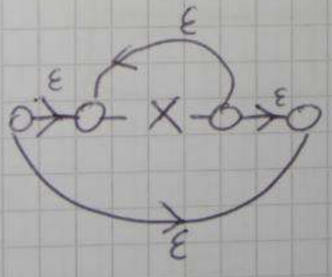
Règles de construction :

X + Y :



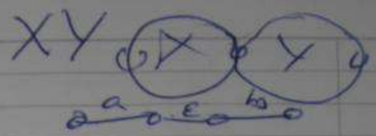
X Y

X* :

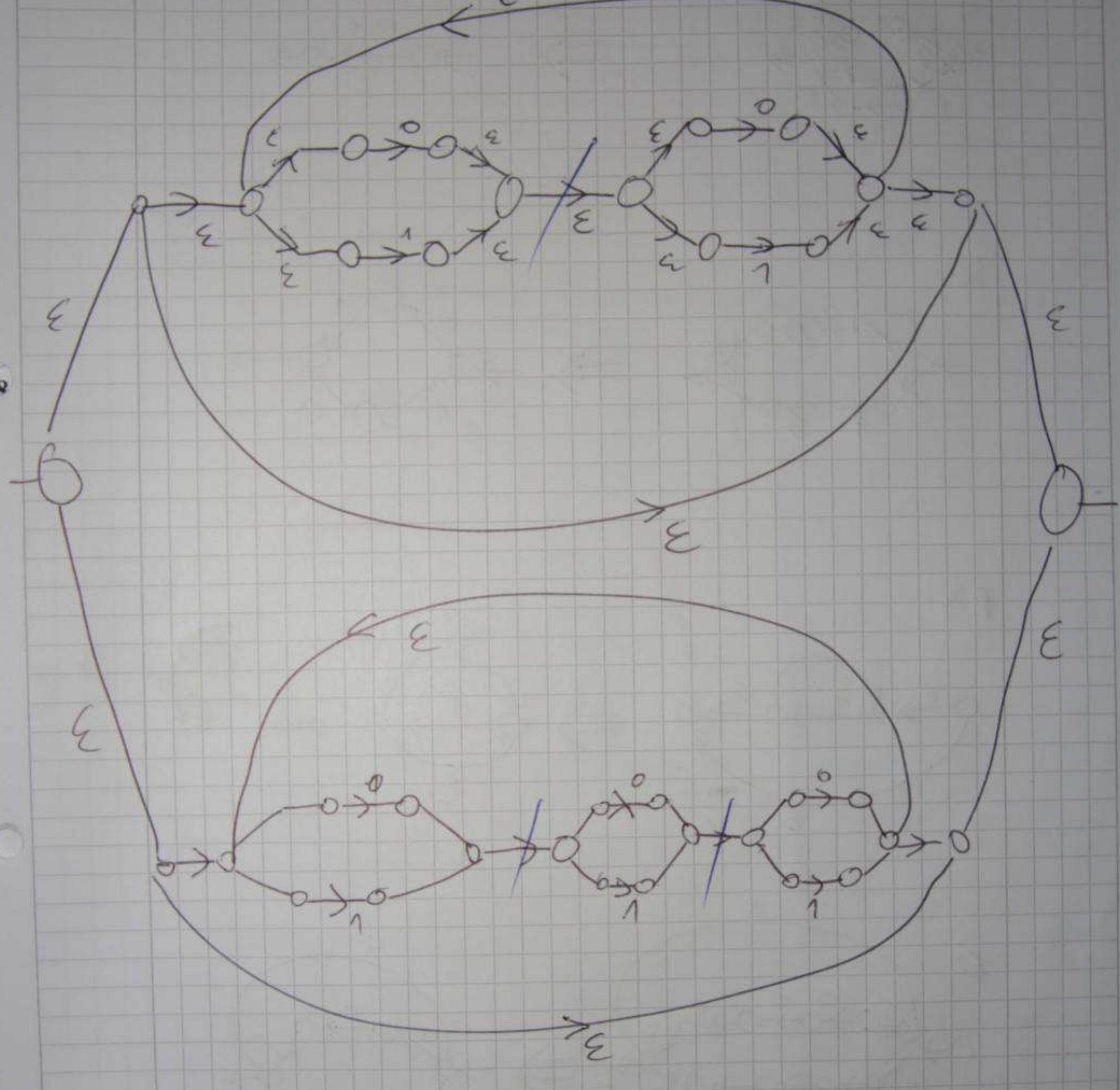


MPI Expression Rationelle · ab

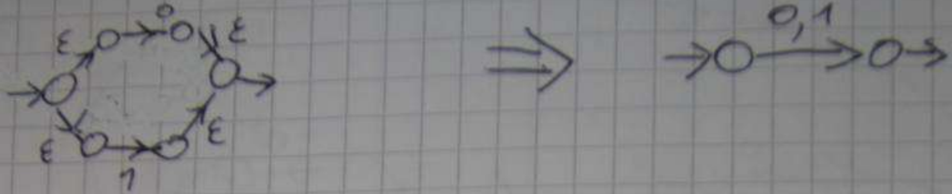
XY



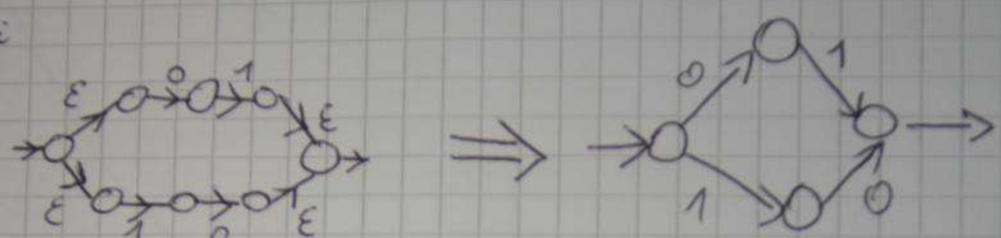
Exercice 1:



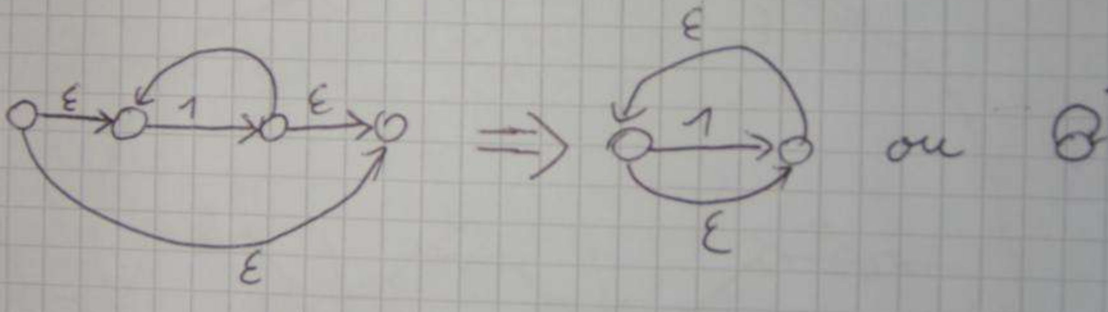
Si



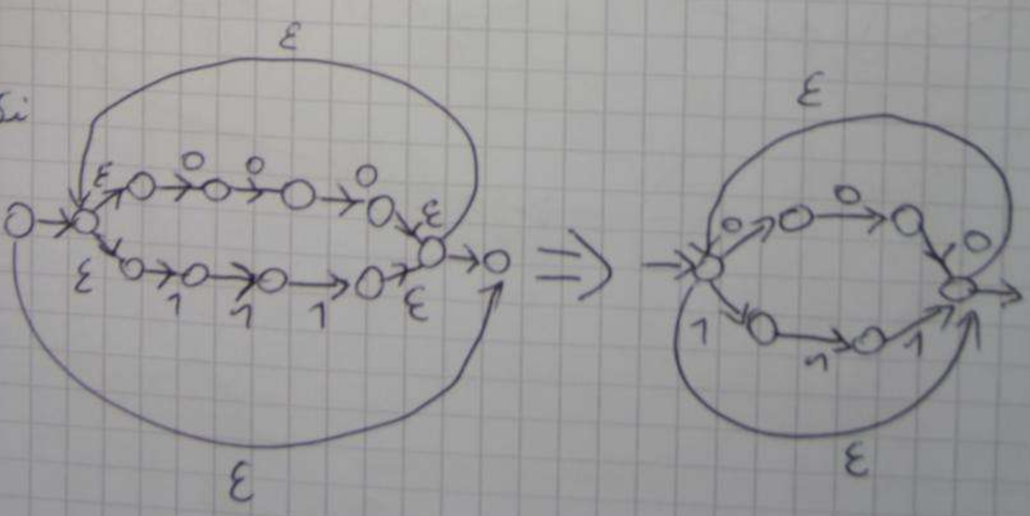
Si



Si

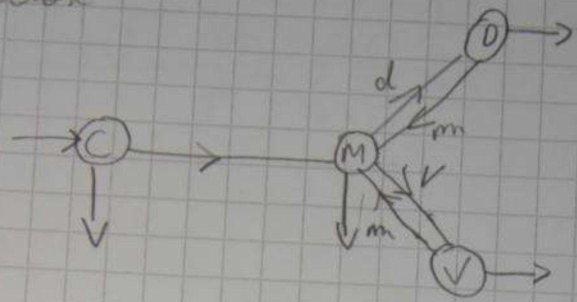


Si



Exercice 1:

correction



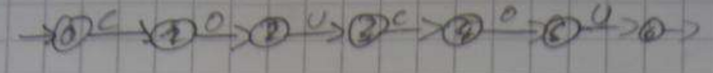
Il est deterministe car il n'y a aucune ambiguité sur les changements d'Etat

Table de Transition

	Etat	m	d	v
ES	C	M	—	—
S	M	—	D	V
S	V	M	—	—
S	D	M	—	—

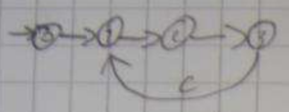
Naixy

Exercice 2 :

a) 

Déterminisme

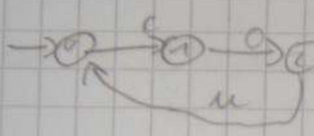
b) Bonne solution :



AD

autre solution :

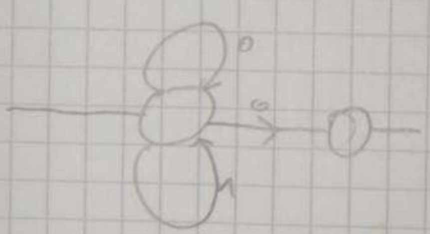
~~ee~~



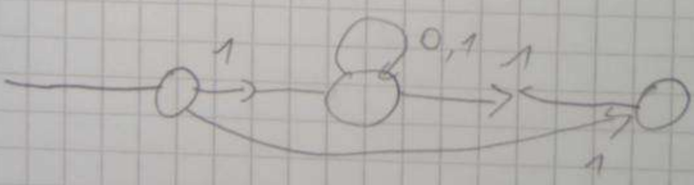
AND

Exercice 3 :

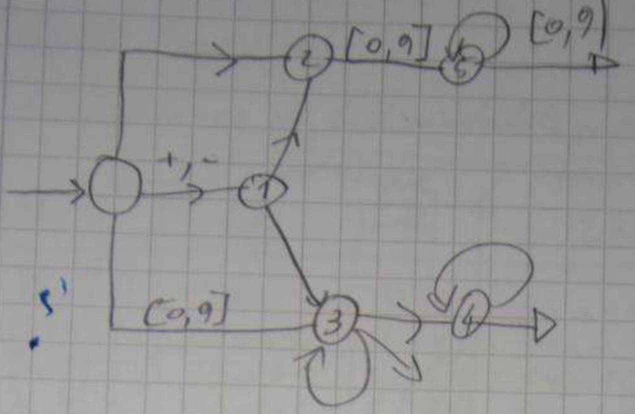
a)



b-)



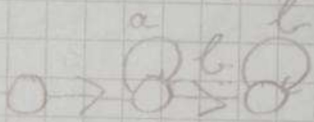
71

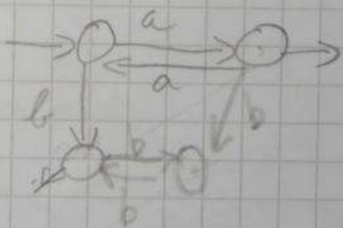


3) d)

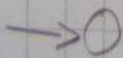
8

e)





Exercice 4



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Quotient Exercice 4 :

1) Vis-à-vis de la divisibilité par 7, il y a 7 classes de nombre

85

		ajout 0 à droite		ajout 1 à droite	
N :		2N	modulo	2N+1	modulo
7n	0	14n	0	14n+1	1
7n+1	1	14n+2	2	14n+3	3
7n+2	2	14n+4	4	14n+5	5
7n+3	3	14n+6	6	14n+7	0
7n+4	4	14n+8	1	14n+9	2
7n+5	5	14n+10	3	14n+11	~~4~~ 4
7n+6	6	14n+12	5	14n+13	6
		Transition 0		Transition 1	

2) Si on colle 0 à coté de l'écriture binaire d'un ~~no~~ nombre, on multiplie par 2

3) Si c'est 1, ~~il~~ on multiplie par 2 et ~~p~~ on ajoute 1

A chaque classe :

- on crée un état
- les mots qui arrivent