RUNSER Laure AAL TD 03 02.10.2020

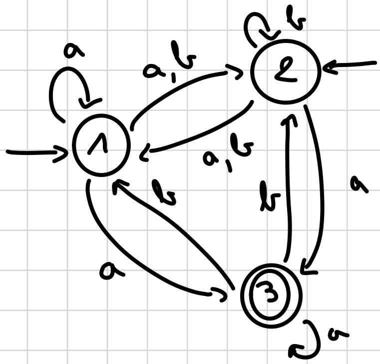
Déterminisation

But : passer d'un AFND à un AFD équivalent (= qui accepte le m̃ langage).

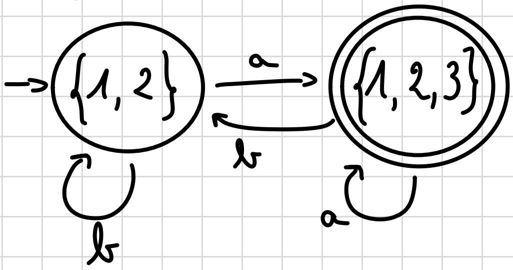
Méthode des sous-ensembles : AFND $\mathcal{A}$ à n états → AFD $\mathcal{A}'$ équivalent à au plus 2^n états

↳ chaque état de $\mathcal{A}'$ sera un sous-ensemble des états de $\mathcal{A}$

ex:

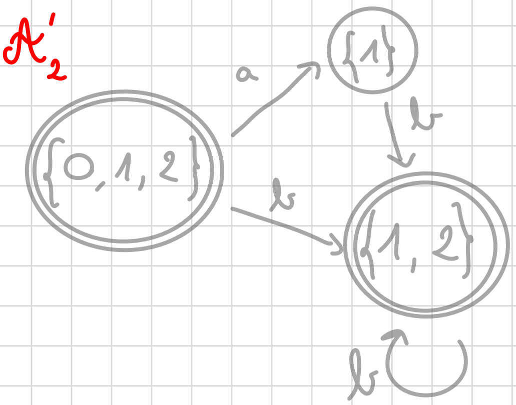


AFD équivalent

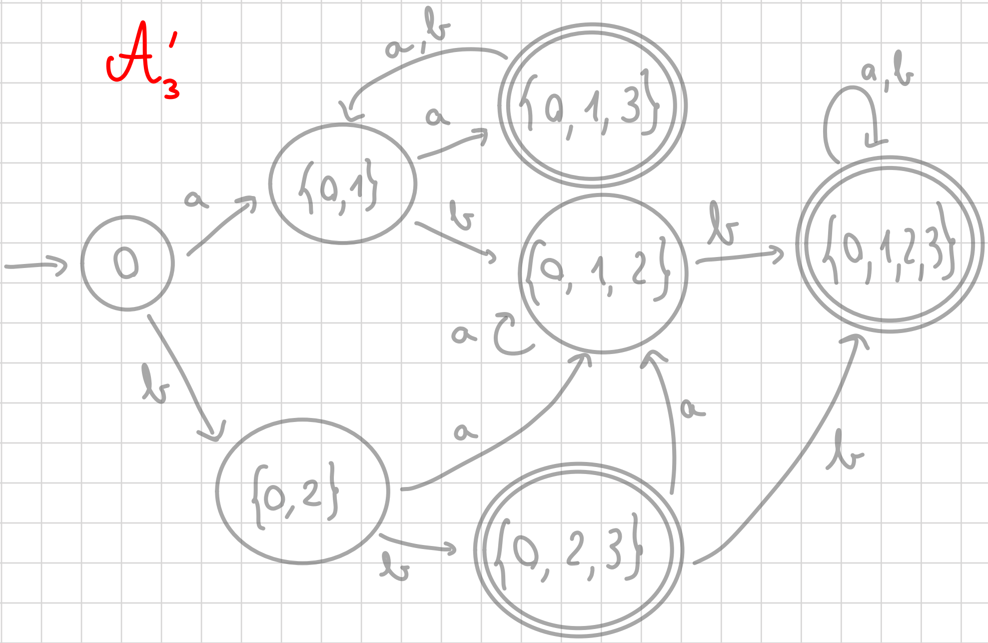


Exercice 1

$\mathcal{A}'_2$



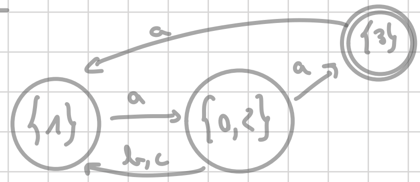
$\mathcal{A}'_3$



$\mathcal{A}'_5$

	a	b	c
0	3	\	1
→ 1	0, 2	\	\
2	3	1	\
← 3	1	\	\

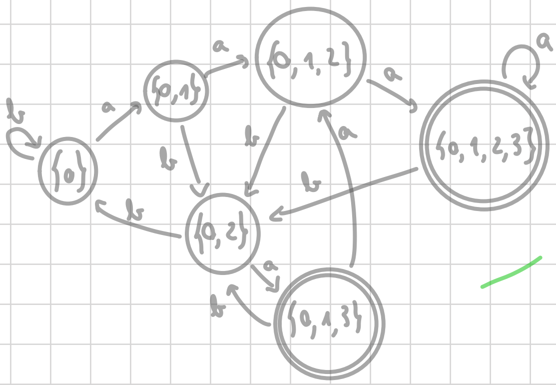
	a	b	c
→ {1}	{0,2}	\	\
{0,2}	{3}	{1}	{1}
← {3}	{1}	\	\



$\mathcal{A}'_1$

	a	b
→ 0	0,1	0
1	2	2
2	3	\
← 3	\	\

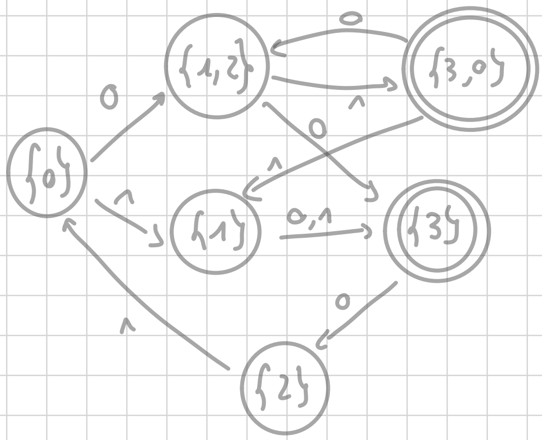
	a	b
→ {0}	{0,1}	{0}
{0,1}	{0,1,2}	{0,2}
{0,1,2}	{0,1,2,3}	{0,2}
{0,2}	{0,1,3}	{0}
← {0,1,3}	{0,1,2}	{0,2}
← {0,1,2,3}	{0,1,2,3}	{0,2}



$\mathcal{A}'_4$

	0	1
→ 0	1,2	1
1	3	3
2	\	0
← 3	2	\

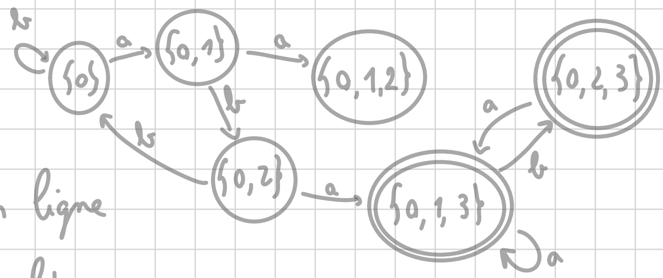
	0	1
→ {0}	{1,2}	{1}
{1}	{3}	{3}
{1,2}	{3}	{3,0}
← {3}	{2}	\
← {3,0}	{1,2}	{1}
{2}	\	{0}



$\mathcal{A}'_6$

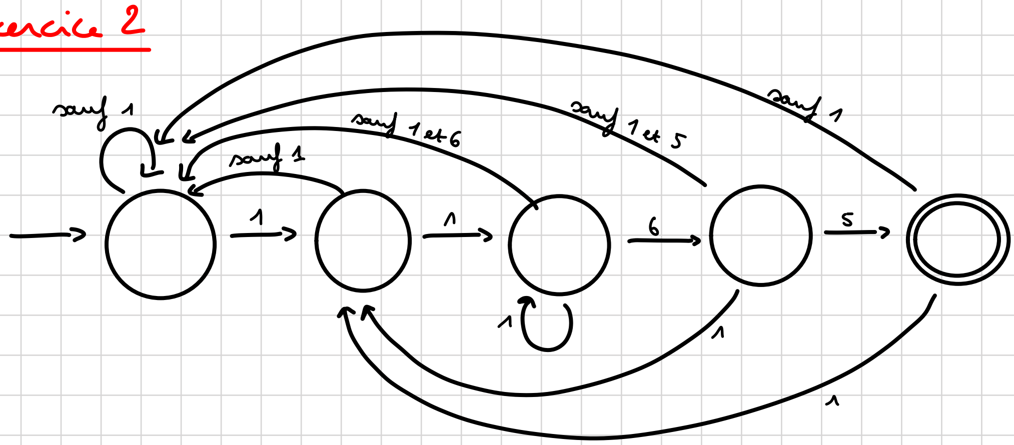
	a	b
→ 0	0, 1	0
1	2	2
2	3	\
← 3	3	3

	a	b	
→ {0}	{0,1}	{0}	
{0,1}	{0,1,2}	{0,2}	
{0,1,2}	{0,1,2,3}	{0,2}	
{0,2}	{0,1,3}	{0}	
← {0,1,3}	{0,1,2,3}	{0,2,3}	] m̃ ligne
← {0,1,2,3}	{0,1,2,3}	{0,2,3}	
← {0,2,3}	{0,1,3}	{0,3}	] m̃ ligne
← {0,3}	{0,1,3}	{0,3}	

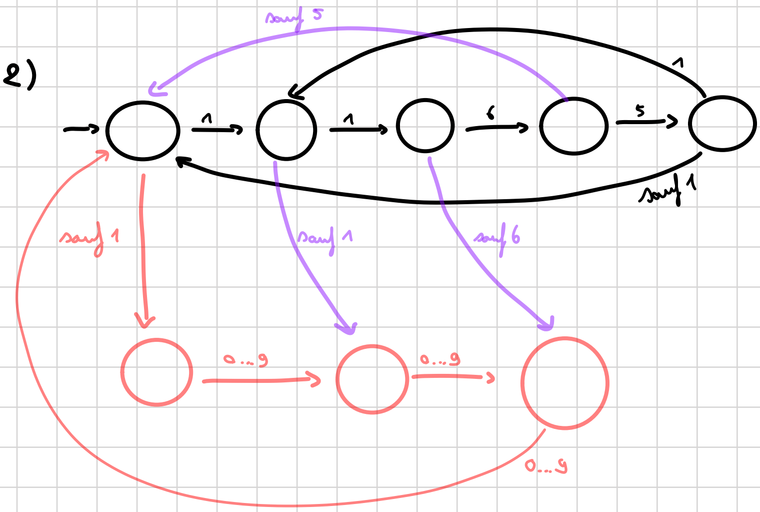


Exercice 2

1)

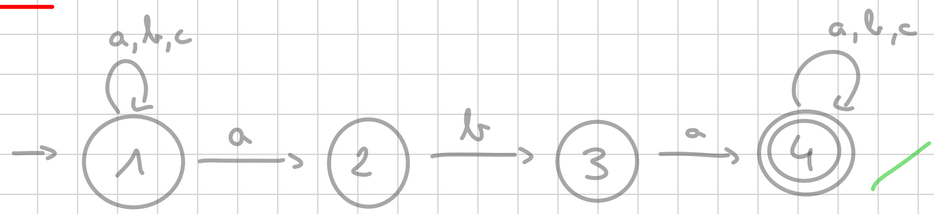


2)

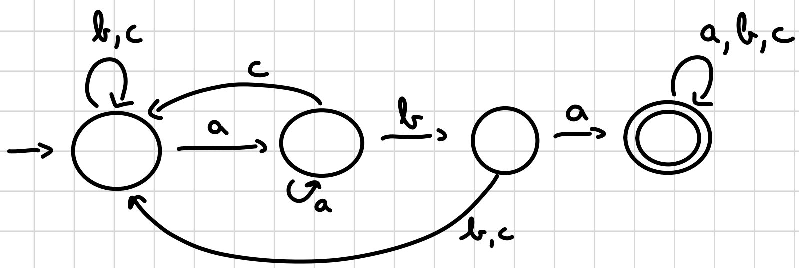


Exercice 3

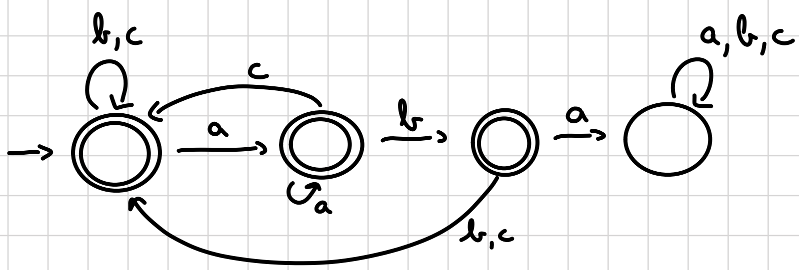
1)



2)



3)



On prend le complémentaire.

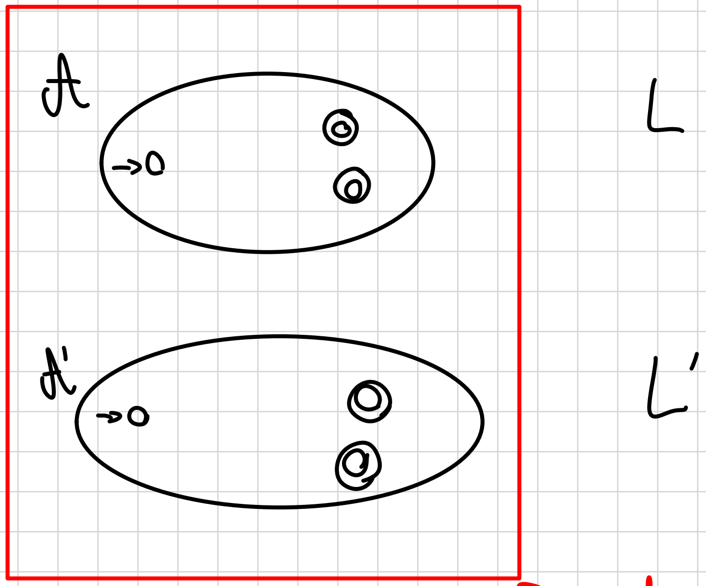
↓

il faut partir d'un AFD **COMPLET**

(Les états terminaux deviennent non-terminaux et vice-versa)

4) <u>OUI</u> en partant d'un AFD complet (sinon on loupe des cas).

5) L'union de 2 langages reconnaissable est reconnaissable => $\boxed{\text{VIDÉO MOODLE}}$



automate pour $L \cup L'$

Donc $L \cap L'$ est reconnaissable car $L \cap L' = {}^c({}^cL \cup {}^cL')$

${}^cL$

${}^cL'$

${}^c({}^cL \cup {}^cL')$