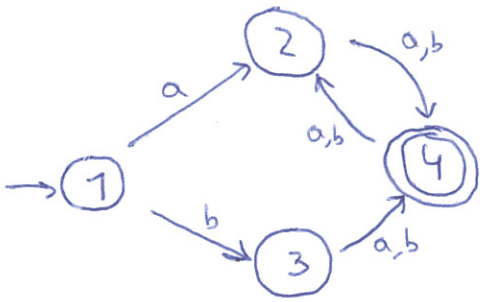
Minimización de AFDs

17 de Octubre 2014

616923
Pablo Hernández Almudi

Ejercicio 1

1.a.



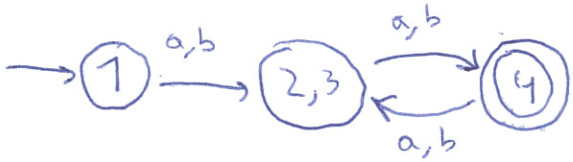
$1 \xrightarrow{a} 2$ (H)
$2 \xrightarrow{a} 4$

$1 \xrightarrow{a} 2$ (H)
$3 \xrightarrow{a} 4$

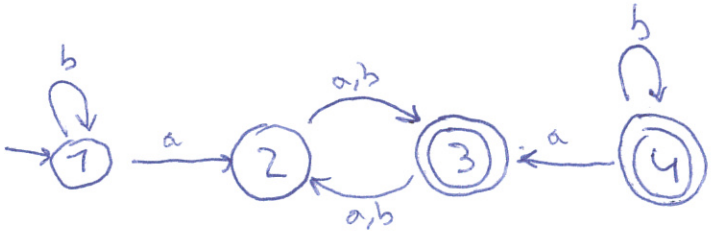
$2 \xrightarrow{a,b} 4$

$3 \xrightarrow{a,b} 4$

2	X		
3	X	O	
4	X	X	X
	1	2	3



1.b.



2	X		
3	X	X	
4	X	X	X
	1	2	3

$1 \xrightarrow{b} 1$ (H)
$2 \xrightarrow{b} 3$

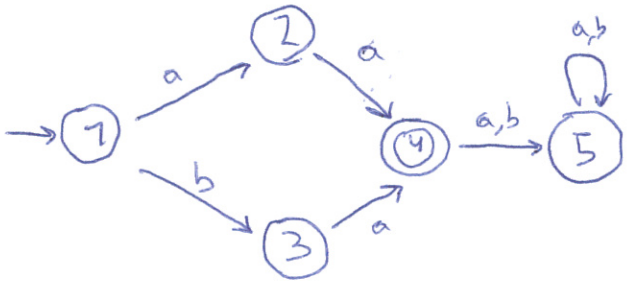
$1 \xrightarrow{a} 2$ (H)
$2 \xrightarrow{a} 3$

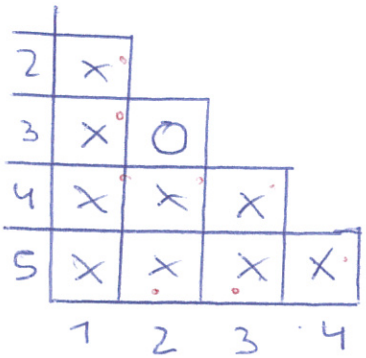
$4 \xrightarrow{a} 3$ (H)
$3 \xrightarrow{a} 2$

debe

En este autómata se ~~podría~~ eliminar el 4 puesto que no es un estado alcanzable.

1.c.





$2 \xrightarrow{a} 4$ $\quad$ $1 \xrightarrow{a} 2$ ≠

$3 \xrightarrow{a} 4$ $\quad$ $2 \xrightarrow{a} 4$

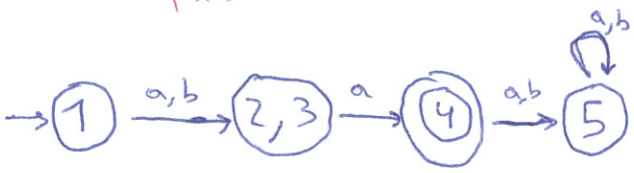
$1 \xrightarrow{a} 2$ ≠

$3 \xrightarrow{a} 4$

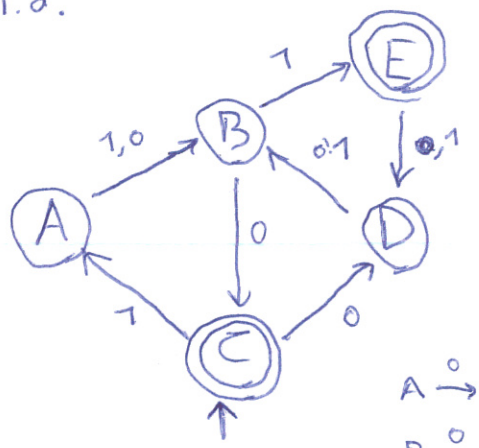
$2 \neq 5$

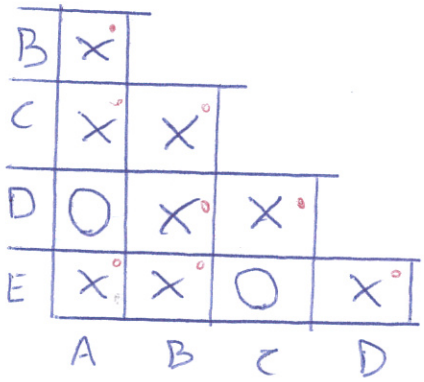
$3 \neq 5$

$1 \neq 5$



1.d.



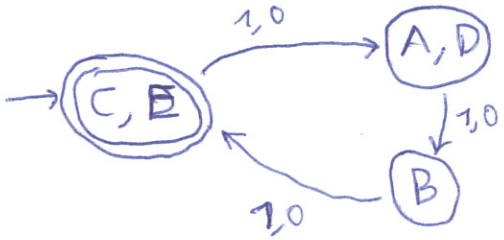


$A \xrightarrow{0} B$ $\quad$ $A \xrightarrow{0,1} B$

$B \xrightarrow{0} C$ ≠ $\quad$ $D \xrightarrow{0,1} B$

$B \xrightarrow{0} C$ $\quad$ $C \xrightarrow{0} D$ $\quad$ $C \xrightarrow{1} A$

$D \xrightarrow{0} B$ ≠ $\quad$ $E \xrightarrow{0} 0$ $\quad$ $E \xrightarrow{1} B$ =



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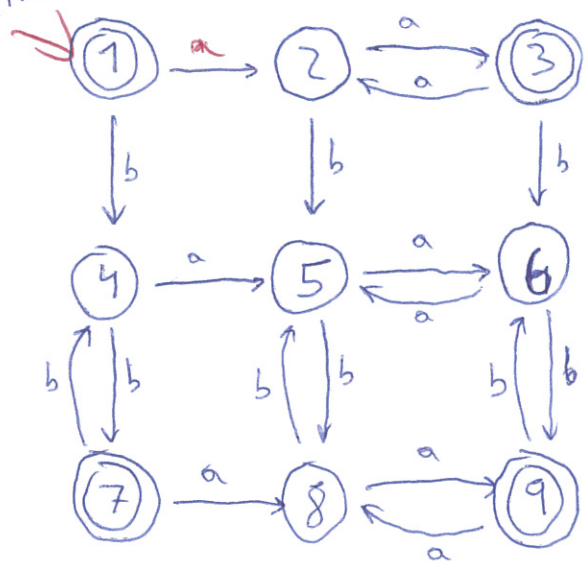
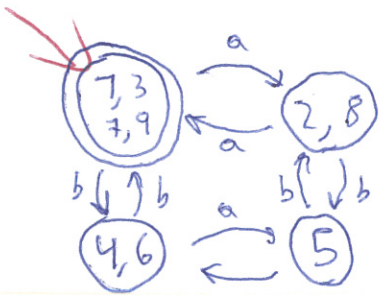
1.e (Resuelto en clase)



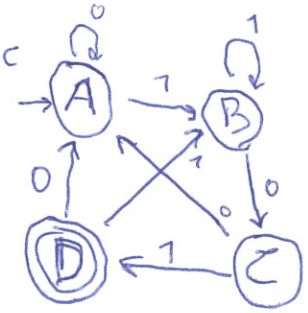
2	X							
3	O	X						
4	X	X	X					
5	X	X	X	X				
6	X	X	X	O	X			
7	O	X	O	X	X	X		
8	X	O	X	X	X	X	X	
9	O	X	O	X	X	X	O	X
	1	2	3	4	5	6	7	8



Ejercicio 2

2.a y 2.b son el 1.a y 1.b

2.c

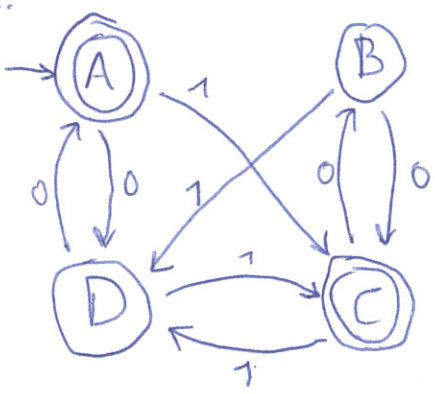


B	X		
C	X	X	
D	X	X	X
	A	B	C

$A \xrightarrow{1} B$ $A \xrightarrow{0} A$ $A \xrightarrow{1} B$ $B \xrightarrow{1} B$

$B \xrightarrow{1} B$ $B \xrightarrow{0} C$ H $C \xrightarrow{1} D$ H $C \xrightarrow{1} D$ H

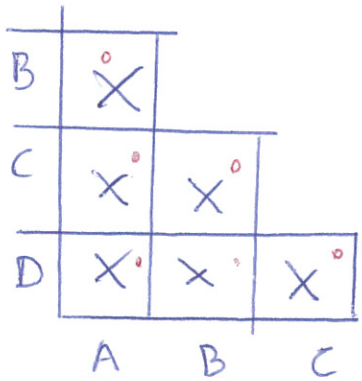
2.d.



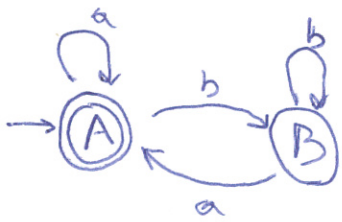
D $\xrightarrow{1}$ C
B $\xrightarrow{1}$ D
D $\xrightarrow{0}$ A
B $\xrightarrow{0}$ C

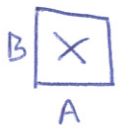
A $\xrightarrow{1}$ C
C $\xrightarrow{1}$ D

A $\xrightarrow{0}$ D
C $\xrightarrow{0}$ B

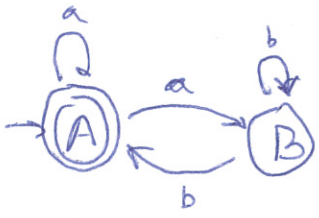


2.e

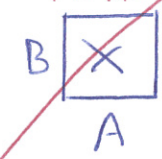




2.f.

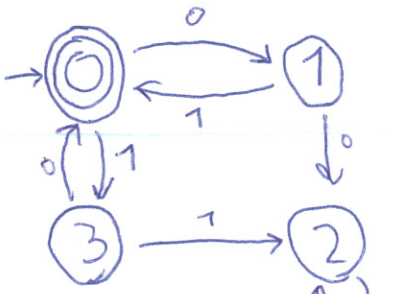


es un AFnD



↳ primero determinizar

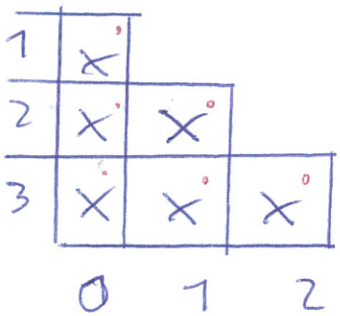
2.g



1 $\xrightarrow{1}$ 0
3 $\xrightarrow{1}$ 2

1 $\xrightarrow{1}$ 0
2 $\xrightarrow{1}$ 2

2 $\xrightarrow{0}$ 2
3 $\xrightarrow{0}$ 0



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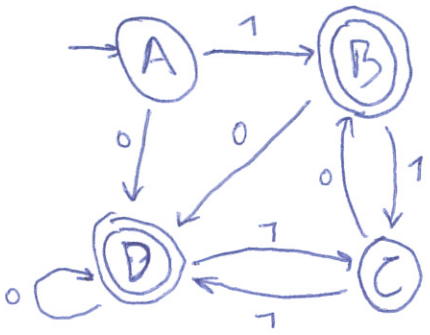
Ejercicio 3



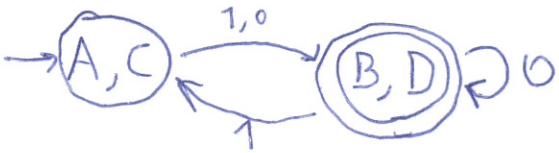
B	X°		
C	O	X°	
D	X°	O	X°
	A	B	C

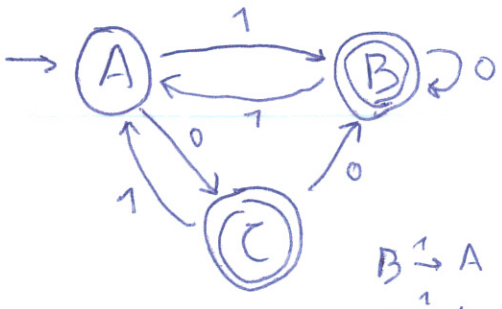
$A \xrightarrow{1} B$ ‖ $C \xrightarrow{1} D$

$A \xrightarrow{0} D$ ‖ $C \xrightarrow{0} B$

$B \xrightarrow{0} D$ $D \xrightarrow{0} D$

$B \xrightarrow{1} C$ $D \xrightarrow{1} C$

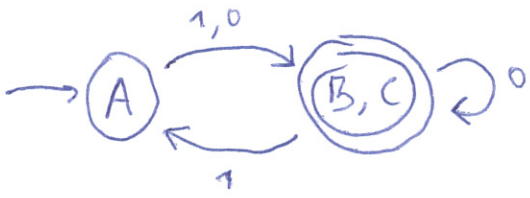




D	X°	
C	X	O
	A	B

$B \xrightarrow{1} A$ ‖ $C \xrightarrow{1} A$

$B \xrightarrow{0} B$ ‖ $C \xrightarrow{0} B$



Sí que reconocen el mismo lenguaje

porque el autómata mínimo es el mismo.