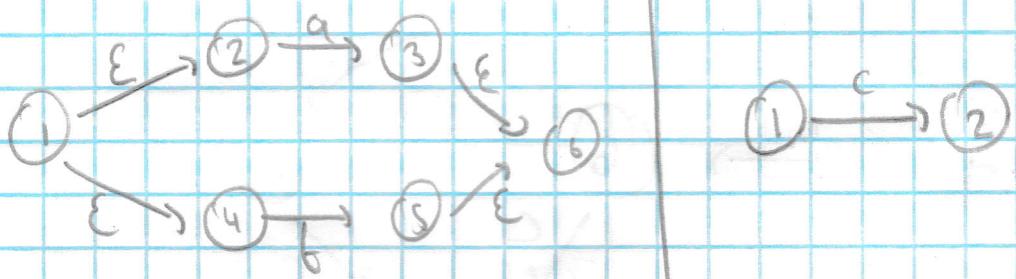


Laboratorio 1

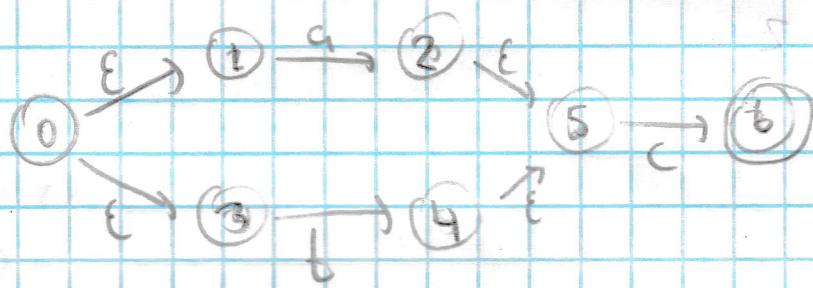
Problema 1

$(a|b)c$

$a|b$



c

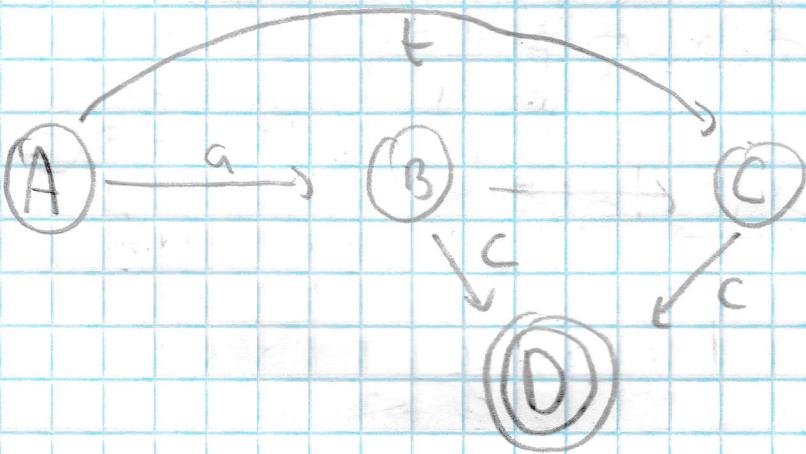


ampliación
de la red

Estados	a	b	c	ϵ^+
0	-	-	-	{0, 1, 3}
1	2	-	-	{1}
2	-	-	-	{2, 5}
3	-	4	-	{3}
4	-	-	-	{4, 5}
5	-	-	6	{5}
6	-	-	-	{6}

[2]

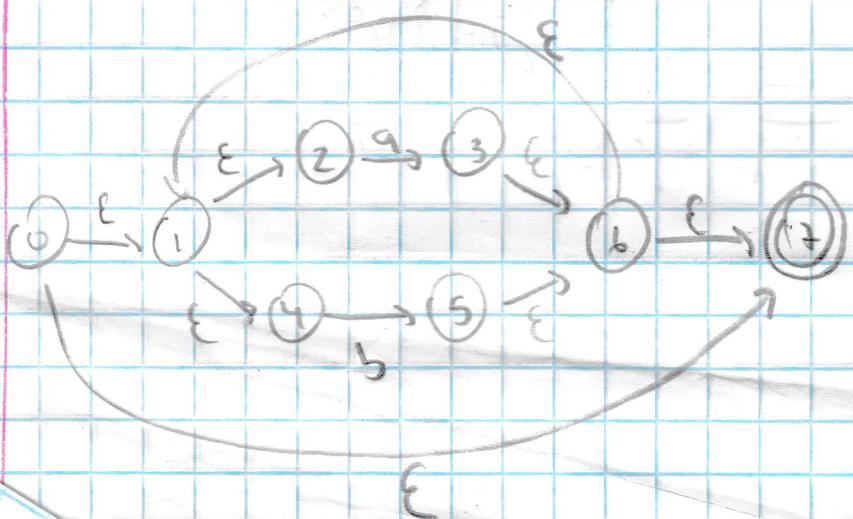
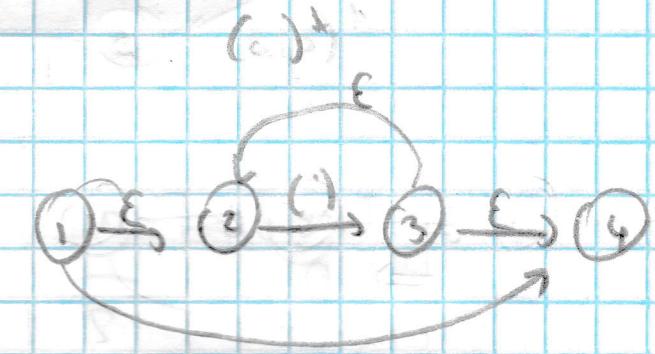
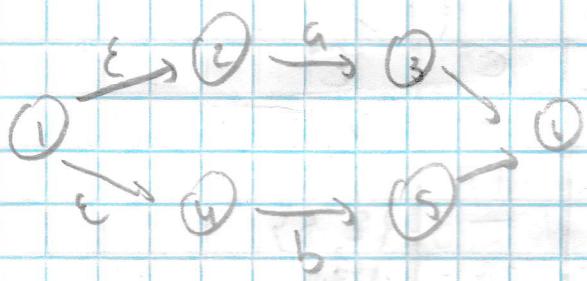
Estados del AFN	$a\epsilon^*$	$t\epsilon^*$	CE^*
$\{0, 1, 3\} = A$	$\{2, 5\} = B$	$\{4, 5\} = C$	$\{6\} = D$
$\{2, 5\} = B$	-	-	$\{6\} = D$
$\{4, 5\} = C$	-	-	$\{6\} = D$
$\{6\} = D$	-	-	$\{6\} = D$



Problema 2

$(a|b)^*$

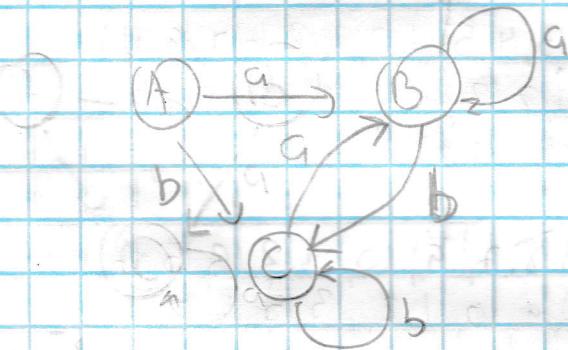
$a|b$



(3)

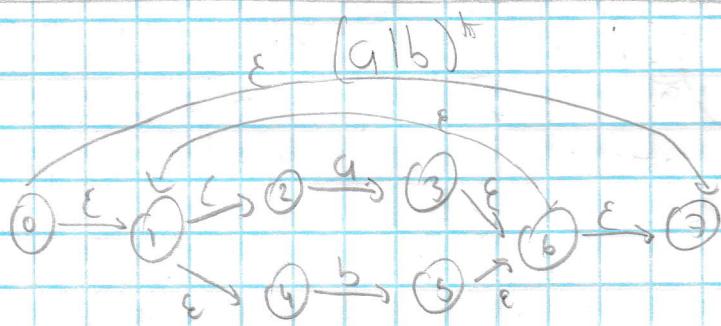
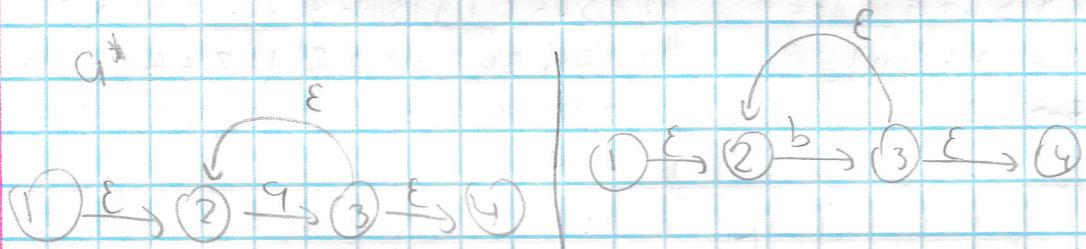
Estados	a	b	ϵ^*
0	-	-	{0, 1, 2, 4, 7}
1	-	-	{1, 2, 4}
2	3	-	{2}
3	-	-	{3, 6, 1, 2, 4}
4	-	5	{4}
5	-	-	{5, 6, 1, 2, 4}
6	-	1	{6, 7, 1, 2, 4}
7	-	-	

Estados del AFN	$a\epsilon^*$	$b\epsilon^*$
$\{0, 1, 2, 4, 7\} = A$	$\{1, 2, 3, 4, 6, 5\} = B$	$\{1, 2, 4, 5, 3\} = C$
$\{1, 2, 3, 4, 6\} = B$	$\{1, 2, 3, 4, 6\} = B$	$\{1, 2, 4, 5, 6\} = C$
$\{1, 2, 4, 5, 6\} = C$	$\{1, 2, 3, 4, 6\} = B$	$\{1, 2, 4, 5, 6\} = C$

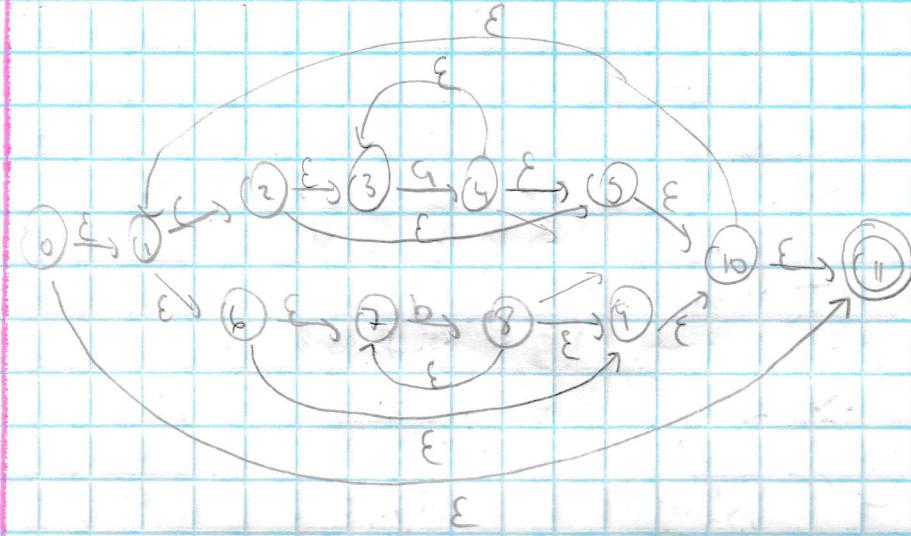


Problema 3

$$(a^* \mid b^*)^*$$

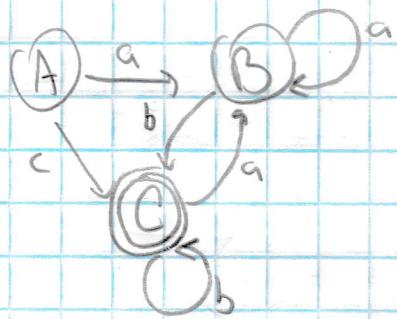


4



Estados	a	b	ϵ^*
0	-	-	{0, 1, 2, 3, 5, 6, 7, 9, 10, 11} = A
1	-	-	{1, 2, 3, 5, 6, 7, 9, 10, 11} = B
2	-	-	{1, 2, 3, 5, 6, 7, 9, 10, 11} = C
3	4	-	{3}
4	-	-	{3, 4, 5, 10, 1, 2, 6, 7, 9, 11}
5	-	-	{1, 2, 3, 5, 6, 7, 9, 10, 11}
6	-	-	{6, 9, 10, 1, 2, 3, 5, 11}
7	-	8	{7}
8	-	-	{8, 7, 9, 10, 1, 2, 3, 5, 6, 11}
9	-	-	{9, 10, 1, 2, 3, 5, 6, 7, 11}
10	-	-	{1, 2, 3, 5, 6, 7, 9, 10, 11} = D
11	-	-	{11}

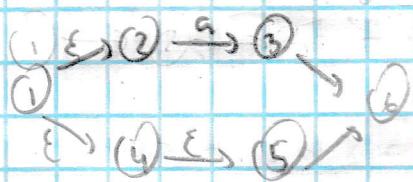
Estados del AFN	$a \epsilon^*$	$b \epsilon^*$
{0, 1, 2, 3, 5, 6, 7, 9, 10, 11} = A	{1, 2, 3, 4, 5, 6, 7, 9, 10, 11} = B	{1, 2, 3, 5, 6, 7, 8, 9, 10, 11} = C
{1, 2, 3, 4, 5, 6, 7, 9, 10, 11} = B	{1, 2, 3, 4, 5, 6, 7, 9, 10, 11} = B	{1, 2, 3, 5, 6, 7, 8, 9, 10, 11} = C
{1, 2, 3, 5, 6, 7, 8, 9, 10, 11} = C	{1, 2, 3, 4, 5, 6, 7, 9, 10, 11} = B	{1, 2, 3, 5, 6, 7, 8, 9, 10, 11} = C



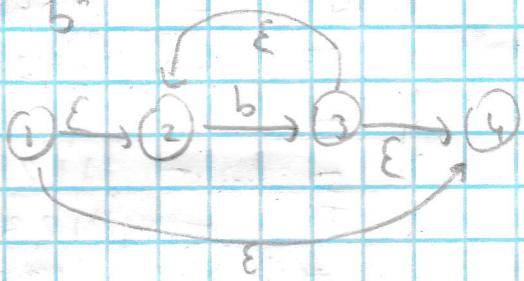
Problems 5 & 4

$((E1g) | b^*)^*$

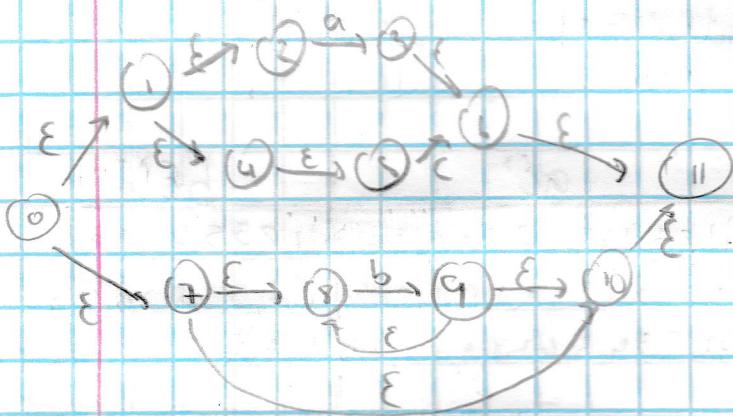
(E1g)



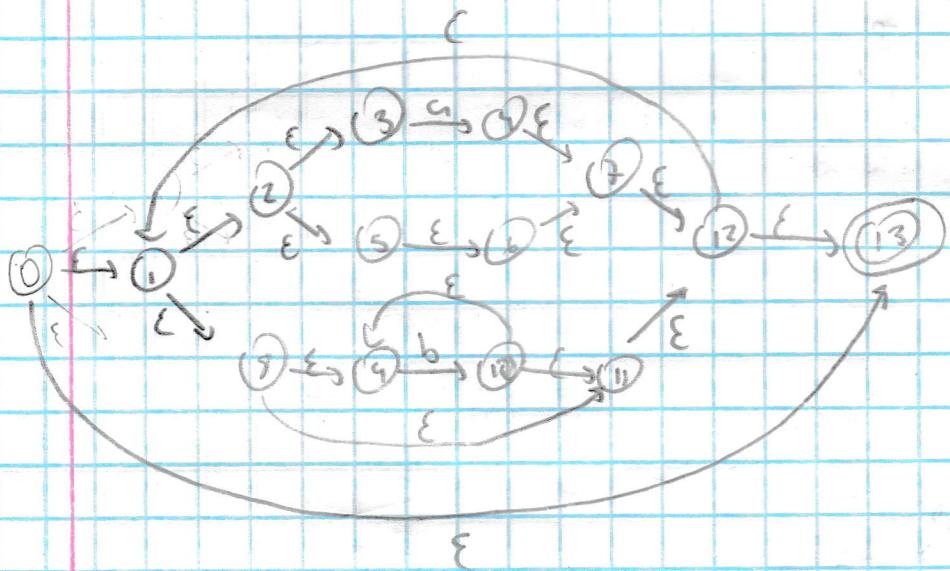
b^{*}



$((E1g) | b^*)^*$



$((E1g) | b^*)^*$



Estados	a*	b*	E^*
0	-	-	{0, 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
1	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
2	-	-	{2, 3, 5, 6, 7, 12, 13, 11, 13}
3	4	-	{3}
4	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
5	-	-	{1, 2, 3, 5, 6, 7, 9, 9, 11, 12, 13}
6	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
7	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
8	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
9	-	10	{9}
10	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13}
11	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
12	-	-	{1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13}
13	-	-	{13}

Estados del AFN

$$\Rightarrow \{0, 1, 2, 3, 5, 6, 7, 8, 9, 11, 12, 13\} = A$$

$$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13\} = B$$

$$\{1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13\} = C$$

aE^*

bE^*

$$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13\}$$

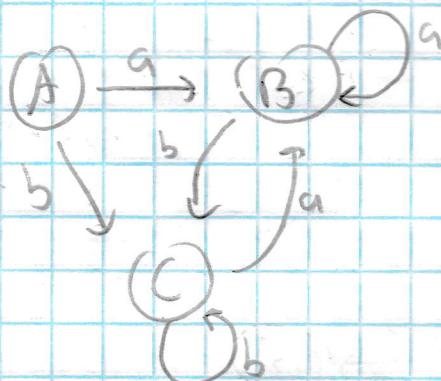
$$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13\}$$

$$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13\}$$

$$\{1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$$

$$\{1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$$

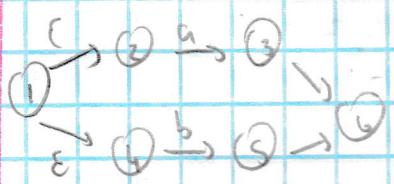
$$\{1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$$



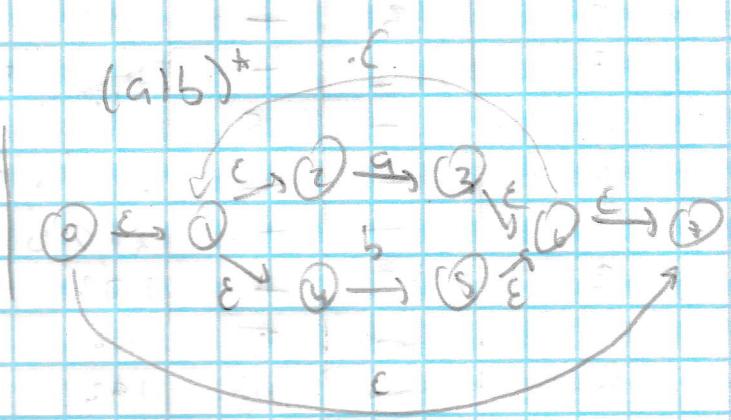
Problema 5

$(a|b)^* a b b b (a|b)^*$

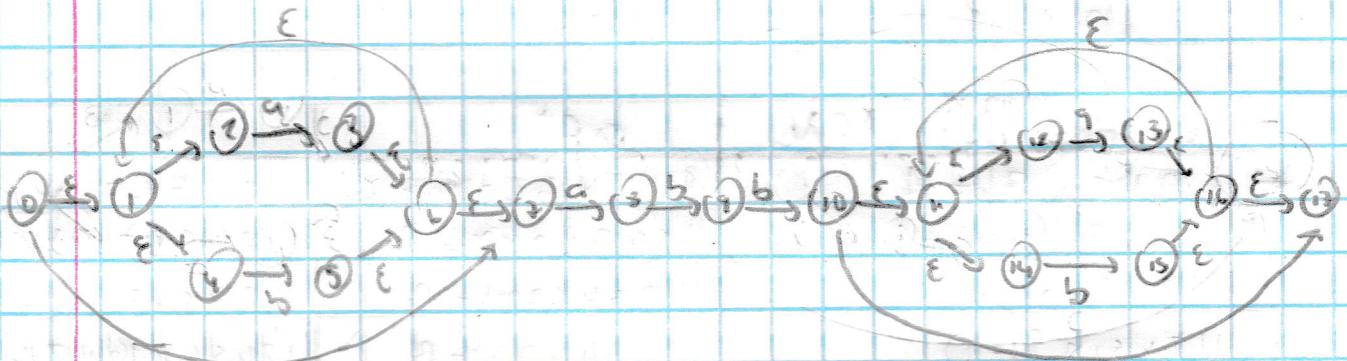
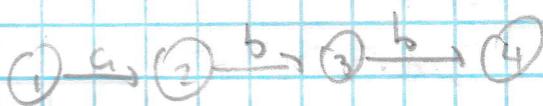
$(a|b)$



$(a|b)^*$



$a b b$



Estados	a	b	ϵ^*
0	-	-	{0, 1, 2, 4, 7}
4	-	-	{1, 2, 4}
2	3	-	{2}
3	-	-	{1, 2, 4, 3, 6, 7}
4	-	5	{4}
5	-	-	{1, 2, 4, 5, 6, 7}
6	-	-	{1, 2, 4, 6, 7}
7	8	-	{7}
8	-	9	{8}
9	-	10	{9}
10	-	-	{10, 11, 13, 14, 17}
11	-	-	{11, 12, 14}
12	13	-	{12}
13	-	-	{11, 12, 13, 14, 16, 17}
14	-	15	{4}
15	-	-	{11, 12, 14, 15, 16, 17}
16	-	-	{11, 12, 14, 16, 17}
17	-	-	{17}

Estados del AFN

- $\Rightarrow \{0, 1, 2, 4, 7\} = A$
- $\{1, 2, 4, 3, 6, 7, 8\} = B$
- $\{1, 2, 4, 5, 6, 7\} = C$
- $\{1, 2, 4, 5, 6, 7, 9\} = D$
- $\{1, 2, 4, 5, 6, 7, 10, 11, 12, 14, 17\} = E$
- $\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$
- $\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = G$
- $\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17\} = H$
- $\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = I$

$a\epsilon^*$

$$\{1, 2, 4, 3, 6, 7, 8\} = B$$

$$\{1, 2, 4, 3, 6, 7, 8, 9\} = B$$

$$\{1, 2, 3, 4, 6, 7, 8\} = B$$

$$\{1, 2, 3, 4, 6, 7, 9\} = B$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$$\{1, 2, 3, 4, 6, 7, 8, 11, 12, 13, 14, 16, 17\} = F$$

$b\epsilon^*$

$$\{1, 2, 4, 5, 6, 7\} = C$$

$$\{1, 2, 4, 5, 6, 7, 9\} = D$$

$$\{1, 2, 4, 5, 6, 7\} = C$$

$$\{1, 2, 4, 5, 6, 7, 11, 12, 14, 15, 16, 17\} = G$$

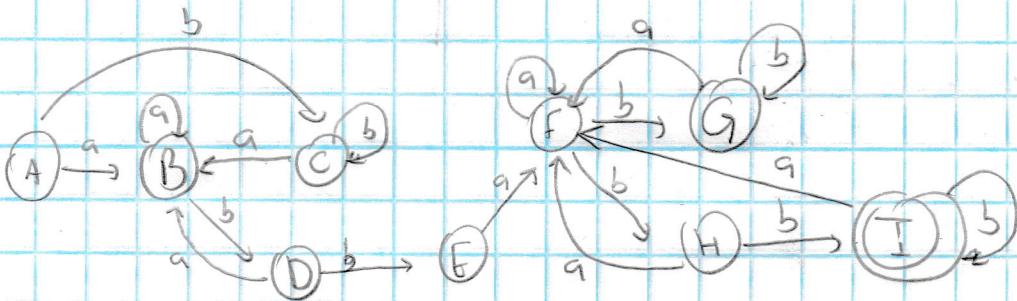
$$\{1, 2, 4, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17\} = H$$

$$\{1, 2, 4, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17\} = G$$

$$\{1, 2, 4, 5, 6, 7, 11, 12, 13, 14, 15, 16, 17\} = I$$

$$\{1, 2, 4, 5, 6, 7, 10, 11, 12, 14, 17, 15, 16\} = I$$

$$\{1, 2, 4, 5, 6, 7, 10, 11, 12, 14, 17, 15, 16\} = J$$

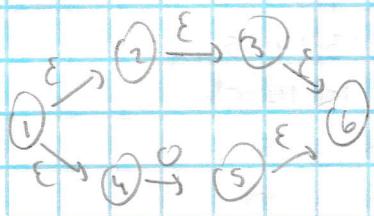


Problema 6

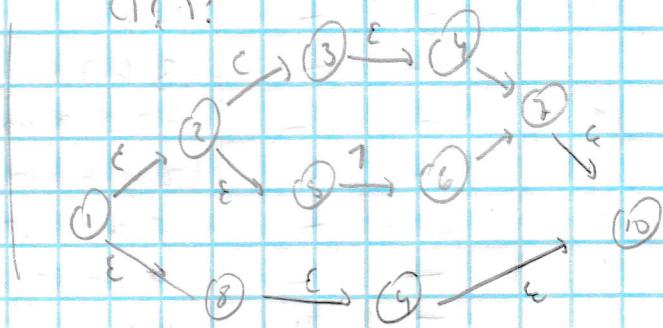
L9

0? (1?)? 0*

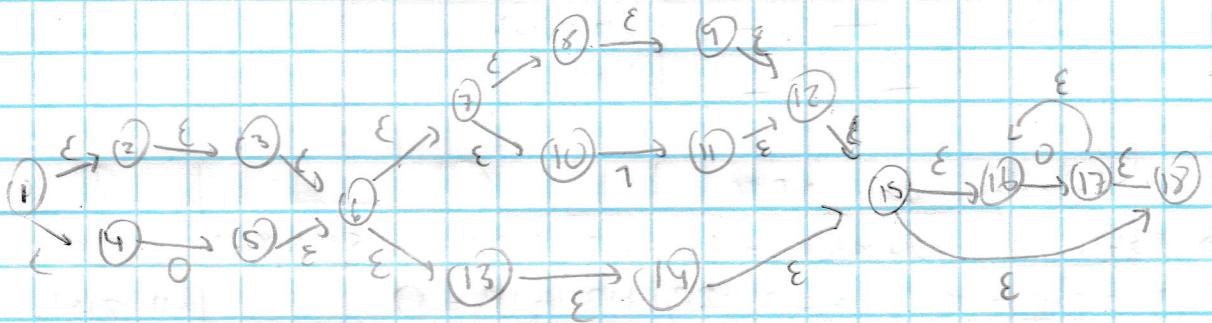
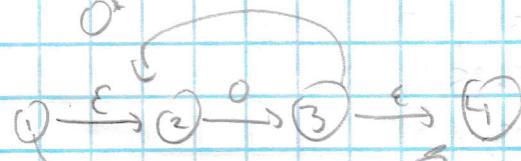
0?



(1?)?

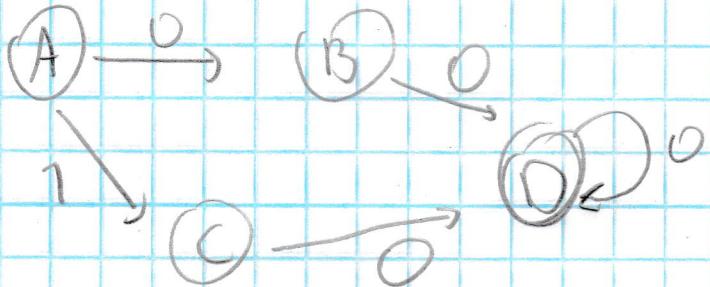


0*



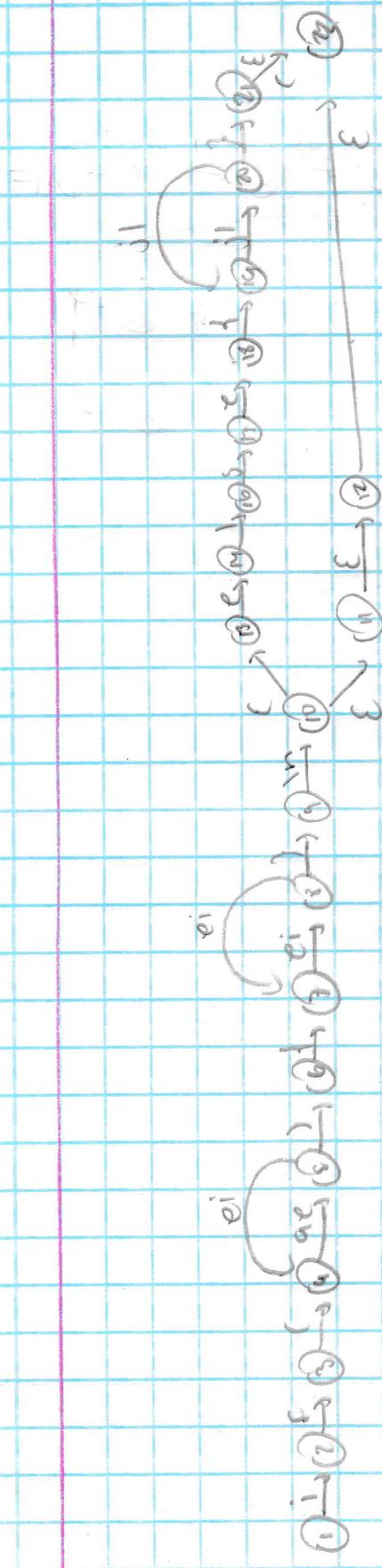
Estados	0	1	ϵ^*
1	-	-	{1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18}
2	-	-	{2, 3, 4, 6, 7, 1, 9, 10, 12, 13, 14, 15, 16, 18}
3	-	-	{3, 4, 6, 2, 8, 9, 10, 12, 13, 14, 15, 16, 18}
4	5	-	{4}
5	-	-	{5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18}
6	-	-	{6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18}
7	-	-	{7, 8, 9, 10, 12, 13, 14, 15, 16, 18}
8	-	-	{8, 9, 10, 12, 13, 14, 15, 16, 18}
9	-	-	{9, 10, 12, 13, 14, 15, 16, 18}
10	-	11	{10}
11	-	-	{11, 12, 13, 14, 15, 16, 18}
12	-	-	{12, 13, 14, 15, 16, 18}
13	-	-	{13, 14, 15, 16, 18}
14	-	-	{14, 15, 16, 18}
15	-	-	{15, 16, 18}
16	17	-	{16}
17	-	-	{17, 16, 18}
18	-	-	{18}

Estados del AFN	0*	1*
$\{1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18\} = A$	$\{5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18\} = B$	$\{11, 12, 13, 14, 15, 16, 18\} = C$
$\{5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18\} = B$	$\{17, 16, 18\} = D$	$\{11, 12, 13, 14, 15, 16, 18\} = C$
$\{11, 12, 13, 14, 15, 16, 18\} = C$	$\{16, 17, 18\} = D$	$\{11, 12, 13, 14, 15, 16, 18\} = C$
$\{16, 17, 18\} = D$	$\{16, 17, 18\} = D$	$\{11, 12, 13, 14, 15, 16, 18\} = C$



Problem 2

$F \setminus ([a, e] \cup \{[e]\} \cup \{[e] \cup \{[e]\} \cup \{[e] \cup \{[e]\}\})$?



Problema 8

[ae03] + @ [ae03] + (comlnet | org) |, (gb | crl | col) ?

