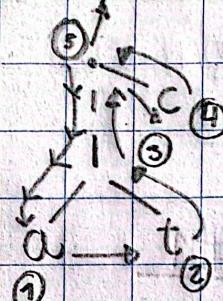
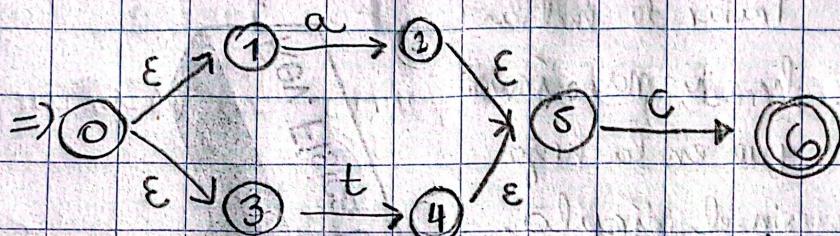
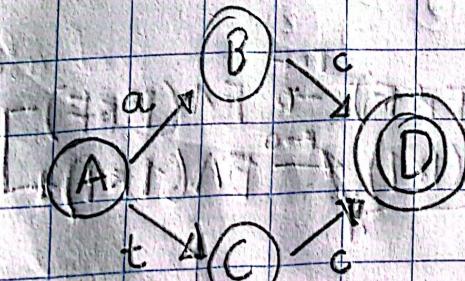


Ejercicio 1:

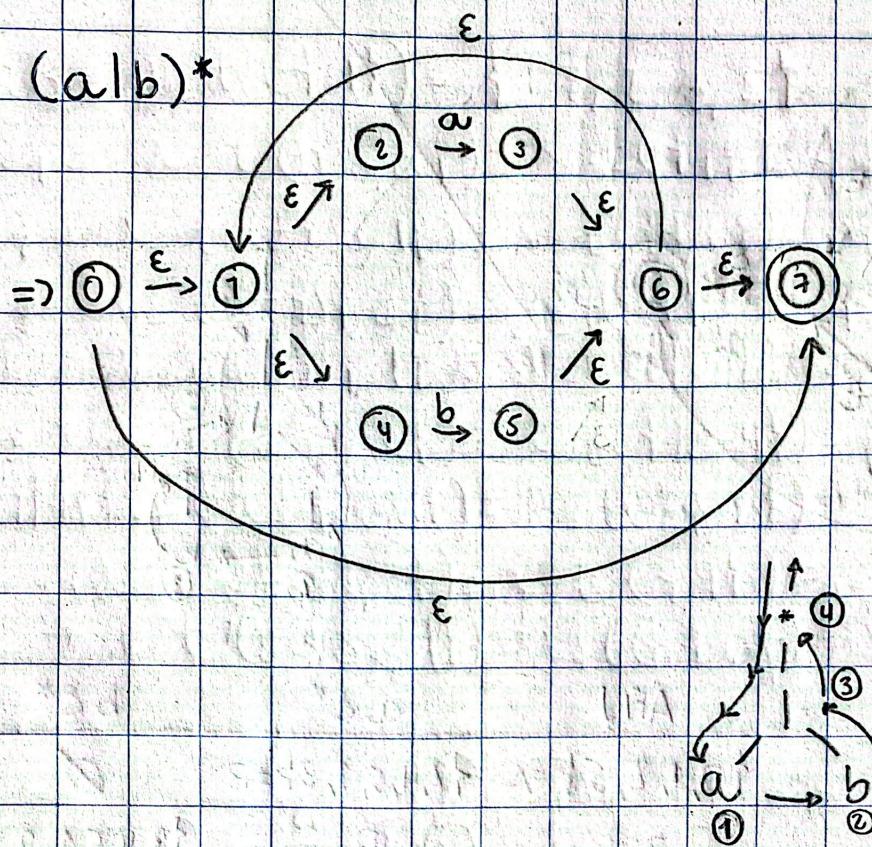
a) $(a|t)c$ 

	a	t	c	ϵ^*
0	-	-	-	{0, 1, 3}
1	2	-	-	{1}
2	-	-	-	{2, 5}
3	-	4	-	{3}
4	-	-	-	{4, 5}
5	-	-	6	{5}
6	t	t	-	{6}

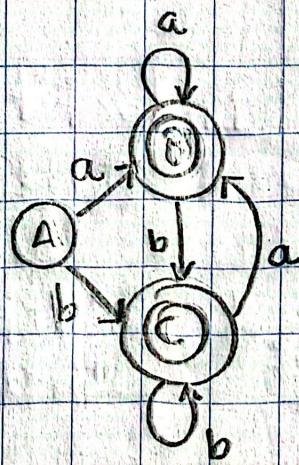
AFN	$a\epsilon^*$	$t\epsilon^*$	$c\epsilon^*$
{0, 1, 3} = A	{2, 5} = B	{4, 5} = C	Ø
B	Ø	Ø	Ø
C	Ø	Ø	D
D	Ø	Ø	Ø



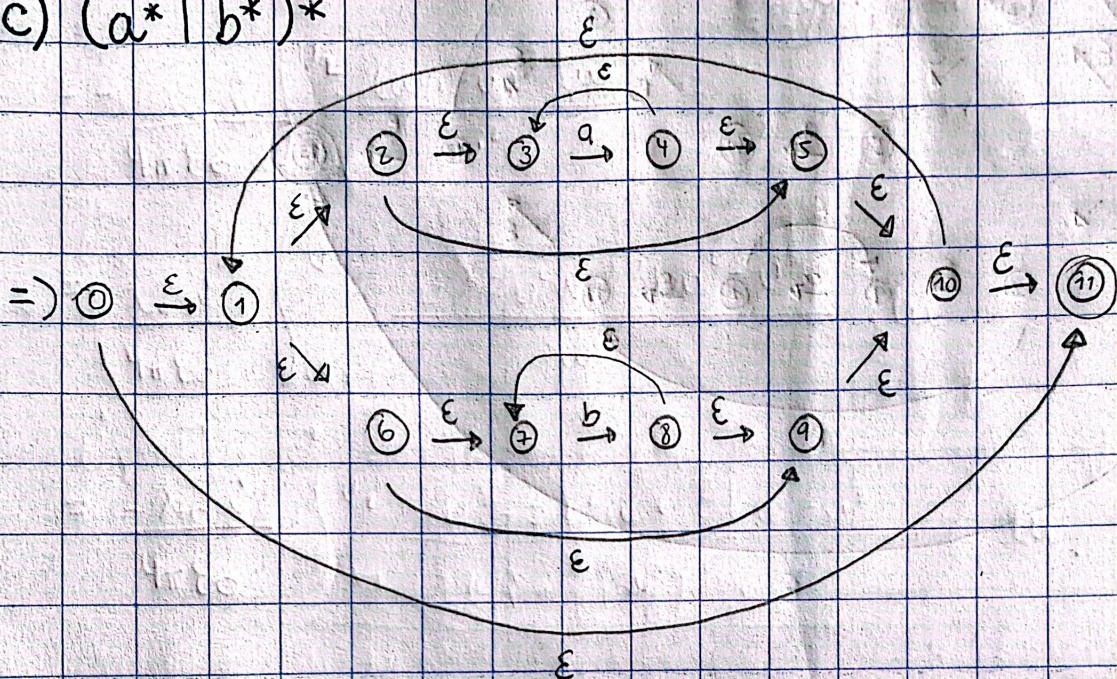
TC

b) $(a|b)^*$ 

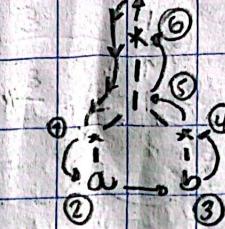
	a	b	ϵ^*	AFN	$a\epsilon^*$	$b\epsilon^*$
0	-	-	$\{0, 1, 2, 4, 7\}$	$\{0, 1, 2, 4\} = A$	$\{3, 6, 7, 1, 2, 4\} = B$	$\{5, 6, 7, 1, 2, 4\} = C$
1	-	-	$\{1, 2, 4\}$	B	B	C
2	3	-	$\{2\}$	C	B	C
3	-	-	$\{3, 6, 7, 1, 2, 4\}$			
4	-	5	$\{4\}$			
5	-	-	$\{5, 6, 7, 1, 2, 4\}$			
6	-	-	$\{6, 7, 1, 2, 4\}$			
7	-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



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



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



$\epsilon^* = \{0, 1, 2, 3, 5, 10, 11, 6, 9, 7\}$

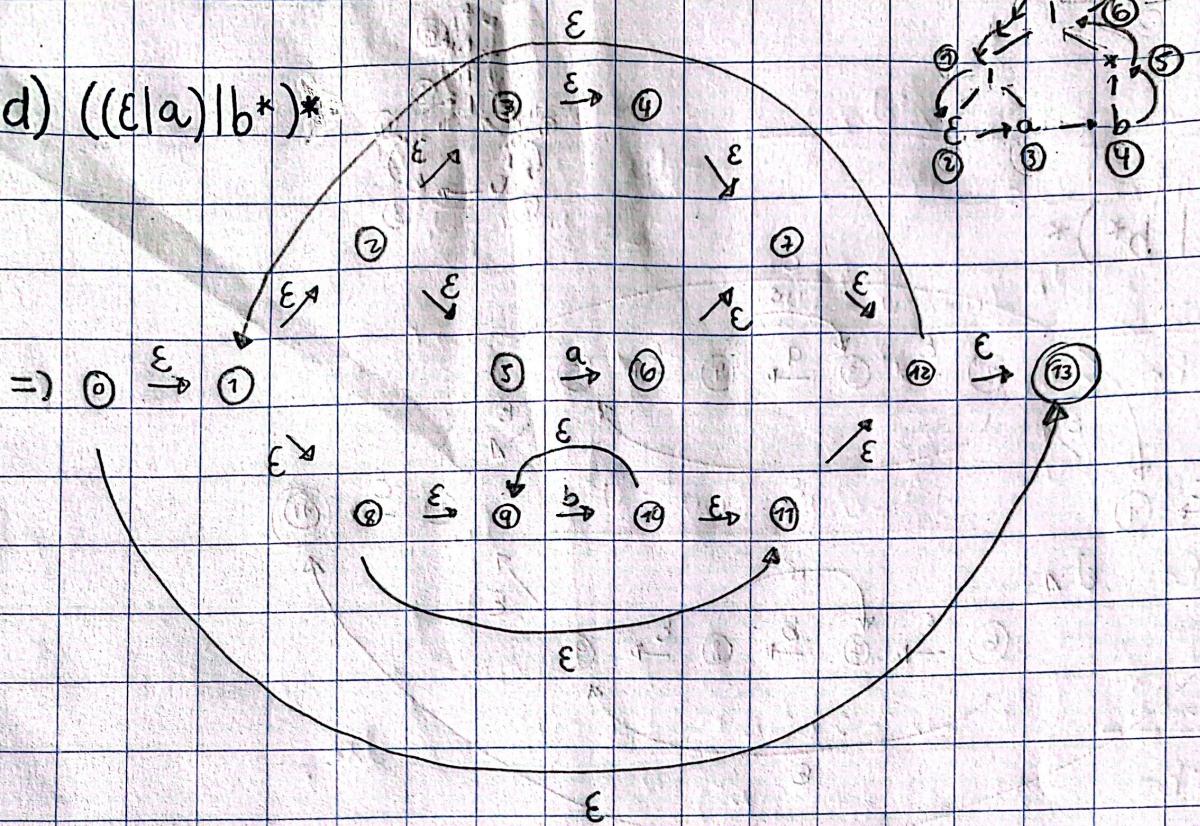
$a \cdot \epsilon^* = \{4, 3, 5, 10, 11, 1, 2, 6, 7, 9\}$

AFN

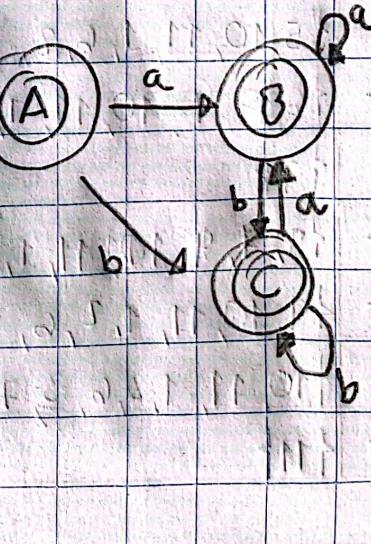
$\{0, 1, 2, 3, 5, 10, 11, 6, 9\} = \{4, 3, 5, 10, 11, 1, 2, 6, 7, 9\}$



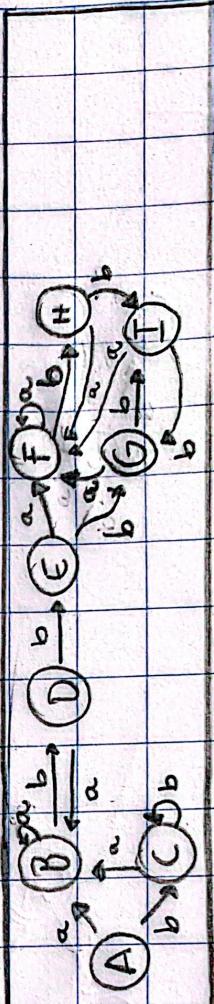
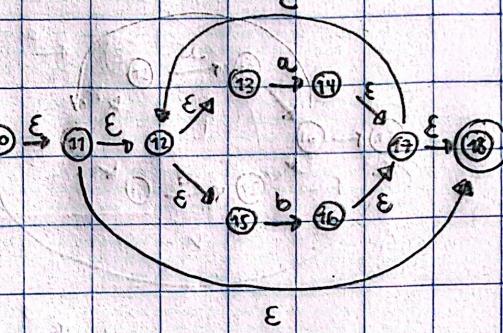
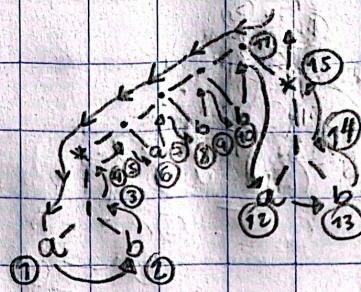
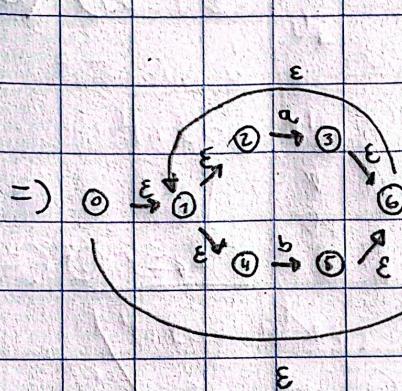
d) $((\epsilon|a)|b^*)^*$



a	b	ϵ^*	AFN	$a\epsilon^*$	$b\epsilon^*$
0	-	{0, 1, 2, 8, 9, 11, 12, 13, 3, 4, 7, 5}	A	$\epsilon[\epsilon^*] = \emptyset$	$a[\epsilon^*] = C$
1	-	{1, 2, 8, 9, 11, 12, 13, 3, 4, 7, 5}	B	$\epsilon[\epsilon^*] = B$	$a[\epsilon^*] = C$
2	-	{2, 3, 5, 4, 1, 12, 13, 1, 8, 11}	C	$\epsilon[\epsilon^*] = B$	$a[\epsilon^*] = C$
3	-	{1, 2, 8, 9, 11, 12, 13, 3, 4, 7, 5}	C	$\epsilon[\epsilon^*] = B$	$a[\epsilon^*] = C$
4	-	{1, 2, 8, 9, 11, 12, 13, 3, 4, 7, 5}			
5	6	-	(A)	a	
6	-	{6, 7, 12, 13, 1, 2, 8, 9, 11, 3, 4}	(B)	b	
7	-	{0, 7, 12, 13, 1, 2, 8, 9, 11, 3, 4}	(C)	a	
8	-	{0, 7, 12, 13, 1, 2, 8, 9, 11, 3, 4}		b	
9	-	10	(B)	a	
10	-	{10, 9, 11, 12, 13, 1, 2, 8, 3, 4, 5, 7}	(C)	b	
11	-	{11, 12, 13, 1, 2, 8, 3, 4, 5, 9, 7}		a	
12	-	{12, 13, 1, 2, 8, 3, 4, 5, 7, 9, 11}		b	
13	-	-	(C)	b	



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



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

AFN

$$\{0, 1, 2, 4, 7\} = \Delta$$

B

C

D

E

F

G

H

I

$a\epsilon^*$

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

B

B

B

B

F

F

F

F

$b\epsilon^*$

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

C

C

C

E

G

H

I

G

$$\{3, 6, 7, 1, 2, 4, 8, 14, 17, 18, 19\} = F$$

F

F

F

F

F

F

F

F

$$\{17, 18, 12, 13, 15\} = G$$

G

G

G

F

H

I

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14\} = H$$

H

H

H

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17\} = I$$

I

I

I

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18\} = J$$

J

J

J

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19\} = K$$

K

K

K

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10\} = L$$

L

L

L

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11\} = M$$

M

M

M

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12\} = N$$

N

N

N

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13\} = O$$

O

O

O

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14\} = P$$

P

P

P

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15\} = Q$$

Q

Q

Q

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16\} = R$$

R

R

R

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17\} = S$$

S

S

S

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18\} = T$$

T

T

T

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19\} = U$$

U

U

U

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10\} = V$$

V

V

V

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11\} = W$$

W

W

W

F

G

H

I

J

$$\{15, 6, 7, 1, 2, 4, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 10, 11, 12\} = X$$

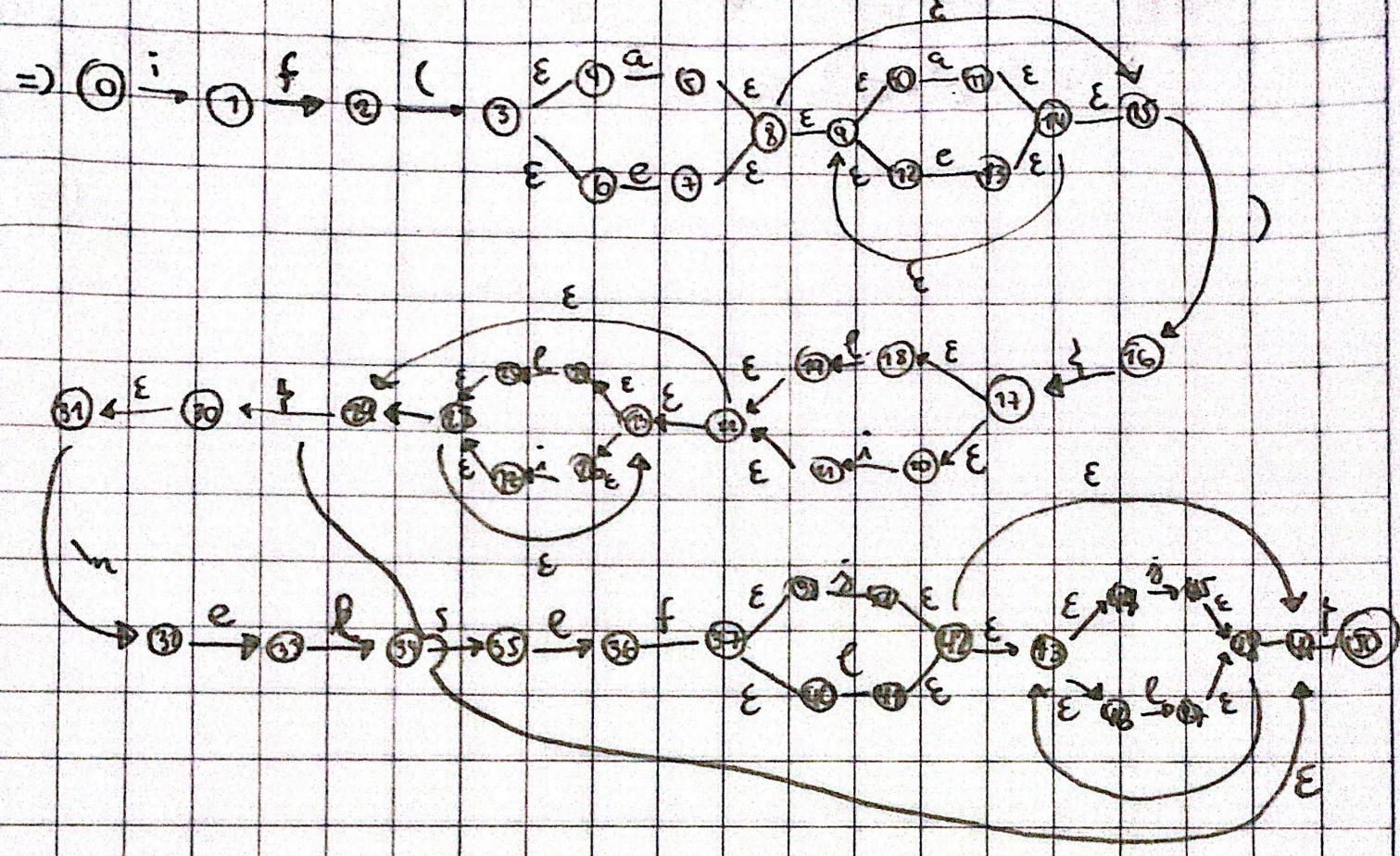
X

X

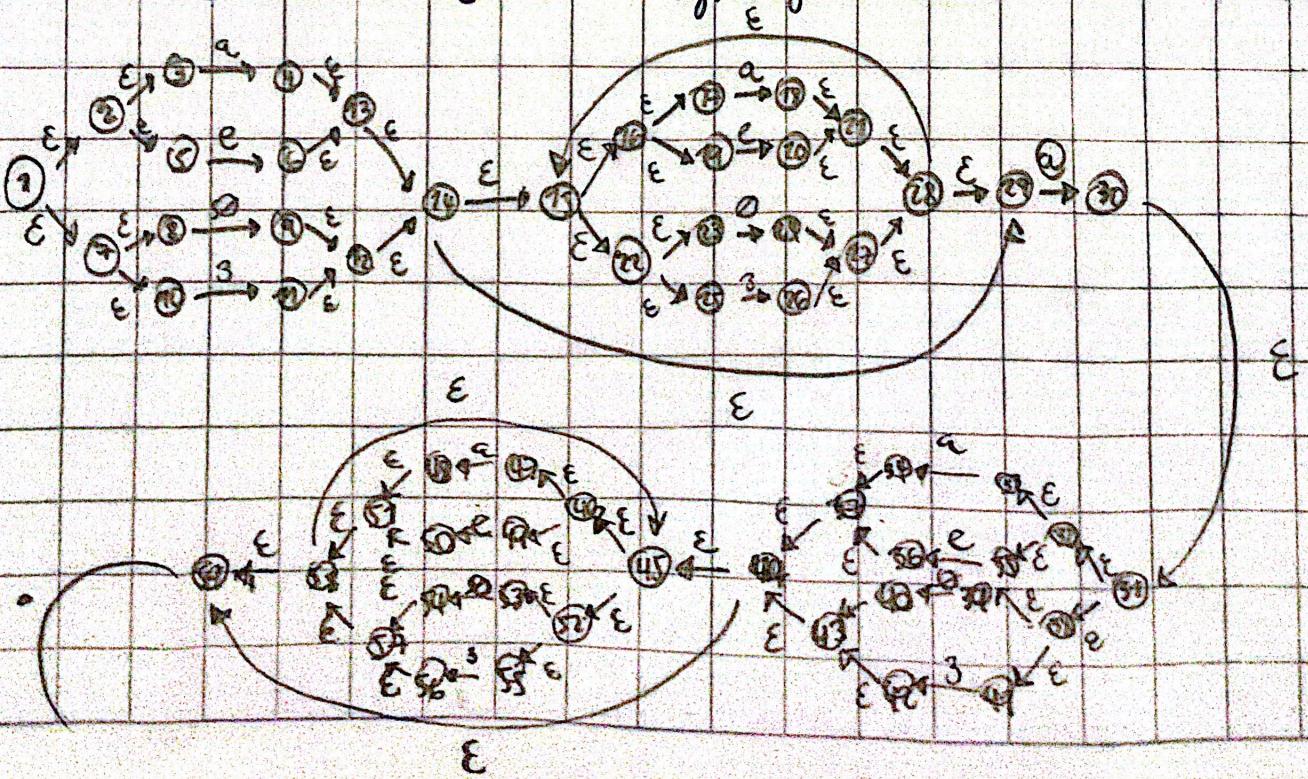
X

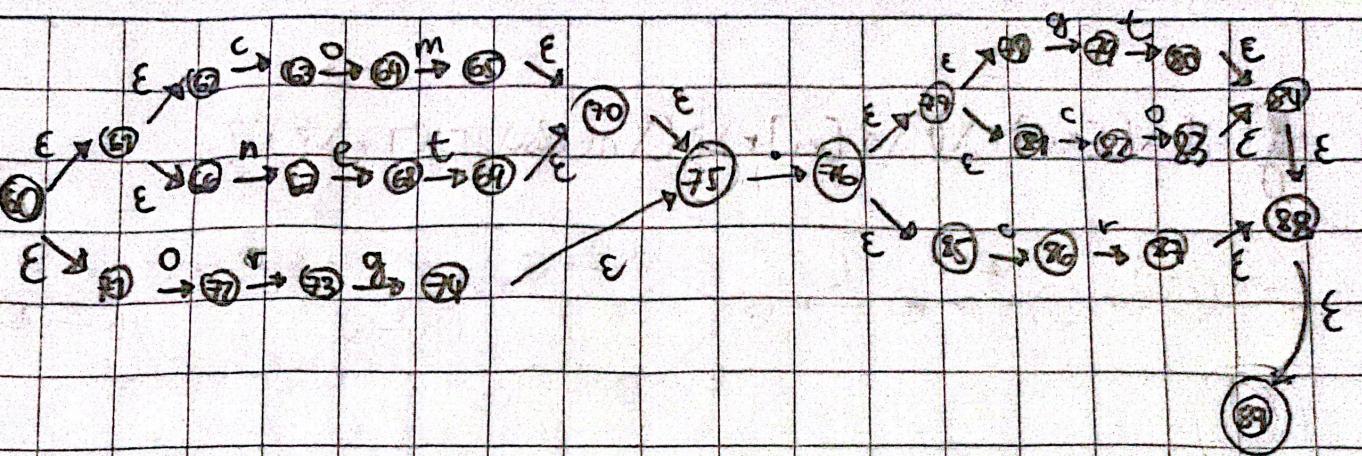
F

g) if \(([ae] + \backslash \)) \{ [ei] + \} \n(else \{ [je] + \}) ?

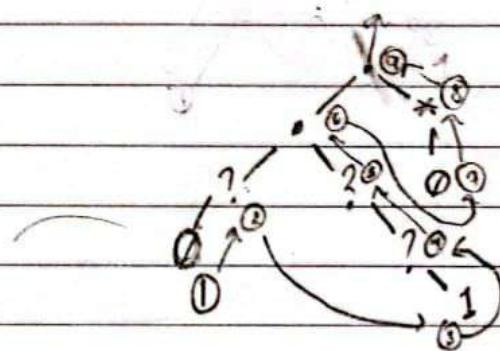
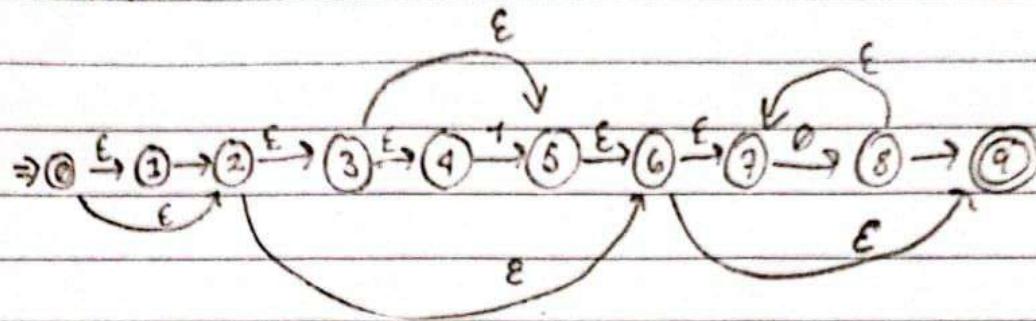


h) [aeo3]+ @ [aeo3]+. (com|net|org) (. (gt|crlco))?





F) $\emptyset^* (1^*)^* \emptyset^*$



	\emptyset	1	AFN	$\emptyset \epsilon^*$	$1 \epsilon^*$
0	-	-	$\{0, 1, 2, 3, 4, 5, 6, 7, 9\}$	$\{0, 1, 2, 3, 4, 5, 6, 7, 9\} = A$	$\{5, 6, 7, 9\} = C$
1	2	-	$\{1\}$	$\{8, 9, 9\} = D$	$\{5, 6, 7, 9\} = C$
2	-	-	$\{3, 4, 5, 6, 7, 9\}$	C	D
3	-	-	$\{3, 4, 5, 6, 7, 9\}$	D	T
4	-	5	$\{4\}$		
5	-	-	$\{5, 6, 7, 9\}$		
6	-	-	$\{7, 9\}$		
7	8	-	$\{7, 9\}$		
8	-	-	$\{8, 7, 9\}$		
9	-	-	$\{9\}$		

AFD

