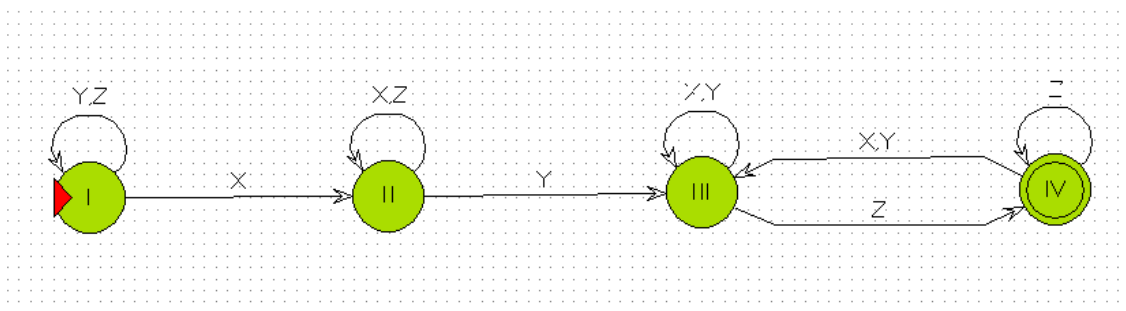
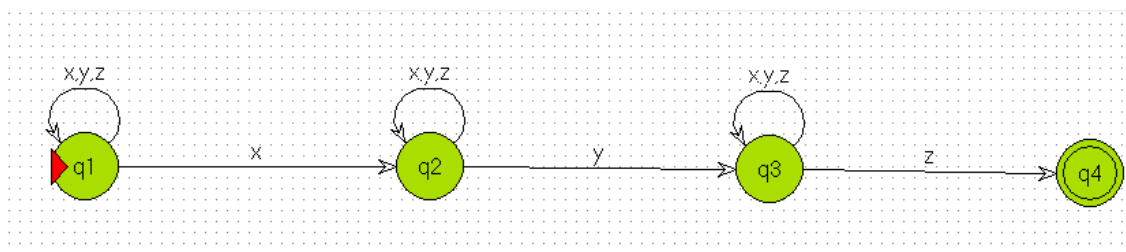


Ciência da Computação – Teoria da Computação

Exercício 04

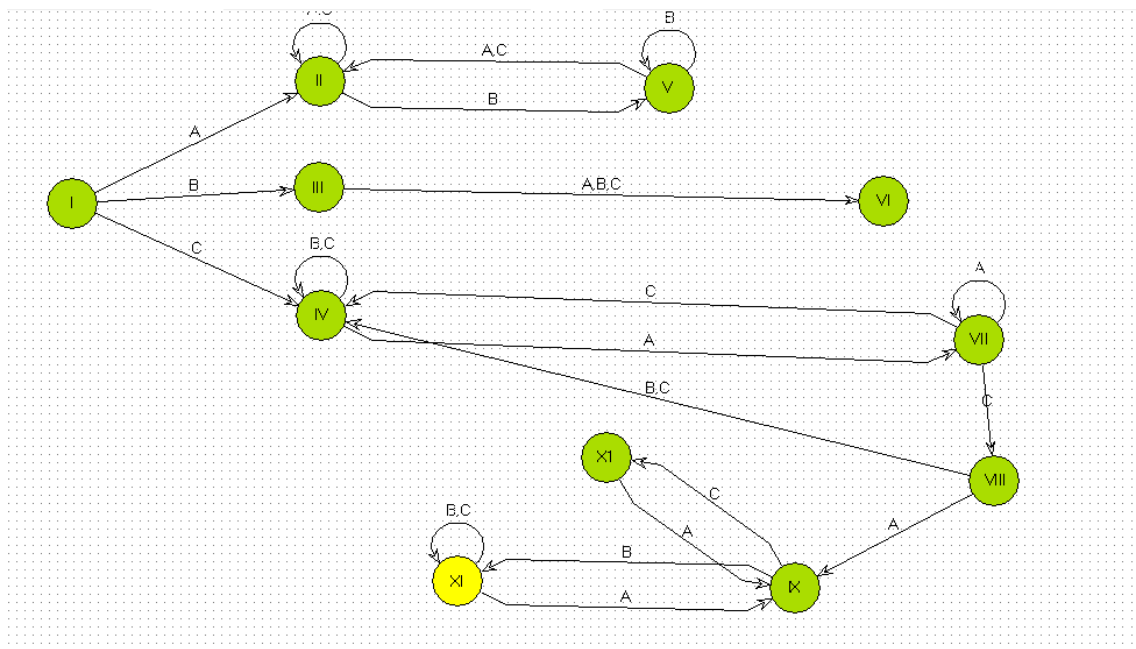
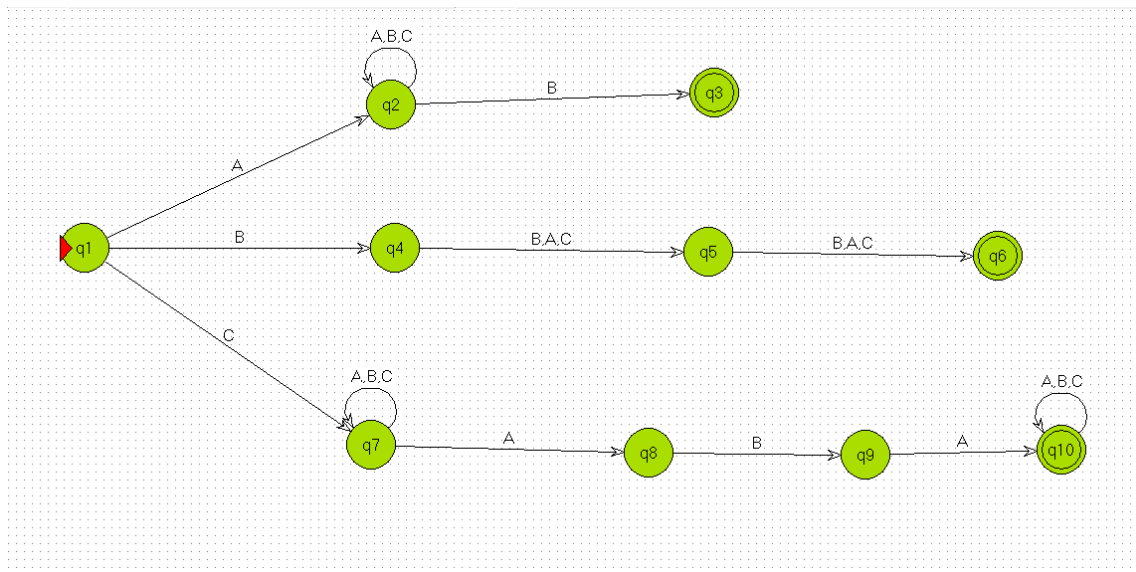
Construir o NFA e transformar o mesmo em DFA, para as seguintes linguagens:

$L1 = \{w \in \{x, y, z\}^* \mid |w| \text{ não é menor que } 3 \text{ e termina com } z\}$.



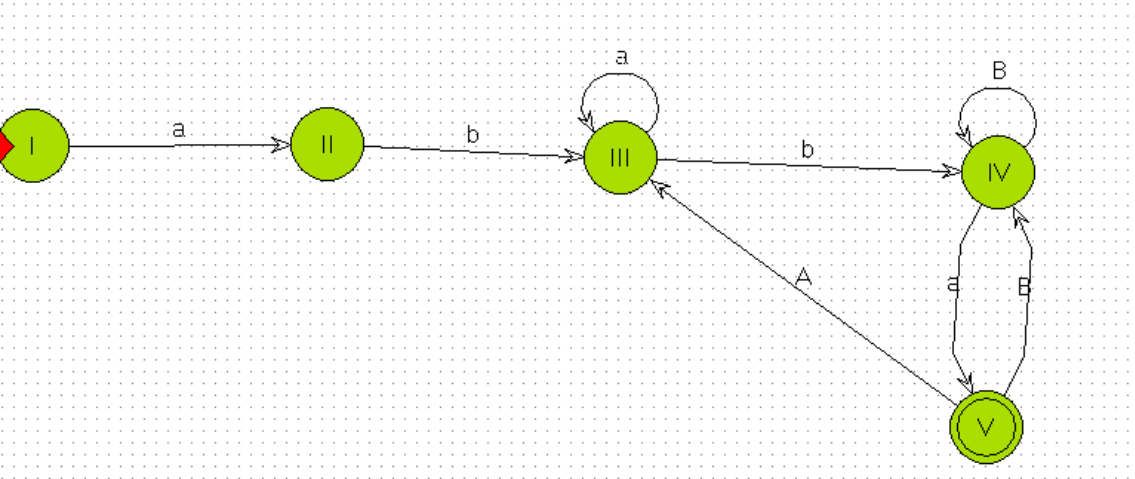
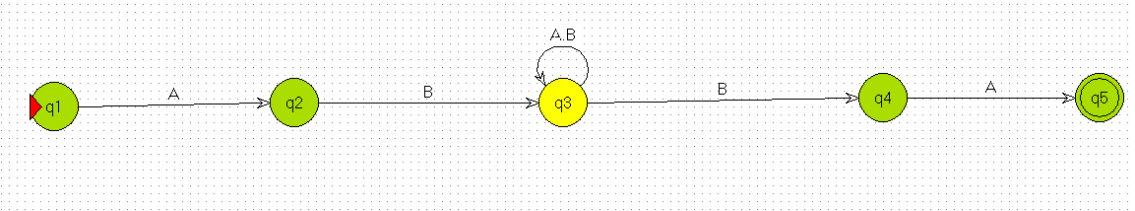
Q / Σ	Representação	x	y	z
1	I	1,2	1	1
1,2	II	1,2	1,2,3	1,2
1,2,3	III	1,2,3	1,2,3	1,2,3,4
1,2,3,4	IV	1,2,3	1,2,3	1,2,3,4

$L2 = \{w \in \{a, b, c\}^* \mid \text{se } w \text{ começa com } a \text{ termina com } b, \text{ se } w \text{ começa com } b \mid w \mid = 3, \text{ se } w \text{ começa com } c \text{ possui o substring } aba\}.$



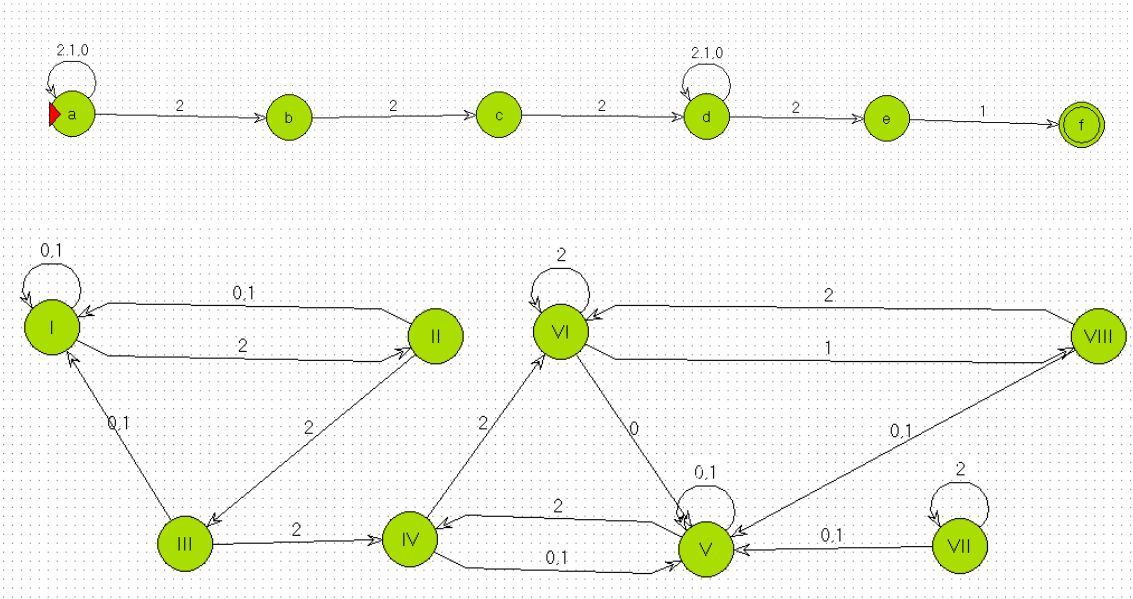
Q / Σ	REPRESENTAÇÃO	a	b	c
1	I	2	4	7
2	II	2	2,3	2
4	III	5	5	5
7	IV	7,8	7	7
2,3	V	2	2,3	2
5	VI	6	6	6
7,8	VII	7,8	7,9	7
7,9	VIII	7,8,10	7	7
7,8,10	IX	7,8,10	7,9,10	7,10
7,9,10	X	7,8,10	7,10	7,10
7,10	XI	7,8,10	7,10	7,10

$L3 = \{w \in \{a, b\}^* \mid w \text{ começa com } ab \text{ e termina com } ba\}.$



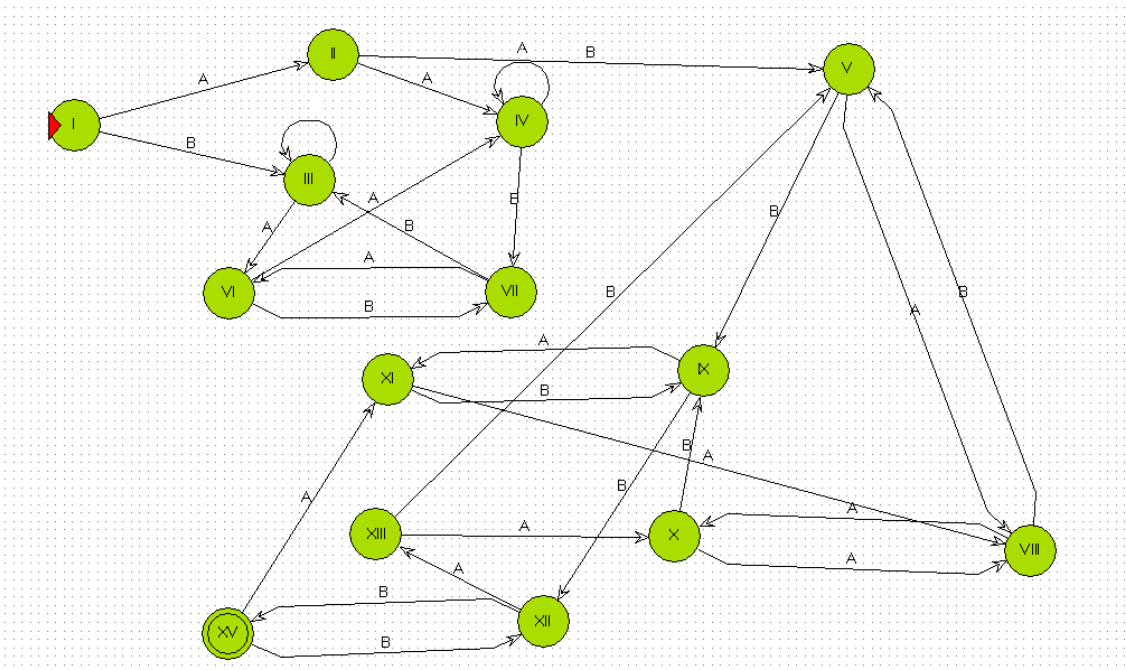
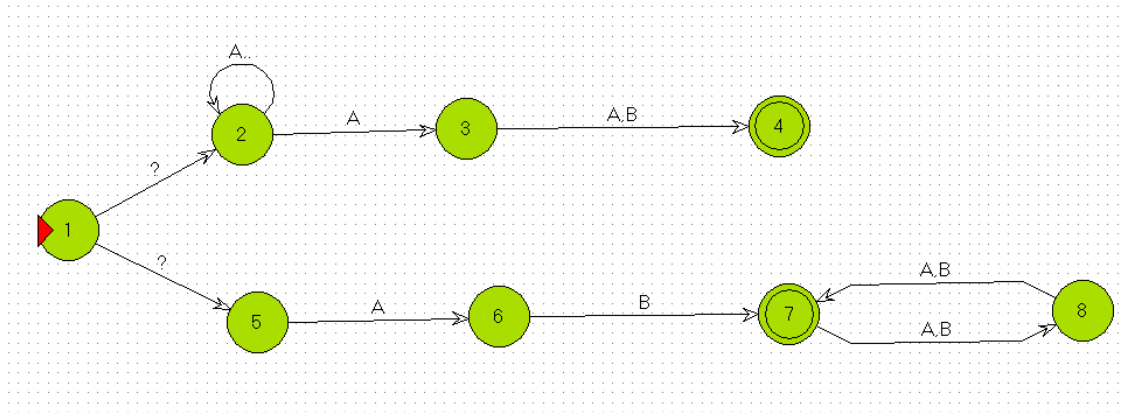
Q / Σ	REPRESENTAÇÃO	a	b
1	I	2	-
2	II	-	3
3	III	3	3,4
3,4	IV	3,5	3,4
3,5	V	3	3,4

$L4 = \{w \in \{0, 1, 2\}^* \mid w \text{ possui a substring } 222 \text{ e termina com } 21\}$.



Q / Σ	REPRESENTAÇÃO	0	1	2
A	I	A	A	A,B
A,B	II	A	A	A,B,C
A,B,C	III	A	A	A,B,C,D
A,B,C,D	IV	A,D	A,D	A,B,C,D,E
A,D	V	A,D	A,D	A,B,D,E
A,B,C,D,E	VI	A,D	A,D,F	A,B,C,D,E
A,B,D,E	VII	A,D	A,D	A,B,C,D,E
A,D,F	VIII	A,D	A,D	A,B,C,D,E

$L5 = \{w \in \{a, b\}^* \mid w \text{ possui } a \text{ na penúltima posição ou começa com } ab \text{ e } |w| \text{ é par}\}.$



Q / Σ	REPRESENTAÇÃO	A	B
1,2,5	I	2,3,6	2
2,3,6	II	2,3,4	2,4,7
2	III	2,3	2
2,3,4	IV	2,3,4	2,4
2,4,7	V	2,3,4,8	2,4,8
2,3	VI	2,3,4	2,4
2,4	VII	2,3	2
2,3,4,8	VIII	2,3,4,7	2,4,7
2,4,8	IX	2,3,7	2,7
2,3,4,7	X	2,3,4,8	2,4,8
2,3,7	XI	2,3,4,8	2,4,8
2,7	XII	2,3,8	2,8
2,3,8	XIII	2,3,4,7	2,4,7
2,8	XV	2,3,7	2,7