1. El lenguaje de las palabras que contienen la subpalabra abc.

$$(a+b+c)^* \; abc \; (a+b+c)^*$$

2. El lenguaje de las palabras de longitud múltiplo de 3.

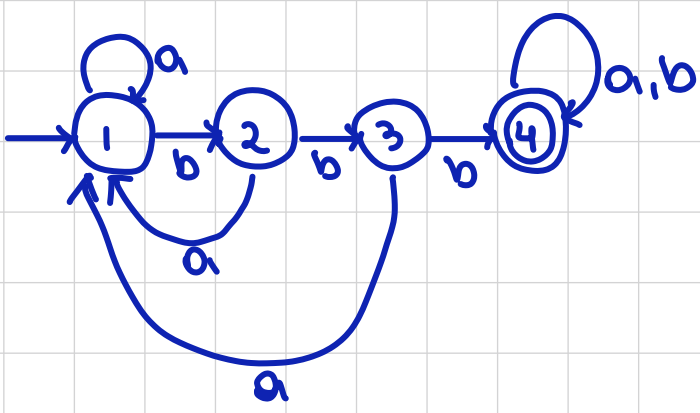
$$((a+b+c)(a+b+c)(a+b+c))^*$$

3. El lenguaje de las palabras que tienen un número par de a.

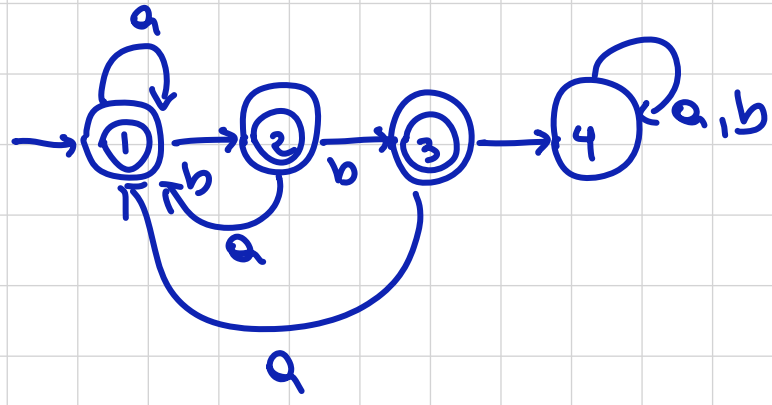
$$(b+c)^* + ((b+c)^* a (b+c)^* \; a (b+c)^*)^*$$

4. $L(A) = \{w \in \{a,b\}^* / w$ no contiene 3 b consecutivas$\}$

Sí contiene 3 b:



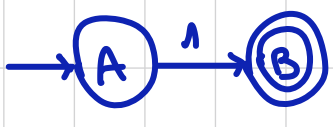
No contiene:



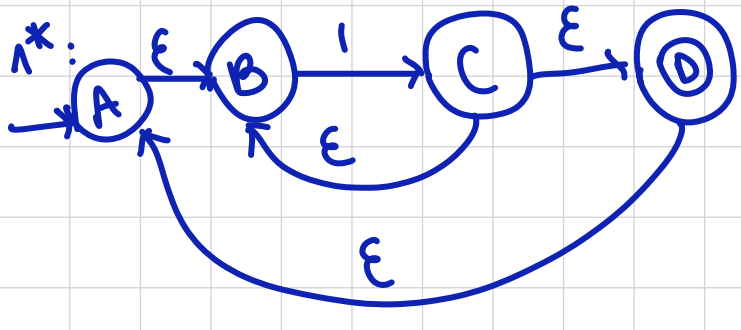
5. Contiene un número par de 0 y 1

$$1^* + (1^* 0 1^* 0 1^*)^* \qquad 0^* + (0^* 1 0^* 1 0^*)^*$$

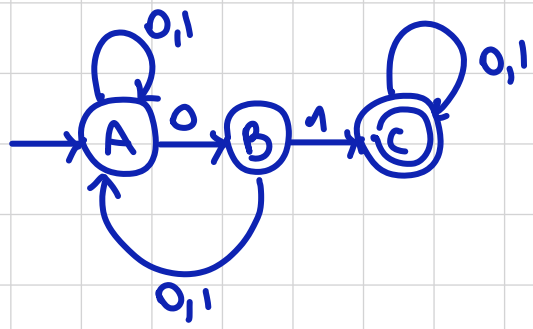
1:



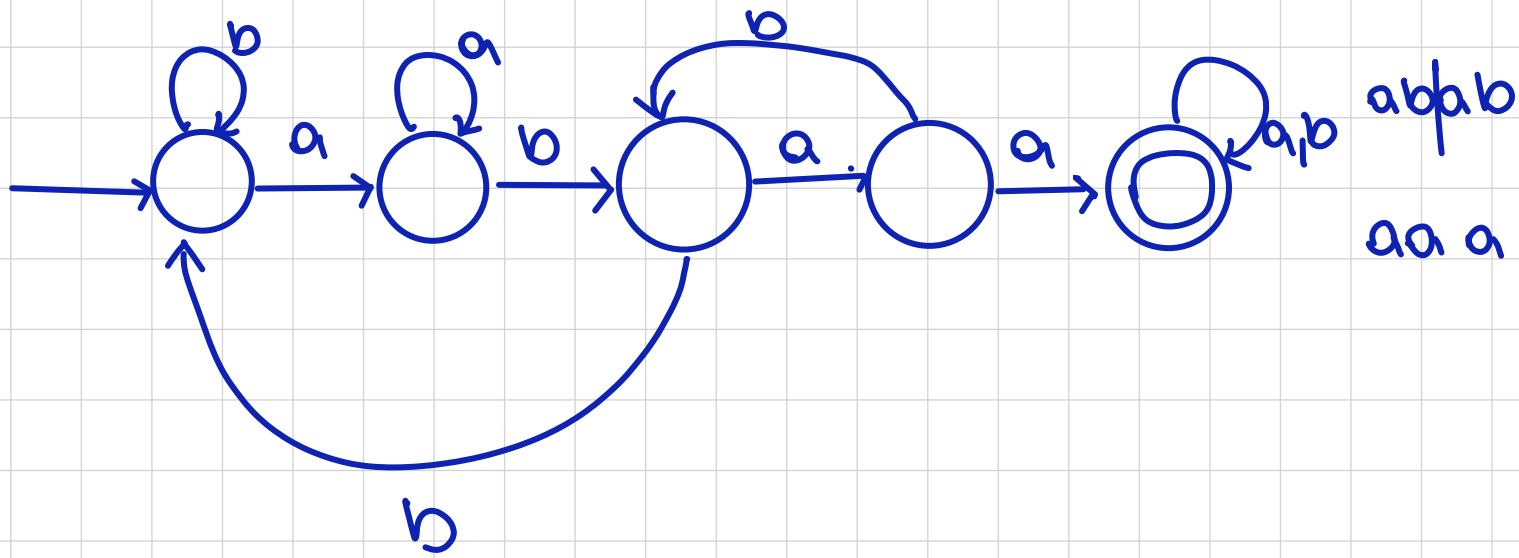
1*:



6. $L(A) = \{w \in \{0,1\}^* / w$ contiene la subpalabra 01

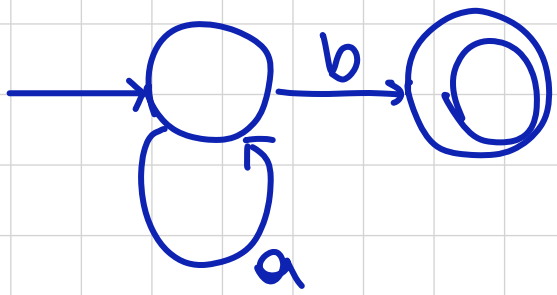


7. $L(A) = \{w \in \{a,b\}^* / w$ contiene la subpalabra $abaa\}$



$L(A_1) = \{a^i b \mid i \geq 0\}$

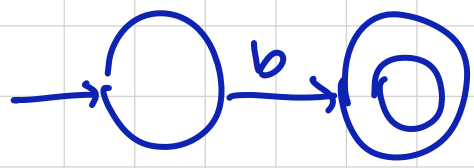
a^*b



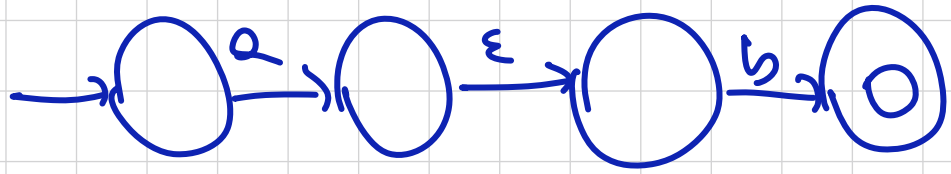
$L(A_2) = \{(ab)^i \mid i \geq 0\}$

a:

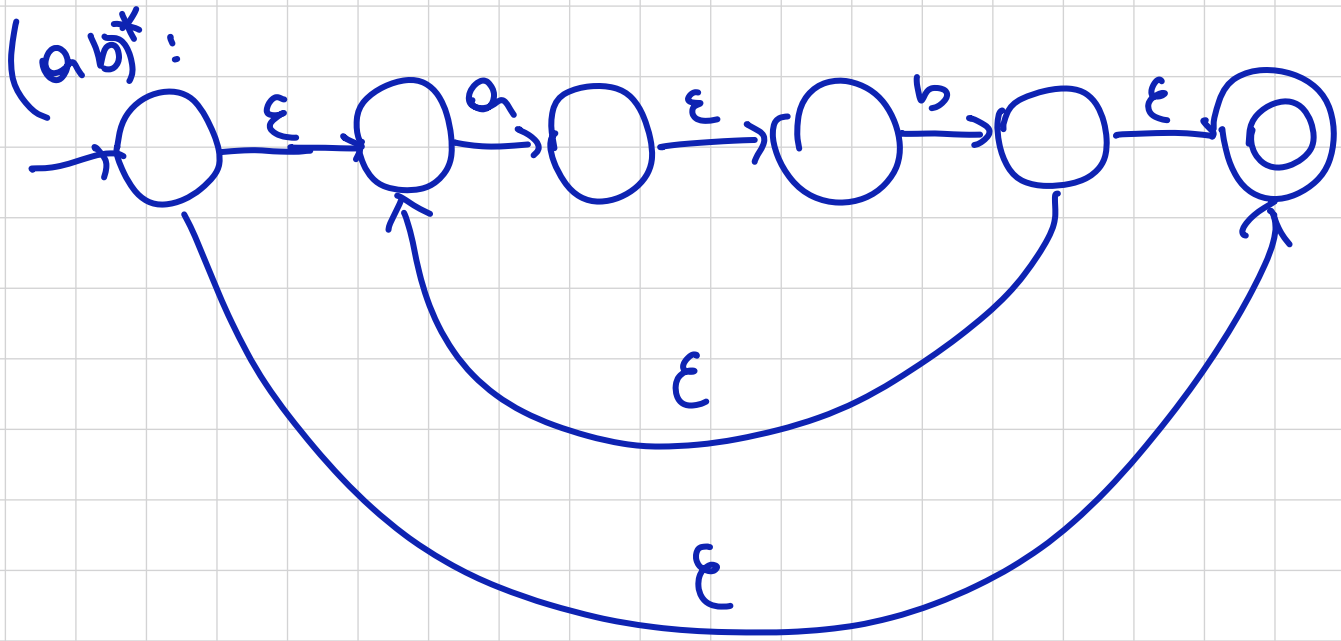
b:



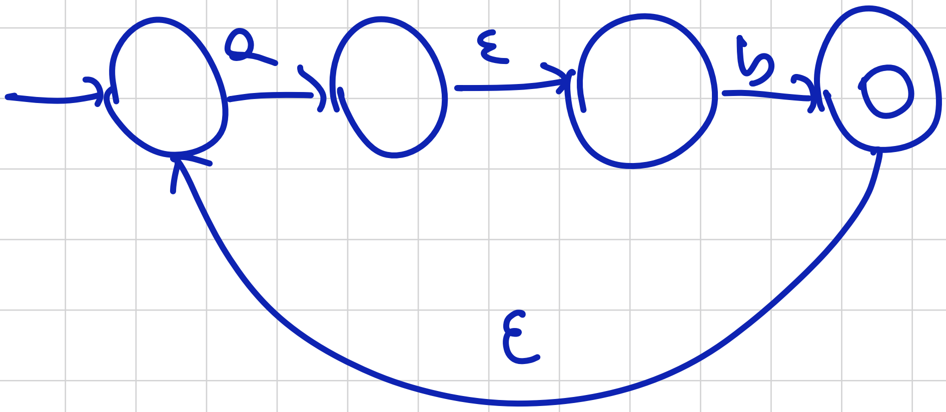
ab:



$(ab)^*$:



$(ab)^i \quad i \geq 1$



Intersección

δ_1	0	1
→* A	A	B
B	A	B

δ_2	0	1
→* C	C	D
D	E	C
E	D	E

$Q_1 = \{A, B\}$
$Q_2 = \{C, D, E\}$

$Q = \{(A,C), (A,D), (A,E), (B,C), (B,D), (B,E)\}$

$F_1 = \{A\}$
$F_2 = \{C\}$

$F = \{(A,C)\}$

$q_0 = \{(A,C)\}$

δ'	0	1
→* (A,C)	(A,C)	(B,D)
(A,D)	(A,E)	(B,C)
(A,E)	(A,D)	(B,E)
(B,C)	(A,C)	(B,D
(B,D)	(A,E)	(B,C
(B,E)	(A,D)	(B,E)

$A = (\{(A,C), (A,D), (A,E), (B,C), (B,D), (B,E)\},$
$\{0,1\},$
$\delta',$
$(A,C),$
$\{(A,C)\})$

Gramática = $(Q, \Sigma, \delta \to \varepsilon, S)$