

EXAMEN AÑO PASADO

$\mathcal{L} = \{0^*1^m / n-w \text{ es múltiplo de } 3\}$ AFD

$n-w = 3k \Rightarrow n$ y w tienen mismo resto al dividir por 3

$S \rightarrow 0A \mid 1D \mid E$

$A \rightarrow 0B \mid 1A'$

$A' \rightarrow \epsilon \mid 1D'$

$B' \rightarrow 1F'$

$C' \rightarrow 1H'$

$D \rightarrow 1E$

$B \rightarrow 0C \mid 1B'$

$D' \rightarrow 1E'$

$F' \rightarrow \epsilon \mid 1G'$

$H' \rightarrow 1I'$

$E \rightarrow 1 \mid 1F$

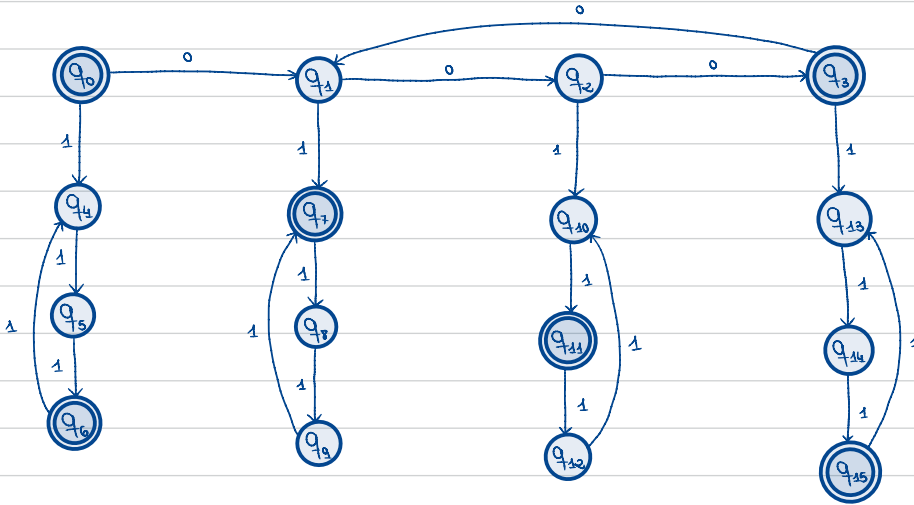
$C \rightarrow 0A \mid 1C' \mid E$

$E' \rightarrow 1A'$

$G' \rightarrow 1B'$

$I' \rightarrow \epsilon \mid 1C'$

$F \rightarrow 1D$



$\delta(q_i, 0) = \text{Error} \quad \forall i \geq 4$

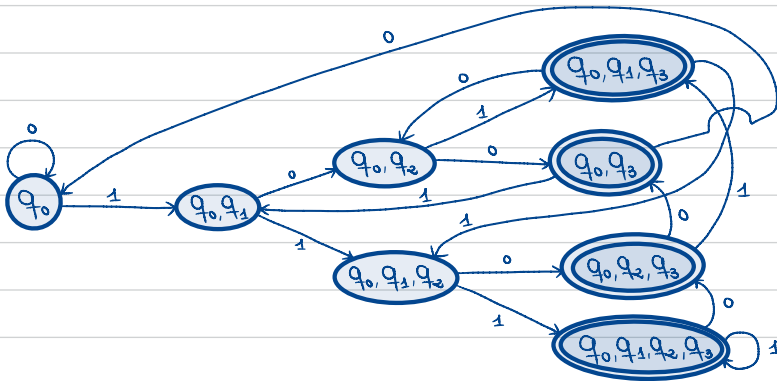
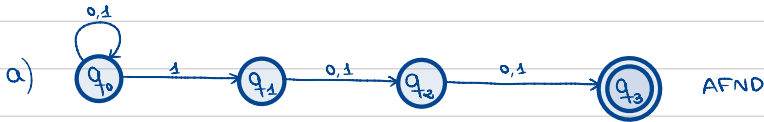
$\mathcal{L} = \{w \in \{0,1\}^* / \text{el tercer símbolo empezando por el final es un } 1\}$

a) AFD b) ER c) Gr. iεq.

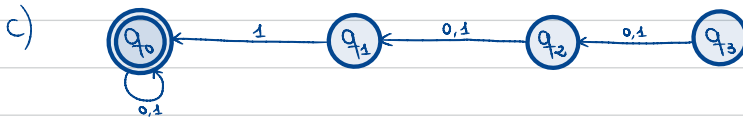
$$q_0 \rightarrow 0q_0 \mid 1q_1$$

$$q_1 \rightarrow 0q_2 \mid 1q_2$$

$$q_2 \rightarrow 0 \mid 1$$



b) $(0+1)^* 1(0+1)(0+1)$



$$q_3 \rightarrow 0q_3 \mid 1q_2$$

$$q_2 \rightarrow 0q_1 \mid 1q_1$$

$$q_1 \rightarrow 1q_0$$

$$q_0 \rightarrow 0q_0 \mid 1q_0 \mid \epsilon$$

\Rightarrow

$$q_3 \rightarrow q_2 0 \mid q_2 1$$

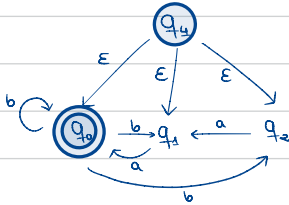
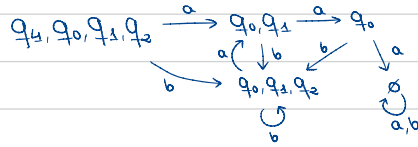
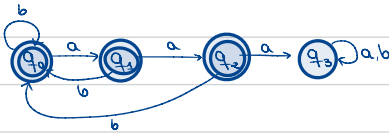
$$q_2 \rightarrow q_1 0 \mid q_1 1$$

$$q_1 \rightarrow q_0 1$$

$$q_0 \rightarrow q_0 0 \mid q_0 1 \mid \epsilon$$

Esto ya no es del examen pero es interesante:

AFD que no acepta 3 a's seguidas



$$\begin{array}{l}
 S \rightarrow aA \mid bB \mid \epsilon \\
 A \rightarrow bB \mid aC \mid \epsilon \\
 B \rightarrow bB \mid aA \mid \epsilon \\
 C \rightarrow bB \mid \epsilon
 \end{array}
 \left. \vphantom{\begin{array}{l} S \\ A \\ B \\ C \end{array}} \right\}
 \begin{array}{l}
 S \rightarrow Aa \mid Bb \mid \epsilon \\
 A \rightarrow Bb \mid Ca \mid \epsilon \\
 B \rightarrow Bb \mid Aa \mid \epsilon \\
 C \rightarrow Bb \mid \epsilon
 \end{array}$$

AFD de los mltiplos de 5 en binario

