

Ejercicio NO. 2. Utilice el Pumping Lemma para demostrar que el lenguaje $A = \{yy|y \in \{0,1\}^*\}$ no es regular

$$A = \{yy|y \in \{0,1\}^*\} \rightarrow \text{regular}$$

$$\begin{aligned} \lceil W &= 0^p 10^p 1 \\ \Rightarrow W &= xyz \end{aligned}$$

$$\begin{aligned} W &= xyz \\ |xy| &\leq p \\ |y| &\geq 1 \\ i \geq 0, xy^i z \notin A \end{aligned}$$

Assumiendo que p es 7...

$$W = 00000000100000001$$

\swarrow \nwarrow \searrow
 x y z

$$xy^i z \rightarrow xy^2 z$$

$$0000000000000100000001 \notin A \quad \therefore \text{contradice}$$

$$\begin{aligned} |xy| &\leq p \\ &\leq 7 \quad \checkmark \end{aligned}$$

$$|y| \geq 1 \quad \checkmark$$

$$A = \{yy|y \in \{0,1\}^*\} \text{ no es regular}$$