

$L = \{a^{2^n} \mid n \geq 0\}$ Demostrar que es no-regular

① Suponemos L regular

Sea $n \in \mathbb{N}$ es constante

$$w = a^{2^n}, \quad w \in L, \quad |w| \geq n$$

②

$$w = xyz$$

$$y \neq \epsilon$$

$$|xy| \leq n$$

$$x = a^i$$

$$y = a^j$$

$$z = a^{2^n - i - j}$$

$$j \geq 1 \quad i+j \leq n$$

③ $\exists k \geq 0$

$$L \not\vdash xy$$