

$$(k) T(1) \in \Theta(1), T(n) = 2T(n/4) + \overbrace{n^2}^{f(n)}$$

$$(V1) \quad a=2 \quad b=4 \quad d=2$$

$$a=2 < 4^2 = b^d \quad \xRightarrow{\text{CASO 1}} T(n) = \Theta(n^2).$$

$$(V2) \quad n^{\log_a b} = n^{\log_2 4} = n^2 = \sqrt{n}$$

$$f(n) = n^2 = \Omega(n^{1/2+\epsilon}) \quad \xRightarrow{\text{CASO 3}} \text{cond. estabilidad}$$

$$a. f(n/b) \leq c \cdot f(n), \text{ para alguna } \underline{c} < 1 \text{ e } n \text{ A.g.}$$

$$2. \left(\frac{n}{4}\right)^2 = 2 \cdot \frac{n^2}{16} \leq \frac{n^2}{8} \quad (c = \frac{1}{8}), \forall n \quad \checkmark$$

$$\underline{\underline{T(n) = \Theta(n^2)}}$$