$$T(n) = \begin{cases} a & \text{IF } n \le 1 \\ 3T\left(\frac{n}{4}\right) + n \end{cases}$$

	LIV	INPUT	CONTRIBUTO	RAMI
$T(n) = 3T\left(\frac{n}{4}\right) + n$	0	n	n	1
$T\left(\frac{n}{4}\right) = 3T\left(\frac{n}{4^2}\right) + \frac{n}{4}$	1	$\frac{n}{4}$	$\frac{n}{4}$	3
$T\left(\frac{n}{4^2}\right) = 3T\left(\frac{n}{4^3}\right) + \frac{n}{4^2}$	2	$\frac{n}{4^2}$	$\frac{n}{4^2}$	3^2
$T\left(\frac{n}{4^i}\right) = 3T\left(\frac{n}{4^{i+1}}\right) + \frac{n}{4^i}$	i	$\frac{n}{4^i}$	$\frac{n}{4^i}$	3^i

TOTALE $T\left(\frac{n}{4^k}\right)$

0 $n \cdot 1 = n$

1 $\frac{n}{4} \cdot 3 = n\frac{3}{4}$

2 $\frac{n}{4^2} \cdot 3^2 = n\left(\frac{3}{4}\right)^2$

i $\frac{n}{4^i} \cdot 3^i = n\left(\frac{3}{4}\right)^i$

$\frac{n}{4^k} = 1 \quad k = \log_4 n$

~~RAMI 3^i~~

$$\sum_{i=0}^{k-1} n\frac{3}{4}^i = n \sum_{i=0}^{k-1} \left(\frac{3}{4}\right)^i = \frac{1}{1-\frac{3}{4}} = 4n = \Theta(n)$$

$+3^k a$

FOGLIE non so quanto vale

$$4n + 3^{\log_4 n} = 4n + n^{\log_4 3} < 1 = \Theta(n)$$