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"Strassen Theorem"

$T(n) = 7^{log_2 n}$ $\qquad\qquad n = 2^i; i \in N \cup \{O\}$

$Let\ n = 2^O = T(7^{log_2 n 1})| \geq T(1) \approx 1$

Induction Hypothesis

$Supose\ n = 2^k, k\ \in N\ and\ that\ T(2^k) = 7^{log_2(2k)}\ satisfies$

$T(n) = 7t\left(\frac{n}{2}\right)$

$Statement\ to\ prove$:

$Let\ n = 2^{k+1} \geq T(2^{k+1}) = 7^{log_2\left(2^{k+1)}\right)}\ which$ satisfies

$T(n) = 7T\left(\frac{n}{2}\right)$

$Let\ T(2^{kn}) = 7^{log_2(2^{k+1})}$

$Let\ us\ also\ compute\ the\ value\ of$

$7T\left(\frac{n}{2}\right) | \ n = 2^{k+1}$

$7T\left(\frac{n}{2}\right) | = 7T\left(\frac{2^{k+1}}{2}\right) = 7T(2^k)$

$We\ know$

$T(2^k) = 7^{log_2(2^k)} = 7^{k\ log_2(2)} = 7^{k(1)} = 7T(2^k) = 7^1$ ó $7k = 7^{k+1} = 7^{k+1(1)}$

$= 7^{k+1(\log(O))}$

$= 7^{log_O(2^{k+1})}$