$$\frac{1}{3}(n+1)(n-2)-5 = \Theta(n^2)$$

$$c_1 n^2 \le \frac{1}{3}(n^2-n-2)-5 \le c_2 n^2$$

$c_2 = 1$

torta

$$c_1 n^2 \le \frac{1}{3}n^2 - \frac{1}{3}n - \frac{2}{3} - 5 \le n^2$$

tg

$$\frac{1}{3}n^2 - \frac{1}{3}n - \frac{17}{2} \le n^2$$

$\frac{1}{2}$

torta

$$\frac{1}{3}n \le \frac{1}{4}\left(\frac{1}{3}n^2\right) \rightarrow 4 \le n$$

$11 \le n$

$n_0 = 11$

$$\frac{17}{2} \le \frac{1}{4}\left(\frac{1}{3}n^2\right) \rightarrow 6 \times 17 \le n^2$$

$$\sqrt{6 \times 17} \le n \Leftrightarrow 11 \le n$$

$$\frac{1}{3}n^2 - \frac{1}{3}n - \frac{17}{2} \ge \frac{1}{3}n^2 - \frac{1}{4}\left(\frac{1}{3}n^2\right) - \frac{1}{4}\left(\frac{1}{3}n^2\right)$$

$$n^2\left(\frac{1}{4} - \frac{1}{12} - \frac{1}{12}\right)$$

$$\frac{1}{6}n^2 \qquad c_1 = \frac{1}{6} \qquad n \ge 11$$

$$\lg n! = \Omega(n \lg n)$$

$$n! = n^{\cdot} \rightarrow \sum$$

$$C\, n \lg n \leq \underbrace{\lg n!}_{\sum_{i=\frac{n}{2}+1}^{n} \lg(i) + \sum_{i=1}^{n/2} \lg(i)}$$

$$n \leq n!$$

$$\lg n \leq \lg(n!)$$

$$¿\ \frac{n}{2} \lg n \geq \sum_{i=\frac{n}{2}+1}^{n} \lg(i)\ ?$$

$$\binom{n}{6} = \left(\frac{n(n-1)(n-2)!}{6!\,(n-6)!} \right)$$

$$\left(\binom{n}{6} \right) =$$