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i	0	1	2	3	4	5	6	7	...	n-1
j	0	0	2	0	4	0	6	0	...	n-1

$T = 2 + 4 + 6 + \ldots + n-1$

$\sum_{i=1}^{n} i = \frac{n(n+1)}{2} \longrightarrow \frac{n(n+1)}{2} \cdot \frac{1}{2} = \frac{n(n+1)}{4}$

$f(n) = 100n^4 + 5000n + 3, \quad f(n) \in O(n^4)?$

$c * n^4 > 100n^4 + 5000n + 3$

$c > \frac{100n^4}{n^4} + \frac{5000n}{n^4} + \frac{3}{n^4}$

$c > 100 + \frac{5000}{n^3} + \frac{3}{n^4} \qquad n = 10$

$c > 100 + \frac{5000}{10^3} + \frac{3}{10^4}$

$c > 100 + \frac{5000}{1000} + \frac{3}{10000}$

$c > 100 + 5 + 0.0003$

$c > 105.0003$

Yes; $c = 105.0003$; $n_0 = 10$