ejercicio 7

- a) $cte_1 + \sum_{i=1}^{n} cte_2 = cte_1 + n \cdot cte_2 = O(n)$
- b) similar al anterior $O(n)$
- c) for interno $= cte_1 + \sum_{j=0}^{n+1} cte_2 = cte_1 + (n+1) \cdot cte_2$

for externo $= cte_3 + \sum_{i=0}^{n+1} (\text{for interno}) = cte_3 + \sum_{i=0}^{n+1} (cte_1 + (n+1) \cdot cte_2)$

$= cte_3 + \sum_{i=0}^{n+1} cte_1 + \sum_{i=0}^{n+1} (n+1) \cdot cte_2 = cte_3 + (n+1) \cdot cte_1 + (n+1) \cdot (n+1) \cdot cte_2$

$= cte_3 + (n+1) \cdot cte_1 + cte\, n^2 \ldots = O(n^2)$

- d) for interno 1 $= cte_1 + \sum_{j=0}^{i \cdot n} cte_2 = cte_1 + (i \cdot n) \cdot cte_2$

for interno 2 $= cte_3 + \sum_{k=0}^{n \cdot 3} cte_4 = cte_3 + (n \cdot 3) \cdot cte_4$

for externo $= cte_5 + \sum_{i=0}^{n+100} (\text{for int}_1 + \text{for int}_2) = cte_5 + \sum_{i=0}^{n+100} (i \cdot n) \cdot cte_2 + (n \cdot 3)(cte + cte)$

$= cte_5 + \sum_{i=0}^{n+100} (i \cdot n) \cdot cte_2 + \sum_{i=0}^{n+100} (n \cdot 3) \cdot cte_4 + (n+100) \cdot cte_6$

$= (n+100) \cdot (i \cdot n \cdot cte_2) + (n+100) \cdot (n \cdot 3 \cdot cte_4) + (n+100)$

$O(n^2)$

- e) for interno $= cte_1 + \sum_{i=0}^{n+1} cte_2 = cte + (n+1)\, cte_2$

for $= cte_3 + \sum_{i=0}^{n+1} cte_1 + (n+1) \cdot cte_2 = \underbrace{(n+1)\, cte_1 + (n+1) \cdot (n+1 \cdot cte_2)}_{\text{for } 1}$

for 1 + for 2 $= \text{for } 1 + \sum_{i=0}^{n+1} cte \;/\; n \cdot n = O(n^2)$