

Ex 1 A or B

$$n \lg_b a = \begin{cases} n \lg_2^2 = u \\ n \lg_4^4 = u \end{cases}$$

$$\xrightarrow{\text{case 1}} \Theta(\lg^2 u) = O(u^{1-\epsilon})$$

bastere prendere $0 < \epsilon < 1$
p.e. $\epsilon = 1/2$

Ex 2

risolto in laboratorio

Ex 3

Quickselect $\left\{ \begin{array}{l} \Theta(u) \text{ caso medio} \\ \Theta(u^2) \text{ caso pessimo} \end{array} \right\}$

$$T(u) = 2T\left(\frac{u}{2}\right) + \Theta(u) \text{ caso medio} \rightarrow T(u) = \Theta(u \lg u)$$

$$2T\left(\frac{u}{2}\right) + \Theta(u^2) \text{ caso pessimo} \rightarrow T(u) = \Theta(u^2)$$

Ex 4

Simulatione

Ex 5

Copia A in B

Heap sort (B)

For $y=1$ To $n-1$ do

$r = \text{Ricerca_Binaria}(B, -B[y], y+1, n);$

if ($r \neq -1$)

for $x=1$ To n do if ($A[x] = B[y]$) $i=x;$
if ($A[x] = -B[y]$) $j=x;$
3. $B[y]$

if ($i < j$) return $\langle i, j \rangle$ // per $A[i] + A[j] = 0$ no if

return $\langle -1, -1 \rangle$