


$$g) \sqrt[2]{2^{\log_2 n}}, \sqrt[2]{2^{\log_2 n}}, n^{5/2}, 2^{n^2}, n^2 \log_2(n)$$

Κατηγορία	$f(x)_{\text{opx}}$	$f(x)$
	$\log_2 n$	$n$ ✓
	$2$	$2^n$ ✓
	$2^{2^{\log_2 n}}$	$n^{2.5}$ ✓
	$n^{5/2}$	$n^2$ ✓
	$2^{n^2}$	$2^{n^2}$ ✓
	$n^2 \log n$	$n^2 \log n$

$$\begin{aligned} n &< n^{2.5} & (1) \\ n^a &< 2^n & (3) \\ 2^n &< 2^{n^2} & (2) \\ n &< n^2 \log n \text{ και } n^2 \log n < n^{2.5} & (4), (5) \end{aligned}$$

$$\begin{aligned} n &, n^{2.5} \\ n &, n^{2.5}, 2^n \\ n &, n^{2.5}, 2^n \\ n &, n^{2.5}, 2^n \\ n &, n^2 \log n, n^{2.5}, 2^n, 2^{n^2} \end{aligned}$$

$$\begin{aligned} (1) \quad n &= O(n^\alpha) & \alpha > 1, c=1, n_0=2 \\ (2) \quad 2^n &= O(2^{n^2}) & c=1, n_0=1 \\ (3) \quad n^a &= O(2^n) & a > 1, \text{δεν } \exists B \\ (4) \quad n &= O(n^2 \log n) \\ & n \leq c \cdot n^2 \log n \\ & \frac{1}{n} \leq c \cdot \log n \end{aligned}$$


---

το κλει για  $n \geq 1, c=1$

$$\begin{aligned} n^2 \log n &= O(n^{2.5}) \\ n^2 \log n &\leq c \cdot n^{2.5} \\ \log n &\leq c \cdot \sqrt{n} \\ \log n &\leq n \cdot c^2 \\ \log n &= O(n) \quad c=1, n_0=2 \end{aligned}$$