(4) $A_1 = \{ 5n^2 + n\log n + n^{3/2},\ 4^{\log n},\ n^2 + \log n^2,\ n\log 3^n,\ 4n^2 + 6n\sqrt{n} \}$

$A_2 = \{ n - \sqrt{n}\log n,\ [illegible],\ 10n + 3\log\log^2 n,\ 4n + 20\log n + 3\sqrt{n} \}$

$A_3 = \{ 8n\log\sqrt[3]{n},\ [illegible],\ \log(n!/2^n)^4,\ \log(n!),\ n\log(n^2)^3$

$A_4 = \{ \log\log^2 n^3,\ \log\log n \}$

$A_5 = \{ 3^n + 5^n \},\ A_6 = \{ n! \}\quad A_7 = \{ 5 \cdot 2^n \}\quad A = \{ 4^n \}$

$A_4 < A_2 < A_3 < A_1 < A_7 < A_8 < A_5 < A_6$

Appunti: $4^{\log n} \Leftrightarrow 2^{2\log n} \Leftrightarrow 2^{\log n^2} \Leftrightarrow n^2$, $8n\log\sqrt[3]{n} \Leftrightarrow 2^3 n \log n^{1/3}$

$\Leftrightarrow$ [illegible] $\frac{1}{3} \cdot 8n\log n \Leftrightarrow \frac{8}{3} n\log n$

$\log\left(\frac{n!}{2^n}\right)^4 \Leftrightarrow \log(n! \cdot 2^{-n})^4 \Leftrightarrow 4\log n! - 4n$

(5)

$10\log\log^2 n,\ \log n^4,\ 3\log n^4,\ 7\log^3 n,\ n^{1/\log n},\ 10\sqrt[4]{n},\ n^{\log n}$ [illegible]$,\ 10\sqrt[4]{n},\ 4\sqrt[3]{n\log n},\ n\log\sqrt[3]{n},\ 2n\log^3 n$

$, n^5,\ (\log n)^n\ n!,\ n^n$

(6) $\Omega(\sqrt[4]{n}) = \sqrt[3]{n} = O(\sqrt[4]{n})$

$\Omega(1/n) = \quad 1/\log n = O(1)$

$\Omega(n^2) = 2n^3 - 3n = O(2^n)$

$\Omega(n^{3/2}) = (n^3 + n) / (n\log^2 n + \log n) = O(M^2)$

$\Omega(2^n) = (4^n) = O(5^n)$

$\Omega(2^n) = 3^{(\log_3 n)^3} = O(5^n)$