Es. 5 $\displaystyle\sum_n \frac{\lg(1+n^3)}{2^n+n^2+3^n}(x-3)^n$

$$\frac{a_{n+1}}{a_n} = \frac{\lg(1+(n+1)^3)}{2^{n+1}+(n+1)^2+3^{n+1}} \cdot \frac{2^n+n^2+3^n}{\lg(1+n^2)} \xrightarrow[n\to\infty]{} \frac{1}{3}$$

$\Rightarrow R = 3$

$x=6 \quad \displaystyle\sum_n \underbrace{\frac{\lg(1+n^3)}{2^n+n^2+3^n}\,3^n}_{b_n}$

$\lim\limits_{n\to\infty} b_n \neq 0 \Rightarrow$ la serie non converge

$x=0 \quad \displaystyle\sum_n \underbrace{\frac{\lg(1+n^3)}{2^n+n^2+3^n}(-1)^n 3^n}_{c_n}$

$\lim\limits_{n\to\infty} c_n \neq 0 \Rightarrow$ la serie non converge

$\Rightarrow$ La serie converge assolutamente e puntualmente $\forall x \in (0,6)$

La serie converge totalmente $\forall x \in [0+\delta, 6-\delta]$ $0<\delta<3$