

Esercizi sulle serie Foglio 3

STABILIRE IL CARATTERE DELLE SERIE:

$$1. \sum_{n=1}^{\infty} \left(\lg \left(\frac{\pi}{2} x \right) \right)^n \left(n^{2x} + \frac{\sin(-1)^n}{n} \right) \quad |x| < 1$$

$$2. \sum_{n=1}^{\infty} \frac{1}{\sqrt[n]{n \left(n^{\cos \frac{1}{n^x}} - n - \cos \frac{1}{n} \right)}} \quad x > 0$$

$$3. \sum_{n=2}^{\infty} \left(\frac{n}{n^2+1} \right)^{\cos \left(\frac{1}{\lg n^x} \right)} \quad x > 0$$

$$4. \sum_{n=10}^{\infty} \frac{(-1)^n}{n \left(1 + \frac{1}{\lg n} \right)}$$

$$5. \sum_{n=1}^{\infty} \lg \left(2 - \frac{\lg n}{\lg(n+1)} \right)$$

$$6. \sum_{n=2}^{\infty} (-2)^n \left(\lg \left(n + (-1)^n \right) \right)^x \quad x \in \mathbb{R}$$

$$7. \sum_{n=1}^{\infty} (-1)^{[x]} \frac{\sin^3 \frac{1}{n}}{(\lg n)^{x-1}} \quad x \in \mathbb{R},$$

[x] = PARTE INTERA DI x.