

Esercizi sulle serie

Lista n.1 di lunedì 25 marzo 2002

Studiare il carattere, eventualmente al variare dei parametri che vi compaiono, delle seguenti semplici serie:

$$\boxed{1} \sum_{n=1}^{+\infty} \frac{1}{n}$$

$$\boxed{2} \sum_{n=1}^{+\infty} \frac{1}{n^3}$$

$$\boxed{3} \sum_{n=1}^{+\infty} \frac{1}{\sqrt[4]{n}}$$

$$\boxed{4} \sum_{n=1}^{+\infty} \frac{1}{n^\alpha}$$

$$\boxed{5} \sum_{n=1}^{+\infty} \frac{1}{n!}$$

$$\boxed{6} \sum_{n=1}^{+\infty} \frac{1}{n^n}$$

$$\boxed{7} \sum_{n=1}^{+\infty} \frac{1}{n^4 + 1}$$

$$\boxed{8} \sum_{n=1}^{+\infty} \left(\sqrt{n^3 + 1} - \sqrt{n^3} \right)$$

$$\boxed{9} \sum_{n=1}^{+\infty} \log \left(1 + \frac{1}{n} \right)$$

$$\boxed{10} \sum_{n=1}^{+\infty} \frac{1}{1 + e^n}$$

$$\boxed{11} \sum_{n=1}^{+\infty} \frac{1}{\sqrt{n}} \log \left(1 + \frac{1}{n} \right)$$

$$\boxed{12} \sum_{n=2}^{+\infty} \frac{1}{n \log n}$$

$$\boxed{13} \sum_{n=1}^{+\infty} \frac{1}{(1 + n^2) \sqrt{\log(1 + n)}}$$

$$\boxed{14} \sum_{n=1}^{+\infty} \frac{1}{n \sqrt[3]{\log(1 + n^4)}}$$

$$\boxed{15} \sum_{n=1}^{+\infty} \frac{1}{n \log^2(5 + \sqrt{n})}$$

$$\boxed{16} \sum_{n=1}^{+\infty} \frac{\log n}{n^2 + 1}$$

$$\boxed{17} \sum_{n=2}^{+\infty} \frac{1}{n^\alpha \log^\beta n}$$

$$\boxed{18} \sum_{n=1}^{+\infty} \frac{\log(1 + \frac{1}{n})}{\log^3 n}$$

$$\boxed{19} \sum_{n=1}^{+\infty} \frac{(-1)^n}{n}$$

$$\boxed{20} \sum_{n=1}^{+\infty} \frac{(-1)^n}{\sqrt{n}}$$

$$\boxed{21} \sum_{n=1}^{+\infty} \frac{(-1)^n}{\log n}$$

$$\boxed{22} \sum_{n=1}^{+\infty} (-1)^n \frac{6 + n}{n^2 + 5n}$$

$$\boxed{23} \sum_{n=1}^{+\infty} \frac{\cos(\pi n)}{n}$$

$$\boxed{24} \sum_{n=1}^{+\infty} \tan \left(\frac{\pi}{4} + \frac{\pi n}{2} \right) \sin \left(\frac{1}{n} \right)$$

$$\boxed{25} \sum_{n=1}^{+\infty} \frac{1}{2^n + 3^n}$$

$$\boxed{26} \sum_{n=1}^{+\infty} \frac{1}{4^n - 3^n}$$

$$\boxed{27} \sum_{n=1}^{+\infty} \frac{n^2}{2^n + 1}$$

$$\boxed{28} \sum_{n=1}^{+\infty} \frac{n^4}{n^4 + 1}$$

$$\boxed{29} \sum_{n=1}^{+\infty} \sin \left(\frac{1}{n} + n\pi \right)$$

$$\boxed{30} \sum_{n=1}^{+\infty} \frac{e^{\sin n}}{n^2}$$

$$\boxed{31} \sum_{n=2}^{+\infty} \frac{e^{\cos n}}{n \log n}$$

$$\boxed{32} \sum_{n=1}^{+\infty} \frac{\sin(n^2)}{n^3}$$

$$\boxed{33} \sum_{n=1}^{+\infty} \frac{(-1)^n}{n\sqrt{n} + e^{-n}}$$