

Sa se determine natura si suma seriilor urmatoare

$$\begin{aligned}& \sum_{n=0}^{\infty} \frac{1}{n^2 + 3n + 2} \\& \sum_{n=0}^{\infty} \ln \left(1 - \frac{1}{n^2} \right) \\& \sum_{n=0}^{\infty} \ln \frac{n+1}{n} \\& \sum_{n=1}^{\infty} \frac{1}{\sqrt{(n)} + \sqrt{(n+1)}} \\& \sum_{n=1}^{\infty} \frac{3^n + (-2)^{n+1}}{6^n}\end{aligned}$$

Studiati convergenta seriilor

$$\begin{aligned}& \sum_{n=0}^{\infty} \frac{1}{3^n + 4^n} \\& \sum_{n=0}^{\infty} 2^n \sin \frac{\pi}{4^n} \\& \sum_{n=0}^{\infty} \frac{n+1}{n^3 + 2n + 1} \\& \sum_{n=0}^{\infty} \frac{\sqrt{n}}{n+1} \\& \sum_{n=0}^{\infty} (\sqrt{n^2 + n} - n) \\& \sum_{n=0}^{\infty} \frac{n^2}{3^n}\end{aligned}$$

$$\begin{aligned}
& \sum_{n=0}^{\infty} \left(\frac{n+1}{n} \right)^{n^2} \cdot a^n, a > 0 \\
& \sum_{n=0}^{\infty} (-1)^n \frac{1}{\sqrt{n(n+1)}} \\
& \sum_{n=1}^{\infty} \sin \frac{1}{n\sqrt{n}} \\
& \sum_{n=1}^{\infty} \frac{n!}{(a+1)(a+2)\cdots(a+n)}, a \in \mathbb{R} \\
& \sum_{n=1}^{\infty} \frac{\sqrt{n+2} - \sqrt{n}}{n} \\
& \sum_{n=1}^{\infty} \left(\frac{2n+1}{3n+2} \right)^{\frac{n^2}{n+2}} \\
& \sum_{n=1}^{\infty} \frac{n!}{n^n} \\
& \sum_{n=1}^{\infty} \frac{\ln n}{2n^3 + 1}
\end{aligned}$$

Pag 96: 2,3,4,5,6,7

Pag 101: 1,4,5,6,10,11,12,13

Pag 119: 1,2,3

Pag 141: 1,2,3,4,10,11

pag 144: 1,2,3,4

pag 148: 1,2

pag 203: 1,2,4

pag 222: 1,2,3,5

pag 228: 2,3,4,5