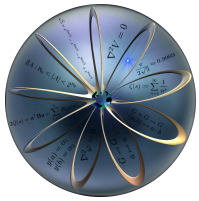

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Cauchy's root test

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If $\sum a_n$ is a series of positive real terms and

$$\sqrt[n]{a_n} < k < 1$$

for all $n > N$, then $\sum a_n$ is convergent. If $\sqrt[n]{a_n} \geq 1$ for an infinite number of values of n, then $\sum a_n$ is divergent.

Limit form

Given a series $\sum a_n$ of complex terms, set

$$\rho = \limsup_{n \to \infty} \sqrt[n]{|a_n|}$$

The series $\sum a_n$ is absolutely convergent if $\rho < 1$ and is divergent if $\rho > 1$. If $\rho = 1$, then the test is inconclusive.