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comparison test

Canonical name	ComparisonTest
Date of creation	2013-03-22 13:21:48
Last modified on	2013-03-22 13:21:48
Owner	mathwizard (128)
Last modified by	mathwizard (128)
Numerical id	4
Author	mathwizard (128)
Entry type	Theorem
Classification	msc 40A05

The series

$$\sum_{i=0}^{\infty} a_i$$

with real a_i is absolutely convergent if there is a sequence $(b_n)_{n \in \mathbb{N}}$ with positive real b_n such that

$$\sum_{i=0}^{\infty} b_i$$

is convergent and for all sufficiently large k holds $|a_k| \leq b_k$.

Also, the series $\sum a_i$ is divergent if there is a sequence (b_n) with positive real b_n , so that $\sum b_i$ is divergent and $a_k \geq b_k$ for all sufficiently large k .