Series

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0.1 Divergence and convergence

An infinite series converges if the limit of its partial sum sequence also converges, otherwise it diverges.

1 Properties

$$\left(\sum_{n=0}^{\infty} a_n\right)\left(\sum_{n=0}^{\infty} b_n\right) = \sum_{n=0}^{\infty}\sum_{k=0}^{n} a_k b_{n-k}$$

1.1 Covergence theorem

If $\sum a_n$ converges then $\lim_{n\to\infty} a_n = 0$