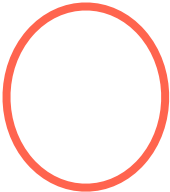


series

n -th partial sum

convergent

divergent





sum of the series

series

Given a series $\sum_{n=1}^{\infty} a_n = a_1 + a_2 + a_3 + \cdots$ we let s_n denote its n -th partial sum

$$s_n = a_1 + a_2 + a_3 + \cdots + a_n$$

If the sequence s_n is convergent and $\lim_{n \rightarrow \infty} s_n = S$ then the series $\sum_{n=1}^{\infty} a_n$ is convergent and we let

$$\sum_{n=1}^{\infty} a_n = \lim_{n \rightarrow \infty} \sum_{i=1}^n a_i = \lim_{n \rightarrow \infty} s_n = \textcircled{S} \leftarrow \text{sum of the series}$$

Otherwise the series is divergent

determine convergence/divergence using limit of S_n