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## Divergence or nth Term Test

Series:  $\sum_{n=1}^{\infty} a_n$ 

## Condition(s) of Convergence:

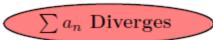
None. This test cannot be used to show convergence.

## Condition(s) of Divergence:

$$\lim_{n\to\infty}a_n\neq 0$$

## TEST FOR DIVERGENCE

Does  $\lim_{n\to\infty} a_n = 0$ ?



The *n*-th Term Test for Divergence: If  $\lim_{n\to\infty} a_n \neq 0$ , then the series diverges.

Note that the converse is *false*, that is, if  $\lim_{n\to\infty} a_n = 0$ , the series may or may not converge.