ALTERNATING SERIES

Does $a_n = (-1)^n b_n$ or $a_n = (-1)^{n-1} b_n$, $b_n \geq 0$? — YES

Is $b_{n+1} \leq b_n$ & $\lim_{n\to\infty} b_n = 0$? — YES → $\sum a_n$ Converges

Alternating Series: Let $\sum_{n=1}^{\infty} a_n$ be a series such that

i) the series is alternating

ii) $\left| a_{n+1} \right| \leq \left| a_n \right|$ for all n, and

iii) $\lim_{n\to\infty} a_n = 0$

Then the series *converges*.

Alternating Series Remainder: The remainder R_N is less than (or equal to) the first neglected term

$$\left|R_N\right| \leq a_{N+1}$$

Alt. Series Error: error $\leq \left|a_{n+1}\right|$ (the next term)