

Tests 11.2-11.6.*	Requirements for application	If this is true...	Then we conclude...
limit test for divergence	Any $a_n$	$\lim_{n \rightarrow \infty} a_n \neq 0$	$\sum a_n$ diverges
		$\lim_{n \rightarrow \infty} a_n = 0$	inconclusive
geo. series	$a_n = r^n$	$ r  < 1$	$\sum_{n=1}^{\infty} (r)^n$ converges to $\frac{r}{1-r}$
		$ r  \geq 1$	$\sum (r)^n$ diverges
p-series	$a_n = \frac{1}{n^p}$	$p > 1$	$\sum a_n$ converges
		$p \leq 1$	$\sum a_n$ diverges
integral test	$a_n = f(n)$ ; $f(x) > 0$ , continuous and decreasing on $[1, \infty)$	$\int_1^{\infty} f(x) dx$ converges	$\sum a_n$ converges
		$\int_1^{\infty} f(x) dx$ diverges	$\sum a_n$ diverges
comparison test	$a_n > 0$ known $b_n > 0$	$a_n \leq b_n$ , $\sum b_n$ converges	$\sum a_n$ converges
		$a_n \geq b_n$ , $\sum b_n$ diverges	$\sum a_n$ diverges
limit comparison test	$a_n > 0$ known $b_n > 0$	$\lim_{n \rightarrow \infty} \frac{a_n}{b_n} = L$ , $0 < L < \infty$ and $\sum b_n$ converges	$\sum a_n$ converges
		$\lim_{n \rightarrow \infty} \frac{a_n}{b_n} = L$ , $0 < L < \infty$ and $\sum b_n$ diverges	$\sum a_n$ diverges
		$\lim_{n \rightarrow \infty} \frac{a_n}{b_n} = 0$ or $\infty$ , or DNE	inconclusive
alternating series	$a_n > 0$ $a_{n+1} \leq a_n$	$\lim_{n \rightarrow \infty} a_n = 0$	$\sum (-1)^n a_n$ converge
		other wise	inconclusive
* absolute convergence	Any $a_n$	$\sum_{n=1}^{\infty}  a_n $ converges	$\sum a_n$ converges
		$\sum_{n=1}^{\infty}  a_n $ diverges	inconclusive
combinations	Any $a_n, b_n, c \in \mathbb{R}$ $d \in \mathbb{R}$	$\sum a_n$ converges and $\sum b_n$ converges	$\sum (ca_n + db_n)$ converges