Series or Test	Conclusions	Comments
Divergence Test: For any $\sum_{n=1}^{\infty} a_n$, evaluate $\lim_{n\to\infty} a_n$.	If $\lim_{n\to\infty} a_n = 0$, the test is inconclusive. If $\lim_{n\to\infty} a_n \neq 0$, the series diverges.	This test cannot prove convergence of a series.
Geometric Series: For $\sum_{n=1}^{\infty} ar^{n-1}$,	If $\lvert r\rvert < 1$, the series converges to $\frac{a}{1-r}$. If $\lvert r\rvert \geq 1$, the series diverges.	Write the series in the form $a + ar + ar^2 + \cdots$.
p-Series: For $\sum_{n=1}^{\infty} \frac{1}{n^p}$,	If $p > 1$, the series converges. If $p \leq 1$, the series diverges.	
Alternating Series: For $\sum_{n=1}^{\infty}(-1)^{n+1}b_n$ or $\sum_{n=1}^{\infty}(-1)^n b_n$,	If $0 \leq b_{n+1} \leq b_n$ for all $n \geq 1$ and $b_n \to 0$, then the series converges.	Only applies to alternating series.
Comparison Test: For $\sum_{n=1}^{\infty} a_n$ with $a_n \geq 0$, compare with a known series $\sum_{n=1}^{\infty} b_n$.	If $a_n \leq b_n$ for all $n \geq N$ and $\sum_{n=1}^{\infty} b_n$ converges, then $\sum_{n=1}^{\infty} a_n$ converges. If $a_n \geq b_n$ for all $n \geq N$ and $\sum_{n=1}^{\infty} b_n$ diverges, then $\sum_{n=1}^{\infty} a_n$ diverges.	Typically used for a series similar to a geometric or p-series. It can sometimes be difficult to find b_n.
Limit Comparison Test: For $\sum_{n=1}^{\infty} a_n$ with $a_n \geq 0$, compare with a series $\sum_{n=1}^{\infty} b_n$ with $b_n > 0$ by evaluating $L = \lim_{n\to\infty} \frac{a_n}{b_n}$.	If L is a real number and $L \neq 0$, then both $\sum_{n=1}^{\infty} a_n$ and $\sum_{n=1}^{\infty} b_n$ either converge or diverge. If $L = 0$ and $\sum_{n=1}^{\infty} b_n$ converges, then $\sum_{n=1}^{\infty} a_n$ converges. If $L = \infty$ and $\sum_{n=1}^{\infty} b_n$ diverges, then $\sum_{n=1}^{\infty} a_n$ diverges.	Typically used for a series similar to a geometric or p-series. Often easier to apply than the comparison test.
Ratio Test: For any $\sum_{n=1}^{\infty} a_n$, evaluate $\rho = \lim_{n\to\infty} \left\lvert \frac{a_{n+1}}{a_n} \right\rvert$.	If $0 \leq \rho < 1$, the series converges absolutely. If $\rho > 1$, the series diverges. If $\rho = 1$, the test is inconclusive.	Often used for series with factorials or powers of n. Does not require a comparable series b_n.
Integral Test: If there exists a positive, continuous, decreasing function f such that $a_n = f(n)$ for all $n \geq N$, evaluate $\int_N^{\infty} f(x)\,dx$.	$\int_N^{\infty} f(x)\,dx$ and $\sum_{n=1}^{\infty} a_n$ both converge or both diverge.	Limited to those series for which the corresponding function f can be easily integrated. Does not require a comparable series b_n.