Series C n er ence Tests

Test	hen To Use	Conclusions [1]
Geometric Series	$\sum_{k=0}^{\infty} ar^k$	Converges to $\frac{a}{1-r}$ if $\|r\| < 1$; diverges if $\|r\| \geq 1$.
k^{th} Term Test	All series	If $\lim_{k \to \infty} a_k \neq 0$, the series diverges.
Integral Test	Where $a_k = f(k)$ and f is continuous, decreasing, and $f(x) \geq 0$ for all x.	$\sum_{k=0}^{\infty} a_k$ and $\int_{1}^{\infty} f(x)dx$ either *both* converge or *both* diverge.
p-series	$\sum_{k=0}^{\infty} \frac{1}{k^p}$	