The 'Mac'Lauren

Always start with the: Nth term test	
$\lim_{n\to\infty} a_n$	
= 0	≠ 0
inconclusive	diverges

What to look for:	$\frac{1}{n^p}$		$\sum a(r)^n$		$\sum (a_n)^n$		Factorials and exponentials		$(-1)^n$	
Test to use:	p-series		Geometric series		Root test		Ratio test		Alternating series test	
How to apply it:					$\lim_{n\to\infty} \sqrt[n]{\lvert a_n \rvert}$		$\lim_{n\to\infty} \left\lvert \frac{a_{n+1}}{a_n} \right\rvert$		$\lim_{n\to\infty} \lvert a_n \rvert$	
Result:	p > 1	p ≤ 1	|r| < 1	|r| ≥ 1	< 1	> 1	< 1	> 1	= 0	≠ 0
	converge	diverge	converge	diverge	converge	diverge	converge	diverge	converges	Use nth term to show divergence

What to look for:	$\sum a_n - b_n$		An obvious u-sub		Obviously < or > a similar function		Great for $\frac{n^a+\#}{n^b+\#}$, also $\sin\left(\frac{1}{n}\right)$ *and* $\tan\left(\frac{1}{n}\right)$
Test to use:	Telescoping series		Integral test		Direct comparison test		Limit comparison test
How to apply it:	Write out first several terms to determing if the interior terms all cancel		$\lim_{b\to\infty} \int_1^b a_n$				$\lim_{n\to\infty} \left\lvert \frac{a_n}{b_n} \right\rvert$
Result:	Sum = #	Sum = ∞	= #	= ∞	< converging	> diverging	Limit is positive and finite
	converge	inconclusive	Converge	diverge	converge	diverge	The functions match