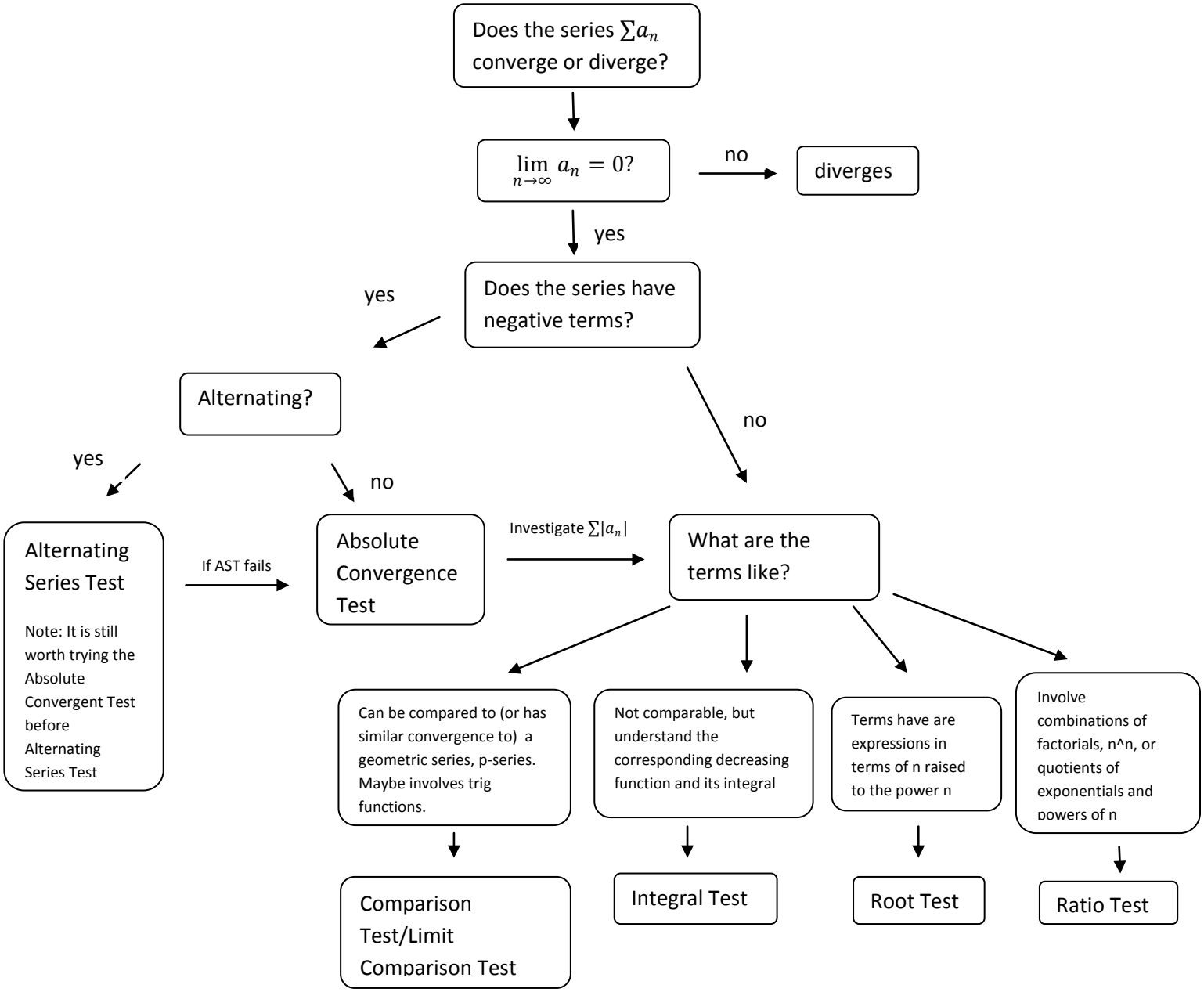
Does the series $\sum a_n$ converge or diverge?
$\lim_{n\to\infty} a_n = 0$?
no
diverges
yes
Does the series have negative terms?
yes
Alternating?
yes
no
Alternating Series Test
Note: It is still worth trying the Absolute Convergent Test before Alternating Series Test
If AST fails
Absolute Convergence Test
Investigate $\sum |a_n|$
no
What are the terms like?
Can be compared to (or has similar convergence to) a geometric series, p-series. Maybe involves trig functions.
Not comparable, but understand the corresponding decreasing function and its integral
Terms have are expressions in terms of n raised to the power n
Involve combinations of factorials, n^n, or quotients of exponentials and powers of n
Comparison Test/Limit Comparison Test
Integral Test
Root Test
Ratio Test