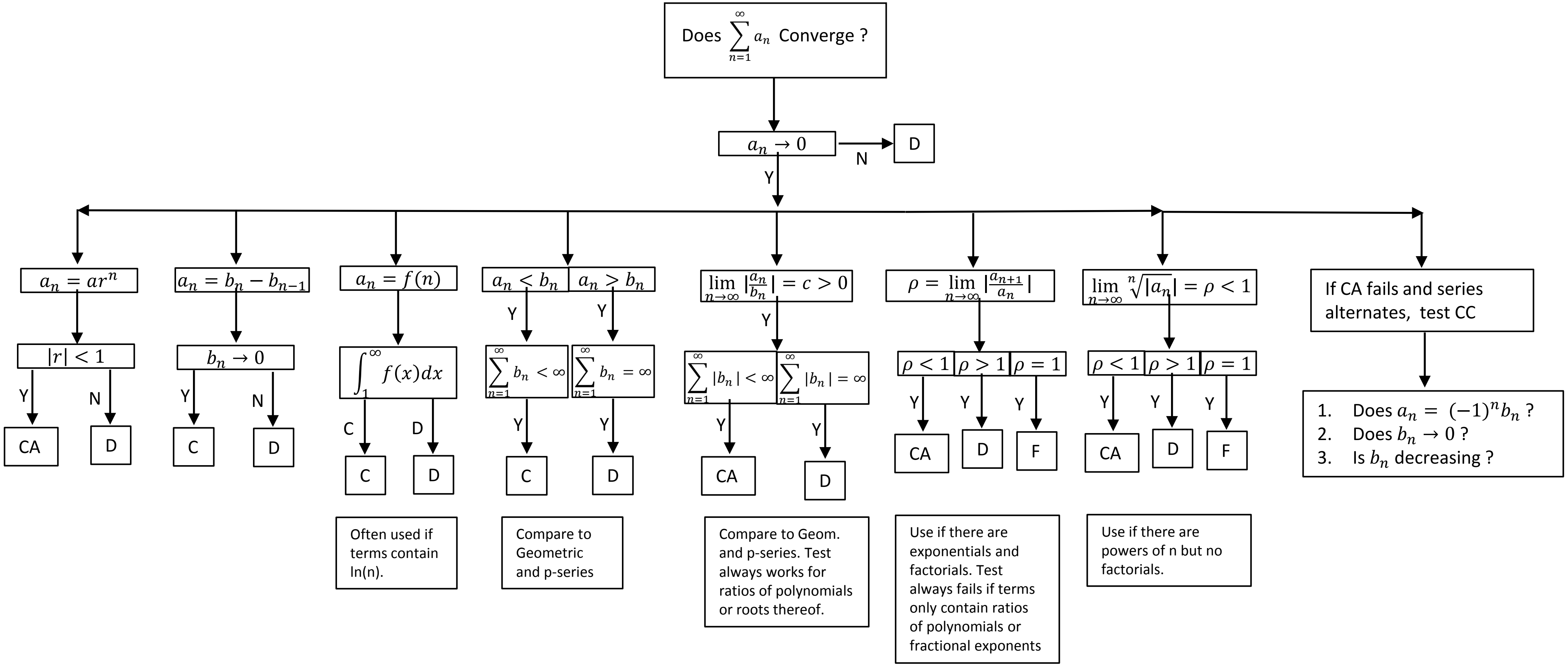

Does $\sum_{n=1}^{\infty} a_n$ Converge ?
$a_n \to 0$
N
D
Y
$a_n = ar^n$
$|r| < 1$
Y
N
CA
D
$a_n = b_n - b_{n-1}$
$b_n \to 0$
Y
N
C
D
$a_n = f(n)$
$\int_1^{\infty} f(x)dx$
C
D
C
D
Often used if terms contain ln(n).
$a_n < b_n$
$a_n > b_n$
Y
Y
$\sum_{n=1}^{\infty} b_n < \infty$
$\sum_{n=1}^{\infty} b_n = \infty$
Y
Y
C
D
Compare to Geometric and p-series
$\lim_{n\to\infty} |\frac{a_n}{b_n}| = c > 0$
Y
$\sum_{n=1}^{\infty} |b_n| < \infty$
$\sum_{n=1}^{\infty} |b_n| = \infty$
Y
Y
CA
D
Compare to Geom. and p-series. Test always works for ratios of polynomials or roots thereof.
$\rho = \lim_{n\to\infty} |\frac{a_{n+1}}{a_n}|$
$\rho < 1$
$\rho > 1$
$\rho = 1$
Y
Y
Y
CA
D
F
Use if there are exponentials and factorials. Test always fails if terms only contain ratios of polynomials or fractional exponents
$\lim_{n\to\infty} \sqrt[n]{|a_n|} = \rho < 1$
$\rho < 1$
$\rho > 1$
$\rho = 1$
Y
Y
Y
CA
D
F
Use if there are powers of n but no factorials.
If CA fails and series alternates, test CC
1. Does $a_n = (-1)^n b_n$?
2. Does $b_n \to 0$?
3. Is b_n decreasing ?