

Section 11.7: Does it Converge? A Testing Strategy.

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10:35 PM

Goal: To determine which test for convergence (or divergence) to apply.

Guidelines for Deciding which Test to Use.

1. Apply the nth-Term Test for Divergence first. $a_n \rightarrow 0, \sum a_n D$
2. See if the series is a p-series or geometric series.
3. If the series has positive terms...
 - a. try the Comparison Test or Limit Comparison Test.
 - b. Try the Ratio Test if the series involves an $n!$ or an exponential function (c^n).
 - c. Try the Root Test if the series involves a function of n to the n th power. Sometimes the root test also works with exponential functions.
 - d. Try the Integral Test if the terms of the series are decreasing to 0.
4. If the series is alternating, check for absolute convergence using one of the above tests or use the Alternating Series Test to check for conditional convergence.