

Learning Objectives for Power Series

Below are some of the learning objectives for everything that we have done with power series. Although it is important to be able to do problems, it is also important to have a qualitative understanding of what the intention of those problems is. If you can answer these questions in full sentences, this is a good start. From there, you can begin to do quantitative problems.

1. To understand and be able to apply the ratio test to determine the convergence or divergence of a series.
2. To understand and be able to apply the idea of a power series.
3. To be able to determine the radius and interval of convergence of a power series.
4. To understand and be able to represent functions as power series.
5. To be able to differentiate and integrate power series to obtain new ways to represent functions as power series.
6. To understand and be able to compute Taylor and Maclaurin series.
7. To understand and be able to find the Taylor polynomial of a function.
8. To understand the convergence of a Taylor series.
9. To understand and be able to make computations using Taylors Inequality and Taylors Remainder Theorem.
10. To understand how Taylor polynomials can be used to approximate functions.