Math 105 Week 13 Learning Goals

1 Overview

We continue our study of power series, focusing on the relation between known functions and their power series representations.

2 Learning Objectives

These should be considered a minimum, rather than a comprehensive, set of objectives. By the end of the week, having participated in lectures, worked through the indicated sections of the textbook and other resources, and done the suggested problems, you should be able to independently achieve all of the objectives listed below.

1. Given a function f that can be differentiated up to any order, write down the Taylor series for f with center a. Define the Maclaurin series of f. [Recall/Procedural]

2. Manipulate Taylor series of known functions to obain Taylor series for other functions. [Procedural/Conceptual]

   Reading: Text § 9.3 (pp. 684 — 688)

3. evaluate a power series in terms of a known function. Use this to evaluate certain numerical series. [Procedural]

   Reading: Text § 9.4(pp. 696 — 702)