Math 140a Fall 2015 Homework 7

Due Friday November 13 by 5pm in HW box in basement of AP&M

Reading

Finish reading Chapter 3 and begin to read Chapter 4. This homework is a shorter one to address a few concepts from Chapter 3 that have not yet appeared on homework. The final two homeworks will be about Chapter 4.

Assigned problems from the text (write up and hand in):

Chapter 3: #9, 10, 13

Additional problems (also write up and hand in):

A. Does $\sum_{n=0}^{\infty} n^4 e^{-n^2}$ converge?

B. Let $\sum_{n=0}^{\infty} a_n z^n$ be a power series with radius of convergence R. Show that for any $z \in \mathbb{C}$ with $|z| < R$, the series $\sum_{n=0}^{\infty} a_n z^n$ is absolutely convergent. Show by example that for $z \in \mathbb{C}$ with $|z| = R$, it is possible for $\sum_{n=0}^{\infty} a_n z^n$ to be convergent but not absolutely convergent.

Optional problem (handing in is not required)

Chapter 3: #24