

## MATH 311H: Homework 13

Due: December 11 at 5 pm

1. Office hours this week are Monday, December 4 2-3 on Zoom at Meeting ID 570 840 4797 with passcode cycle, and Thursday, December 7 10-11 in LSH 102D.
2. Recall that the final exam is Monday, December 18 8-11 am in our usual room. It will be nine questions long and similar in style to the midterms. A sample final will be posted sometime before the final recitation on Tuesday December 12.
3. Read Sections 6.4-6 in Abbott.
4. Do exercises 6.2.1, 6.2.3, 6.3.3, 6.4.7, 6.5.6 in Abbott.
5. Find the radius of convergence and the interval of convergence of each of the following power series.

(a)  $\sum_{n=1}^{\infty} n^2 x^n$

(b)  $\sum_{n=1}^{\infty} \frac{2^n}{n^2} x^n$

(c)  $\sum_{n=1}^{\infty} \frac{2^n}{n!} x^n$

(d)  $\sum_{n=1}^{\infty} \frac{3^n}{n4^n} x^n$

(e)  $\sum_{n=1}^{\infty} a_n x^n$  for  $a_n = \left( \frac{4+2(-1)^n}{5} \right)^n$