

Math 131 Day 37

My Office Hours: M & W 12:30–2:00, Tu 2:30–4:00, & F 1:15–2:30 or by appointment. **Math Intern** Sun: 12–6pm; M 3–10pm; Tu 2–6, 7–10pm; W and Th: 5–10 pm in Lansing 310. Website: <http://math.hws.edu/~mitchell/Math131S13/index.html>.

Reading

Review Section 8.6 on Alternating Series. Skip from the bottom of page 580 through 581. Then read pages 589–593. Also review the **online notes**. You should know the definitions of **Absolute** and **Conditional Convergence**. Begin Section 9.1 on Taylor Polynomials, through page 595.

Review the chart on page 584. It is a good guide.

Two New Tests

- 1. The Alternating Series Test.** Assume $a_n > 0$. The alternating series $\sum_{n=1}^{\infty} (-1)^n a_n$ converges if the following two conditions hold:
- a) $\lim_{n \rightarrow \infty} a_n = 0$
 - b) $a_{n+1} \leq a_n$ for all n (i.e., a_n is decreasing).

- 2. Absolute Convergence Test.** If the series $\sum_{n=1}^{\infty} |a_n|$ converges, then so does the series $\sum_{n=1}^{\infty} a_n$.

Practice

- 1. Basics: Page 585 #11, 13, and 17.
- 2. More interesting: Page 585 #21 and 23.
- 3. Do you understand the difference between absolute and conditional convergence: Page 585 #39, 43(ez), 44(conditional), and 45.

Hand In

- 1. Do the problems on the other handout and bring to lab (graded). **There is a quiz at the end of lab.**
- 2. Begin WeBWork Day 37 (Due Sunday night.)