

## Part I

No Part I this time. Please bring a laptop to class Friday.

## Part II

No Part II this time.

## Part III: Homework Problems (due FRIday, April 26 at the beginning of class)

We keep forgetting to talk about when Part IIIs are due this week. Let's make them all due Friday.

1. For each part, use an appropriate Maclaurin series to express the quantity as an alternating series and then use the error bound theorem to approximate the quantity to within 0.001 of its actual value.

(a)  $e^{-0.3}$

(b)  $\ln 1.5$

2. Each of the following series is based on a common Maclaurin series. Use this knowledge to (a) rewrite the series as a function and (b) give the interval of convergence of the series.

(a)  $3 - \frac{3^3 x^2}{3!} + \frac{3^5 x^4}{5!} - \frac{3^7 x^6}{7!} + \dots$

(b)  $x^4 - \frac{x^{12}}{3} + \frac{x^{20}}{5} - \frac{x^{28}}{7} + \dots$

## Final Self Evaluation (due Friday, May 3, at the final Celebration of Learning)

For your final self evaluation, reflect on your learning in the course as a whole and your progress on each of the Mathematical Practices Learning Targets listed on the syllabus. Your self evaluation should include what you've learned about yourself as a student and how you will use that self-knowledge in your future academic endeavors. In addition, answer (at least) one of these questions:

- Choose one mathematical idea from this course that you have found beautiful and explain why you find it beautiful. Your answer should both explain the idea in a way that could be understood by a student who has taken Calculus I but has not yet taken Calculus II and also address how this beauty is similar to or different from other kinds of beauty.
- Give an example of a mathematical idea from this class that you found creative and explain what you found creative about it. As an option, you can choose an instance of creativity you experienced in your own problem solving or an example you witnessed in someone else's problem solving.