

Math 15300/14 Homework 4

Due date: Thursday, February 6, 2020, 5pm (in my mailbox in Eckhart basement)

Please present your solutions clearly and in an organized way. Think of it this way: if you show it to another student in this class, he/she should be able to understand it without needing to ask you questions.

## Wolfram Alpha

Wolfram Alpha is a very useful tool. Check it out if you have not used it before: <http://wolframalpha.com>. For example, try entering the following text into Wolfram Alpha:

- `plot y = sin(1/x)`      ([direct link](#))
- `integrate x/(x^2+2x+5)^2 dx`      ([direct link](#))
- `eevee curve`      ([direct link](#))

## January 30

Goals:

- Use tests of series convergence
- Come up with examples and counterexamples of sequences/series for various statements

### Section 12.2:

- 28, 30, 33

### Section 12.3:

- 37, 47, 48 (Note that even though 47 and 48 seem to be about the limit comparison test, it's actually not useful for these problems. You can do 47 and 48 with what we have seen in class already.)

## February 4

Goals:

- More tests of series convergence

### Section 12.3:

- 1, 5, 15, 17, 13, 25

### Section 12.5:

- 3, 5, 17, 19, 35, 45

Note: I didn't want to assign too many problems. For more practice, and when it comes to studying for exams, I'd recommend taking a look at more of 1–36 in 12.3, and 1–29 in 12.5.

**This is all for HW 4.**