Assignment #7

Due Monday 11 November, 2013 at the start of class

Please read sections 14, 15, 16, and 17 of the textbook *Elementary Analysis*. Then do *all* of the following exercises. Turn them in on paper.

For this assignment, because of its timing relative to Midterm 2, you do not have to do any problems in LaTeX or email me anything.

Exercise 14.7.

Exercise 14.8.

Exercise 14.11.

Exercise 14.13 (b), (c).

Exercise 15.6 (a), (c).

Exercise 16.4 (b), (f).

Exercise 16.5 (b), (f).

Exercise 16.7.

Exercise E6. Determine which of the following series converge. Justify your answers. (*Hint*. This problem is similar to 15.1.)

(a)

$$\sum_{n=1}^{\infty} \frac{(-1)^n}{\sqrt{n}}$$

(b)

$$\sum_{n=1}^{\infty} \frac{\sin\left(\frac{n\pi}{2}\right)}{\ln n}$$

Exercise E7. Show that the following sum converges. Then use a computer to find an estimate of the sum which is accurate to three decimal digits; justify your three digit claim:

$$\sum_{n=0}^{\infty} \frac{(-1)^n}{n^{3/2}+1}$$