

Homework 1, due Friday 31 August.

Because of the nature of the problems, 4600 students must do 1. and 2. individually.

1. (35 points) Do this problem as a Good Problem, paying attention to the *Layout* handout. You are encouraged but not required to L^AT_EX your good problems. See the back of this sheet for a description of the Good Problems. Target length is 2 pages.

Write your mathematical autobiography. Include your background, current interests, future goals, why you are taking this class, and whatever else is relevant or interesting.

2. (35 points)

- Explore Wikipedia <http://en.wikipedia.org/> and Wikiversity <http://en.wikiversity.org/>
- If you do not already have an account, click on **create account** in the upper right and make one. Note: You can have a user page on Wikipedia and another on Wikiversity, which can sometimes be confusing. 5600 students make sure to create your account from Wikiversity so your user page will be there.
- Read the editing instructions at http://en.wikipedia.org/wiki/Wikipedia:How_to_edit_a_page
- Go to your user page (by clicking on your username at the top) and edit it to have
 - A list of five things you learned about wikipedia/ wikiversity.
 - Some complicated math formula.
- Submit the URL of your user page. I will grade it online.

3. (30 points) Figure out which language/ environment you will use for programs in this class. Your main options are:

- MATLAB, which is available many places on campus. If you want your own personal copy you have to pay for it.
- OCTAVE <http://www.gnu.org/software/octave/> which is free software and mostly compatible with MATLAB.
- PYTHON <http://www.python.org/> using SCIPY <http://www.scipy.org/> which are free and more powerful, but not as easy to use.
- Another language and environment of your choice; I will not provide support for it, however.

I will phrase some assignments as MATLAB problems, but you are free to substitute another language.

- (a) Tell me what your choice is and your reasons for choosing it.
- (b) Write a (function) program to compute the relative error of an approximation. The inputs are the exact value e and the approximate value a and it should return $|(e - a)/e|$. Include many comments within your program. Print and submit the program and the result of running it on a few examples.