

Homework 8 for Math 480A
<http://wiki.wstein.org/2008/480a>
Due Wednesday May 28, 2008

Each problem has equal weight, and parts of problems are worth the same amount as each other. There are **3 problems**. I have office hours MWF 2:30-3:30 in Sieg 312, unless otherwise stated. You can email me about problems; all responses will be cc'd to `sage-uw`, so you may want to subscribe to that mailing list.

1. Implement the bracketing algorithm to minimize a function of one variable that Josh Kantor described at the beginning of the lecture on May 14. Illustrate this algorithm by minimizing a function of your choice on an interval of your choice. You might want to build on code from class on May 12.
2. Use Sage to minimize the function $x^2 + y^2$ in a neighborhood of 0. (Of course the answer is obvious, but using Sage to do it perhaps isn't totally trivial.)
3. (a) Show how to use Sage to create a random $100 \times 100 \times 3$ numpy 3d-array with entries that are normally distributed with mean 0 and variance 1/2.
(b) Draw a plot that somehow helps you to visualize this $100 \times 100 \times 3$ array.