Math 6833 assignments

15. (due 9/28) Write a brief report on your work with GAP to date. Also, describe your work with any other software that you have examined as part of your effort for this course. You can hand this in as a physical document or as email.

16. (due 9/28) Two invariants from knot theory are the Scharlemann-Thompson invariant and the principal slope invariant. They take values in the rational numbers, and are related as follows: Suppose that r is one of the invariants. It is known that $r = q/p$ with q odd, which implies that it has a continued fraction expansion of the form $[2a_1, 2b_1, 2a_2, 2b_2, \ldots, 2a_n, b_n]$ where $b_n \neq 0$. Let $a = \sum a_i$. Then the other invariant is $[(-1)^p 2a, -b_n, -2a_n, -2b_{n-1}, -2a_{n-1}, \ldots, -2a_2, -2b_1]$. Write a GAP routine to convert between the two invariants. Please hand it in by email. (If this exercise is too advanced for your GAP skills, then hand in HW #8 and at least part of HW #9 instead.)

17. (due ASAP) Please attempt to install the Hugs Haskell Intepreter (see the Hugs online link on our links page). Gavin is going to be out of town for three months, leaving in about a week, so we need to get going on this sooner than expected. I have asked him to make it available on aftermath, but it is best to have your own implementation.

18. (due 10/3) Download the Haskell lecture, "Getting started" from our links page and work through it on the Hugs interpreter.