

**Final exam**

Due in class, Friday June 6

Your task is to produce two problems, suitable for the Statistics Theory Prelim exam (Second Year Theory Exam). Each problem needs to have

- (a) A clear problem statement with careful attention to stating the assumptions
- (b) A complete and correct solution
- (c) A motivation for why this is a suitable problem

To gauge suitable levels you can look at old exams, but you may not use any problems from old prelims, or from final exams in the 580s. A good problem may use material from different parts of the course. It should be doable in 30 minutes, at most.

This is a take-home exam, and you may use any resources except communication with other students. Chris and Peter will be available to answer technical questions (such as “What are the assumptions needed for the asymptotic result for quadratic functional?” or “Can we assume that students know the law of the iterated logarithm?”), or questions about the syllabus for the exam (such as “Is it OK to have a question on the Gauss-Markov theorem?”) but we will not answer questions about the suitability of a particular problem (such as “Is this problem too hard?”). If in doubt ask, we will answer if we judge it an appropriate question.

The official syllabus for the exam is available at

<http://www.stat.washington.edu/graduate/programs/phd/exams/theory/>

It is woefully out of date (for example, the 570s are no longer required for the exam).