

## How to prepare for your exam

November 29, 2006

- **Syllabus.** Here is the exact syllabus. The lecture notes by Derek Holt (version 1 September 2006). Not example 43 (higher derangements). Plus all B exercises from the assignments. Subject to change.
- **Mock exam.** On our webpage you can find a mock exam. It is similar in difficulty and question style as the exam (this says nothing about the topics covered.) The main aim of the mock exam is to give you an impression what is awaiting you on the exam. Solutions to the mock exam will not be made available.
- **How to prepare for your exam.** The way to prepare for your exam is to do many (appropriate) exercises.
- **What to memorize.** Below you can find the short list of theorems that you need to know by heart, or at least be able to reproduce within a short time during the exam. All other theorems (all of them are actually formulas) from the lectures will be provided on the exam, at least if needed. Other things you can be asked about on the exam are all definitions (except a few mentioned below) and all proofs — in other words, everything except the definitions below and the theorems *not* below.

Theorems that you need to be able to reproduce and use:

$$\sum_{k=0}^n x^k = \frac{x^{n+1} - 1}{x - 1} \quad (\text{page 7})$$

$$\binom{r}{k} = \binom{r-1}{k} + \binom{r-1}{k-1} \quad (\text{page 24})$$

$$\sum_{n \geq 0} \binom{r}{n} x^n = (1+x)^r \quad (\text{page 27})$$

Everything in section 6.1

Definitions that you do not need to learn by heart: Spectrum (section 3.3), Harmonic numbers (section 5.2), Fibonacci numbers (section 5.3), Bernoulli numbers and polynomials (example 41), Bell numbers (example 42), Higher Derangements (example 43). These topics are on the syllabus though (except higher derangements)!

- Don't forget: Any questions, just send me an email or drop by in my office. Good luck with your exam!

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