

Final Exam Topics

December 11, 2015

1 What we covered

1. Bóna, Chapters 1,2,3,4,5 in their entirety
2. Bóna, Chapter 6 including 6.1 but not 6.2
3. Bóna, Chapter 7 in its entirety
4. Bóna, Chapter 8, only certain topics: for which ones exactly, take a look at the review sheet I gave out before the quiz
5. Bóna, Chapter 9 and 10 in its entirety
6. Brief overview of colouring and matching, including the stable matching algorithm (Gale-Shapley algorithm) that we demonstrated with volunteers in class, and a brief mention of Ramsey theory. Know the relevant definitions, and be able to perform the matching algorithm, and compute chromatic numbers and chromatic polynomials of the simplest examples (as in class).
7. Combinatorial Games and Surreal Numbers:
 - (a) Know the basic construction of surreal numbers and be able to do a computation showing \leq or $+$.
 - (b) Know the basic construction of games (how does it differ from surreal numbers), and do computations such as adding games.
 - (c) Know the meaning of 0, positive, negative and fuzzy
 - (d) Be able to compute the 'game' of a simple Hackenbush, Col or Nim position, i.e. is it 0, $\{0|0, 1\}$, $*$ or $1 + *$ etc.