

SUGGESTIONS FOR HOW TO STUDY FOR THE FINAL EXAM

MARTIN OLSSON

The length of this test will be roughly twice that of the quizzes. As in those tests, my goal is not to test your trickiness but rather your understanding of the main theorems covered in class and their applications in various corollaries, examples, and exercises.

Everything discussed in lecture or on homework is fair game, but please remember that I try to be reasonable and test the key ideas so plan your studying accordingly.

Concretely, here are some hints for studying:

- (1) Go over the study suggestions for quizzes 1 and 2, and study them in light of the questions asked on the tests. I feel that these questions highlighted the key aspects fairly well and are of a nature which you can expect on the final (except possibly for question 4 on quiz 1 which perhaps was too tricky; however, the ideas of the solution to this question are important).
- (2) Regarding the material since quiz 2, the questions on the final will be largely mechanical applications of the key definitions and theorems. So here I would go over the following with an eye towards actually computing things in examples: projective space, points at infinity, smooth and singular points, Faltings theorem (also known as the Mordell conjecture), Mazur's theorem, the Lutz-Nagell theorem (no need to remember the formula for the discriminant). A good exercise is to compute the torsion subgroup of an elliptic curve (just write down a random elliptic curve and start computing!). An example for how to do such a calculation will be handed out on Wednesday May 14.