

Complex multiplication

We follow largely chapter two to four of the second edition of the book *Primes of the Form $x^2 + ny^2$* by David Cox. Every talk (except talk 4) should cover the corresponding section of the book.

Talk 1. Overview and Orders in imaginary quadratic fields

Talk 2. Class field theory and the Chebotarev density theorem

Talk 3. Ring class fields and $p = x^2 + ny^2$

Talk 4. Overview: Complex analysis

Talk 5. Elliptic functions and complex multiplication

Talk 6. Modular functions and ring class field

Talk 7. Modular functions and singular j -invariants

Talk 8. The class equation

Talk 9. Elliptic curves

Talk 10. Shimura reciprocity