

## ALGEBRAIC NUMBER THEORY

### HOMEWORK 5

- (1) Compute all reduced forms of discriminant  $\Delta = -4 \cdot 17$ .
- (2) Use Shanks' method to compute the composition table for all reduced forms of discriminant  $\Delta = -4 \cdot 17$ .
- (3) Compute all reduced forms of discriminant  $\Delta = -47$ .
- (4) Let  $Q = (2, 1, 6)$  denote a form of discriminant  $-47$ . Show that  $5[Q] = [Q_0]$  in the class group of forms. (Hint: compute  $2[Q]$  and  $4[Q]$  using composition.)