Algebra 2 (2012)-Aalborg University
Lecture 5, February 16th

5th Lecture (A): Thursday February 16th, 8:15-12:00 at room G5-112.

- 8:15-8:45 Repetition from last lecture. Quotient rings. Ring homomorphisms. The unique ring homomorphism from $\mathbb{Z}$. Binomial formula in prime characteristic (116–123).

- 8:45-10:45 Work in groups: Exercises from [Lau], 3.6 (page 138) + 1 exercise: 11, A, 18, 19, 23, 16, 13, 15, 12 + some exercises from previous lectures that you did not solved yet.

  Exercise A: Check that
  $$\begin{array}{rcl} \varphi : \mathbb{Z}/6\mathbb{Z} & \to & \mathbb{Z}/6\mathbb{Z} \\ [x] & \mapsto & [3][x] \end{array}$$

  is not a ring homomorphism because (only) one of the necessary condition is not satisfied.

- 10:45-12:00 Lecture: Equivalence relations and construction of $\mathbb{Q}$. Field of fractions. Unique factorization (pages 123–126 + 227).

Best regards,

Diego