

Algebra 1 (2011)-Aalborg University

Lecture 11, October 17th

11th Lecture: Monday October 17th, 8:15-12:00 at room G5-112.

- 8:15-8:45 Repetition from last lecture. More examples of groups. Subgroups and cosets (pages 57-64).
- 8:45-10:45 Work in groups. Exercises from [Lau], 2.11 (page 104): 10, A, 11, 12 (only the first question), 15 (only (i) and (ii)), B, C.
Exercise A: Let $G = \mathbb{Z}/6\mathbb{Z}$ and $H = \{[0], [3]\}$, compute G/H .
Exercise B: Let H be a finite nonempty subset of a group G . Prove that H is a subgroup of G if and only if H is closed.
Exercise C: Let H and K be subgroups of a group G . Show that $H \cap K$ is a subgroup of G .
- 10:45-12:00 Lecture: Normal subgroups. Quotient groups of the integers. The multiplicative group of prime residue classes (pages 64–67).

Best regards,

Diego