

Algebra 1 (2011)-Aalborg University

Lecture 25, December 13th

25th Lecture: Tuesday December 13th, 8:15-12:00 at room G5-112.

- 8:15-10:00 Repetition and lecture. Actions of groups (pages 92–100).
- 10:00-12:00 Work in groups. Exercises from [Lau], 2.11 (page 104): 40 (hint: use $\tau = (1\ 2)$ and lemma 2.9.8 for (ii)), 51, 49, A, 41, 45, B, C + some exercises from previous lectures that you did not solved yet.

Exercise A: Write all the elements of S_4 , each factored into disjoint cycles. Compute A_4 .

Exercise B: Let $H = \{e, (1\ 2)(3\ 4), (1\ 3)(2\ 4), (1\ 4)(2\ 3)\}$. Show that H is a normal subgroup of A_4 . Compute A_4/H and write down the composition table of A_4/H .

Exercise C: Self-study examples 2.10.6, 2.20.9 and 2.10.10 (and lemma 2.10.8).

Best regards,

Diego