

Algebra 1 (2011)-Aalborg University

Lecture 23, December 5th

23rd Lecture: Monday December 5th, 8:15-12:00 at room G5-112.

I will not be present during this lecture. The group G3-114 will be responsible for the lecture.

- 8:15-8:45 Repetition. Group G3-114 will give this lecture. Symmetric and alternating groups. Simple groups (pages 78–86).
- 8:45-11:45 Work in groups and self-study.
 - Exercises from [Lau], 2.11 (page 104): 43, 40 (hint: use $\tau = (1\ 2)$ and lemma 2.9.8 for (ii)), 51, 49 (i)(ii)(iii), A, 41, 45, B.
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 .
 - Self-study. Simple groups and the 15-puzzle (pages 86–92).
- 11:45-12:00 Common discussion in the lecture room directed by group G3-114. At the end of the lecture, group G3-114 will orientate the teacher, by e-mail, about the concrete successes and difficulties during the lecture.

Best regards,

Diego