Algebra 2010-Aalborg University

12th Lecture: Thursday October 21st, 8:15-12:00 at room G5-112.

- 8:15-8:45 Repetition from last lecture. Symmetric group. Simple transpositions. The alternating group (pages 83–86).

- 8:45-10:45 Work in groups. Exercises from [Lau], 2.11 (page 104)+ 2 other exercises: exercise A, 39 (hint: use exercise 15 (iii)), exercise B, 43, 40 (hint: use $\tau = (1\ 2)$ and lemma 2.9.8 for (ii)), 49 (i)(ii)(iii), 41 + some exercises from previous lectures that you did not solved yet.

  Exercise A: Write a permutation that is not a k-cycle for any k?

  Exercise B: Compute the order of the permutation $(1\ 2\ 3\ 4)(5\ 6\ 7)(8\ 9)$. Compute the order of the permutation $(1\ 2\ 3\ 4)(2\ 6\ 7)(8\ 9)$. (Hint: the first one is easy, for the second one we have to do computations)

- 10:45-12:00 Lecture: Rings, basic definitions and examples. Ideals (pages 112–116).

Best regards,

Diego Ruano