

# MAT 551: Algebra I

## Exercise Sheet 4

Stefan Kohl

May 27, 2011

Due: Monday, June 6, 2011

Exercise 16 (Version 6): Let

$$G := \left\langle \begin{pmatrix} -1 & 1 & -1 & -1 \\ -1 & 0 & 0 & 0 \\ 0 & -1 & 1 & 0 \\ 0 & -1 & 0 & 1 \end{pmatrix}, \begin{pmatrix} 0 & 1 & -1 & -1 \\ 0 & 0 & 0 & -1 \\ -1 & 1 & 0 & -1 \\ 0 & -1 & 0 & 0 \end{pmatrix} \right\rangle < \mathrm{GL}(4, \mathbb{Z}).$$

Find out about the group  $G$  as much as you can. You will hand in your written answers on June 6. Further you will give a short (about 5 minute) talk about your findings on June 8 and answer a few questions on them at the blackboard. It is allowed to use a computer algebra system such as **GAP**. (Credits: unspecified, depends on what you do and how you present it.)