Instructions. Write all answers clearly on one piece of paper, and put all group members’ names on the top of the paper. If you talk, you must do so very quietly!

1. What is the role of the binary operation in defining a group?

2. Besides having a binary operation, what are the names of the three properties a nonempty set must have to be a group?

3. How can we make the set of $2 \times 2$ matrices over the real numbers a group under matrix multiplication?

4. An Abelian group satisfies $ab = ba$ for all pairs $a, b$ in the group. Give an example of an Abelian (commutative) group and a non-Abelian group, being clear which is which.