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 condition for a subgroup $H \leq G$ to be a normal subgroup? Be specific with any quantifiers.

2. (True/False) The center $Z(G)$ is a normal subgroup of G.

3. What is meant by the *factor group* formed in G using a normal subgroup H of G?

4. (True/False) The dihedral group D_4 contains a nontrivial normal subgroup (i.e., one that is neither just the identity nor all of D_4).

5. How should we arrange the Cayley table of G in order to understand the structure of the factor group G/H for some normal subgroup H of G?