Chapter 7A Random Group Quiz. Math 430-001 (Ellis)

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. If $H$ is a subgroup of $G$, then what is a coset of $H$ in $G$?

2. Suppose $|G| = 10$ and $|H| = 5$, where $H$ is a subgroup of $G$. How many distinct cosets of $H$ are there in $G$?

3. What is the difference between a left coset and a right coset of $H$ in $G$?

4. (True/False) All cosets of $H$ in $G$ are the same size.

5. (True/False) If $G$ is non-Abelian, then it is possible for distinct cosets of $H$ in $G$ to overlap but not be equal.

6. Suppose a group $G$ has $|G| = p$, where $p$ is a prime. What do you know about $G$?