

Topics for Exam # 2

- Cosets, normal subgroups, quotient groups.
- Homomorphisms, kernel, Fundamental Homomorphism Theorem.
- Simple groups, solvable groups. A_n is simple for $n \geq 5$ (don't need to know the proof).
- Conjugacy classes and class equation; group actions and orbit equation.
- p -groups and Sylow subgroups. Sylow theorems (don't need to know the proofs).