

UNIVERSITY OF ST ANDREWS
School of Mathematics and Statistics
MT4603 Groups: Tutorial 10.

1. Prove that there is no simple group having order 40.
Prove that there is no simple group having order 992.
2. Determine Sylow p -subgroups of the alternating group A_5 for every prime p dividing $|A_5|$.
3. Prove that every group of order 245 is abelian.
4. Let G be a finite group. Show that a Sylow p -subgroup P of G is a Sylow p -subgroup of its normalizer. Show further that P is the only Sylow p -subgroup of its normalizer.
5. Describe, up to isomorphism, all groups of order 28.