

Quiz 4

1. Let p prime and $1 \leq n < p$. Let G be a group of order pn .
 - (a) How many p -Sylow subgroups does G admit?
 - (b) Using the second Sylow theorem, prove that a subgroup of G of order p must be normal.
2. Let G be a group of order 15.
 - (a) How many subgroups of order 3 does G admit?
 - (b) Deduce that G contains exactly 2 elements of order 3.