NAME :

Quiz 3

1. Recall the third Sylow theorem.

2. Let p prime and $1 \leq n \leq p$. Let G be a group of order pn.

   (a) How many p-Sylows subgroups does G admit ?

   (b) Using the second Sylow theorem, prove that a subgroup of G of order p must be normal.

3. Let G be a group of order 15.

   (a) How many subgroups of order 3 does G admits ?

   (b) Deduce that G contains exactly 2 elements of order 3.