Name: _____

Finish reading Section 15.1.

Reading Questions

1. Make sure you know the definitions of conjugate subgroups and the normalizer of a subgroup as well as the statements of Sylow's Second and Third Theorems.

2. True or false, with reasons and/or citations.

   (a) If H is a subgroup of a group G and $g \in G$, then gHg^{-1} is a subgroup of G.

   (b) If H and K are conjugate subgroups in a group G, then $|H| = |K|$.

   (c) The normalizer of a subgroup H in a group G is the largest normal subgroup in G.

   (d) If H is a subgroup of a finite group G, then the number of subgroups in G that are conjugate to H is $[G : N(H)]$.

   (e) Let P be a Sylow p-subgroup of a group G. A subgroup Q of G is a Sylow p-subgroup of G if and only if there is an element $g \in G$ such that $Q = gPg^{-1}$.

3. Use Sylow's Third Theorem to show that there is a unique Sylow 3-subgroup in a group G of order 15.

4. What struck you in this reading? What is still unclear? What remaining questions do you have?