HONOURS PROJECT

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Project Title: On Baer's theorem on products of finite groups

Let A and B be subgroups of G. The group $G = AB$ is a normal product of subgroups A and B if A and B are normal subgroups of G. An interesting problem in group theory is to determine how the structure of A and B affect the structure of G.

A group G is supersouble if there exists normal subgroups of G; $1 = G_0, G_1, G_2, \ldots, G_n = G$ for some positive integer n such that G_i/G_{i-1} is a cyclic subgroup for all $i = 1, \ldots, n$. It is well known that if A and B are supersoluble, then G need not be supersoluble.

A famous theorem of Reinhold Baer gives a sufficient condition for the group to be supersoluble. The project is to explore this theorem. A solid understanding of material in WTW381 is required.