

Permutable p -groups Are Hard to Find (in S_n)

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Abstract

We introduce some notions of permutability, and state recent results of Martin Isaacs concerning the normal closure of subgroups which are permutable in an appropriate sense. These results and a related conjecture form the motivation for looking at the case of p -groups inside the symmetric group. After making this connection, we state some preliminary results which do not violate Isaacs' conjecture; namely that subgroups of order p or p^2 are not permutable (in a generalized sense) inside of S_n for $n \geq 5$. The talk should be accessible to anyone who has taken MAS 5311 and is familiar with Sylow theory.