Groups as the union of proper subgroups

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Abstract

In this seminar, we are going to analyze the minimal number of proper subgroups that can cover the entire finite group. In particular, we will be interested in proving two important theorems. The first one states that the finite solvable groups cannot be covered by less than \( p^a + 1 \) proper subgroups, for some prime number \( p \) and some positive integer \( a \). The second one proves that there are no finite groups such that this minimal number is equal to 7.

References

[1] M. J. Tomkinison, Groups as the union of proper subgroups, Math. Scand. 81, 1997;