ISSN 0081-5438, Proceedings of the Steklov Institute of Mathematics, 2021, Vol. 313, Suppl. 1, pp. S194–S200.

published in Trudy Instituta Matematiki i Mekhaniki UrO RAN, 2020, Vol. 26, No. 3, pp. 211–218.

Criterion of Subnormality in a Finite Group: Reduction to Elementary Binary Partitions

F. Sun[1], X. Yi[1,], and S. F. Kamornikov[2,***]**

Received June 4, 2020; revised June 30, 2020; accepted July 3, 2020

Abstract—Wielandt's criterion for the subnormality of a subgroup of a finite group is developed. For a set $\pi = \{p_1, p_2, \ldots, p_n\}$ and a partition $\sigma = \{\{p_1\}, \{p_2\}, \ldots, \{p_n\}, \{\pi\}'\}$, it is proved that a subgroup H is σ-subnormal in a finite group G if and only if it is $\{\{p_i\}, \{p_i\}'\}$-subnormal in G for every $i = 1, 2, \ldots, n$. In particular, H is subnormal in G if and only if it is $\{\{p\}, \{p\}'\}$-subnormal in $\langle H, H^x\rangle$ for every prime p and any element $x \in G$.

Keywords: finite group, subnormal subgroup, σ-subnormal subgroup, elementary binary partition.

DOI: 10.1134/S0081543821030202

[1]Zhejiang Sci-Tech University, Hangzhou, 310018 China
[2]Francisk Skorina Gomel State University, Gomel, 246019 Belarus
e-mail: *sun4624@163.com, **yixiaolan2005@126.com, ***sfkamornikov@mail.ru