ON SOME ARITHMETIC PROPERTIES OF FINITE GROUPS

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We fix some partition $\sigma = \{\sigma_i | i \in I\}$ of the set of all primes $\mathbb{P}$ (that is, $\mathbb{P} = \cup_{i \in I} \sigma_i$ and $\sigma_i \cap \sigma_j = \emptyset$ for all $i \neq j$). A group G is called **σ-primary** if G is a σ_i-group for some $i = i(G)$.

We say that a finite group G is: **σ-soluble** if every chief factor of G is σ-primary; **σ-nilpotent** if $(H/K) \rtimes (G/C_G(H/K))$ is σ-primary for every chief factor H/K of G.

Based on these concepts, we develop and unify [1–5] some aspects of the theories of soluble and quasinilpotent groups, of the subgroup lattices theory and of the theory of subnormal subgroups.

References

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