

Some questions about subgroups and structures of finite groups

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In this talk, we give the answers to the following questions:

Question 1. What is the structure of the groups G in which every subgroup can be written as an intersection of subgroups of prime power indexes?

Question 2. What is the structure of the groups G in which every subnormal subgroup can be written as an intersection of subnormal subgroups of prime power indexes?

Question 3. Whether the intersection of all maximal \mathcal{F} -subgroups of a finite group G is equal to the \mathcal{F} -hypercentre of G , for any hereditary saturated formation \mathcal{F} ?

Question 4. If the answer of question 3 is negative, whether can to give the criterion for which the intersection of all maximal \mathcal{F} -subgroups of a finite group G is equal to the \mathcal{F} -hypercentre of G , for any hereditary saturated formation \mathcal{F} ?