

## On the residual of a finite group with semi-subnormal subgroups

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**Abstract.** A subgroup  $A$  of a group  $G$  is called *seminormal* in  $G$ , if there exists a subgroup  $B$  such that  $G = AB$  and  $AX$  is a subgroup of  $G$  for every subgroup  $X$  of  $B$ . We introduce the new concept that unites subnormality and seminormality. A subgroup  $A$  of a group  $G$  is called *semi-subnormal* in  $G$ , if  $A$  is subnormal in  $G$  or seminormal in  $G$ . In this paper, the  $\mathfrak{F}$ -residual of a group  $G = AB$  with semi-subnormal subgroups  $A$  and  $B$  such that  $A, B \in \mathfrak{F}$ , where  $\mathfrak{F}$  is a saturated formation and  $\mathfrak{U} \subseteq \mathfrak{F}$ , is studied. Here  $\mathfrak{U}$  is the class of all supersoluble groups and the  $\mathfrak{F}$ -residual of  $G$  is the intersection of all those normal subgroups  $N$  of  $G$  for which  $G/N \in \mathfrak{F}$ .

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