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Some properties of the supersoluble formation and the supersoluble residual of a group

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Let p, q, r be primes such that pq is not divisor of $r-1$ and $p<q<r$. Let X be a group of order p and let $F=GF(q)$ and $K=GF(r)$ such that the field F contains a primitive p^{th} root of unity. Let V be a simple FX-module and consider the semidirect product $Y=[V]X$. Let W be a faithful simple KY-module, and let $G=[W]Y$, $H=[W]X$ and $K=[W]V$. We show that K is a supersoluble subgroup of G and H is not a supersoluble subgroup of G. We also characterize the supersoluble residual of the group G.