Title: On abelian and central factors of expanded groups

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In this paper, we study the respective relationships between abelian and central factors of an expanded group and ring and central factors of the group reduct of the expanded group as a nearring module over its nearring of zero preserving polynomial functions. Building upon these results, we further study the respective relationships between solvability and nilpotency of the expanded group and solvability and nilpotency of this nearring module.

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