

On the structure of homothetic functions

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“Homothetic function” is a term which refers to some extension of the concept of a homogeneous function. We study different hierarchies of generalized homogeneous functions. The main result is a general classification of those functions.

On a certain identity satisfied by a derivation and an arbitrary additive mapping

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Let R be a prime ring and d be a nonzero derivation of R . If an additive mapping f of R satisfies $d(x)f(x) = 0$ for all $x \in R$, then f vanishes on some nonzero left ideal of R and on some nonzero right ideal of R .

On the geometry of field extensions

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We investigate the spread arising from a field extension and its chains. The major tool in this paper is the concept of transversal lines of a chain which is closely related to the Cartan–Brauer–Hua theorem. Provided that one chain has a “sufficiently large” number of such lines, both this chain and the given spread permit a simple geometric description by means of collineations.