GENERALIZED DERIVATIONS IN PRIME RINGS AND BANACH ALGEBRAS

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Abstract

Let $R$ be a prime ring with extended centroid $C$, $F$ a generalized derivation of $R$ and $n \geq 1$, $m \geq 1$ fixed integers. In this paper we study the situations:

1. $(F(x \circ y))^m = (x \circ y)^n$ for all $x, y \in I$, where $I$ is a nonzero ideal of $R$;
2. $(F(x \circ y))^n = (x \circ y)^n$ for all $x, y \in I$, where $I$ is a nonzero right ideal of $R$.

Moreover, we also investigate the situation in semiprime rings and Banach algebras.

Keywords: prime ring, generalized derivation, extended centroid, Utumi quotient ring.

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References


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