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A RESULT ON PRIME RINGS WITH GENERALIZED DERIVATIONS

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Abstract

In this paper we investigate the following result. Let R be a prime ring, Q its symmetric Martindale quotient ring, C its extended centroid, I a nonzero ideal of R. If F and G are the two generalized derivation of R such that $(\mathbf{F(xy)} + \mathbf{G(yx)})^n - (\mathbf{xy} \mp \mathbf{yx})^n = 0$, for all $x, y \in I$, then either R is commutative or $F(x) = x$, $G(x) = \mp x$ for all $x \in R$ and $n = 1$.

Keywords: prime ring, generalized derivations, quotient ring, extended centroid.

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