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Title: On some functional equation arising from (m, n)-Jordan derivations of prime rings

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In this paper, we prove the following result. Let $m \geq 1$, $n \geq 1$ be some fixed integers with $m \neq n$, and let R be a prime ring with $\mathrm{char}(R) > (m+n)^2$. Suppose that $D : R \to R$ is an additive mapping satisfying the relation $(m+n)^2 D(x^4) = 4m^2 D(x)x^3 + 4mnxD(x)x^2 + 4mnx^2 D(x)x + 4n^2 x^3 D(x)$ for all $x \in R$. In this case, D is a derivation and R is commutative.

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