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Abstracts of Short Communications and Posters

Section:

2. Algebra

1991 MS Classification: 16D70, 16N40
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Classification of rings satisfying some generalized Herstein's condition.
Let R be a ring which is not necessarily commutative. Let C and N be the center of $\mathbf{R}$ and the set of all nilpotents of R respectively. In [1] Herstein generalized a theorem of Jacobson [2, Theorem 11) His theorem states that if for every $a \in \mathbf{R}$, there exists an integer $n(a) > 1$, depending on a such that $a^{n(a)} - a \in C$, then $\mathbf{R}$ is commutative. The following result is proved here: If $R \neq C$ and for every $a \in R \backslash (C \cup N)$, there exists an integer $n(a) > 1$, depending on a, such that $a^{n(a)} - a \in C$, then R is one of five types whose structures can be determined completely.
References: [1]: L. N. Herstein. A generalization of a theorem of Jacobson, III, Amer. J. Math. 75 (1953), 105 - 111. [2]: N. Jacobson, Structure theory for algebraic algebras of bounded algebras of bounded degree, Ann. of Math. 46, (1945), 695 - 707.