MR1007628 (90m:17009) 17A99 17C99 17D92
Hentzel, I. R. [Hentzel, Irvin Roy] (1-IASU); **Peresi, L. A.** (BR-SPL)
Semi-prime Bernstein algebras.
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The authors work with Bernstein algebras that are nonassociative, commutative and semiprime, that is, they have no nilpotent ideals of index two. They study this kind of algebra of both finite and infinite dimension, over a field with characteristic different from two, and prove that such algebras are Jordan algebras, using properties derived from the Peirce decomposition associated to Bernstein algebras. They also prove that any Bernstein algebra A, semiprime, finitely generated, is a field, stating first that $N = (\ker w)$ is a special Jordan algebra, w being the only nontrivial homomorphism over the field K; moreover, they prove that w is nilpotent and that $N = 0$, so that $A = Ke$, for e idempotent. Afterwards they prove that, for Bernstein algebras finitely generated and not necessarily semiprime, the kernel of w is solvable, that is, $N^{(k)} = 0$ for some positive integer k, where $N^{(k)} = N^{(k-1)}N^{(k-1)}$ ($N^{(0)} = N$, $N^{(k)} = N \cdot N$).

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