ON SOME ALGORITHMIC PROBLEMS RELATED TO VARIETIES OF NONASSOCIATIVE RINGS

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It is proven that there exists no algorithm deciding whether the variety $\operatorname{var} \Sigma$ is finitely based relative to an arbitrary recursive system of ring identities Σ. An infinite sequence is constructed of finitely based varieties of nonassociative rings $\mathfrak{A}_1 \supset \mathfrak{B}_1 \supset \mathfrak{A}_2 \supset \mathfrak{B}_2 \supset \cdots$ such that, for all i, the equational theory of $\mathfrak{A}_i$ is undecidable and the equational theory of $\mathfrak{B}_i$ is decidable.

Key words and phrases: variety of rings, finitely based variety, equational theory, decidable theory, undecidable theory.

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