The author proves the following strengthened form (with respect to the nilpotency property) of the theorem on the existence of a faithful finite-dimensional representation of a finite-dimensional Lie algebra. Let $L$ be a finite-dimensional Lie algebra over an arbitrary field, and let $\alpha$ denote the adjoint representation of $L$. There exists a faithful finite-dimensional representation $\rho$ of $L$ such that $\rho(x)$ is nilpotent for every $x$ of $L$ for which $\alpha(x)$ is nilpotent. In the course of the proof of the theorem for fields of nonzero characteristic, the following result is established. Let $L$ be a finite-dimensional Lie algebra over a field $F$ of characteristic $p > 0$, and let $U$ denote the universal enveloping algebra of $L$. Let $C$ denote the center of $LU$. Then $\bigcap_{n=1}^{\infty} UC^n = (0)$. The characteristic zero case of the first result was used in a paper by L. Ross [Trans. Amer. Math. Soc. **120** (1965), 17–23; MR0185043].                                    *C. W. Curtis*

### References

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2. O. Zariski and P. Samuel, *Commutative algebra*, Vol. 1, Van Nostrand, Princeton, N. J., 1958. MR0090581

*Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.*