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Every Abelian group universally equivalent to a discriminating group is elementarily equivalent to a discriminating group. (English) Zbl 1017.20025

Cleary, Sean (ed.) et al., Combinatorial and geometric group theory. Proceedings of the AMS special session on combinatorial group theory, New York, NY, USA, November 4-5, 2000 and the AMS special session on computational group theory, Hoboken, NJ, USA, April 28-29, 2001. Providence, RI: American Mathematical Society (AMS). Contemp. Math. 296, 129-137 (2002).

A group G is discriminating if for every finite nonempty subset S of $G \times G$ not containing 1×1 there is a homomorphism $\varphi_S\colon G \to G$ such that $\varphi_S(g) \neq 1$ for all $g \in S$. A group H is squarelike if there is a discriminating group G_H universally equivalent to H (that is, they satisfy the same universal sentences of L). Two groups are elementarily equivalent if they satisfy precisely the same sentences of L. The main results of the paper provide partial answers to questions raised in an earlier paper.

Theorem 2.1. Every squarelike torsion Abelian group is the direct union of a family of discriminating subgroups.

Corollary 2.7. Every squarelike Abelian group is elementarily equivalent to a discriminating group.

For the entire collection see [Zbl 0990.00044].

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MSC:

20F10	Word problems, other decision problems, connections with logic and automata (group-theoretic aspects)	Cited in **1** Review
20K99	Abelian groups	
08C10	Axiomatic model classes	
20E10	Quasivarieties and varieties of groups	
03C60	Model-theoretic algebra	
20A15	Applications of logic to group theory	

Keywords:

discriminating groups; universally equivalent groups; elementarily equivalent groups; squarelike Abelian groups