

1090-03-183

Kyle Riggs*, kwriggs@umail.iu.edu. *The Σ_1^1 -completeness of the Decomposability of Torsion-Free Abelian Groups.* Preliminary report.

An abelian group is decomposable if it can be written as the direct sum of two (or more) nontrivial subgroups. Among torsion groups, the decomposable groups have previously been completely characterized. Among torsion-free groups, we show that this property is Σ_1^1 -complete, so it cannot be characterized by a first-order logic in the language of arithmetic. (Received February 28, 2013)