In this thesis will be demonstrated proof of decidability of theory of commutative groups. This result was already shown in year 1955 by author W.Szmielew. However proof shown here takes different path. Result will by shown with use of results from theory of modules and theory of modeles prooved in article by M. Ziegler Model theory of modules. Final part of proof follows proof shown in article The elementary theory of Abelian groups by P. C. Eklofa and E. R. Fishera.