Title: Equidecomposability

Author: Matyáš Valkoun

Department: Department of Mathematics Education

Supervisor: Mgr. Zdeněk Halas, DiS., Ph.D., Department of Mathematics Education

Abstract: This bachelor thesis focuses on the area of polygons and its definition by equidecomposability. In the plane ρ a simple polygon and its area is defined and the notion of equidecomposability is introduced. Since any two equidecomposable polygons have equal areas, a question arises if the opposite is also true: are any two polygons of equal area equidecomposable? That is the formulation of the Wallace-Bolyai-Gerwein theorem, its detailed proof is presented in this text. Thus the notions of equidecomposability and equal area are equivalent. At the end of the thesis it is briefly examined if it is possible to use equidecomposability in the third dimension to define the volume of a polyhedron.