

Abstract:

Graph theory and its use in school mathematics

This thesis deals with the inclusion of some problems of graph theory in education at secondary school. It contains the necessary theory for teachers as well as several examples of graph theory in school mathematics in elementary school; moreover it describes several well-known problems, which can be solved using graph theory.

The work also includes preparation of two lessons. The theme of the first one is drawing in one stroke and an Eulerian cycle in general. Second topic is dedicated to mazes and labyrinths, their transformation to graph and few algorithms for passing through the maze.

In the experimental part, the author examines whether the students are able to understand the selected parts of graph theory, and whether they find this topic more interesting than the usual mathematics they are used to at school. The results of this experiment are then compared for children from two types of lower secondary schools.