

Mathematical competitions are important for the development of knowledge of students who are gifted in Mathematics as well as for the motivation of all students. There are a lot of mathematical competitions and their ways of organization, aims and target groups differ from each other. The aims of my work were: To map theoretically the field of problem posing and problem solving in mathematical competitions; to create a summary of mathematical competitions held in the Czech Republic with an emphasis on problem posing and problem solving; to design and test a set of problems for one concrete mathematical competition; to create a self-reflection of my activities as a material for other authors of problems for a similar competition; and to analyze students' solutions. Readers can get acquainted with the Mathematical Correspondence Seminar "Pikomati" in detail in this diploma work. In my self-reflection, all the activities needed to organize a seminar are described. Most attention is given to posing problems and other texts for a seminar as well as to an item analysis of students' solutions of all created problems (problem solving). This analysis examines the abilities of students to solve the problems and serves as feedback about the suitability of the problems used.