This diploma thesis is focused on exploring students' problem solving strategies. The tasks used in the research included tasks from the R-FCI test. 35 students participated in the research that was based on the eye-tracking method. Students' eye movements were tracked by camera Tobii TX300 during the problem solving periods. Qualitative analysis was then performed based on the data obtained by the research. Comparison between students who provided the correct and incorrect answers was carried out. Correctly answering students solved tasks faster than incorrectly answering students. Also they focused on relevant information in the tasks and the choice of correct answers was easier for them. Another step of the research was to analyze some students' problem solving strategies in depth. All materials that were used for the analysis were generated by the program Tobii Studio 3.2., and are enclosed in the appendix.