

TITTLE:

Mathematics on the chessboard

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ABSTRACT:

The main subject of my thesis is mathematical problems on the chessboard using chess pieces. The work aims to demonstrate how a secondary school student would approach and solve several typical mathematical tasks of this nature. Consequently, it outlines ways to incorporate chessboard mathematical problems and exercises in mathematical classes. Moreover, the thesis includes a compact collection of solved problems on the chessboard that can serve as an inspiring source of unconventional mathematical tasks in conventional mathematical education.

My own mathematical research forms a major part of the thesis. The research was conducted as a series of tests in three school classes. In order to achieve a high degree of objectivity classes of students with different specializations were selected to take part in the tests. The participating classes were also of different age groups.

The theoretical part of the thesis takes a look at the past of the subject and presents several interesting historical problems concerning the mathematics on the chessboard.

Last but not least, the thesis contains a discussion of solutions of the problems that were published in one particular textbook of mathematics.

KEYWORDS: Combinatory, chessboard, chess pieces, mathematics on the chessboard