I. IDENTIFICATION DATA

Thesis name:	**Analysis and investigation of the convergence of the Bezout coefficients search algorithm**
Author's name:	**Alisher Zhumaniezov**
Type of thesis:	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Computer Science
Thesis supervisor:	Karel Frajták
Supervisor's department:	Department of Computer Science

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**challenging**

Evaluation of thesis difficulty of assignment.

In the age of modern technology, time is a very valuable resource. Therefore, an important indicator of the program's work is its computational speed. The thesis addresses the problem of finding the Bezout coefficients by introducing different optimization schemes to the search algorithm.

Satisfaction of assignment	**fulfilled**

Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.

The author analyzed and investigated the convergence of the Bezout coefficients search algorithms. He starts with the very basic algorithm and its complexity and then moves forward to newer algorithms evaluating their complexity and efficiency. The author used different pairs of numbers to demonstrate how these algorithms work. I would welcome to use on pair (or two pairs) of numbers to show the steps taken in the best- and worst-case scenario and summarize it at the end of the chapter.

The overall complexity for each algorithm was evaluated on sets of 4, 8 and 16-bit numbers. Each evaluation was visualized in chart summarizing the number of steps taken and the running time. The results helped the author to summarize the advantages and fallbacks for each used algorithm.

Technical level	**A - excellent.**

Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.

The author proved his knowledge of the problematics of finding the Bezout coefficients.

Formal and language level, scope of thesis	**A - excellent.**

Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.

Although the thesis is 81 pages long, the actual text ends on page 40 followed by a short list of references, and the rest is the content of the Python source files. I don't think it's necessary to put these into the printed version of the thesis (think of the paper required to print it). The text is well written, well-structured and quite well organized. The language level is above normal.

Selection of sources, citation correctness	**B - very good.**

Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.

All resources were properly cited. The author could have cited works published recently.

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Questions for defense:

- *Why haven't you also included experiments for 32 or 64-bit numbers?*

I evaluate handed thesis with classification grade **A - excellent.**

Date: **7.6.2018**   Signature: