ABSTRACT

for coursework, student Osypov Kirill, group XA-51
on discipline "Numerical methods"
on the topic of «*The solution of nonlinear programming unconstrained problem
by the configuration (Hooke-Jeeves) method*»

In the course work, the Hooke-Jeeves method was investigated. The statement of the problem, the algorithm of solution, the description of the software product for the solution of this problem and the solution of the test cases are given.

To solve the problem, a program (programming language - Delphi) was found and tested, in which the Hooke-Jeeves method was implemented. The program examined two test cases with different target functions.

In the second part of the course work, typical problems of approximation of functions are solved: the type of empirical dependence is determined and the values of its coefficients are calculated, an approximating polynomial is found, and the spline interpolation problem is solved. The analysis of the results showed that all approximating functions sufficiently well describe the experimental data.