

The aim of this bachelor thesis is to present an overview of elementary numerical methods for solving nonlinear algebraic equations in one variable. Firstly, related concepts from numerical mathematics and mathematical analysis are explained. The main part of the thesis provides a detailed description of chosen iterative methods as well as the proofs of their orders of convergence. The methods covered are namely the bisection method, fixed-point iteration, regula falsi method, Newton's method, secant method and methods that are based on quadratic interpolation. The practical part of the thesis presents results of numerical experiments that were carried out with Matlab software on various types of nonlinear equations. These results are compared with the theory introduced in the preceding parts. The contribution of this thesis is to provide a comprehensive overview and comparison of the characteristics of basic methods for solving nonlinear equations based on a variety of literature.