COMPARISON BETWEEN SECANT METHOD, NEWTON METHOD AND BISECTION METHOD IN SOLVING NONLINEAR EQUATION

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ABSTRACT

Numerical analyze is a field of mathematics and computer science that produces, analyses, and implements algorithms to solve the problems of continuous mathematics numerically. Such problems typically emerge from real-world applications of algebra, geometry, and calculus, and include variables that differ continuously. These issues exist in the natural sciences, social sciences, medicine, engineering, and business sectors. A few numerical methods have been introduced to help mathematician to solve these functions for finding root such as Secant method, Bisection method and Newton method. These methods are chosen because can apply simple algorithm that could be understand.

The aims of research are which approach in numerical analysis is the best and most successful for finding a root in a nonlinear equation. So, the objective of this research is to solve a nonlinear equation theoretically and numerically. After calculate all the root for each method, the errors of Secant method, Bisection method and Newton method based on the exact solution for solving the system of nonlinear equation will be calculated and analyse. The method with the least of error will be chosen as the best method in finding root for nonlinear equation. The method that will be used in this research are Secant method, Bisection method and newton method. This because three of method easier and more suitable than other method in finding root. Throughout this project, it will help the researcher to finding a root for nonlinear equation using the best method.

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