COMPARATIVE STUDY OF SECANT, FIXED POINT AND SIXTH SECTION METHODS FOR SOLVING ROOT IN NONLINEAR EQUATION

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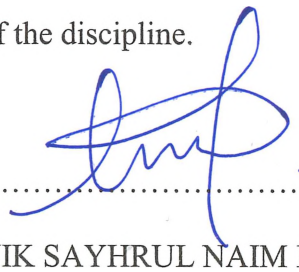
DECLARATION BY CANDIDATE

I hereby declare that the thesis is based on my original work, except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously and concurrently submitted for any other degree at UiTM or other institutions.

I certify that this report and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.



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ABSTRACT

Numerical analysis is to solve the functions for finding root by using a few numerical methods such as Secant, Fixed point and Sixth section methods to solve the functions for finding root. In this research, these methods are selected because it can be understand and has simple algorithm to use. The chosen methods are analyzed and compare it efficiency in order to solve the nonlinear function. The cubic polynomial, exponential, trigonometric, and logarithm functions are nonlinear function. For each nonlinear function, there are two difference functions were tested by using code Maple 17 software. The result is then analyzed based on the number of iterations and the central processing unit (CPU) times where it define the fastest calculation for the root. Even though, these methods are easy but it does possesses some errors compared to the exact root. So, it will produced error analysis. All three criteria are depends to a certain tolerance.

Keyword: Secant; Fixed point; Sixth section; trigonometric; exponential; logarithm; cubic polynomial; number of iteration; CPU times; tolerance

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