NUMERICAL CALCULATION OF COMPLEX ROOT FUNCTIONS

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ABSTRACT

In the field of mathematics, science and engineering, determining the root of a function in the form of complex root is an issue that is often encountered. Complex root could be determined theoretically and numerically. The aim of this project is to determine the best numerical method in computing the complex roots. Three numerical methods will be studied which are: Complex Newton, Complex Secant, and Complex Halley's. The tested function consists of different type of polynomial functions with complex roots. The results are analysed based on the number of iterations, CPU time and modulus of complex root. Numerical results demonstrates that, in terms of number of iterations, the best method is Complex Halley's. While in terms of CPU times, the best method is Complex Newton method.

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