

**SOLVING NONLINEAR EQUATIONS USING MODIFIED  
HOUSEHOLDER METHOD**

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## **ABSTRACT**

Many real-life problems can be expressed in mathematical equations, often being in the form of nonlinear equations. This leads to the need of having methods to solve these equations daily in the most efficient and accurate way. Thus, iterative method was introduced as one of the solutions, and from there, many methods has been derived from one to another. One specific iterative method is called Householder's method, founded by Alston Scott Householder. This can lead to complicated calculation to achieve that high rate of convergence. To alleviate that problem, the method is modified using Newton's method as predictor, thus creating two-step predictor-corrector of Newton's Householder's method. However, this might cause some setback since it is well-known that Newton's method possessed many weaknesses over its simplicity. This eventually leads to using two-step Newton's method to be used as predictor instead, thus creating Modified Newton's Householder's method. In this research, these methods will be compared on its efficiency alongside Newton's method and Halley's method.

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