

## New method for finding all roots using Quadratic Envelop Function

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This work introduces new algorithm for finding all roots of a single nonlinear equation. By using Quadratic Envelop Function (QEF), region which doesn't contain zero can be removed. This new method is globally convergent with quadratic convergence rate. And this method guaranteed convergence. The method is applied to some numerical experiments. For all problems, all roots are obtained when they exist. The results of numerical experiments show that this method's efficiency compared with Interval Newton method.