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Leap-frogging Newton's method.

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Using Newton's method as an intermediate step, we introduce an iterative method that approximates numerically the solution of $f(x)=0$. The method is essentially a leap-frog Newton's method. The order of convergence of the proposed method at a simple root is cubic and the computational efficiency in general is less, but close to that of Newton's method. Like Newton's method, the new method requires only function and first derivative evaluations. The method can easily be implemented on computer algebra systems where high machine precision is available. (orig.)

Classification: N45

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