

عنوان مقاله:

The Krasnoselskii's Method for Real Differentiable Functions

محل انتشار:

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خلاصه مقاله:

We study the convergence of the Krasnoselskii sequence $x_{n+1} = \frac{x_n + g(x_n)}{2}$ for non-self mappings on closed intervals. We show that if g satisfies $g' \geq -1$ along with some other conditions, this sequence converges to a fixed point of g . We extend this fixed-point result to a novel and efficient root-finding method. We present concrete examples at the end. In these examples, we make a comparison between Newton-Raphson and our method. These examples also reveal how our method can be applied efficiently to find the fixed points of a real-valued function

کلمات کلیدی:

Krasnoselskii's theorem, Iterative sequence, Newton-Raphson method, Root estimation, Real function

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