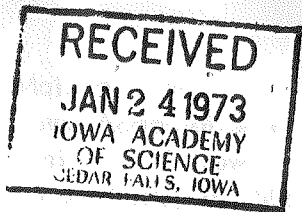


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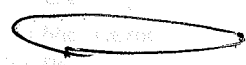


KRASNOSELSKI'S THEOREM ON THE REAL LINE. Donald F. Bailey, Mt. Vernon
In 1955 Krasnoselski proved the following theorem.

Theorem: If K is a convex, closed, bounded subset of a uniformly convex Banach space and if f is a mapping of K into a compact subset of K such that $\|f(x)-f(y)\| \leq \|x-y\|$, then the sequence obtained by choosing x_1 in K and defining $x_{n+1} = \frac{1}{2}(f(x_n)+x_n)$ converges to some z in K and $f(z) = z$.

In this paper we give an extremely simple proof for the special case in which K is a closed interval on the real line.

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