A TITLE FOR YOUR ARTICLE

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Abstract. State the main result in a few sentences.

1. Introduction

Let $f\colon \mathbb{R} \to \mathbb{R}$ be continuous. We show that every such f on $[a, b]$ attains a maximum.

Definition 1.1. A function f is *bounded* on S if there is M with $|f(x)| \le M$ for all $x \in S$.

Lemma 1.2. *A continuous function on $[a, b]$ is bounded.*

Theorem 1.3. *A continuous function on $[a, b]$ attains its maximum.*

Proof. By Lemma 1.2, $s = \sup_{[a,b]} f$ is finite; compactness gives a point where $f = s$. □

Remark 1.4. The same argument works on any compact space.

References

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