Test

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**Theorem 1** (Weierstrass Approximation Theorem). Let  $f:[a,b]\to\mathbb{R}$  be continuous. Given  $\varepsilon>0$ , there exists a polynomial p(x) satisfying

$$|f(x) - p(x)| < \varepsilon$$

for all  $x \in [a, b]$ .

**Proof.** This is a proof