There Is No Largest Prime Number
With an introduction to a new proof technique

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1 Results
Proof of the Main Theorem
There Is No Largest Prime Number

The proof uses *reductio ad absurdum*.

**Theorem**

*There is no largest prime number.*

**Proof.**

1. Suppose \( p \) were the largest prime number.
2. Let \( q \) be the product of the first \( p \) numbers.
3. Then \( q + 1 \) is not divisible by any of them.
4. Thus \( q + 1 \) is also prime and greater than \( p \).