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

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## 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.
- 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.