

The Life and Times of Times of Life

October 5th 2018

There Is No Largest Prime Number

1. Suppose p were the largest prime number.
2. Consider the number $p + 1$.
3. $p + 1$ is not prime, because it is divisible by p .
4. But $q + 1$ is greater than 1 , thus divisible by some prime number not in the first p numbers.

There Is No Largest Prime Number

1. Suppose p were the largest prime number.
2. Let q be the product of the first p numbers.
4. But $q + 1$ is greater than 1, thus divisible by some prime number not in the first p numbers.

There Is No Largest Prime Number

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. But $q + 1$ is greater than 1 , thus divisible by some prime number not in the first p numbers.