There Is No Largest Prime Number

Euclid of Alexandria

27th International Symposium of Prime Numbers

There Is No Largest Prime Number

The proof uses reductio ad absurdum.

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Theorem

There is no largest prime number.

1. Suppose p were the largest prime number.

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

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The proof uses reductio ad absurdum.

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Theorem

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

The proof uses reductio ad absurdum.

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Theorem

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.

A longer title

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- one
- two