



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.

Theorem

There is no largest prime number.

- 1 Suppose p were the largest prime number.
- 2
- 3
- 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.

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.

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The proof uses reductio ad absurdum.

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

- one
- two

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