



ALMA MATER STUDIORUM · UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO DI MEDICINA SPECIALISTICA, DIAGNOSTICA E Sperimentale

Beamer version of Unibo template

Unibo Theme example

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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. Consider $q = p + 1$.
Since p is the largest prime number, q is either prime or composite.
If q is prime, then q is greater than p , which contradicts the assumption that p is the largest prime number.
Therefore, q must be composite.
3. Since q is composite, it has a divisor d such that $1 < d < q$.
This divisor d cannot be any of the first p numbers, because if it were, then d would divide p (since $d < p$), and since p is prime, d would have to be equal to p , which contradicts the fact that $d < p$.
Therefore, d is a prime number greater than p , which contradicts the assumption that p is the largest prime number.
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*.

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*.

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



Thanks to the research group





Acknowledgment

Thank for your attention!



Hope you slept
comfortably!