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

### Euklid of Alexandria

Department of Mathematics University of Alexandria

27th International Symposium on Prime Numbers, –280

#### Results

Proof of the Main Theorem



# 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.

