

## Primeality Tests and Finding Primes

The goal of the presentation is to discuss methods to test if a number is prime and for finding prime numbers. Your presentation should include at least

- A discussion of the Sieve of Eratosthenes
- An explanation as to why, given a number  $x$ , to check if  $x$  is prime it suffices to check that it isn't divisible by any primes less than  $\sqrt{x}$ .
- A discussion of the Fermat Primality Test

In addition you should include at least one thing not on the above list

At the end of your presentation the class will be asked one of the following questions.

- Which is (almost always) easier: to factor a number or to see if the number is prime?
- Who was the sieve, which is most commonly used to test for primes, named after?
- Does the Fermat Primality test always detect if a number is prime?

A good starting point for your research is

[http://en.wikipedia.org/wiki/Prime\\_number](http://en.wikipedia.org/wiki/Prime_number)

If you have any questions regarding the presentation feel free to e-mail your TA or Dr. Ackerman