

Abstract

Bachelor Thesis

**Mersenne primes**

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The numbers that can not be written as a product of two smaller numbers, but all other numbers can be written using only these. Mesmerizing many, it became a widely known topic, holding an important space among others. We call them primes. Primes have been studied for a very long time and it is still a popular topic among mathematicians, with so many questions unanswered. Even if we say primes, there are, in fact, many types of primes. For example, Fermat primes, Happy primes and Mersenne primes.

The aim of the thesis is to summarize what we know about Mersenne primes so far.

In the first chapter, we will discuss why is the thesis about Mersenne primes, what is the history of these numbers and what special characteristics do they have.

The second chapter is about theorems related to Mersenne primes, proof of these, such as Lucas-Lehmer primality test and lastly, it contains a list of the found Mersenne primes.

Next, we will mention how these primes related to other numbers, such as perfect numbers and its application. We will mostly focus on the Mersenne twister, how it works, what is the purpose of it and it's code.

Lastly, we will see the open questions related to Mersenne primes.