

Prime number and their Summary:

Definition: P is called prime number if and only if it is divisible by only 1 and P itself.

Theorem of Arithmetic:

$$100 = 2 \times 2 \times 5 \times 5$$

The sieve of Eratosthenes can be used to find all primes.

Mersenne Prime: from $2^p - 1$: also prime like
 $P=3$: $2^3 - 1 = 7$ also prime.

still there is no generalize equation to find prime number.

How many prime numbers can be possible in a given range.

$f(n) = n^2 - n + 41$ given prime number where $n \leq 40$

Actually what we need:

Goldbach's Conjecture:

The Twin Prime Conjecture: Differ 2 like 5, 7

~~#~~ 11, 13

GCD: greatest common divisor

If $\text{GCD}(a, b) = 1$, then those are relatively prime like 10, 12

Finding GCD using Prime Factorization:

Least Common Multiplication (LCM):

Euclidean Algorithm:

Linear Congruence: $a \equiv b \pmod{m}$

still prime: 1-9 most prime: 2-7: 10-12 prime like

still prime: 13-17: 18-20 prime like

still prime: 21-23: 24-26 prime like

still prime: 27-29: 30-32 prime like