Consideration of Twin Prime Conjecture
Average difference is 2.296

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Abstract

In the process of pursuing Twin Prime Problem, I found that the Reciprocal of distribution of primes always increased at a rate of about 2.296.

When $1 \times 10^{3\times10^{12}}$ is reached, only 1 of 6889379491 is a prime number.
This assumes that 2.296 continues all the time.

This seems to continue forever.
In other words, it was considered that in the ultimate, the existence of primes is very close to zero.

It is 4/3 times the square of the probability of primes is the probability of Twin Primes, and it is very questionable whether it can be said that Twin Primes are produced at such times.

key words
Distribution of primes, Average difference is 2.296, Forever

Introduction

From[5], 1×10^{24} is 18435599767349200867866, but this is a number assuming that the Riemann hypothesis is true.

And, the following, the value of from 1×10^4 to 1×10^{13} depends on [4].

$(1 \times 10^{24})/(1.843559976734 \times 10^{22})$=54.24287859...
Average difference is (54.24287859-28.9862524)/11=2.296056926...

Discussion

And, as can be seen from the equation below, even if the number becomes large, the degree of production of primes only decreases little by little.

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However, it is the basis for supporting the above results.

$$\pi(x) \sim \frac{x}{\log x} \quad (x \to \infty) \tag{1}$$

$\frac{x}{\log x} = (10^{10})/\log(10^{10}) \approx 4.343 \times 10^{8}$
$\frac{x}{\log x} = (10^{11})/\log(10^{11}) \approx 3.948 \times 10^{9}$
$\frac{x}{\log x} = (10^{12})/\log(10^{12}) \approx 3.619 \times 10^{10}$
$\frac{x}{\log x} = (10^{13})/\log(10^{13}) \approx 3.341 \times 10^{11}$
$\frac{x}{\log x} = (10^{14})/\log(10^{14}) \approx 3.102 \times 10^{12}$
$\frac{x}{\log x} = (10^{15})/\log(10^{15}) \approx 2.895 \times 10^{13}$
$\frac{x}{\log x} = (10^{16})/\log(10^{16}) \approx 2.714 \times 10^{14}$
$\frac{x}{\log x} = (10^{17})/\log(10^{17}) \approx 2.555 \times 10^{15}$
$\frac{x}{\log x} = (10^{18})/\log(10^{18}) \approx 2.413 \times 10^{16}$
$\frac{x}{\log x} = (10^{24})/\log(10^{24}) \approx 1.809 \times 10^{22}$
$\frac{x}{\log x} = (10^{100})/\log(10^{100}) \approx 4.343 \times 10^{97}$
$\frac{x}{\log x} = (10^{800})/\log(10^{800}) \approx 5.429 \times 10^{796}$

On Gauss formulae,

$$\pi(x) \sim \frac{1 \times 10^{24}}{\log(1 \times 10^{24})} = 1.80956 \times 10^{22} \tag{2}$$

From[5] is $1.843559976734 \times 10^{22}$.

It almost agrees with the result of Gauss's formula.

$[1 \times 10^{24}]/[\frac{1 \times 10^{24}}{log(1 \times 10^{24})}] = 55.262042....$
Approximately 1 out of 55 integers is a prime number.

However, when $1 \times 10^{3 \times 10^{12}}$ is reached, only 1 of 6889379491 is a prime number.
This assumes that 2.296 continues all the time, but will give the same result, although it will be slightly different than 2.296.

It is 4/3 times the square of the probability of primes is the probability of Twin Primes, and it is very questionable whether it can be said that Twin Primes are produced at such times.

number(ak)	(bk)primes numb	(bk/ak)	(ak/bk)	difference
10000	1229	12.29	8.14	2.29
100000	9592	9.59	10.43	2.31
1000000	78498	7.85	12.74	2.31
10000000	664579	6.65	15.05	2.31
100000000	5761455	57.61	17.36	2.31
1000000000	50847534	50.85	19.67	2.31
10000000000	455052511	45.51	21.98	2.31
100000000000	4118054813	41.18	24.28	2.3
1000000000000	37617912018	37.62	26.58	2.31
10000000000000	346065636839	34.61	28.9	2.3
1*10^14			31.19	2.3
1*10^15			33.48	2.3
1*10^16			35.78	2.3
1*10^17			38.07	2.3
1*10^18			40.37	2.3
1*10^19			42.66	2.3
1*10^20			44.95	2.3
1*10^21			47.25	2.3
1*10^22			49.54	2.3
1*10^23			51.84	2.3
1*10^24	1.84E+022	18.44	54.24	2.3
1*10^100			283.84	100*2.296
1*10^200			513.44	100*2.296
1*10^300			743.04	100*2.296
1*10^400			972.64	100*2.296
1*10^500			1202.24	100*2.296
1*10^600			1431.84	100*2.296
1*10^700			1661.44	100*2.296
1*10^800			1891.04	100*2.296
1*10^1000000			231491.04	100000*2.296
1*10^2000000			461091.04	100000*2.296
1*10^3000000			690691.04	100000*2.296
1*10^4000000			920291.04	100000*2.296
1*10^5000000			1149891.04	100000*2.296
1*10^6000000			1379491.04	100000*2.296
1*10^1000000000000			2297379491.04	1000000000*2.296
1*10^2000000000000			4593379491.04	1000000000*2.296
1*10^3000000000000			6889379491.04	1000000000*2.296

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