

Twin Prime Conjecture

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Abstract

I proved the Twin Prime Conjecture.

All Twin Primes are executed in hexadecimal notation. It does not change in a huge number (forever huge number).

In the hexagon, prime numbers are generated only at $[6n - 1]$ $[6n + 1]$. (n is a positive integer)

The probability that a twin prime will occur is $6/5$ times the square of the probability that a prime will occur. If the number is very large, the probability of generating a prime number is low, but since the prime number exists forever, the probability of generating a twin prime number is very low, but a twin prime number is produced.

That is, twin primes exist forever.

key words

Hexagonal circulation, Twin Prime, $6/5$ times the square of the probability

Introduction

$(6n - 1)$, include multiples of 5 are not prime numbers.

For example,

35, 65, 95, 125, 155, 185, 215, 245, 275, 305, 335.....

And, at $(6n + 1)$, include multiples of 7 are not prime numbers.

For example,

49, 63, 77, 91, 119, 133, 147, 161, 189, 203, 217, 231.....

The prime number is represented as $(6n - 1)$ or $(6n + 1)$. And, n is positive integer.

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All Twin Primes are combination of $[6n - 1]$ and $[6n + 1]$.

The only exception is (3, 5).

That is, all Twin Primes are a combination of 5th angle and 1th angle.

(n is positive integer)

1th angle is $[6n + 1]$.

5th angle is $[6n - 1]$.

$(6n - 2)$, $(6n)$, $(6n + 2)$ in are even numbers.

$(6n - 1)$, $(6n + 1)$, $(6n + 3)$ are odd numbers.

Prime numbers are $(6n - 1)$ or $(6n + 1)$. Except 2 and 3. (n is positive integer).

The following is a prime number.

There are no prime numbers that are not $(6n - 1)$ or $(6n + 1)$.

5 ——— $6n - 1$ (Twin prime)

7 ——— $6n + 1$

11 ——— $6n - 1$ (Twin prime)

13 ——— $6n + 1$

17 ——— $6n - 1$ (Twin prime)

19 ——— $6n + 1$

23 ——— $6n - 1$

29 ——— $6n - 1$ (Twin prime)

31 ——— $6n + 1$

37 ——— $6n + 1$

41 ——— $6n - 1$ (Twin prime)

43 ——— $6n + 1$

.....

.....

There are 166 prime numbers from 5 to 1000. Probability is $\frac{166}{996}$

In this, there are 33 twin prime numbers. Probability is $\frac{33}{996} = 0.03313253...$

and $[\frac{166}{996}]^2 \times \frac{6}{5} = 0.0333333...$

and

There are 139 prime numbers from 1001 to 2000. Probability is $\frac{139}{1000}$

In this, there are 23 twin prime numbers. Probability is $\frac{23}{1000} = 0.023$

and $[\frac{139}{1000}]^2 \times \frac{6}{5} = 0.0231852$

and

There are 127 prime numbers from 2001 to 3000.

In this, there are 21 twin prime numbers.

and

There are 122 prime numbers from 3001 to 4000.

In this, there are 22 twin prime numbers.

and
There are 117 prime numbers from 4001 to 5000.
In this, there are 21 twin prime numbers.
and
There are 114 prime numbers from 5001 to 6000.
In this, there are 16 twin prime numbers.
and
There are 115 prime numbers from 6001 to 7000.
In this, there are 18 twin prime numbers.
and
There are 106 prime numbers from 7001 to 8000.
In this, there are 13 twin prime numbers.
and
There are 112 prime numbers from 8001 to 9000.
In this, there are 13 twin prime numbers.
and
There are 110 prime numbers from 9001 to 10000.
In this, there are 15 twin prime numbers.
and
There are 106 prime numbers from 10001 to 11000.
In this, there are 16 twin prime numbers.
and
There are 102 prime numbers from 11001 to 12000.
In this, there are 11 twin prime numbers.
and
There are 109 prime numbers from 12001 to 13000.
In this, there are 12 twin prime numbers.
and
There are 105 prime numbers from 13001 to 14000.
In this, there are 11 twin prime numbers.
and
There are 102 prime numbers from 14001 to 15000.
In this, there are 11 twin prime numbers.
and
There are 108 prime numbers from 15001 to 16000.
In this, there are 12 twin prime numbers.
and
There are 98 prime numbers from 16001 to 17000.
In this, there are 13 twin prime numbers.
and
There are 104 prime numbers from 17001 to 18000.
In this, there are 17 twin prime numbers.
and
There are 94 prime numbers from 18001 to 19000.
In this, there are 14 twin prime numbers.
and
There are 104 prime numbers from 19001 to 20000.

In this, there are 14 twin prime numbers.
and
There are 98 prime numbers from 20001 to 21000.
In this, there are 13 twin prime numbers.
and
There are 104 prime numbers from 21001 to 22000.
In this, there are 13 twin prime numbers.
and
There are 100 prime numbers from 22001 to 23000.
In this, there are 13 twin prime numbers.
and
There are 104 prime numbers from 23001 to 24000.
In this, there are 11 twin prime numbers.
and
There are 94 prime numbers from 24001 to 25000.
In this, there are 6 twin prime numbers.
and
There are 98 prime numbers from 25001 to 26000.
In this, there are 12 twin prime numbers.
and
There are 101 prime numbers from 26001 to 27000.
In this, there are 11 twin prime numbers.
and
There are 94 prime numbers from 27001 to 28000.
In this, there are 15 twin prime numbers.
and
There are 100 prime numbers from 28001 to 29000.
In this, there are 10 twin prime numbers.
and
There are 92 prime numbers from 29001 to 30000.
In this, there are 9 twin prime numbers.
and
There are 95 prime numbers from 30001 to 31000.
In this, there are 10 twin prime numbers.
and
There are 92 prime numbers from 31001 to 32000.
In this, there are 9 twin prime numbers.
and
There are 106 prime numbers from 32001 to 33000.
In this, there are 10 twin prime numbers.

and
There are 3548 prime numbers from 5 to 33000. Probability is $\frac{3548}{32996}$
In this, there are 455 twin prime numbers. Probability is $\frac{455}{32996} = 0.01378955...$
and $[\frac{3536}{32996}]^2 \times \frac{6}{5} = 0.0137810773...$

and

There are 100 prime numbers from 33001 to 34000.
 In this, there are 11 twin prime numbers.
 and
 There are 94 prime numbers from 34001 to 35000.
 In this, there are 13 twin prime numbers.
 and
 There are 92 prime numbers from 35001 to 36000.
 In this, there are 9 twin prime numbers.
 and
 There are 99 prime numbers from 36001 to 37000.
 In this, there are 7 twin prime numbers.
 and
 There are 75 prime numbers from 37001 to 38000.
 In this, there are 10 twin prime numbers.
 and
 There are 107 prime numbers from 38001 to 39000.
 In this, there are 11 twin prime numbers.
 and
 There are 96 prime numbers from 39001 to 40000.
 In this, there are 8 twin prime numbers.
 and
 There are 88 prime numbers from 40001 to 41000.
 In this, there are 9 twin prime numbers.
 and
 There are 101 prime numbers from 41001 to 42000.
 In this, there are 10 twin prime numbers.
 and
 There are 102 prime numbers from 42001 to 43000.
 In this, there are 10 twin prime numbers.
 and
 There are 85 prime numbers from 43001 to 44000.
 In this, there are 11 twin prime numbers.
 and
 There are 96 prime numbers from 44001 to 45000.
 In this, there are 10 twin prime numbers.
 and
 There are 4673 prime numbers from 5 to 45000. Probability is $\frac{4694}{44996}$
 In this, there are 582 twin prime numbers. Probability is $\frac{582}{44996} = 0.012934483...$
 and
 $[\frac{4673}{44996}]^2 \times \frac{6}{5} = 0.01294276...$

It seems that there are several miscount. I would like to request a close examination at a research institution such as a university.

$\frac{6}{5}$ is necessary as a correction value. This is because if one of the hexagons is identified as a prime number, the probability that the remaining corner is a prime number increases by $\frac{6}{5}$ times the simple square.

To put it simply, one of the 6 corners that should be true is occupied, and 5 are left. Therefore, the probability increases to $\frac{6}{5}$.

The infinite number of twin primes can be said to be based on the known concept that the generation probability of a prime number is low when the number is large, but it always occurs[3].

The probability of occurrence of twin prime numbers is very low when the number is large, but it always occurs as long as the prime number is generated.

That is, as long as prime numbers are generated, twin prime numbers are generated.

I continued to challenge.

and

There are 86 prime numbers from 45001 to 46000.

In this, there are 8 twin prime numbers.

and

There are 80 prime numbers from 46001 to 47000.

In this, there are 11 twin prime numbers.

and

There are 80 prime numbers from 47001 to 48000.

In this, there are 10 twin prime numbers.

and

There are 95 prime numbers from 48001 to 49000.

In this, there are 10 twin prime numbers.

and

There are 98 prime numbers from 49001 to 50000.

In this, there are 15 twin prime numbers.

and

There are 98 prime numbers from 50001 to 51000.

In this, there are 9 twin prime numbers.

and

There are 97 prime numbers from 51001 to 52000.

In this, there are 14 twin prime numbers.

and

There are 89 prime numbers from 52001 to 53000.

In this, there are 6 twin prime numbers.

and
There are 92 prime numbers from 53001 to 54000.
In this, there are 9 twin prime numbers.
and
There are 90 prime numbers from 54001 to 55000.
In this, there are 6 twin prime numbers.
and
There are 95 prime numbers from 55001 to 56000.
In this, there are 10 twin prime numbers.
and
There are 99 prime numbers from 56001 to 57000.
In this, there are 14 twin prime numbers.
and
There are 91 prime numbers from 57001 to 58000.
In this, there are 9 twin prime numbers.
and
There are 90 prime numbers from 58001 to 59000.
In this, there are 9 twin prime numbers.
and
There are 94 prime numbers from 59001 to 60000.
In this, there are 14 twin prime numbers.
and
There are 87 prime numbers from 60001 to 61000.
In this, there are 6 twin prime numbers.
and
There are 87 prime numbers from 61001 to 62000.
and
There are 88 prime numbers from 62001 to 63000.
In this, there are 6 twin prime numbers.
and
There are 93 prime numbers from 63001 to 64000.
In this, there are 10 twin prime numbers.
and
There are 80 prime numbers from 64001 to 65000.
In this, there are 8 twin prime numbers.
and
There are 98 prime numbers from 65001 to 66000.
In this, there are 14 twin prime numbers.
and
There are 84 prime numbers from 66001 to 67000.
In this, there are 6 twin prime numbers.
and
There are 84 prime numbers from 67001 to 68000.
In this, there are 9 twin prime numbers.
and
There are 80 prime numbers from 68001 to 69000.
In this, there are 8 twin prime numbers.

and

There are 81 prime numbers from 69001 to 70000.

In this, there are 11 twin prime numbers.

and

There are 98 prime numbers from 70001 to 71000.

In this, there are 14 twin prime numbers.

and

There are 95 prime numbers from 71001 to 72000.

In this, there are 10 twin prime numbers.

and

There are $4694+2426=7126$ prime numbers from 5 to 72000.

In this, there are 867 twin prime numbers. Probability is $\frac{867}{71996}=0.012042336\dots$

and $[\frac{7126}{71996}]^2 \times \frac{6}{5} = 0.0117559071\dots$

I continued to challenge.

and

There are 90 prime numbers from 72001 to 73000.

In this, there are 10 twin prime numbers.

and

There are 83 prime numbers from 73001 to 74000.

In this, there are 6 twin prime numbers.

and

There are 92 prime numbers from 74001 to 75000.

In this, there are 8 twin prime numbers.

and

There are 91 prime numbers from 75001 to 76000.

In this, there are 7 twin prime numbers.

and

There are 83 prime numbers from 76001 to 77000.

In this, there are 11 twin prime numbers.

and

There are 95 prime numbers from 77001 to 78000.

In this, there are 9 twin prime numbers.

and

There are 84 prime numbers from 78001 to 79000.

In this, there are 9 twin prime numbers.

and

There are 91 prime numbers from 79001 to 80000.

In this, there are 9 twin prime numbers.

and

There are 88 prime numbers from 80001 to 81000.
In this, there are 12 twin prime numbers.
and
There are 92 prime numbers from 81001 to 82000.
In this, there are 12 twin prime numbers.
and
There are 89 prime numbers from 82001 to 83000.
In this, there are 13 twin prime numbers.
and
There are 84 prime numbers from 83001 to 84000.
In this, there are 5 twin prime numbers.
and
There are 97 prime numbers from 84001 to 85000.
In this, there are 11 twin prime numbers.
and
There are 85 prime numbers from 85001 to 86000.
In this, there are 11 twin prime numbers.
and
There are 88 prime numbers from 86001 to 87000.
In this, there are 8 twin prime numbers.
and
There are 93 prime numbers from 87001 to 88000.
In this, there are 13 twin prime numbers.
and
There are 76 prime numbers from 88001 to 89000.
In this, there are 9 twin prime numbers.
and
There are 94 prime numbers from 89001 to 90000.
In this, there are 8 twin prime numbers.
and
There are 89 prime numbers from 90001 to 91000.
In this, there are 9 twin prime numbers.
and
There are 85 prime numbers from 91001 to 92000.
In this, there are 10 twin prime numbers.
and
There are 97 prime numbers from 92001 to 93000.
In this, there are 9 twin prime numbers.
and
There are 86 prime numbers from 93001 to 94000.
In this, there are 10 twin prime numbers.
and
There are 87 prime numbers from 94001 to 95000.
In this, there are 11 twin prime numbers.
and
There are 95 prime numbers from 95001 to 96000.
In this, there are 8 twin prime numbers.

and

There are 84 prime numbers from 96001 to 97000.

In this, there are 7 twin prime numbers.

and

There are 82 prime numbers from 97001 to 98000.

In this, there are 15 twin prime numbers.

and

There are 87 prime numbers from 98001 to 99000.

In this, there are 13 twin prime numbers.

and

There are 87 prime numbers from 99001 to 100000.

In this, there are 6 twin prime numbers.

and

There are $7120+2470=9590$ prime numbers from 5 to 100000.

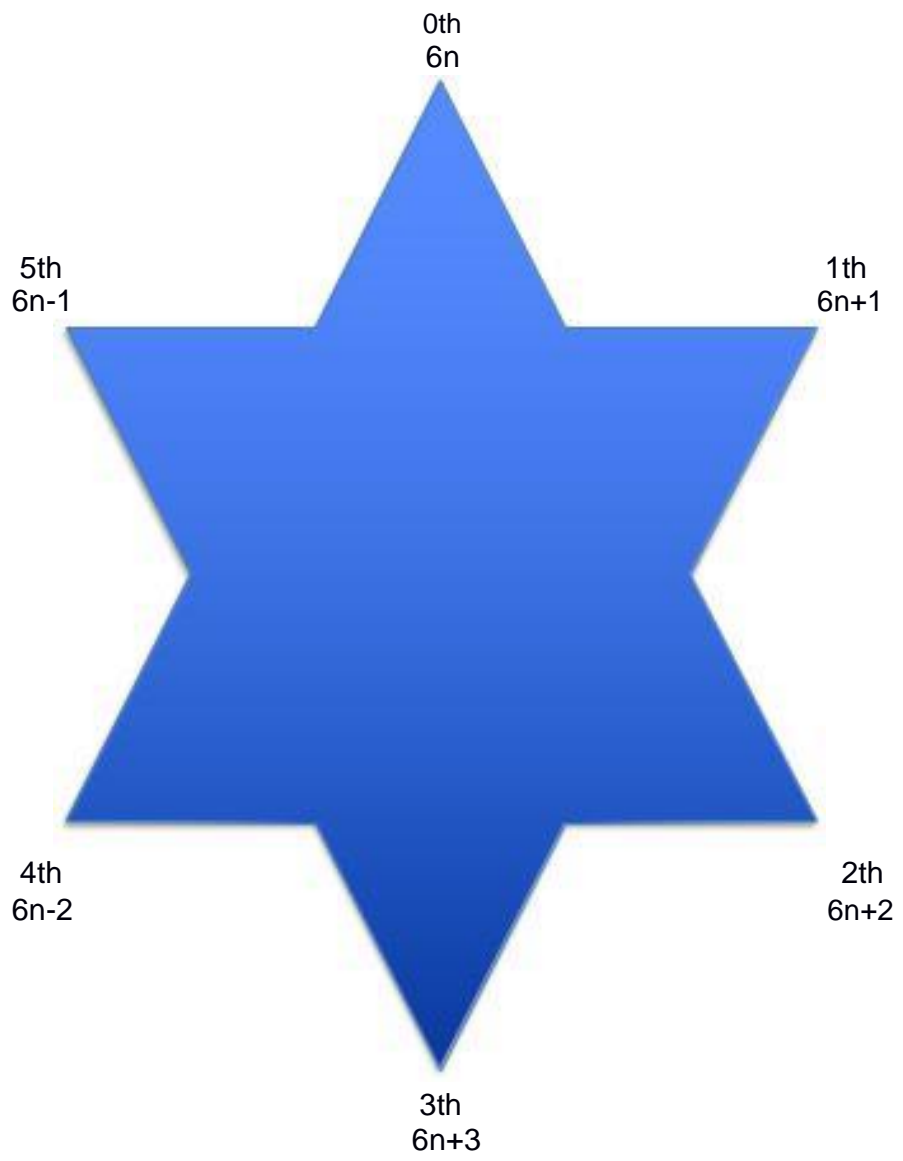
In this, there are $867+267=1134$ twin prime numbers.

Probability is $\frac{1134}{99996} = 0.0113404536\dots$

and

$\left[\frac{9590}{99996}\right]^2 \times \frac{6}{5} = 0.011037054946736451\dots$

Calculation depends on WolframAlpha.



Discussion

First, say $6n - 1 = 6n + 5$

$$(6n - 1) \times 3 = 18n - 3 = 3\text{th-angle.}$$

$$(6n + 1) \times 3 = 18n + 3 = 3\text{th-angle.}$$

The 1st-angle and 5th-angle are not filled.

$$(6n - 1) \times 5 = 6(5n - 1) + 1 = 1\text{th-angle.}$$

$$(6n + 1) \times 5 = 6(5n) + 5 = 5\text{th-angle.}$$

$$(6n - 1) \times 7 = 6(7n - 2) + 5 = 5\text{th-angle.}$$

$$(6n + 1) \times 7 = 6(7n + 1) + 1 = 1\text{th-angle.}$$

and

$$(6n - 1) \times 11 = 6(11n - 2) + 1 = 1\text{th-angle.}$$

$$(6n + 1) \times 11 = 6(11n + 1) + 5 = 5\text{th-angle.}$$

and

$$(6n - 1) \times 13 = 6(13n - 3) + 5 = 5\text{th-angle.}$$

$$(6n + 1) \times 13 = 6(13n + 2) + 1 = 1\text{th-angle.}$$

and

$$(6n - 1) \times 17 = 6(17n - 3) + 1 = 1\text{th-angle.}$$

$$(6n + 1) \times 17 = 6(17n + 2) + 1 = 5\text{th-angle.}$$

and

$$(6n - 1) \times 19 = 6(19n - 4) + 5 = 5\text{th-angle.}$$

$$(6n + 1) \times 19 = 6(19n + 3) + 1 = 1\text{th-angle.}$$

and

$$(6n - 1) \times (6n - 1) = 6(6n^2 - 2n) + 1 = 1\text{th-angle.}$$

$$(6n - 1) \times (6n + 1) = 6(6n^2 - 1) + 5 = 5\text{th-angle.}$$

and

$$(6n + 1) \times (6n - 1) = 6(6n^2 - 1) + 5 = 5\text{th-angle.}$$

$$(6n + 1) \times (6n + 1) = 6(6n^2 + 2n) + 1 = 1\text{th-angle.}$$

In this way, prime multiples of 5 or 7 or more of prime numbers fill 1th angle, 5th angle, and the location of prime numbers becomes narrower.

However, every time the hexagon is rotated once, the number of locations where the prime number exists increases by two.

But, the number of prime numbers increases as the number increases, the narrowing of the gorge is severe with large numbers.

The narrowing becomes very strong as the number grows.

The probability that $(6n - 1)(6n + 1)$ combinations exist is $6/5$ times the square of the probability of obtaining one prime number by rotating the hexagon once.

The probability that $(6n - 1)(6n + 1)$ combinations exist becomes very low when the number is huge.

Its probability is very close to 0, but greater than 0.

The narrowing of the generation of prime numbers cannot fill all the locations of prime numbers, that is, $(6n - 1)(6n + 1)$.

Because prime numbers exist forever[3].

The twin prime number is the same number of prime numbers $(6n - 1)(6n + 1)$.

It is $6/5$ times the square of the probability that a prime number will occur.

The probability that a twin prime will occur is less likely to occur because it is $6/5$ times the square of the probability that a prime will occur in a huge number, where the probability that a prime will occur is low[3], while a prime number is generated, it can be generated.

That is, twin primes exist forever.

Proof end.

References

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Postscript

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