Twin Prime Conjecture

Toshiro Takami*
mmm82889@yahoo.co.jp

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.

*47-8 kuyamadai, Isahaya-shi, Nagasaki-prefecture, 854-0067 Japan

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)

5th angle is [6n -1].
1th 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
47 ——— 6n -1
53 ——— 6n -1
59 ——— 6n -1
61 ——— 6n+1
67 ——— 6n+1
71 ——— 6n -1 (Twin prime)
73 ——— 6n+1
79 ——— 6n+1
83 ——— 6n -1
89 ——— 6n -1
97 ——— 6n+1
101 ——— 6n -1 (Twin prime)
103 ——— 6n+1
107 ——— 6n -1 (Twin prime)
109 ——— 6n+1
113 ——— 6n -1
127 ——— 6n+1
131 ——— 6n -1
137 ———6n -1 (Twin prime)
139 ———6n+1

149 ———6n -1 (Twin prime)
151 ———6n+1
157 ———6n+1
163 ———6n+1
167 ———6n -1
173 ———6n -1
179 ———6n -1 (Twin prime)
181 ———6n+1
191 ———6n -1(Twin prime)
193 ———6n+1
197 ———6n -1 (Twin prime)
199 ———6n+1
211 ———6n+1
223 ———6n+1
227 ———6n -1 (Twin prime)
229 ———6n+1
233 ———6n -1
239 ———6n -1 (Twin prime)
241 ———6n+1
251 ———6n -1
257 ———6n -1
263 ———6n -1
269 ———6n -1 (Twin prime)
271 ———6n+1
277 ——— 6n+1
281 ——— 6n -1 (Twin prime)
283 ——— 6n+1
293 ——— 6n+1
307 ——— 6n+1
311 ——— 6n -1 (Twin prime)
313 ——— 6n+1
317 ——— 6n -1
331 ——— 6n+1
337 ——— 6n+1
347 ——— 6n -1 (Twin prime)
349 ——— 6n+1
353 ——— 6n -1
359 ——— 6n -1
367 ——— 6n+1
373 ——— 6n -1
379 ——— 6n+1
383 ——— 6n -1
389 ——— 6n -1
397 ——— 6n+1
401 ——— 6n -1
409 ——— 6n+1
419 ——— 6n -1 (Twin prime)

421 ——— 6n+1
431 ——— 6n -1 (Twin prime)
433 ——— 6n+1
439 ——— 6n+1
443 ——— 6n -1
449 ——— 6n -1
457 ——— 6n+1
461 ——— 6n -1 (Twin prime)
463 ——— 6n+1
467 ——— 6n -1
479 ——— 6n -1
487 ——— 6n+1
491 ——— 6n -1
499 ——— 6n+1
503 ——— 6n -1
509 ——— 6n -1
521 ——— 6n -1 (Twin prime)
523 ——— 6n+1
541 ——— 6n+1
547 ——— 6n+1
557 ——— 6n -1
563 ——— 6n -1
569 ——— 6n -1 (Twin prime)
571 ——— 6n+1
577 ——— 6n+1
587 ——— 6n -1
593 ——— 6n -1
599 ——— 6n -1 (Twin prime)
601 ——— 6n+1
607 ——— 6n+1
613 ——— 6n+1
617 ——— 6n -1 (Twin prime)
619 ——— 6n+1
631——— 6n+1
641——— 6n -1 (Twin prime)
643——— 6n+1
647——— 6n -1
653——— 6n -1
659——— 6n -1 (Twin prime)
661——— 6n+1
673——— 6n+1
677——— 6n -1
683——— 6n+1
691——— 6n+1
701——— 6n -1
709——— 6n+1
719——— 6n -1

727——— 6n+1
733——— 6n+1
739——— 6n+1
743——— 6n -1
751——— 6n+1
757——— 6n+1
761——— 6n -1
769——— 6n+1
773——— 6n -1
787——— 6n+1
797——— 6n -1
809——— 6n -1 (Twin prime)
811——— 6n+1
821——— 6n -1 (Twin prime)
823——— 6n+1
827——— 6n -1 (Twin prime)
829——— 6n+1
839——— 6n -1
853——— 6n+1
857——— 6n -1 (Twin prime)
859——— 6n+1
863——— 6n -1
877——— 6n+1
881——— 6n -1 (Twin prime)
883——— 6n+1
887——— 6n -1
907——— 6n+1
911——— 6n -1
919——— 6n+1
929——— 6n -1
937——— 6n+1
941——— 6n -1
947——— 6n -1
953——— 6n -1
967——— 6n -1
971——— 6n -1
977——— 6n -1
983——— 6n -1
991——— 6n+1
997——— 6n+1
1009——— 6n -1
1013——— 6n+1
1019——— 6n -1 (Twin prime)
1021——— 6n+1
1031——— 6n -1 (Twin prime)
1033——— 6n+1
1039——— 6n+1

1049——— 6n -1 (Twin prime)
1051——— 6n+1
1061——— 6n -1 (Twin prime)
1063——— 6n+1
1069——— 6n+1
1087——— 6n+1
1091——— 6n -1 (Twin prime)
1093——— 6n+1
1097——— 6n -1
1103——— 6n -1
1109——— 6n -1
1117——— 6n+1
1123——— 6n+1
1129——— 6n+1
1151——— 6n -1 (Twin prime)
1153——— 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 $\frac{33}{996}$=0.03313253012...
and $[\frac{166}{996}]^2 \times \frac{6}{5} = 0.033333...$

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. Probability is $\frac{127}{1000}$
In this, there are 21 twin prime numbers. Probability is $\frac{21}{1000} = 0.021$
and $[\frac{127}{1000}]^2 \times \frac{6}{5} = 0.0193548$

and
There are 122 prime numbers from 3001 to 4000. Probability is $\frac{122}{1000}$
In this, there are 22 twin prime numbers. Probability is $\frac{22}{1000} = 0.022$
and $[\frac{122}{1000}]^2 \times \frac{6}{5} = 0.0178608$

and
There are 117 prime numbers from 4001 to 5000. Probability is $\frac{117}{1000}$
In this, there are 21 twin prime numbers. Probability is $\frac{21}{1000} = 0.021$
and $[\frac{117}{1000}]^2 \times \frac{6}{5} = 0.0164268$

and
There are 114 prime numbers from 5001 to 6000. Probability is $\frac{114}{1000}$
In this, there are 16 twin prime numbers. Probability is $\frac{16}{1000} = 0.016$
and $[\frac{114}{1000}]^2 \times \frac{6}{5} = 0.0155952$

and
There are 115 prime numbers from 6001 to 7000. Probability is $\frac{115}{1000}$
In this, there are 18 twin prime numbers. Probability is $\frac{18}{1000} = 0.018$
and $[\frac{115}{1000}]^2 \times \frac{6}{5} = 0.01587$

and
There are 106 prime numbers from 7001 to 8000. Probability is $\frac{106}{1000}$
In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $[\frac{106}{1000}]^2 \times \frac{6}{5} = 0.0134832$

and
There are 112 prime numbers from 8001 to 9000. Probability is $\frac{112}{1000}$
In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $[\frac{112}{1000}]^2 \times \frac{6}{5} = 0.0150528$

and
There are 110 prime numbers from 9001 to 10000. Probability is $\frac{110}{1000}$
In this, there are 15 twin prime numbers. Probability is $\frac{15}{1000} = 0.015$
and $[\frac{110}{992}]^2$=0.012295948231... $[\frac{110}{992}]^2 \times \frac{6}{5} = 0.014755...$

and
There are 106 prime numbers from 10001 to 11000. Probability is $\frac{106}{1000}$
In this, there are 16 twin prime numbers. Probability is $\frac{16}{1000} = 0.016$
and $[\frac{106}{1000}]^2 \times \frac{6}{5} = 0.0134832$

and
There are 102 prime numbers from 11001 to 12000. Probability is $\frac{102}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $[\frac{102}{1000}]^2 \times \frac{6}{5} = 0.0124848$

and
There are 109 prime numbers from 12001 to 13000. Probability is $\frac{109}{1000}$
In this, there are 12 twin prime numbers. Probability is $\frac{12}{1000} = 0.012$

and $\quad [\frac{109}{1000}]^2 \times \frac{6}{5} = 0.0142572$

and
There are 105 prime numbers from 13001 to 14000. Probability is $\frac{105}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $\quad [\frac{105}{1000}]^2 \times \frac{6}{5} = 0.01323$

and
There are 102 prime numbers from 14001 to 15000. Probability is $\frac{102}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $\quad [\frac{102}{1000}]^2 \times \frac{6}{5} = 0.0124848$

and
There are 108 prime numbers from 15001 to 16000. Probability is $\frac{108}{1000}$
In this, there are 12 twin prime numbers. Probability is $\frac{12}{1000} = 0.012$
and $\quad [\frac{108}{1000}]^2 \times \frac{6}{5} = 0.0139968$

and
There are 98 prime numbers from 16001 to 17000. Probability is $\frac{98}{1000}$
In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $\quad [\frac{98}{1000}]^2 \times \frac{6}{5} = 0.0115248$

and
There are 104 prime numbers from 17001 to 18000. Probability is $\frac{104}{1000}$
In this, there are 17 twin prime numbers. Probability is $\frac{17}{1000} = 0.017$
and $\quad [\frac{104}{1000}]^2 \times \frac{6}{5} = 0.0129792$

and
There are 94 prime numbers from 18001 to 19000. Probability is $\frac{94}{1000}$
In this, there are 14 twin prime numbers. Probability is $\frac{14}{1000} = 0.014$
and $\quad [\frac{94}{1000}]^2 \times \frac{6}{5} = 0.0106032$

and
There are 104 prime numbers from 19001 to 20000. Probability is $\frac{104}{1000}$
In this, there are 14 twin prime numbers. Probability is $\frac{14}{1000} = 0.014$
and $\quad [\frac{104}{1000}]^2 \times \frac{6}{5} = 0.0129792$

and
There are 98 prime numbers from 20001 to 21000. Probability is $\frac{98}{1000}$

In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $[\frac{98}{1000}]^2 \times \frac{6}{5} = 0.0115248$

and
There are 104 prime numbers from 21001 to 22000. Probability is $\frac{104}{1000}$
In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $[\frac{104}{1000}]^2 \times \frac{6}{5} = 0.0129792$

and
There are 100 prime numbers from 22001 to 23000. Probability is $\frac{100}{1000}$
In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $[\frac{100}{1000}]^2 \times \frac{6}{5} = 0.012$

and
There are 104 prime numbers from 23001 to 24000. Probability is $\frac{104}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $[\frac{104}{1000}]^2 \times \frac{6}{5} = 0.0129792$

and
There are 94 prime numbers from 24001 to 25000. Probability is $\frac{94}{1000}$
In this, there are 6 twin prime numbers. Probability is $\frac{6}{1000} = 0.006$
and $[\frac{94}{1000}]^2 \times \frac{6}{5} = 0.0106032$

and
There are 98 prime numbers from 25001 to 26000. Probability is $\frac{98}{1000}$
In this, there are 12 twin prime numbers. Probability is $\frac{12}{1000} = 0.012$
and $[\frac{98}{1000}]^2 \times \frac{6}{5} = 0.0115248$

and
There are 101 prime numbers from 26001 to 27000. Probability is $\frac{101}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000}$=0.011
and $[\frac{101}{1000}]^2 \times \frac{6}{5} = 0.0122412$

and
There are 94 prime numbers from 27001 to 28000. Probability is $\frac{94}{1000}$
In this, there are 15 twin prime numbers. Probability is $\frac{15}{1000} = 0.015$
and $[\frac{94}{1000}]^2 \times \frac{6}{5} = 0.0106032$

and

There are 100 prime numbers from 28001 to 29000. Probability is $\frac{100}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{10}{1000} = 0.01$
and $[\frac{100}{1000}]^2 \times \frac{6}{5} = 0.012$

and
There are 92 prime numbers from 29001 to 30000. Probability is $\frac{92}{1000}$
In this, there are 9 twin prime numbers. Probability is $\frac{9}{1000} = 0.009$
and $[\frac{92}{1000}]^2 \times \frac{6}{5} = 0.0101568$

and
There are 95 prime numbers from 30001 to 31000. Probability is $\frac{95}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{10}{1000} = 0.01$
and $[\frac{95}{1000}]^2 \times \frac{6}{5} = 0.01083$

and
There are 92 prime numbers from 31001 to 32000. Probability is $\frac{92}{1000}$
In this, there are 9 twin prime numbers. Probability is $\frac{9}{1000} = 0.009$
and $[\frac{92}{1000}]^2 \times \frac{6}{5} =$

and
There are 106 prime numbers from 32001 to 33000. Probability is $\frac{106}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{10}{1000} = 0.01$
and $[\frac{106}{1000}]^2 \times \frac{6}{5} = 0.0134832$

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 $[\frac{3548}{32996}]^2 \times \frac{6}{5} = 0.0138747727438...$

and
There are 100 prime numbers from 33001 to 34000. Probability is $\frac{100}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $[\frac{100}{1000}]^2 \times \frac{6}{5} = 0.012$

and
There are 94 prime numbers from 34001 to 35000. Probability is $\frac{94}{1000}$
In this, there are 13 twin prime numbers. Probability is $\frac{13}{1000} = 0.013$
and $[\frac{94}{1000}]^2 \times \frac{6}{5} = 0.0106032$

and
There are 92 prime numbers from 35001 to 36000. Probability is $\frac{92}{1000}$
In this, there are 9 twin prime numbers. Probability is $\frac{9}{1000} = 0.009$
and $[\frac{92}{1000}]^2 \times \frac{6}{5} = 0.0101568$

and
There are 99 prime numbers from 36001 to 37000. Probability is $\frac{99}{1000}$
In this, there are 7 twin prime numbers. Probability is $\frac{7}{1000} = 0.007$
and $[\frac{99}{1000}]^2 \times \frac{6}{5} = 0.0117612$

and
There are 75 prime numbers from 37001 to 38000. Probability is $\frac{75}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{7}{1000} = 0.007$
and $[\frac{75}{1000}]^2 \times \frac{6}{5} = 0.00675$

and
There are 107 prime numbers from 38001 to 39000. Probability is $\frac{75}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $[\frac{107}{1000}]^2 \times \frac{6}{5} = 0.00675$

and
There are 96 prime numbers from 39001 to 40000. Probability is $\frac{96}{1000}$
In this, there are 8 twin prime numbers. Probability is $\frac{8}{1000} = 0.008$
and $[\frac{96}{1000}]^2 \times \frac{6}{5} = 0.0110592$

and
There are 88 prime numbers from 40001 to 41000. Probability is $\frac{88}{1000}$
In this, there are 9 twin prime numbers. Probability is $\frac{9}{1000} = 0.009$
and $[\frac{88}{1000}]^2 \times \frac{6}{5} = 0.0092928$

and
There are 101 prime numbers from 41001 to 42000. Probability is $\frac{101}{1000}$
In this, there are 11 twin prime numbers. Probability is $\frac{11}{1000} = 0.011$
and $[\frac{101}{1000}]^2 \times \frac{6}{5} = 0.0122412$

and
There are 102 prime numbers from 42001 to 43000. Probability is $\frac{102}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{10}{1000} = 0.01$
and $[\frac{102}{1000}]^2 \times \frac{6}{5} = 0.0124848$

and
There are 85 prime numbers from 43001 to 44000. Probability is $\frac{85}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{10}{1000} = 0.01$
and $[\frac{85}{1000}]^2 \times \frac{6}{5} = 0.00867$

and
There are 85 prime numbers from 44001 to 45000. Probability is $\frac{96}{1000}$
In this, there are 10 twin prime numbers. Probability is $\frac{10}{1000} = 0.01$
and $[\frac{96}{1000}]^2 \times \frac{6}{5} = 0.0110592$

and
There are 4683 prime numbers from 5 to 45000. Probability is $\frac{3675}{44996}$
In this, there are 582 twin prime numbers. Probability is $\frac{582}{44996}$ =0.012934483...
and $[\frac{4683}{44996}]^2 \times \frac{6}{5} = 0.012998156...$

There seems to be one or two miscounts.

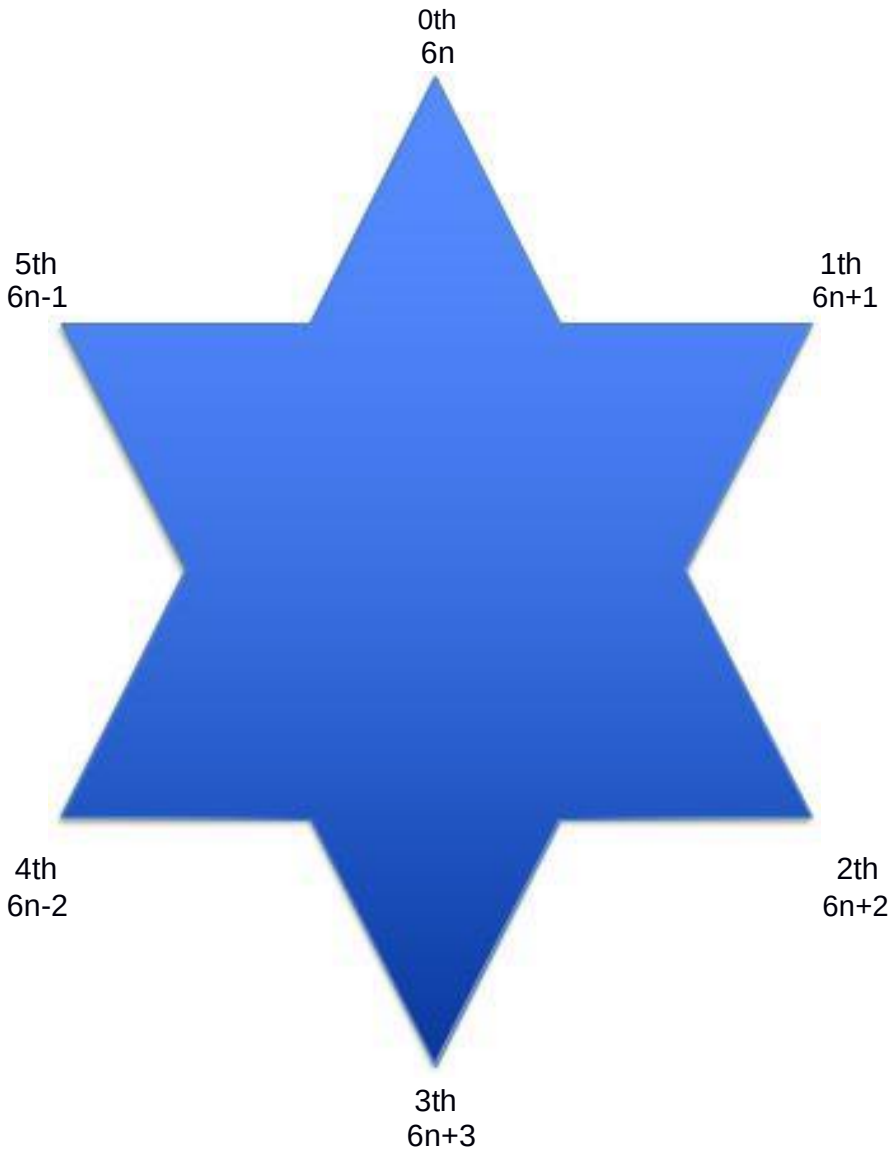
$\frac{6}{5}$ is necessary as a correction value. This is because if one of the hexagons is identified as a prime number, the probability that the remaining corner is a prime number increases by 6/5 times the simple square.

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


0th
6n
1th
6n+1
2th
6n+2
3th
6n+3
4th
6n-2
5th
6n-1

Discussion

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

(6n -1)×3 =18n -3= 3th-angle.
(6n+1)×3 =18n+3= 3th-angle.
The 1st-angle and 5th-angle are not filled.

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

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

and
$(6n-1)\times 11$ =6(11n -2)+1= 1th-angle.
$(6n+1)\times 11$ =6(11n+1)+5= 5th-angle.

and
$(6n-1)\times 13$ =6(13n -3)+5= 5th-angle.
$(6n+1)\times 13$ =6(13n+2)+1= 1th-angle.

and
$(6n-1)\times 17$ =6(17n -3)+1= 1th-angle.
$(6n+1)\times 17$ =6(17n+2)+1= 5th-angle.

and
$(6n-1)\times 19$ =6(19n -4)+5= 5th-angle.
$(6n+1)\times 19$ =6(19n+3)+1= 1th-angle.

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

and
$(6n+1)\times(6n-1) = 6(6n^2$ -1)+5= 5th-angle.
$(6n+1)\times(6n+1) = 6(6n^2$+2n)+1= 1th-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.
It 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

[1] B.Riemann.: Uber die Anzahl der Primzahlen unter einer gegebenen Grosse, Mon. Not. Berlin Akad pp.671-680, 1859

[2] John Derbyshire.: Prime Obsession: Bernhard Riemann and The Greatest Unsolved Problem in Mathematics, Joseph Henry Press, 2003

[3] S.Kurokawa.: Riemann hypothesis, Japan Hyoron Press, 2009

[4] Marcus du Sautoy.: The Music of The Primes, Zahar Press, 2007

[5] T.Takami.: Goldbach's Conjecture, viXra:1808.0531

Postscript

I seem to be congenital, but I am not good at English.
I was only studying English in junior high school, but English was always the lowest.
All relied on Google translation.
When converted to English, it is encrypted to me.
There seems to be a lot of mistakes in English.