Almost no primes in the infinite world

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Abstract

There are almost no primes in the infinite world.

This is because the place where the primes appears is occupied by multiple of the primes.

If you think about a hexagon, you can see it right away.

key words

multiple of the primes, almost no primes in the infinite world, average difference is 2.296

Introduction

In this paper, it is written in advance that 2 and 3 are omitted from primes.

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

All Twin Primes are combination of (6n -1) and (6n+1).
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.

Primes are (6n -1) or (6n+1).
The following is a prime number.
There are no primes that are not (6n -1) or (6n+1).
5 ——— 6n -1 (Twin prime)

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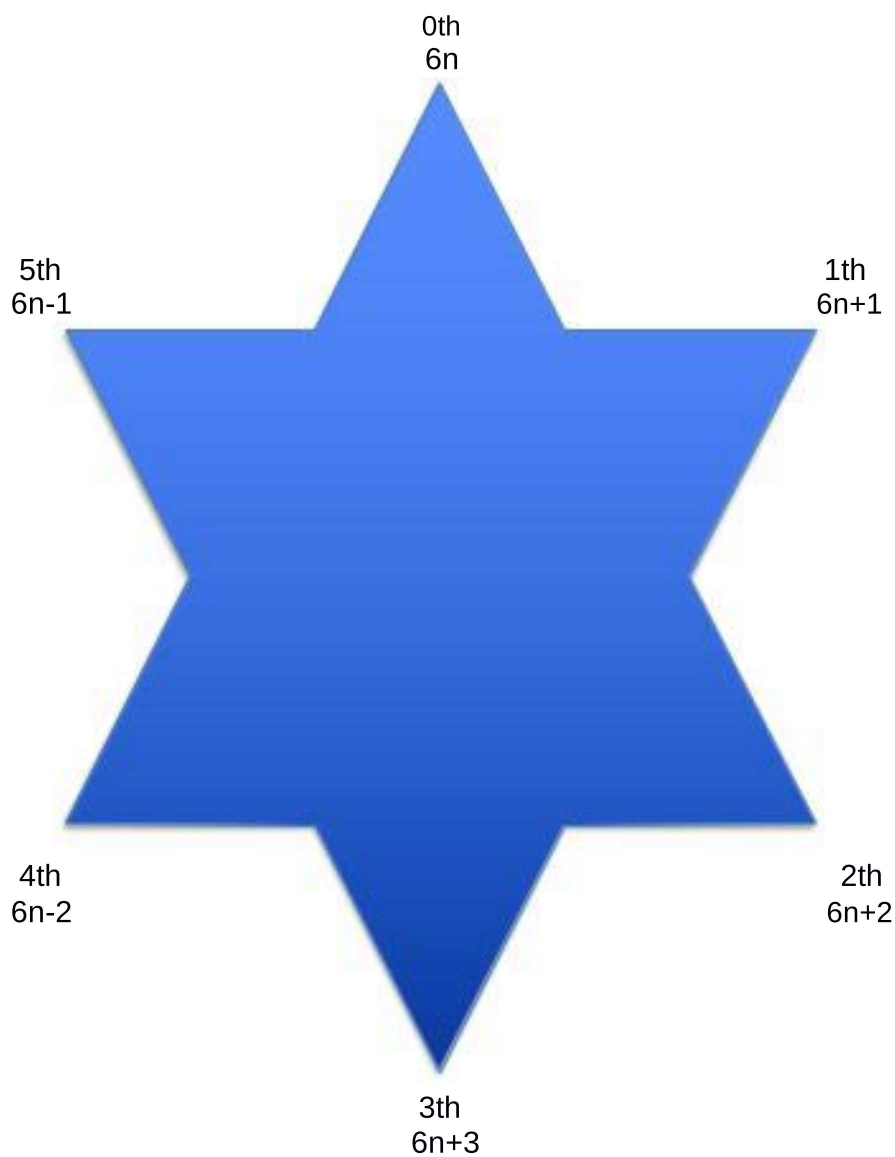
7 ——— 6n+1
11 ——— 6n -1 (Twin prime)
13 ——— 6n+1
17 ——— 6n -1 (Twin prime)
19 ——— 6n+1
23 ——— 6n -1
29 ——— 6n -1 (Twin prime)
31 ——— 6n+1
....
....


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

Sheet1

number	number of primes	distribution(bk/ak)	average(ak/bk)
10000	1229	12.29	8.1366965012205
100000	9592	9.592	10.4253544620517
1000000	78498	7.8498	12.739178068231
10000000	664579	6.64579	15.0471200564568
100000000	5761455	57.61455	17.3567267296195
1000000000	50847534	50.847534	19.6666371273777
10000000000	455052511	45.5052511	21.975485813768
100000000000	4118054813	41.18054813	24.2833096063503
1000000000000	37617912018	37.617912018	26.5830809408429
10000000000000	346065636839	34.6065636839	28.8962524315938
1*10^14			31.1902524315938
1*10^15			33.4842524315938
1*10^16			35.7782524315938
1*10^17			38.0722524315938
1*10^18			40.3662524315938
1*10^19			42.6602524315938
1*10^20			44.9542524315938
1*10^21			47.2482524315937
1*10^22			49.5422524315937
1*10^23			51.8362524315937
1*10^24	1.8435599767E+22	18.43559976734	54.24287859
1*10^124			283.84287859
1*10^224			513.44287859
1*10^324			743.04287859
1*10^424			972.64287859
1*10^524			1202.24287859
1*10^624			1431.84287859
1*10^724			1661.44287859
1*10^824			1891.04287859
1*10^1000824			231491.04287859
1*10^2000824			461091.04287859
1*10^3000824			690691.04287859
1*10^4000824			920291.04287859
1*10^5000824			1149891.04287859
1*10^6000824			1379491.04287859
1*10^100006000824			2297379491.04288
1*10^200006000824			4593379491.04288
1*10^300006000824			6889379491.04288
1*10^10000300006000824			22966889379491
1*10^20000300006000824			45926889379491.1
1*10^30000300006000824			68886889379491

Discussion

As can be seen from the above table, the number of very prime numbers decreases as the number increases.

In the number $1 \times 10^{30000300006000824}$, there is only one prime out of 68886889379491 .

68886889379491 =6.88×10^{14}

When a number is small, a large number of primes are generated, and such a large number hardly produces a prime number.

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

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

In this way, prime multiples of (6n -1) or (6n+1) of primes fill 5th-angle, 1th-angle, and the location of primes becomes little by little narrower.

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

$\log(10^{20}) = 20\log(10) \approx 46.0517018$
$\log(10^{200}) = 200\log(10) \approx 460.517018$
$\log(10^{2000}) = 2000\log(10) \approx 4605.17018$
$\log(10^{20000}) = 20000\log(10) \approx 46051.7018$
$\log(10^{200000}) = 200000\log(10) \approx 460517.018$

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