Intrinsic Relations between Prime Numbers

A prime number and the generation of the prime twins

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Abstract: This work reveals the intrinsic relationship of numbers with the conception of "prime multiple" to prove the "hypothesis of twin primes". Based on this proof, "Goldbach conjecture" is proved with the "Odd-Gaussian Corresponding". The nature of "prime number" can be thus obtained.Paper is using the axiom Ⅶ twice. For the first time: high high more than nonsingular group, according to the axiom Ⅶ get there will be a (high + high group). Second: high + high group) will be (prime number + prime)

Key words: the Prime Spanning, cross interval, the Odd-Gauss Group, the Odd-Gaussian Corresponding.

Section I

(If there is no particular in the following, all the discussion is within the scope of odd numbers.)

1. Temporary Axiom

Axiom I: Multiples of the same prime numbers appear with the same spanning towards infinity.

Axiom II: Among n consecutive odd numbers, there must be【roundness(n/a)】composite numbers with a as a prime factor.

Axiom III: Among n consecutive composite numbers with a, there must be【roundness(n/b)】composite numbers with b as a prime factor.

Axiom IV: All multiples less than b (a ≤ b, a,b are prime numbers) cannot completely fill in the spanning in prime number cross interval of b, that at least 2 prime numbers exist in the prime number cross interval of b.

Corollary 1: the length of consecutive composite numbers is less than that of prime number spanning in prime number cross interval.

Corollary 2: sufficient condition for the existence of twin prime numbers

Axiom V: There must be one prime number pair (solution) in the all-correspondence of two Odd-Gauss groups.

Axiom VI: There are (a-1) prime numbers between two neighboring composite numbers with a as a prime factor.

Axiom Ⅶ:

If the number of Element A is greater than the number of

Element B, there must be the group like (a, a) when any two Elements are divided into one group.

Section II

Glossary:

That for every even number is a set of gaussian. -- then:

1. The Odd-Gauss Group: 3 consecutive odd numbers (there should be only no more than one composite, which must be the multiple of 3) can be called the Odd-Gauss Group, the Gaussian corresponding group of prime number.

2. The Prime Cross-interval: If a, b are consecutive prime numbers (a<b), then the difference of the square of b and the square of a is called the cross interval of a. [a2, b2].

3. The interval less than the square: The interval less than the square of a. (a is a prime number)

4. The Twin Prime Number Position: The position of the four odd numbers next to the multiple of 3.

5. The Odd-Gaussian Corresponding: The Gaussian correspondence of odd numbers (The discussion is based on the Odd-Gaussian Corresponding), which means the corresponding relation between two odd numbers of one even number (see below).

Section III

About high corresponding to the understanding and the understanding of the definition of high group

The even number is less than 38. For example, the Odd-Gaussian Corresponding of 28 is as follows:

3 5 7 9 11 13

25 23 21 19 17 15

Odd high group (3, 5, 7,) correspond to (non) odd high group (25, 23, 21), get 3+25, 5+23,7+21.

Empathy (19, 17, 15,) + (9, 11, 13,) was 19+9,17+11,15+13

And the Odd-Gaussian Corresponding of 30 is:

3 5 7 9 11 13

27 25 23 21 19 17 15

Special note: (27, 25, 23) is a "non - odd high group" - (definition can be known)

Odd high group (3, 5, 7,) correspond to (non) odd high group (27, 25, 23,), get 3+27, 5+25,7+23.

Empathy (21, 19, 17) + (9, 11, 13,) was 21+9,19+11,17+13

(Theses two examples show that the corresponding odd numbers of even numbers from 28 to 30 are 25 and 27.)

number in accordance now is 32 with the Odd-Gaussian Corresponding as follows:

3	5	7	9	11	13	15
29	27	25	23	21	19	17

Supplement

*The Odd-Gaussian Corresponding of 32 is as follow*s:

3	5	7	9	11	13	15
29	27	25	23	21	19	17

The Odd-Gaussian Corresponding of the even number 32:

(i) 31 is not in consideration.

(ii) E.g. (9,11,13) is an Odd-Gauss Group, in accordance with the group (23,21,19) which the two consist an Odd-Gaussian all- correspondence.

(iii) If regarding the whole sequence as one merely includes the multiples of 3, and the multiples of 5,7,….,n are all supposed to be prime numbers, then further analysis of the multiples of 5,7,…n are made step by step with the increase of even numbers.

The Odd-Gaussian Corresponding of 34 is as follows:

3	5	7	9	11	13	15	17
31	29	27	25	23	21	19	17

IV eventually proved: using axiom Ⅶ proof

1.Two using the axiom VII proof

1 in the high group that corresponds odd prime number number is greater than the number of.

2 prove that odd high corresponding to odd high group number is greater than the number of non singular high group.

Proof 1: from the definition of the odd high group.

The first: know any even number has a set of gaussian.

Second: gaussian, the corresponding number is high than the high number of group. In the below.

Third: the corresponding high group, according to the definitions and axioms Ⅶ available will be the result of "prime number + prime number".

Article 2 prove as follows:

{(1/3) +1/15+...... +1/3n > 1/5+...... 1/n}N

Proof 2: (1/3) +1/15+...... +1/3n > 1/5+...... 1/n [n] is a continuous prime necessity -- is that of twin primes.

A. (1/3) +1/15+...... +1/3n (this is the number of odd high group)

1/5+ .... 1/n (this is the number of non singular high group)The fourth part
2.Natural Numbers were calculated according to the definition of high group, infinity (or any) when the high group is greater than the number of the unusually high number of.
3. 1/15 +... 1/3n > 1/5 +... + 1 / n
4.n is greater than 5 all prime Numbers.
5.2. 1/3 + 1/15+... +1/3n is the number of high group.
6.3. 1/5 +... + 1 / n is the number of group (not high).
By above knowable:
High group is greater than the number of the number of group (not high), then according to the axiom Ⅶ launch {there will be a high group with high all corresponding}. -- -- -- high group and the high of the corresponding introduced according to the axiom Ⅶ {there will be a prime to the presence of goldbach conjecture}.
7.High group is greater than the number of group (not high) number, this is the twin prime conjecture ? in itself

Section Ⅵ

1. Generalization and Summarization: (i) There are infinitely many twin prime numbers. (There must be twin primes in the cross interval)

(ii) Goldbach Conjecture. (If there are at least two prime pairs in the interval less than the square, then there must be a pair in the cross interval.)

(iii) Twin prime numbers, primes and odd composite numbers appear and can only appear in the Twin Prime position. The rules can only be based on the fact that the primes are infinite.

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