



# Some even expressed as 1+1 or 1-2, 1-4, 1-c, 1+2 can also be expressed as 1-3

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## ABSTRACT

According to known conclusions, even numbers can be expressed as 1+2, 1+5, 3+2, 1+c. So this paper derives conclusions partial even expressed as 1+1 or 1-2, 1-4, 1-c, 1+2 can also be expressed as 1-3.

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## INTRODUCTION

Goldbach's conjecture is that an even number can be represented as a prime number plus a prime number, called "1+1", According to the theory of Chinese mathematician ChenJing run, a large even number can be expressed as one prime number plus no more than two primes product, It is called "1+ 2";There is also Wang Yuan's theory: 1. Large even Numbers can be expressed as the product of two prime Numbers plus three primes product It is called: 3+2; 2.A large even number can be expressed as a prime number plus no more than four prime's product, it is called 1 plus 4;There is also pan cheng dong's theory that large even Numbers can be represented as a prime plus 5 prime's product, called "1+5".

Based on these known conclusions, this paper concludes that some even Numbers that can be expressed as 1+1 can also be expressed as 1-2, 1-4, 1-c, and some even Numbers that can be expressed as 1+2 can also be expressed as 1-3

### Theorem 1.1

Chinese mathematician ChenJing run got : a large even number can be expressed as one prime number plus no more than two primes product, It is called "1+ 2"

### Lemma 1.2

Partial even numbers can expressed as 1+1 can also be expressed as 1-2.

**Certification**

All with  $p$  subscripts indicate prime numbers  
It is known that  $1+2$  can indicate all large even numbers proposed by Chen Jingrun,

$$2N_1 - p_1 = p_2 p_3 \quad (2N_1 = p_1 + p_2 p_3 \quad 1+2)$$

There is an even number as the difference between two prime numbers,

$$2N_2 + p_4 = p_5 \quad (2N_2 = p_5 - p_4 \quad 1-1)$$

Because of  $2N_1$  representing all large even numbers,  $N_2$  included in  $N_1$  exist, when they are the same. So

$$(2N_1 + p_4) - (2N_1 - p_1) = p_4 + p_1 = p_5 - p_2 p_3$$

$P_4 + p_1$  is  $1+1$ ,  $P_5 - p_2 p_3$  is  $1-2$ , they are equal,

So there are partial even numbers that can be expressed as  $1+1$  can also be expressed as  $1-2$ .

**Theorem 2.1**

There is also Wang Yuan's theory: 1. Large even Numbers can be expressed as the product of two prime Numbers plus three primes product It is called:  $3+2$ ;

**Lemma 2.2**

The presence of an even number that is expressed as  $1+2$  can also be expressed as  $1-3$ .

**Certification**

It is known that  $3+2$  can represent all large even numbers, proposed by Wang Yuan.

$$2N_1 - p_1 p_2 = p_3 p_4 p_5 \quad (2N_1 = p_1 p_2 + p_3 p_4 p_5 \quad 2+3)$$

There is an even number as the difference between two prime numbers

$$2N_2 + p_6 = p_7 \quad (2N_2 = p_7 - p_6 \quad 1-1)$$

Because of  $2N_1$  representing all large even numbers,  $N_2$  included in  $N_1$  exist, when they are the same. So  $2N_1 + p_6) - (2N_1 - p_1 p_2) = p_6 + p_1 p_2 = p_7 - p_3 p_4 p_5$   
 $P_6 + p_1 p_2$  is  $1+2$ ,  $P_7 - p_3 p_4 p_5$  is  $1-3$

So there is the existence that  $1+2$  can also be expressed as  $1-3$ .

**Theorem 3.1**

Wang Yuan's conclusion: A large even number can be expressed as a prime number plus no more than four prime's product, it is called 1 plus 4.

**Lemma 3.2**

The presence of a partial even number that is expressed as  $1+1$  can also be expressed as  $1-4$ .

**Certification**

Wang Yuan also proved  $1+4$ , the same reason:  $1+1$  can also be expressed as  $1-4$ .

**Theorem 4.1**

There is also pan cheng dong's theory that large even Numbers can be represented as a prime plus 5 prime's product, called " $1+5$ ".

**Lemma 4.2**

The presence of a partial even number that is expressed as  $1+1$  can also be expressed as  $1-5$ .

**Certification**

It is known that  $3+2$  can represent all large even numbers, proposed by Pan Chengdong.

$$2N_1 - p_1 = p_2 p_3 p_4 p_5 p_6 \quad (2N_1 = p_2 p_3 p_4 p_5 p_6 + p_1 \quad 1+5)$$

Exist  $1-1 \quad 2N_2 + p_7 = p_8 \quad (2N_2 = p_8 - p_7 \quad 1-1)$

Because of  $2N_1$  representing all large even numbers,  $N_2$  included in  $N_1$  exist, when they are the same. So  $(2N_1 + p_7) - (2N_1 - p_1) = p_7 + p_1 = p_8 - p_2 p_3 p_4 p_5 p_6$

$$P_1 + p_7 \text{ is } 1+1, P_8 - p_2 p_3 p_4 p_5 p_6 \text{ is } 1-5$$

So there is the existence that  $1+1$  can also be expressed as  $1-5$ .

**Theorem 5.1**

Large even numbers can be expressed as  $1+c$ ,  $c$  is a big number.

**Lemma 5.2**

The presence of a partial even number that is expressed as  $1+1$  can also be expressed as  $1-c$ .

**Certification**

Goldbach guessed that " $a+b$ " was completed:  $1+c$ ,  $c$  is a large natural number. According to the above method, there is the existence that  $1+1$  can also be expressed as  $1-c$ .

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## REFERENCES

1. Wangyuan, baidubaik,  
<https://baike.baidu.com/item/%E7%8E%8B%E5%85%83/17475?fr=Aladdin>

2. panchendong, baidubaik,  
<https://baike.baidu.com/item/%E6%BD%98%E6%89%BF%E6%B4%9E/3712120?fr=aladdin>  
3. chenjingrun, baidubaik,  
<https://baike.baidu.com/item/%E9%99%88%E6%99%AF%E6%B6%A6/18067?fr=Aladdin>  
4. gedebahecaix, baidubaik,  
<https://baike.baidu.com/item/%E5%93%A5%E5%BE%B7%E5%B7%B4%E8%B5%AB%E7%8C%9C%E6%83%B3/72364?fr=aladdin>

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