

A Simple Approach To Goldbach's Conjecture

By proving that the sum of every two odd numbers is the sum of two odd prime numbers and an even number, this article has proved that Goldbach's conjecture is true:

Every even number greater than two is the sum of two odd prime numbers;

Key words: Goldbach's Conjecture, even number, odd number, odd prime number.

Proof

Every even number greater than two is the sum of two odd numbers;

i.e., $E=O1+O2$;

where: E is any even number greater than two,

O1 and O2 are odd numbers.

The odd number includes all of the odd prime numbers.

i.e., $P \in O$;

where: P is the odd prime number,

O is the odd number.

The difference between every odd number and an odd prime number is an even number. Therefore,

Every odd number is the sum of an odd prime number and an even number.

i.e., $O_1 = P_1 + E_1$;

where: O_1 is any odd number;

P_1 is an odd prime number;

E_1 is an even number.

Hence, the sum of every two odd number is the sum of two odd prime number and an even number.

i.e., $O_1 + O_2 = P_1 + E_1 + P_2 + E_2 = P_1 + P_2 + E_3$; $E_3 = E_1 + E_2$;

where: O_1 and O_2 are any odd numbers,

P_1 and P_2 are odd prime numbers,

E_1 and E_2 and E_3 are even numbers.

Every even number greater than two is the sum of two odd numbers,

and the sum of every two odd numbers is the sum of two odd prime numbers and an even number,

hence every even number greater than two is the sum of two odd prime numbers and an even number.

i.e., $E=P1+P2+E3$;

where: E is any even number greater than two,

E3 is an even number,

P1 and P2 are odd prime numbers.

That's to say that the difference between every even number greater than two and an even number is the sum of two odd prime numbers.

i.e., $E-E3=P1+P2=2N$;

where: E is any even number greater than two,

E3 is an even number,

P1 and P2 are odd prime numbers.

N is the positive integer.

Every even number greater than two is the sum of two odd prime numbers and an even number E3.

but the sum of every even number E3 and two odd prime numbers is not every even number greater than two.

Hence, $E3=E-P1-P2$, every even number E3 is only restricted by

an even number E , but is not restricted by all even numbers E .

As the same reason, every even number E_3 is not restricted by all odd prime numbers.

Let $E_4 = E - E_3$, because even number E is any even number, so for every even number E_4 , it can be found an even number E to get $E_4 + E_3 = E$, in spite of which even number that even number E_3 is, so $E_4 = E - E_3$ is any even number.

It has established that every even number greater than two is the sum of two odd prime numbers;

Conclusion

Goldbach's conjecture is true:

Every even number greater than two is the sum of two odd prime numbers;

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