Mathematics, I undressed the theory of numbers,
Wetzlar, Germany, pensioner, e-mail: michusid@mail.ru
Mykhaylo Khusid

Representation of even number in the form of the sum of four simple.

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Abstract:*it is known that a weak problem Goldbach is finally solved .*

$$p_1 + p_2 + p_3 = 2N + 1 \qquad [1]$$

where on the left is the sum of three odd primes

more than 7

The author provides the proof in this work, being guided by the decision

weak problem of Goldbach that:

$$p_1 + p_2 + p_3 + p_4 = 2N \qquad [2]$$

where on the right sum of four prime numbers, at the left any even number,

since 12, by method of mathematical induction.

Keywords: *and on this basis decides topical number theory problems.*

Decision.

1. For the first even number 12 = 3+3+3+3.

We allow justice for the previous N> 5:

$$p_1 + p_2 + p_3 + p_4 = 2N \qquad [3]$$

We will add to both parts on 1

$$p_1 + p_2 + p_3 + p_4 + 1 = 2N + 1 \qquad [4]$$

where on the right the odd number also agrees [1]

$$p_1 + p_2 + p_3 + p_4 + 1 = p_5 + p_6 + p_7 \qquad [5]$$

Having added to both parts still on 1

$$p_1 + p_2 + p_3 + p_4 + 2 = p_5 + p_6 + p_7 + 1 \qquad [6]$$

We will unite $p_6 + p_7 + 1$

again we have some odd number,

which according to [1] we replace with the sum of three simple and as a result we receive:

$$p_1 + p_2 + p_3 + p_4 + 2 = p_5 + p_6 + p_7 + p_8 \qquad [7]$$

at the left the following even number is relative [3], and on the right the sum four prime numbers.

$$p_1 + p_2 + p_3 + p_4 = 2\mathrm{N} \qquad [8]$$

Thus obvious performance of an inductive mathematical method.

As was to be shown.

2.Any even number starting with six is representable in the form of the sum of two prime numbers. Goldbach-Euler's hypothesi.

Suppose there are even numbers that cannot be represented as the sum of two prime

odd numbers:

$$p_1 + p_2 + p_3 + p_4 \neq p_9 + p_{10} \qquad [9]$$

$$p_1 + p_2 + p_3 + p_4 + 2 \neq p_9 + p_{10} + 2 \qquad [10]$$

and then, similarly to [6], [7], we transform the right-hand side [10]:

$$p_1 + p_2 + p_3 + p_4 + 2 \neq p_5 + p_6 + p_7 + p_8 \qquad [11]$$

got a complete contradiction [7]

Assumption [9] is not correct.

$$p_1 + p_2 + p_3 + p_4 = p_5 + p_6 = 2\mathrm{N} \qquad [12]$$

Since in [12] N> 5, then 3 + 3 = 6, 3 + 5 = 8, 5 + 5 = 10

3.Thus we proved:

Any even number since 6 is representable in the form of a bag of two odd

the simple.

$$p_1 + p_2 = 2\mathrm{N} \qquad [13]$$

Any even number is representable in the form of the sum of two simple. In total

even numbers, without exception, since 6 are the sum of two prime numbers.

Goldbakha-Euler's problem is true and proved!

Literature:

1 Weisstein, Eric W. Landau's Problems (англ.) на сайте Wolfram MathWorld.
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