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Fermat's theorem: A+B-C is not a natural number

In Memory of my MOTHER

All numbers are written in the number system with a prime base n, where n>2.

Let's assume that for co-prime natural numbers A, B, C and prime n>2

1°) $A^n+B^n-C^n=0$, where, as it is known (see **viXra:1707.0410**),

1a°) $C>A>B>U=A+B-C=un^k>0$ $(k>1)$,

1b°) A=U+a, B=U+b, C=U+c, где a+b-c=0, a=A-U, b=B-U, c=C-U.

Proof of the FLT

2°) Let's multiply the equality 1° by g^n (according to Fermat's small theorem, it exists; the notations of the numbers are left the same), where g is the number from equality $ug=n^v-1$, from here

3°) $U=(n^v-1)n^k=n^s-n^k$, where k=const, s=v+k and s>nk.

Now (taking into account 1b°) the equality of 1° can be written as

4°) $(a+n^s-n^k)^n+(b+n^s-n^k)^n-(c+n^s-n^k)^n=0$, or $[(a-n^k)+n^s]^n+[(b-n^k)+n^s]^n-[(c-n^k)+n^s]^n=0$,

from which (after the expansion of binomials of Newton) it follows that the number of

5°) $D=(a-n^k)^n+(b-n^k)^n-(c-n^k)^n$ is divisible by n^s, because all the other terms contain a factor n^s.

Now let's compute the zero endings in each sum consisting of three terms:

6°) $d=a^n+b^n-c^n$=(см. 1b°)$=(A-U)^n+(B-U)^n-(C-U)^n=[(A-U)^n-A^n]+[(B-U)^n-B^n]-[(C-U)^n-C^n]$, where all three expressions in square brackets end with k+1 zeros (1 zero adds a second factor in the expansion of the sum of powers) with the fourth digits are equal among the three.

7°) $e=(a^{n-1}+b^{n-1}-c^{n-1})n^k$. This (and only!) and all subsequent sums end in kt (t = 1, 2, ...n) zeros. And, consequently, the number D is not divisible by n^s, and the identical equalities 4° and 1° are not satisfied on the (k+2)-th digit.

Which confirms the truth of the FLT.

8°) If A is divisible by n^k, then the numbers U, C-B, a, c-b and d are divisible by n^{kn-1}, and e is divisible by n^{kn+k-1}.

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