Fermat’s theorem. The number $D=A^n+B^n-C^n<0$

In Memory of my MOTHER

The notations in base $U=A+B-C$ [an option: in base $U-1$]:

A’ – the last digit of the number A; A” – the number A without the last digit, the « head » of the number.

So, let’s assume that for natural numbers A, B, C and $n>2$ there is equality:

1°) $A^n+B^n-C^n=0$, where, as it is known,
1a°) $A+B>C>A>B>U=A+B-C>0$, $A=A'+A''$, $B=B'+B''$, $C=C'+C''$,
1b°) $A''+B''-C''=0$.

Proof of the FLT

Let’s assume that $C'=0$ and $B'=A'=U/2$. Then $\min B''=1$, $\min A''=1$, $C=1+1=2$, and now

2°) $A=10*1^{1/2}$, $B=10*1^{1/2}$, $C=10*2$ and therefore, $D=A^n+B^n-C^n<0$ (even if $n=3$).

3°) And now, with any increase of the numbers A and C by d, the number D will only decrease and with any decrease of the numbers B' and C' by e the number D can not become positive!

It remains to show that by increasing the numbers A and C by d and by reducing the numbers B' and C' by e we can get any one of the solutions A, B, C in a hypothetical Fermat’s equality – for example, for the base $U=10$, starting with the solution $A'=5$, $B'=5$, $C'=0$, to arrive to $A'=7$, $B'=4$, $C'=1$.

The answer: $d=2$ and $e=3$ will lead to $A'=5+2$, $B'=5-1$, $C'=0+2-1$, with the final result:

$D=A^n+B^n-C^n<0$,

which confirms the truth of FLT.

Mezos. June 25, 2018