

**The proof of the fallacy of the assumption of the ABC conjecture
a finite number of "exceptional" triples for $r = 2$ ("Pythagorean" equation) and other equations
(Elementary aspect)**

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Annotation. Proposed short proof of the fallacy of the assumption

ABC conjecture on the finiteness of the number of "exceptional" triples for $r = 2$ ("Pythagorean" equation) and other equations, and provides a number of examples.

§1

According to the ABC conjecture, if $(x,y,z)=1$ и $x + y = z$, то $\text{rad}(x \cdot y \cdot z) > z$.

The proof of the fallacy

1.1. Polucheny following equations:

$$1) 7^2 + 24^2 = 25^2 \quad 2 \cdot 3 \cdot 5 \cdot 7 = 210 < 625 \quad [1]$$

$$2) 9^2 + 40^2 = 41^2 \quad 2 \cdot 3 \cdot 5 \cdot 41 = 1230 < 1681$$

$$3) 63^2 + 16^2 = 65^2 \quad 3 \cdot 7 \cdot 2 \cdot 5 \cdot 13 = 2730 < 4225$$

$$4) 117^2 + 44^2 = 125^2 \quad 3 \cdot 13 \cdot 2 \cdot 11 \cdot 5 = 4290 < 15625$$

$$5) 297^2 + 304^2 = 425^2 \quad 3 \cdot 11 \cdot 2 \cdot 19 \cdot 5 \cdot 17 = 106590 < 180625$$

$$1.2. \text{ if } a + b = c [2], \text{ the identically } 3abc \equiv c^3 - a^3 - b^3 [3] \quad (1)$$

From [3] $abc < (c^3 : 3)$ and $< (c^2 : 3) [4]$ for arbitrary, compliance uyuschih [2] positive integers.

$$1.3. \text{ if } x^2 + y^2 = z^2, \text{ it follows from [4] } x^2 \cdot y^2 < z^4 : 3 \text{ и } xy < z^2 : 3 [5].$$

1.4. Let $m=4$ $n=3$. Then,

$$1.4.1. (x_1^2 = 7^2) + (y_1^2 = 24^2) = (z_1^2 = 25^2)^2$$

$$1.4.2. m_2 = 24 \quad n_2 = 7 \quad x_2 = 24^2 - 7^2 = 527 = 17 \cdot 31 \quad y_2 = 2 \cdot 24 \cdot 7 = 336 = 2^4 \cdot 3 \cdot 7$$

$$z_2 = 24^2 + 7^2 = 5^4 \quad \text{rad}(17 \cdot 31 \cdot 2 \cdot 3 \cdot 5 \cdot 7) = 110670 < 390625, \text{ or}$$

$$[5] x_2 \cdot y_2 < z_2^2 : \sqrt{3}, 527.336 < 5^8 : \sqrt{3}, 527.336 : 3 < 5^8 : 1,8 \cdot 3 \approx 72338 < 5^8 : 5 = 5^7 = 78121$$

And $\text{rad}(17.31.2.3.7.5) = 110670 < 5^8 = 390625$.

$$1.4.3. \text{ If } (x_0^2 = 3^2 + y_0^2 = 4^2) = z_0^2 = 5^2, \kappa = 0, 1, 2, 3, \dots, x_1 = 7, y_1 = 24 = 3 \cdot 8, z_1 = 5^2,$$

$$x_{k+1} = x_k^2 - y_k^2, y_{k+1} = 2 \cdot x_k \cdot y_k, z_{k+1} = x_k^2 + y_k^2 = 5^{2^{k+1}} \text{ и } x_{k+1} \cdot y_{k+1} : 3 < z_{k+1}^2 :$$

$$: 3 \cdot \sqrt{3} \approx 5^{2^{k+1}} : 3 \cdot 1,8 = 5^{2^{k+1}} : 5, 4 < 5^{2^{k+1}} : 5 = 5^{2^{k+1}-1} \quad [6] \text{ because "y" in}$$

this example contains a factor 3 for all "k".

1.4.4. in this way, "Pythagorean" type equation [6] for $0 < k < \infty$ will always be

have an infinite number of relevant decisions, in contrast to the erroneous - finite number of them,

Q.E.D. Therefore, the proof of the "Great" Fermat's theorem with the help of

ABC-hypothesis, the more "one with Troc," says it is not necessary.

1.4.5. Vse above can be used for all other equations of paragraph 1.1.

§ 2

If you have a three-term equation $a + b = c$, which satisfy the condition

$C > \text{rad}(a \cdot b \cdot c) + \varepsilon$, then, if they are the basis for

from each of countless equations satisfying

the same condition. Bearing in mind that in [14] $ab < c^2 : 3$, and shows the corresponding

three-term equation to the "Pythagorean" form similar to the claim 4 §1 of the main text

article, we get the following:

$$2..1. \text{ have } 11^2 + 2^2 = 5^3. \text{ Then, } \text{rad}(2.11.5) = 110 < 5^3$$

$$\text{Assume } m=11 \quad n=2. \text{ Hence, } 117^2 + 44^2 = 5^6 \text{ and } 3.13.2.11.5 = 4290 < 15625$$

$$2.3. \quad m = 117 \quad n = 44 \quad X = 117^2 - 44^2 = 13689 - 1936 = 11753, \quad Y = 2 \cdot 117 \cdot 44 = 10296,$$

$$Z = 117^2 + 44^2 = 5^6 \quad (11753^2 = 138133009) + (10296^2 = 106007616) = 244140625 = 5^{12}$$

$$\text{rad}(11753.2.3.13.11.5) = 50420370 < 244140625, \text{ etc.,}$$

$$2.4. \quad 13^2 + 7^3 = 2^9 \quad \text{rad}(13.7.2) = 182 < 512$$

$$2.5. \quad m = 7^3 \quad n = 13 \quad x = 7^3 - 13^2 = 174, \quad y = 2 \cdot 7^3 \cdot 13 = 26 \cdot 7^3, \quad z = 7^3 + 13^2 = 2^9$$

$$174^2 + 26^2 \cdot 7^3 = 2^{18} \quad 87^2 + 13^2 \cdot 7^3 = 2^{16} \quad \text{rad}(29.3.2.13.7) = 15834 < 65536, \text{ Etc.}$$

Proofs are completed

LITERATURE

(1) On the question of ambiguity in math and some consequential extraordinary investigation.
(Elementary aspect) p.7.1.2.b

Bulletin of Mathematical Sciences & Applications ISSN: 2278-9634 Vol. No. 3 4 (2014), pp. 01- 33

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(2) The unique invariant identity and the ensuing unique investigation.

(Elementary aspect) REUVEN TINT 2016