# About the Proved of Ferma's Big Theorem

In 1621 Ferma, French great mathermaticina, pointed out: when n〉2, indeterminate equation $x^n + y^n = z^n$ , there not is any integer root. It is Ferma's big theorem that was not proved still over three hundred years.

There , I have proved that the theorem is whole right.

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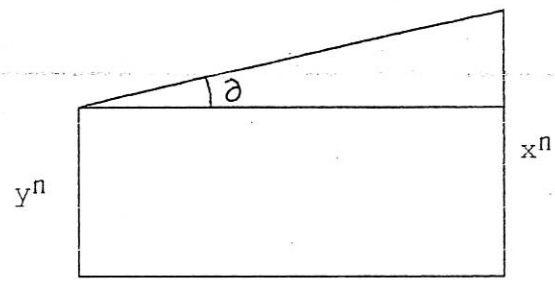
Prove: when>2, indeterminate equation $x^n + y^n = z^n$ there not is any integer root ($n=3, 4, 5, \cdots$).

Triing: in the light of

$$x^n + y^n = z^n \qquad (1)$$

taking assist map, and getting:

$$x^n - y^n = z^n \cdot tg\partial \qquad (2)$$




$z^n$ ($= x^n + y^n$)

from (1)+(2) and (1)−(2) getting separately:

$$2 \cdot x^n = z^n \cdot (1+tg\partial) \qquad (3)$$

$$2 \cdot y^n = z^n \cdot (1-tg\partial) \qquad (4)$$

from (3)×(4) getting:

$$4 \cdot x^n \cdot y^n = z^{2 \cdot n} \cdot (1+tg\partial) \cdot (1-tg\partial)$$

taking evolution of n, and getting:

$$\sqrt[n]{4} \cdot x \cdot y = z^2 \cdot \sqrt[n]{1-tg^2\partial} \qquad (5)$$

looking (5) formula:

when $n>2$, $\sqrt[n]{4}$ is an infinite no recurring decimal.

So: x, y, z are not able to be integer at the same time.

To there: Ferma's Big Theorem had was proved.

Annotation:

A, above mentioned proof was suppose $x>y$.

if: $x=y$

then: from (1) getting $2 \cdot x^n = z^n$

then: $\sqrt[n]{2} \cdot x = z$

then: x, z are not integer at the same time, because $\sqrt[n]{2}$ is an infinite no recurring decimal.

B, (5) formula only is one change of (1), but in (5), $\sqrt[n]{4}$ reflects essence of Ferma's Big theorem.

when n=2, $\sqrt[n]{4} = 2$,

(5) formula becomes: $2 \cdot x \cdot y = z^2 \cdot \sqrt{1-tg^2 \partial}$

select proper x and y, and z can be an integer,

example: (x, y, z) are (3, 4, 5), (6, 8, 10), (5, 12, 13), ......

It is reason to ask n>2.

C, perhaps have a doubt there:

if there is a set x and y making $\sqrt[n]{1-tg^2 \partial}$ to become a product of $\sqrt[n]{4}$ and a rational number in (5)formula, thus $\sqrt[n]{4}$ is passed away ?

No.

suppose: $1-tg^2 \partial = 4k^n$ (k is a rational number),

take $tg\partial = \dfrac{x^n - y^n}{x^n + y^n}$ to get into: then $1-\left(\dfrac{x^n - y^n}{x^n + y^n}\right)^2 = 4k^n$

simplify: $\dfrac{x^n - y^n}{x^n + y^n} = \sqrt{1-4k^n}$

open up: $x^n - y^n = x^n \cdot \sqrt{1-4k^n} + y^n \cdot \sqrt{1-4k^n}$

merge: $x^n \cdot (1-\sqrt{1-4k^n}) = y^n \cdot (1+\sqrt{1-4k^n})$

to multiply $(1+\sqrt{1-4k^n})$ both sides:

$x^n \cdot [1-(1-4k^n)] = y^n \cdot [1+2\sqrt{1-4k^n}+(1-4k^n)]$

$4k^n \cdot x^n = y^n \cdot (2+2\sqrt{1-4k^n}-4k^n)$

simplify:

$$\sqrt[n]{2} \cdot x = y \cdot \sqrt[n]{\frac{1+\sqrt{1-4k^n}-2k^n}{k^n}}$$

If want to pass away $\sqrt[n]{4}$ in (5) formula, it is inevitable there is a relation of irrational namber between x and y, obvious this is no rational.