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Letter to Editor

Confirm that the imaginary number i is a closed field

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Abstract

In the History of mathematics of mankind, some strange symbols appeared when dealing with some mathematical problems, which were defined as imaginary numbers by mankind. The imaginary number has been idle for a long time since it was discovered. Later, mathematicians such as Gauss moved the imaginary number to the mathematical plane (Complex plane).

Humans have also learned the difference between imaginary and real numbers, and have obtained the difference between the two types of numbers on the square root.

My contribution is to discover the inconsistency between real and imaginary numbers.

I have discovered a new method of calculating imaginary number logic that is deeply hidden.

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Introduction

Human beings have natural numbers [1] and then extend the theory of real numbers [2].

Human beings are dealing with an A event,

Event A_1: The sum of the ages of the father and son is 10, and the product is 30.

Is this A_1 event logical?

Solving the A_1 incident resulted in:

$$\{x+y=10, x\times y=30\} \Rightarrow \{x=5\pm\sqrt{5}\sqrt{(-1)}\}$$

$$\Rightarrow (x-5)/\sqrt{5}=\pm\sqrt{(-1)}$$

The mathematical significance of A_1 event:

Obtaining $\pm\sqrt{(-1)}$ explains how $\pm\sqrt{(-1)}$ came about.

If $\pm\sqrt{(-1)}$ conforms to mathematical logic, then x conforms to mathematical logic, resulting in an A_1 event that conforms to mathematical logic.

If the A_1 event does not follow mathematical logic, $\pm\sqrt{(-1)}$ does not follow mathematical logic.

If $\pm\sqrt{(-1)}$ does not conform to mathematical logic, the A_1 event does not conform to mathematical logic.

Only then did humans abbreviate $\pm\sqrt{(-1)}$ as $i : i=\pm\sqrt{(-1)}$

Event A_2: Divide a 30° plane angle into three equal parts [3].

In order to solve the event A_2, the Cardin formula [4] was developed, and: $\pm\sqrt{(-1)}$

The mathematical significance of A_2 event:

Obtaining $\pm\sqrt{(-1)}$ explains how $\pm\sqrt{(-1)}$ came about.

If $\pm\sqrt{(-1)}$ conforms to mathematical logic, then x conforms to mathematical logic, resulting in an A_2 event that conforms to mathematical logic.

If the A_2 event does not follow mathematical logic, $\pm\sqrt{(-1)}$ does not follow mathematical logic.

If $\pm\sqrt{(-1)}$ does not conform to mathematical logic, the A_2 event does not conform to mathematical logic.

Can humans divide arbitrary plane angles into three equal parts?

Some people will refute me: you can divide any angle into three equal parts without using Euclidean geometry.

Excuse me: can we guarantee 100% accurate angular trisection without using the Euclidean geometry geometric drawing method [5]?

Processing an A event will result in $\pm\sqrt{(-1)}$.

Humans record multiple values using the symbol $i : i = \pm\sqrt{(-1)}$

The entire process:

Handling event A will result in $\pm\sqrt{(-1)}$,

Humans use the symbol i to record multiple values: $i = \pm\sqrt{(-1)}$.

Later mathematicians [2] provided ($i^2 = -1$).

Humans have developed theories of imaginary and complex numbers.

The most bizarre event is A_3: involving a correct Bell inequality in quantum entanglement experiments and using imaginary number theory to explain the experiment. Conclusion: Bell inequality is incorrect [6].

The logic is clear:

If the Bell inequality formula is incorrect.

Then: Bell's inequality formula cannot be used to participate in testing experiments.

If Bell's inequality formula is correct.

In the experiment, the theory of imaginary numbers pointed out that Bell's inequality was incorrect and must be an inherent error in the theory of imaginary numbers.

Basis: Logic cannot contradict itself.

The theory of imaginary numbers is inevitably incomplete.

Truth does not conflict with each other

Truth: a logical theory.

Definition of logic: $\{\mathcal{A} \nsucc \mathcal{A}\}$

Non-logical (contradictory) definition: $\{\mathcal{A} > \mathcal{A}\}$

Therefore, the definition of truth: $\{\mathcal{A} \nsucc \mathcal{A}\} \to f(x)$

$\because$ (Mathematical theory) $+\{\mathcal{A} \nsucc \mathcal{A}\}$

$\therefore$ $\{1+1=1+1\} \in \{\mathcal{A} \nprec \mathcal{A}\}$

Got the truth α: 1+1 = 1+1

There was a physical man doing the experiment. He said that the experiment got the truth: {1+1 = 1+1}

The experiment of physical man is: (1 man) and (1 woman) give birth to (1 baby).

$(1♂) + (1♀) = (1♂) + (1♀) + (1 \text{ baby})$

→{1+1=1+1+1}

He got another truth β:

1+1=1+1+1

truth β Have you denied the truth {1+1=1+1} ? Tell you: No

Reason: This experiment stealthily changes concepts and hides conditions.

This experiment β the truth is:

$(1♂) + (1♀)$ + (Add materials for making 1 baby) = $(1♂) + (1♀)$ + (Made: 1 baby)

→ {1+1+1=1+1+1}

β: 1+1+1=1+1+1

Never: {1+1 = 1+1+1}

(QED).

What I want to tell you in the second section is that there cannot be conflicts or contradictions between correct theories.

(i^2=-1) Hidden a contradiction

From the human understanding of imaginary numbers, it is generally recognized that there were:

$$i = \pm\sqrt{(-1)}, (\pm\sqrt{(-1)})^2 \neq \sqrt{(-1)^2}$$

The question is:

Can $\{i = \pm\sqrt{(-1)}, (\pm\sqrt{(-1)})^2 \neq \sqrt{(-1)^2}\}$ obtain $(i^2 = -1)$

$\because$ {($i^2 \neq 1$)} Obtained multiple possibilities {$i^2 = -1$, $i^2 \neq -1$}.

$\therefore$ In principle, we can only rely on recognized conditions $\{i = \pm\sqrt{(-1)}, (\pm\sqrt{(-1)})^2 \neq \sqrt{(-1)^2}\}$.

Assumption ($i^2 = -1$) is correct

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$$\therefore i=\pm\sqrt{(-1)},\ i^2\neq 1$$

$$\because i^2\neq 1\ \therefore\ (\pm\sqrt{(-1)})^2\neq\sqrt{(-1)^2}$$

$$\therefore \sqrt{(-1)}^2\neq\sqrt{(-1)^2} \qquad (1)$$

(1) The mathematical and logical meaning of the formula: When the number inside $\sqrt{}$ is negative, the external index 2 of the root sign cannot enter the inner layer of the root sign.

$$\Rightarrow\{\sqrt{(<0)}^2\nrightarrow\sqrt{(<0)^2}\} \qquad (2)$$

When the number inside $\sqrt{}$ is 0 or positive, the external index 2 of the root sign can enter the inner layer of the root sign.

$$\Rightarrow\{\sqrt{(\geq 0)}^2\rightarrow\sqrt{(\geq 0)^2}\} \qquad (3)$$

$\{(\sqrt{(<0)}^2\nrightarrow\sqrt{(<0)^2}),(\sqrt{(\geq 0)}^2\rightarrow\sqrt{(\geq 0)^2})\}$ is not a mandatory definition, it is in line with the mathematical logic conclusion:

$\because \sqrt{A}=A^{\frac{1}{2}}$ ∴ Index $\frac{1}{2}$ only affects A

$$\because \sqrt{A}^2=(A^{\frac{1}{2}})^2$$

∴ Index ^{2} must be able to act on A in order to have: A^2

$$\Rightarrow\sqrt{A}^2=(A^{\frac{1}{2}})^2=(A^2)^{\frac{1}{2}}=(A)^{(2\times\frac{1}{2})}=A^1=A$$

$$\Rightarrow\sqrt{A}^2=A \qquad (4)$$

(4) The formula proves the correctness of equation (3).

Key points to note:

Index $\frac{1}{2}$ can act on A, and index ^{2} can act on A, only then can two indices $^{(2\times\frac{1}{2})}$ be used.

∴ When index ^{2} cannot function A, it is not allowed to have: A^2

$$\Rightarrow\sqrt{A}^2=(A^{\frac{1}{2}})^2\neq\left(A^2\right)^{\frac{1}{2}}=(A)^{(2\times\frac{1}{2})}=A^1=A$$

$$\Rightarrow\sqrt{A}^2\neq A \qquad (5)$$

(5) Equation proves the correctness of equation (2)

『The symbol $\{\sqrt{(-1)}^2\neq\sqrt{(-1)^2},\sqrt{(+1)}^2=\sqrt{(+1)^2}\}$ is publicly displayed, and its mathematical significance is also demonstrated to humans. Just wait for someone to discover.

Their meaning includes the definitions of imaginary and real numbers.』

Obtained the definition of $\{(2),\sqrt{(-1)}^2\neq\sqrt{(-1)^2}\}$ and $\{(3),\sqrt{(+1)}^2=\sqrt{(+1)^2}\}$ as imaginary and real numbers.

Do you really agree with: $\{\sqrt{(-1)}^2=\sqrt{(-1)^2}\}$?

$$\because \sqrt{(-1)}^4=\sqrt{(-1)}^{(2\times 2)} \qquad (6)$$

$$\therefore\{(1),(6)\}\Rightarrow\sqrt{(-1)}^4\neq\sqrt{(-1)^2}^2$$

$$\Rightarrow\sqrt{(-1)}^4\neq\sqrt{(-1)^2}^2=1$$

$$\Rightarrow\left\{\sqrt{(-1)}^4\neq 1\right\}$$

$$\Rightarrow\{(\pm\sqrt{(-1)})^4\neq 1\}$$

$$\Rightarrow i^4\neq 1 \qquad (7)$$

$$\left\{i^2=-1\right\}\Rightarrow\{\left(i^2+1\right)=0,\left(i^2-1\right)=-2\}$$

$$\Rightarrow\left\{\left(i^2+1\right)\times\left(i^2-1\right)=0\times(-2)\right\}$$

$$\Rightarrow\{i^4-1=0\}$$

$\Rightarrow\{i^4=1\}$, Contradiction with equation (7)

∴ (i^2 = -1) does not hold.

(QED).

The third section is my contribution to human mathematics: discovering new mathematical meanings hidden in formulas $\Rightarrow\{\sqrt{(<0)}^2\nrightarrow\sqrt{(<0)^2}\},\{\sqrt{(\geq 0)}^2\rightarrow\sqrt{(\geq 0)^2}\}$.

Also correctly defined imaginary and real numbers.

Conclusion

The closed domain of imaginary number i: $i^2\neq\pm 1$

Important note: You cannot refute me with the subconcept of the imaginary number i, as the subconcept of the imaginary number i originates from i.

Mathematical significance: As long as "i" appears in an event, the event must hide contradictions. Cardin's formula is incomplete in solving the true unary cubic equation. Quantum entanglement is incomplete.

For the completeness of equation roots, humans must have n roots for a univariate n-th degree equation.

This must have a premise that the unary n-th degree equation must conform to mathematical logic, and it really has n roots. If this unary n-th degree equation is fictional (not in line with mathematical logic), it does not have n roots.

Humans often overlook this premise and believe that constructing an equation will lead to a radical solution, which is incorrect.

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In fact, this equation has no root solution: $x^3 = a, \{a \mid a > a\}$

In fact, this equation has no root solution: $i^n = 1, \{n \in N, i \in \{i^2 \neq \pm 1\}\}$

Why is the Cardin formula incomplete? Because he got the universal formula to understand the unary Cubic equation after he implanted the imaginary number, and I proved that the number field of the imaginary number i is closed.

Pure mathematics cannot achieve arbitrary plane angle trisection, and Euclidean geometry cannot achieve arbitrary plane angle trisection.

Is it feasible to use other methods?

The other method is the physical method (marking the scale value on the ruler and sliding the ruler straight), which has errors and is not divided into three equal angles

Physical matter is aimed at the wave-particle duality of material particles, with gaps between particles and their volatility, so physical experiments allow for errors.

So it does not belong to arbitrary plane angle trisection.

I proved the closed field of the imaginary number i and also proved that the Cardin formula is incomplete.

The new concept of mathematical extension must be carried out under the laws of mathematical logic.

We cannot extend new concepts beyond the principles of mathematical logic.

The correct theory of matter does not require an imaginary number i to explain it (there are other manuscripts that prove the hidden conditions of quantum entanglement and also deny the principle of quantum uncertainty).

Statement

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References

1. Whittaker ET. Peano axioms The Philosophy of Bertrand Russell. Books & Arts 03 Feb 1945. Nature, 155: 128-131.
2. Newcomb S. Modern mathematical thought. 1894; 49: 325-329.
3. Matthews G. The theory of imaginary numbers in geometry and the trigonometry of imaginary numbers. Books and art. 1920. Nature, 105: 736-737.
4. Richeson DS. Cardano formula. The Sordid Past of the Cubic Formula. JUNE 30, 2022. https://www.quantamagazine.org/search?q[s]=Cardano%20formula&q[cat]=&q[dates]=&q[tag]=&q[author]=&q[taxonomy]=&q[post_type]=
5. Euclid's Elements of Geometry. Books & Arts 24 Oct 1901.Nature. 64: 623-624.
6. Chen MC, Wang C, Liu FM, Wang JW. Ruling Out Real-Valued Standard Formalism of Quantum Theory. Phys Rev Lett. 2022; 128: 040403. https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.128.040403

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