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For the Origin of New Branch of Mathematical Physics

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A B S T R A C T

The research community, referees, editors and journals normally does not accept or novel mathematical and physical ideas. Many experts/reviewers do not even read the abstract and return the manuscripts.Lobachevski, Riemann and even Einstein faced criticism and opposition. Even top scientists ridiculed them. But later on these findings were miraculous successful applications. Keeping all these previous scientific phenomena, the authors attempt to introduce a new concept for the creation of new field of mathematical physics.

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1. Introduction

The origins of trisection of an angle began around 500 BC. Many great mathematicians tried their best to solve this problem but miserably failed. Trisection of an angle and doubling the cube were proved impossible by Pierre Wintzel in 1837, although their impossibility was already known to Gauss in 1800. Squaring the circle problem was proved to be impossible by Lindemann in 1882 [1-7]. Both Wintzel and Lindemann applied the laws of Galois field theory and derived their results. It is to be noted that in quantum mechanics and super string theories the basics of abstract algebra particularly the laws of Lie groups are widely applied. It is a well known fact that the predictions of Einstein's special and general relativity theories have been experimentally established. But there are published experimental tests which challenge these theories. i.e. in some experiments these predictions do not hold.Similarly, the authors' findings also challenge abstract algebra. The authors never and never question the consistent field of abstract algebra. But the authors firmly believe that the laws of abstract algebra cannot fetter the angle trisection.

2. Construction

Construct an equilateral triangle ABC in Figure 1. On the extensions of AB and AC, make BD=DE=AB and AC=CE=EF respectively. Join B and F & D and F. Bisect BD at G. Join G and F. With centre C radius CB describe an arc cutting BF at H. Join C and H and produce it till it meets EF at I and GF at J.

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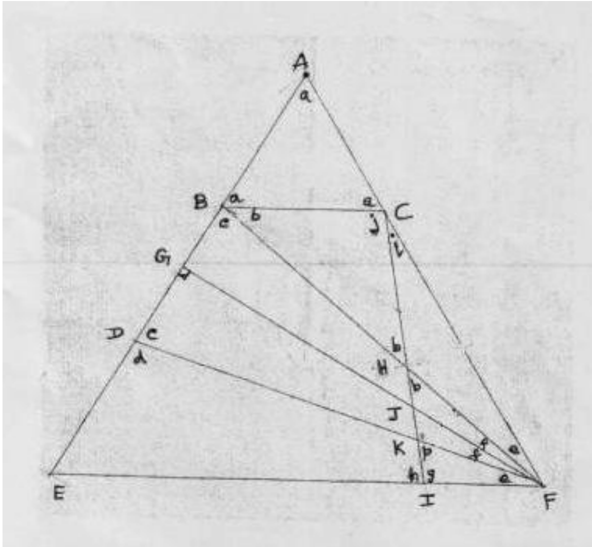

Figure 1

In triangles ABC and AEF all the sides are equal and all the angles are equal. In triangle BCH, since BC and HC are equal, the base angles are equal. By SAS correspondence triangles AGF and EGF are congruent. So, the angle at G is 90 degree. By SAS correspondence triangles BGF and DGF are congruent. So, angles GBF and GDF are equal, and angles BFG and DFG are equal. By SAS correspondence triangles ABF and EDF are congruent.

So, angles AFB and EFD are equal, and angles ABF and EDF are equal. (1)

Let the sum of the interior angles of all Euclidean trianglesis equal to 180 degrees. (2)

From the above constructions,

$b + c = j + i$ (3)

$a + b = d$ (4)

$2e + 2f = a$ (5)

In triangleIFC, $a + j = 2e + 2f + g$

Using(5) in RHS, $j = g$ (6)

In trianglesBHC andIHF, $b + j = g + 2e + 2f$

Using(6) in RHS, $b = e + 2f$ (7)

In triangle CHF, $b = e + i$ (8)

Equating(7) and(8), $i = 2f$ (9)

In triangleCIF, $h = 4f + 2e$ byusing (9)

Assuming(1), $2b + j = 2c + 2f$

Addingtheabove two, $2b + j + h = 6f + 2e + 2c$

Using(6) inLHS, 180degree$+ 2b = 6f + 2e + c$ (10)

Let usapplymathematical induction in (10).

Put $e = 2f$ (11)

So, (10) becomes, $2b + d = 10f + c$ (11a)

In triangle BCH, $2b = 180\text{degree} - j.$ (11b)

Using (11b) in (11a), $180\text{degree} + d = 10f + c + j$ (12)

In triangle BGF, $c + f = 90$ degree.

Applying this in (12), $90\text{degree} + d = 9f + j$ (13)

From straight anglesat B and D, d = a+ b. Putting this in(13),

$90 \text{ degree} + a + b = 9f + j$ (14)

Substituting (5) in (14),

Using (11) in(15)

$90 \text{ degree} + 2e + 2f + b = 9f + j$ (15)

$90 \text{ degree} + 6f + b = 9f + j$

i.e. $90 \text{ degree} + b = 3f + j$ (16)

Using (12) in (16),

Applying (9) in (17),

$b + c = 2f + j$ (17)

$b + c = j + I$ (18)

So, if we put e = 2f in (10), we yield (3) and there is no contradiction. In other words equation (3) can be deduced by replacing e by 2f in equation (10).So, e = 2f is the acceptable solution.

Applying e = 2f at angle c, 3e =60 degrees. So, e is 20 degree.

3. Discussion

For trial measuring angle e, 2f and i, we get that e=2f=i=20 degree. Describing an arc with center H and radius HC, it moves through F. So, e = 20 degree is consistent. In this work, we have not introduced or assumed any conjecture or hypothesis. Only we have applied one of the fundamental operations of number theory. (i.e. addition). So, beyond any doubt e = 2f = 20 degree is consistent.

4. Conclusion

Gödel’s incompleteness theorems state that in a formal mathematical system we construct statements which are neither true nor false. One of us (Kalimuthu) reconfirmed Gödel’s incompleteness theorems. [7-12] Further studies will create a new field of mathematical physics for possible applications in theoretical physics.

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REFERENCES

[1] Howard Eves, An Introduction to the history of Mathematics, Holt, Rhinehart and Winston, New York, 1976.
[2] William Dunham, Journey through Genius John Wiley and sons, 1990. [3] Ian Stewart, Galois Theory, Chapman and Hall, London, 1991.
[4] I N Herstein, Topics in Algebra, Blasdell, New York, 1964.
[5] Arthur Jones, A Sidney Morris and Kenneth R, Person, Abstract Algebra and Famous Impossibilities, Springer-Verlag, New York, 1991.
[6] Richard Courant and Herbert Robbins, What is mathematics?, Oxford University Press, New York, 1941.
[7] R. Hadlock Charles, Field Theory and its Classical Problems, Carus Mathematical Monographs, No. 19, Mathematical Association of America, 1978
[8] S. Kalimuthu, On Gödel's incompleteness theorems. Part 1, International Journal of Mathematics, Game Theory and Algebra, Volume 25, Issue 4, pp. 445-448, Nova, New York novapublishers.com/catalog/product_info.php?products_id=62031
[9] S. Kalimuthu, On Gödel's incompleteness theorems. Part 2, International Journal of Mathematics, Game Theory and Algebra, Volume 25, Issue 4, pp. 449-452 Nova, New York novapublishers.com/catalog/product_info.php?products_id=62031
[10] S. Kalimuthu, On Gödel's incompleteness theorems. Part 3, International Journal of Mathematics, Game Theory and Algebra, Volume 26, Issue 1, Nova, New York https://www.novapublishers.com/catalog/product_info.php?products_id=62756
[11] S. Kalimuthu, On Gödel's incompleteness theorems. Part 4, International Journal of Mathematics, Game Theory and Algebra, Volume 26, Issue 1, Nova, New York https://www.novapublishers.com/catalog/product_info.php?products_id=62756
[12]S.KalimuthuOn Gödel's incompleteness theorems, MathematicaAeterna, Vol. 1, 2011,
Issue No.05, pp 313 – 316, http://e-hilaris.com/MA/MA_5_5.pdf