A Concise Resolution of Fermat's Last Conjecture

$x^n + y^n = z^n$ has no whole number solutions for n greater than 2.

Axioms

(1) There are at least two kinds of spatial two-dimensionality:
(a) the primary <u>*dynamic*</u> symmetrical expansion/contraction between the centre point and periphery of a sphere or spheroid, D2D, which produces the secondary form,
(b) any <u>planar</u> 2D surface, an area on which spatial relationships can be represented by the use of diagrams and symbols.

(2) Circles in geometrical formulations displayed in flat planar 2D may be taken as abstractions representing spheres and, similarly, ellipses may be taken to represent spheroids in the world of forms beyond mathematics.

Prologue

According to Gödel's first *Incompleteness Theorem*, there are some true statements that cannot be proved within the currently prevailing number theory of mathematics.

This present approach views *Fermat's Last 'Theorem',* which is essentially a conjecture, as the outcome of a 3-level, 2-stage reduction and abstraction operation, postulating a logically consistent constant principle, encapsulated in the formulation $x^2 + y^2 = z^2$. The 3 levels are:

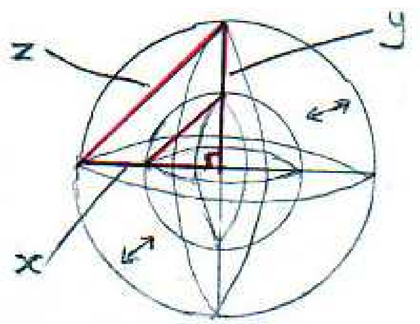
<u>Level 1</u>: the cosmic *dynamic* 2D realm, D2D, of actual expanding/contracting spheres and spheroids, reduced down, ie encoded, into:

<u>Level 2</u>: the flat, static, *planar* 2D realm of such Euclidean geometric forms as circles, ellipses, triangles and squares, further abstracted and encoded into:

<u>Level 3</u>: the algebraic, *symbolised* formulation $x^2 + y^2 = z^2$ which Pythagoras proved, within the limited mathematical logic of his time, to express a constant principle regarding right-angled triangles.
In these, x^2, y^2, z^2 symbolise, in flat planar 2D, three square areas based on the three sides of the triangle. Pythagoras proved that in all right-angled triangles, if z is the hypotenuse, then $x^2 + y^2 = z^2$. Instances of *Pythagorean triples* are where x, y, z are 3, 4, 5 or 5, 12, 13.

The size of a sphere is defined by its radius. The size and shape of a spheroid is defined by the radii of the two perpendicular cross-sectional planes bounded by great circles, which remain in constant mutual proportion during expansion and contraction of the spheroid.

In a circle or ellipse representing, in flat planar 2D, a sphere or spheroid, where the line representing the axis of one such great circle intersects the perpendicular line representing the axis of the other, a right angle is formed.



Method

In flat planar 2D, let the points where the radii x and y meet the perimeter be joined, creating a line z, so that lines x, y, z form a right-angled triangle with z the hypotenuse.

This can be taken to represent a D2D situation in which the centre point of a sphere or spheroid is connected by straight lines to two points on the periphery.
As the radius of the circle or the radii of the ellipse vary, proportionality among the angles and sides of the created right-angled triangle remains constant.

Conclusion

2 steps connecting the 3 levels:
1. Within the rules and conventions of current mathematics, the algebraic formulation $x^2 + y^2 = z^2$ can always be abstracted from the above flat planar 2D geometric formulation of a right-angled triangle set within a circle or an ellipse.

2. After Gödel's lesson on the necessity sometimes to extend beyond current mathematics, the idealised flat planar 2D geometric forms of the circle and ellipse can always be derived from the D2D actuality of an expanding/contracting sphere or spheroid.

So, any right-angled triangle can be construed as a *flat planar* 2D abstraction, derived from a sphere or spheroid, which are primal forms that vary in scale solely in D2D, *dynamic* 2D.

Given that derivation, proportionality among the angles and sides of any right-angled triangle remains constant only in 2D. This limiting principle is symbolised in the algebraic formulation $x^2 + y^2 = z^2$, proven by Pythagorus, in which the exponent 2 represents the 2-dimensionality of the geometric squares based on the sides of the triangle.

Raising the value of the exponent *n* to 3 and beyond creates geometric progressions which step by step increase the difference between $(x^n + y^n)$ and z^n.

Thus there is a consistent logic throughout the three levels which shows that the formulation $x^n + y^n = z^n$ is only valid when the exponent is 2.

Therefore $x^n + y^n = z^n$ has no whole number solutions for n greater than 2.

Afterthought

"No problem can be solved from the same level of consciousness that created it." Albert Einstein

This resolution has been reached through a process of *reverse engineering* – logically tracking back from the part to the whole, from the finished product, an algebraic formula about a particular kind of 2D geometric triangle, to certain universal principles beyond current mathematics.