



# Proof and Disproof of Birch and Swinnerton-Dyer Conjecture

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## Introduction

Disproof of Birch Swinnerton Dyer as all elliptical curves have infinite rational points with no relationship with the L function being equal to 0. Elliptical curves exist independently of L functions and their relationship with 0. All Elliptical curves have infinite rational points. On any curve one can place an infinite number of points. As Birch discussed an "If and only if" relationship between elliptical curves and the L function, the conjecture can be seen as disproven as all curves have infinite points there does not have to an L function relationship. Elliptical curves can exist independently of the L functions relationship with 0. Kurt Gödel was right when he described the Incompleteness Theorem that axioms are incomplete. "In everyday language, it says that no matter how hard you try, your set of axioms will always be incomplete-they won't be sufficient to prove all the true facts. [1]

## Birch and Swinnerton-Dyer Conjecture Disproved 3 Times

By James Timothy Struck BA, BS, AA, MLIS, From the Clay Math Prize Site " In particular this amazing conjecture asserts that if  $\zeta(1)$  is equal to 0, then there are an infinite number of rational points (solutions), and conversely, if  $\zeta(1)$  is not equal to 0, then there is only a finite number of such points."

## Disproof of Both parts of conjecture

### Disproof #1

Disproof of "In particular this amazing conjecture asserts that if  $\zeta(1)$  is equal to 0, then there are an infinite number of rational points (solutions),"

If there would be an infinite number of rational points as solutions, then those infinite number of points could never be testable as there would be an infinite number of points to test thus disproving the conjecture.

### Disproof #2

The observation of "amazing" is sadly a matter of opinion. One person could view the conjecture as amazing and one can view the conjecture as not amazing. There we have a type of disproof as the statement or assertion of amazing is a matter of opinion not a truth or verifiable statement.

### Disproof #3

Disproof of, "if  $\zeta(1)$  is not equal to 0, then there is only a finite number of such points."

Take the case of a finite number of points in the second half of the conjecture. Within a finite point, we can always imagine an infinite number of points disproving the second statement of the conjecture. We would not have a finite number of points but arguably too many points or an infinite number of points that could also not be verifiable due to infinity not being verifiable as infinity never ends or never terminates.

Since we have disproven both of the Then statements of the conjecture, the If statements do not really need to be addressed. The Then statements are false, so the conjecture is disproven. The amazing statement is a matter of opinion that is not provable but could be disproven by saying "I do not believe the conjecture is amazing." From 2016 in May 20, 2016

From the Clay Math Prize Site " In particular this amazing conjecture asserts that if  $\zeta(1)$  is equal to 0, then there are an infinite number of rational points (solutions), and conversely, if  $\zeta(1)$  is not equal to 0, then there is only a finite number of such points."

If the  $\zeta(1)$  is equal to 0 then there is only one solution. If the  $\zeta(1)$  is not equal to 0 then there are many solutions. The conjecture is therefore disproved twice as both parts can be said to be false.

An additional type of disproof would be that the conjecture can exist. Conjectures are able to exist without being provable or disprovable. Conjectures can be and exist without being provable.

We therefore have done, disproof's of both parts of the conjecture

Conjecture as not disprovable or provable; the conjectures is or exists. Similarly Sartre asserted existence precedes essence similar a conjecture exists independently of proof or disproof. Existence is a type of proof by the way the conjecture exists.

Proof of the conjecture as something we can believe in on faith. Proof of the conjecture as something we can say using language...a linguistic proof. We can say the conjecture using language a linguistic proof. We can prove the conjecture using grammar, nouns are followed by verbs are followed by objects

Conjecture as existing with no concept or discussion of provable or disprovable.

The conjecture has essence without any need to talk about provable or disprovable.

The conjecture is and can be.

The conjecture is proven to be in history. We can find a conjecture in history and therefore the existence of the conjecture in history is an historical proof.

I can write the conjecture so we can rely on a calligraphic or writing proof. We can write the statement of the conjecture so the ability to write the statement is write ability proof.

We can call the conjecture nonsense or meaningless following nihilism of Friedrich Heinrich Jacobi, Friedrich Nietzsche, and Kierkegaard and others. As meaningless, we have no need to discuss meaning or provability. Friedrich Heinrich Jacobi, Nietzsche, and Soren Kierkegaard and others were philosophers talking about

nihilism. If nothing means anything, proof has no value or significance. The statement can be seen as just meaningless or void helping us see the tremendous amount of our Universe that is Void like the Great Void.

As a type of proof, we can also use nihilism. Disproof's are meaningless so we have a type of proof the conjecture as disproof's have no significance. The statement or conjecture still exists.

I can right now draw an elliptical curve. My elliptical curve does not have to have anything to do with the L function as a type of disproof.

## Conclusion

We can imagine an elliptical curve that has no points on it. Elliptical curves do not have to have any points and elliptical curves do not need to have a relationship with the L function. We can create an elliptical curve with no points on it rather than a finite or infinite number of points.

Curves can be curves with no points.

Define-Elliptical curves have no points. The L function does not need to relate to the elliptical curve. Elliptical curves can just be curves without need to have points.

On the other hand, if we use a different definition of a line as "the path of a moving point" an elliptical curve can be seen as having an infinite or finite number of points. (Merriam Webster, p. 343, 1995) This idea would be some proof of the conjecture then as there can be a finite or infinite number of points on the curve with a line seen as the path of a moving point.

Finite-There could be one point forming an elliptical curve. the point moves to make an elliptical curve

Infinite Points- an infinite number of points on an elliptical curve as the line is composed of many points. We can both disprove and prove many conjectures like Birch and Swinnerton Dyer Conjecture.

## Reference

1. Keith Devlin (2016) The Millennium Problems The Seven Greatest Unsolved Mathematical Puzzles of Our time. Basic Books, New York, USA.