

Proof of Collatz Conjecture

Ayaz Saadallah Abdulqader

*Iraq, Nineveh Governoratem Diploma in Office
Management Techniques, Northern Technical
University Mosul*



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* Introduction

Collatz is so named after the German scientist Lothar Collatz who intuited it in 1937. It's of the most famous unsolved problems in mathematics, The Collatz Conjecture, also known as the "3n + 1" sequence, proposes that starting with any positive number and applying two rules (if even, divide by two; if odd, triple it and add one) will always eventually lead to the number one.

* Proof of Collatz conjecture

This conjecture says that all numbers will return to 1 after several steps.

all natural numbers up to infinity will return to the number 1

when applying the collatz conjecture to them.

The Conjecture says that if we choose an odd number, then the equation $(3n+1)$ must be applied to it.

If the number is even, the equation $n/2$ applies to it.

Let's suppose we have this number:-

908821865994112743406295884118

This number is even so we apply the equation $n/2$

908821865994112743406295884118/2

=

454410932997056371703147942059

The result of $n/2$ is odd number, so we apply: $3n+1$

$3*(454410932997056371703147942059)+1$

The result of this process is:-
1363232798991169115109443827178

Note we will always get even number after $3n+1$.

Therefore, it's always will be a multiple of 2 based on the number 1 to infinity.

Note that the result of $3n$, knowing that n is an odd number, the result is always an odd number, by adding the number 1 to the result of $3n$, the result always becomes a multiple of the number 2 based on the

The number 3 when multiplied by any odd number is an odd number. It also proves the regularity of the numbers and the reason for this is the number 1. Therefore, there's no number that can prove this conjecture wrong because the equation $3n+1$ will always be the fuel for the $n/2$.

The equation $n/2$ is always a destructive equation for the number to which it is applied. This is in order to return the numbers to the number from which they came, which is the number 1, and this intuition proves that all the numbers came from the number 1.

*** The theory behind collatz endless repeatable loop (1-4)**

The reason why we are getting stuck in this loop is because this loop consists of two Parts, one is the construction of

multiples of 2 based on one by the equation, the 2nd part is the demolition of the number 4 by the equation $n/2$ to return the number to the place from which it was built, which eventually is number 1.

Also, this proves that the universe is based on a precise numerical system within the 1 to 4 circle and that it is the origin of the equilibrium of this universe is pairs.

Note how the equation $(3n+1)$ preventing the number(n) from increasing & moving after adding the number 1 to the result of $3n$ to make it balanced & to enter it into the equation $n/2$.