Shivam Paradox: A New Perspective on the Summation of Squared Natural Numbers

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Abstract: ***The summation of natural numbers N =1+2+3+4+…. ∞ = - 1/12 was introduced by India's greatest mathematician Ramanujan, around 1913. This shocking summation is known by all mathematicians and has now become famous through multimedia. This paper introduces a new mathematical paradox, the SHIVAM PARADOX, which proposes that the summation of all squared natural numbers equals zero. This paradox is derived using integration, graphs, and limit notions.***

Keywords: Mathematical Paradox, Summation, Squared Natural Numbers, SHIVAM PARADOX, Number Theory

1. Introduction

Multimedia is now widely employed in various domains, but particularly in number theory, where it has long been researched. Ramanujan completed a lot of studies while out of a job and living in terrible conditions. Ramanujan, as seen by his summation derivation strategy, was unquestionably one of the most creative mathematicians of all time. Through the use of integration, graphs, and certain limit notions, I introduced **SHIVAM PARADOX,** which is the summation of natural numbers squared N = 1+4+9+16... = 0**.**The purpose of this article is to introduce and explain the SHIVAM PARADOX, a new mathematical paradox that proposes the summation of all squared natural numbers equals zero.The significance of this article lies in its introduction of a new mathematical paradox, which contributes to the ongoing discourse in number theory and challenges existing mathematical assumptions.

2. Shivam Paradox Explanation

Finding the limits that can be utilized to integrate the function and creating the function using Arithmetic progression is the first step in my plan to use integration to verify the summations. Additionally, I provide justification for everything I am able to do utilizing the graph notion. integration to verify the summations.

2.1The generating functions are:

$1+4+9+16+\ldots\ldots\ldots\ldots+\infty$ =summation of natural numbers square

As per the Arithmetic Progression equation

- $1+4+9+16+\ldots\ldots\ldots\ldots+\infty=\frac{X(X+1)(2X+1)}{6}$

  Here x = Number of terms

- $1+4+9+16+\ldots\ldots\ldots\ldots+\infty=Y$

  Then $Y=\frac{X(X+1)(2X+1)}{6}$

2.2 Declaration of the limit of the function Y:

To solve this function,

If we put x = 0, then we get y = 0.

And when we put y = 0, we get x = 0, -1, and -1/2.

- N = summation of natural numbers square
- The sum of the numbers in this area is given by the **area under the curve**.

$$N=\int_{-1}^{-0.5}\frac{X(X+1)(2X+1)}{6}dx+\int_{-0.5}^{0}\frac{X(X+1)(2X+1)}{6}dx$$

$$=\frac{1}{6}\int_{-1}^{-0.5}(2x^3+3x^2+x)\ dx+\frac{1}{6}\int_{-0.5}^{0}(2x^3+3x^2+xdx$$

$$=\frac{1}{6}\int_{-1}^{-0.5}[\frac{2x\text{^}4}{4}+\frac{3x\text{^}3}{3}+\frac{x\text{^}2}{2}]+\frac{1}{6}\int_{-0.5}^{0}[\frac{2x\text{^}4}{4}+\frac{3x\text{^}3}{3}+\frac{x\text{^}2}{2}]$$

- Put the limits and solve the equation

$$=\frac{1}{6}\left[\frac{1}{32}-0\right]+\frac{1}{6}\left[0-\frac{1}{32}\right]$$

$$=\frac{1}{192}-\frac{1}{192}$$

$$= \mathbf{0}$$

So, it is proven that the sum of natural numbers square
N = 1+4+9+16…= 0 (Shivam Paradox).

3. Summary

This paper introduces the **SHIVAM PARADOX**, a new mathematical paradox that proposes the summation of all squared natural numbers equals zero. This paradox, derived using integration, graphs, and limit notions, contributes to the field of number theory and challenges existing mathematical assumptions.

References

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