Rusho's Conjecture on Visualising Complex Arithmetic in Real Analysis

Maher Ali Rusho ✎

Dedicated to:
My Father Dr.prof. Mohammad Ali
My Mother And Teacher of all time Dr. Ruma Ali
My 2'nd Father :Engr.Ali Ahmed Jewel
My 2'nd mother and teacher of my early age Surraya Ahmed

Abstract:We all know Complex number or Imaginary Number can't be seen in real analysis. Mathematicians made another field for this named complex analysis . But In this paper I am going to relate complex number with the real . At least We can take some feel from here . We will use nothing but simple known concept form High School Mathematics and Will imply it in a beautiful way . From headline It can be seen something boring or tough but if we dive in to it it will be understood by school student's also . Analysis is the of mathematics dealing with continuous functions, limits, and related theories, such as differentiation, integration, measure, infinite sequences, series, and analytic functions. These theories are usually studied in the context of real and complex numbers and functions.. But for this paper one can should be known some basic tool like logarithmic function , Euler _lagrange Beautiful math equation , natural log series etc and beat more free time with enthusiastic mind.

Keywords: Logarithmic Function, Euler _Lagrange Beautiful Math Equation, Natural Log Series

Introduction

We all know that :

$$e^i \pi + 1 = 0$$

Or

$$e^i \pi = -1$$

Taking Logarithm form both side:

$$ln(e^i * \pi) = ln(-1)$$

$$\text{Or } i * \pi = ln(-1)$$

From ln x series we know that:-

$$ln(x) = x - x^2/2 + x^3/3 - x^4/4 + x^5/5 - x^7/7 + x^9/9 - .. + ……..$$

Now implementing x=-1 we find =>

$$ln(-1) = -1 - 1/2 - 1/3 - 1/4 - 1/5 + 1/7 - 1/9 - - - -$$

Now ln(-1)=I*π

$$i\pi = -1 - 1/2 - 1/3 - 1/4 - 1/5 + 1/7 - 1/9 - - - -$$

Then

$$i = (-1 - 1/2 - 1/3 - 1/5 + 1/7 - - - -)/\pi$$

From this equation we can see that Real infinite series divided by π is a complex number . This is The beauty in Math . We can also see some 3D Graph using Math

Reference:

1. Complex AnAlysis Book By Hafizur Rahman
2. Vector Rotation field By Art of problem solving
3. Mathway gar[hing calculations with Complex number
4. An introduction to complex Algorithm

✎ **Maher Ali Rusho (Correspondence)**
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