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AN ANALYSIS OF THE IMAGINARY UNIT 'i' AND ITS POSITION ON THE IMAGINARY NUMBER LINE

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Abstract

In the present paper an attempt has been made to define Law of Trichotomy on the imaginary unit 'i' with respect to zero(0) and a new line named as Imaginary Number Line has been introduced to represent the imaginary numbers with the possible position of 'i' on it. This new line is the extension of the extended real number line beyond infinity. The results obtained in this paper states that the complex number is not the number, which has been studying for a long time, but it is an imaginary number that can be imagined only. A point in the 2-D Cartesian Coordinate system/plane cannot denote the complex number. The complex analysis is not an independent subject but it is a resultant of two subjects Two-dimensional Co-ordinate Geometry and Vector Analysis in two-dimension. Infact the algebra of imaginary numbers will give a new mathematical system, which may be named as "Imaginary Analysis".

Key Words : *Imaginary unit i, Complex Numbers, Law of trichotomy, Argand plane, Extended real number line, Ordering of complex numbers .*

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