

ON CAYLEY NUMBERS

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ABSTRACT

This article focuses on Cayley numbers (3-parameter generalized octonions) which include real octonions, split octonions and semi octonions in special cases. The algebraic structure and some algebraic properties of these numbers are examined such as powers and n^{th} roots. Also, the polar forms of Cayley numbers are given and classifications are defined. All calculations in the article are achieved by using MATLAB R2023a and these codes are presented with an illustrative example.

Keywords Cayley numbers · 3-parameter generalized octonions · De Moivre formula

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