



Discusses Some Different Categories of Multiplicative Convexity Analysis

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Abstract

The purpose of this scientific debate is to examine various categories of multiplicative analysis, such as GG-convexity, in the multiplicative framework of G-calculus and AG-convexity in the multiplicative framework of non-Newtonian calculus. Additionally, we present the definition of GG-multiplicative Riemann-Liouville fractional integrals and AG-multiplicative Riemann-Liouville fractional integrals.

Depending on the type of mean, arithmetic (A) or geometric (G), considered on the domain and co-domain of definition, we meet one of the following four types of functions: let

$$f : \text{domain} \rightarrow \text{co-domain},$$

then

AA – convex functions, the usual convex functions in Newtonian calculus.

GG – convex functions, in GG -Multiplicative analysis or non-Newtonian G -calculus.

AG – convex functions, in AG -Multiplicative analysis or non-Newtonian calculus.

GA – convex functions, in GA -Multiplicative analysis or non-Newtonian calculus.

Keywords: GG-convexity, AG-convexity, GG-multiplicative Riemann-Liouville fractional integrals, AG-multiplicative Riemann-Liouville fractional integrals.

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