

# Post-quantum Hermite-Hadamard inequalities involving newly defined $(p,q)$ -integral

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## Abstract

In this investigation, we introduce new definitions of  $(p,q)$ -derivative and integral and discuss their fundamental properties. Some new Hermite-Hadamard inequalities employing newly defined  $(p,q)$ -integral are also obtained for convex functions. Furthermore, we are interested in finding  $(p,q)$ -estimates for midpoint and trapezoidal type inequalities for differentiable functions. It is revealed that the inequalities given in this article are extensions of offered inequalities in the literature of Hermite-Hadamard inequalities.

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