Some new quantum Trapezoid and quantum Midpoint type inequalities for preinvex functions

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Abstract

In this article, we derive Hermite-Hadamard inequalities for preinvex functions using the quantum integrals and show their validation with mathematical examples. We prove midpoint and trapezoidal inequalities for q^{2} -differentiable preinvex functions via q^{2} -quantum integrals. Moreover, we show with an example that the already proved inequality of Hermite-Hadamard type for preinvex functions via q_{1} 1}-quantum integrals is not valid for preinvex functions and we give its correct version. We prove the midpoint inequalities for q_{1} 1}-differentiable preinvex functions via q_{1} 1}-quantum integrals. It is also shown that the newly proved results transformed into some known results by considering the limit q-1- and $\eta(2, 1)=-\eta(1, 2)=$ 2- 1 in the newly derived results.

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