On an inequality for convex functions

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Abstract

Let \( f : I \to \mathbb{R}, x_1, ..., x_n \) distinct points in \( I \) and \( \lambda_1, ..., \lambda_n \in (0, \infty) \). In the present paper, we write \( \sum_{i=1}^{n} \lambda_i f(x_i) - (\sum_{i=1}^{n} \lambda_i) f \left( \frac{\sum_{i=1}^{n} \lambda_i x_i}{\sum_{i=1}^{n} \lambda_i} \right) \) in terms of divided differences on three distinct nodes. This leads to refinements of Jensen–type inequalities.

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References


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