SHARP INEQUALITIES RELATED TO
ONE–PARAMETER MEAN AND GINI MEAN

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Abstract. In the present paper, we answer the question: For \( \alpha + \beta \in (0, 1) \), what are the greatest values \( p, s_1 \) and the least values \( q, s_2 \) such that the inequalities

\[
J_p(a, b) \leq A^\alpha(a, b)G^\beta(a, b)H^{1-\alpha-\beta}(a, b) \leq J_q(a, b)
\]

and

\[
G_{s_1, 1}(a, b) \leq A^\alpha(a, b)G^\beta(a, b)H^{1-\alpha-\beta}(a, b) \leq G_{s_2, 1}(a, b)
\]

hold for all \( a, b > 0 \) with \( a \neq b \) where \( J_p(a, b) \), \( A(a, b) \), \( G(a, b) \), \( H(a, b) \) and \( G_{s, 1}(a, b) \) are the one-parameter mean, arithmetic mean, geometric mean, harmonic mean and Gini mean for two positive numbers \( a \) and \( b \), respectively.


Keywords and phrases: One-parameter mean, Gini mean, arithmetic mean, geometric mean, harmonic mean.

REFERENCES


