

Sándor, J.; Raşa, I.

Inequalities for certain means in two arguments. (English) Zbl 0938.26011
Nieuw Arch. Wiskd., IV. Ser. 15, No. 1-2, 51-55 (1997).

Let $G = \sqrt{ab}$; $L = (b-a)/(\ln b - \ln a)$; $I = \frac{1}{e}(b^b/a^a)^{1/(b-a)}$; $A = \frac{a+b}{2}$, $S = a^{a/(a+b)}b^{b/(a+b)}$. The following inequalities are valid:

$$A^2/I < (4A^2 - G^2)/3I < S < A^4/I^3 < A^2/G,$$

$$AL + SI < 2A^2 < S^2 + G^2,$$

$$(4A^2 - 2G^2)/e < SI < A^2L^2/G^2,$$

$$(S/A)^2 < (I/G)^3,$$

$$(A^2 - G^2)/A^2 < \ln S/G < (A^2 - G^2)/G,$$

$$(S - G)/(S - A) > \sqrt{2}.$$

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MSC:

26D15 Inequalities for sums, series and integrals
26E60 Means

Cited in **1** Review
Cited in **9** Documents

Keywords:

logarithmic mean; identric mean; arithmetic mean; geometric mean; weighted mean; inequalities