ON SCHR–CONVEXITY AND SCHR–GEOMETRIC
CONVEXITY OF FOUR–PARAMETER FAMILY OF MEANS

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Abstract. We prove that the four-parameter family of means
\[ R(u,v;r,s;x,y) = \left[ \frac{E(r,s;x^u,y^u)}{E(r,s;x^v,y^v)} \right]^{1/(u-v)} \]
is Schur-geometrically convex (concave) in \( x,y \) if \( (u+v)(r+s) \geq (\leq) 0 \), and Schur-concave (convex) in \( u,v \geq 0 \) if \( r+s \geq (\leq) 0 \).

Keywords and phrases: S-means, Gini mean, Stolarsky mean, Schur-convexity, Schur-geometric convexity.

REFERENCES