Title: Invariant means related to classical weighted means

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Let A_t, H_t, and G_t denote, respectively, the two-variable weighted arithmetic, harmonic and geometric means with the weight $t \in (0, 1)$. Fixing arbitrarily $s, t \in (0, 1)$, and choosing for K one of these three means of weight s, and for M another mean of weight t, we examine when the function N satisfying the equality $K \circ (M, N) = K$ is a mean, that is when the mean K is (M, N)-invariant. The convergence of the iterates of (M, N) is considered. The obtained results are applied to find the invariant functions with respect to the suitable mean-type mappings.

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