POPOVICIU TYPE CHARACTERIZATION OF POSITIVITY OF SUMS AND INTEGRALS FOR CONVEX FUNCTIONS OF HIGHER ORDER

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Abstract. Some very general identities of Abel and Popoviciu type for sums $\sum p_i f(x_i)$, $\sum\sum p_{ij} f(x_i, y_j)$ and integral $\int\int P(x,y) f(x,y)\,dx\,dy$ are deduced. Using obtained identities, positivity of these expressions are characterized for convex functions of higher order. An application in terms of exponential convexity is given.

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