

## CHARACTERIZATIONS FOR VECTORIAL PREQUASI-INVEX TYPE FUNCTIONS VIA JENSEN TYPE INEQUALITIES

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*Abstract.* The purpose of this paper is to derive some criteria for vectorial prequasi-invex type functions via Jensen type inequalities. It is shown that a Jensen type inequality is sufficient and necessary for a vector function to be prequasi-invex under the condition of lower level-closedness, cone lower semicontinuity, cone upper semicontinuity and semistrict prequasi-invexity, respectively. Analogous results are established for vectorial semistrictly prequasi-invex functions and vectorial strictly prequasi-invex functions.

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*Keywords and phrases:* Jensen type inequalities, prequasi-invexity, semistrict prequasi-invexity, strict prequasi-invexity, lower level-closedness, cone lower semicontinuity, cone upper semicontinuity.

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