INVEX SETS AND NONSMOOTH INVEX FUNCTIONS

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In this paper are given conditions for the invexity of the sets. It is showed that in certain conditions, the family of all invex subsets in $\mathbb{R}^n$ forms a nontrivial vector subspace of $\mathbb{R}^n$. Also, it is given a form of representation of an invex set. It is showed that a nonsmooth function on $\mathbb{R}^n$ is pseudoinvex if and only if every stationary point is a global minimum. The domains of the invex, pseudoinvex and quasiinvex functions are invex sets. There are grounded the notions of invexity pseudoinvexity and quasiinvexity for the real functions defined on arbitrary sets. Finally, there are presented all classes and types of invexity and generalized invexity at a point for the functions defined on arbitrary sets.