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«Additive formulae for functions and closed classes in multiple-valued logics».

Abstract. In k -valued logic function algebra P_k , we study closed classes containing the class L and the class $Polyn$ of all modulo k linear and polynomial functions. Elements of these classes are represented with canonical additive formulae, i.e., sums of unambiguous terms depending on divisors d of the integer k . The most general formulae define modulo d congruences preservation classes, they are maximal in P_k . Additional restrictions for summands define subclasses and their lattice. For some k , all classes containing $Polyn$ and L may be described by this way. Additive representations determine generating sets in the classes considered, methods and algorithms for recognizing properties of functions, constructing their formulae implementations, in particular, composite modulo k polynomials. Some results have analogs in countable-valued logic.