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Predicate Calculus for Boolean Valued Functions. Part X

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Summary. In this paper, we proved some elementary predicate calculus formulae containing the quantifiers of Boolean valued functions with respect to partitions. Such a theory is an analogy of usual predicate logic.

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The articles [6], [5], [8], [7], [3], [4], [1], and [2] provide the notation and terminology for this paper.

In this paper Y denotes a non empty set.

Next we state three propositions:

(4)[1] Let a be an element of $Boolean^Y$, G be a subset of PARTITIONS(Y), and A, B, C be partitions of Y. Then $\forall_{\neg\exists_{a,A}G,B}G \Subset \neg\exists_{\forall_{a,B}G,A}G$.

(7)[2] Let a be an element of $Boolean^Y$, G be a subset of PARTITIONS(Y), and A, B, C be partitions of Y. Suppose G is independent and $G = \{A,B,C\}$ and $A \neq B$ and $B \neq C$ and $C \neq A$. Then $\exists_{\neg\forall_{a,A}G,B}G = \exists_{\neg\forall_{a,B}G,A}G$.

(14)[3] Let a be an element of $Boolean^Y$, G be a subset of PARTITIONS(Y), and A, B, C be partitions of Y. Suppose G is independent and $G = \{A,B,C\}$ and $A \neq B$ and $B \neq C$ and $C \neq A$. Then $\forall_{\neg\exists_{a,A}G,B}G = \forall_{\neg\exists_{a,B}G,A}G$.

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[1] The propositions (1)–(3) have been removed.
[2] The propositions (5) and (6) have been removed.
[3] The propositions (8)–(13) have been removed.

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