

SCME AXIOM SYSTEMS FOR MATHEMATICAL LOGIC



by

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ABSTRACT

This thesis describes the following:

- (1) The theory of identity, which consists of the definition of identity, the rule of substitution, and theorems. It is used for making rigorous proofs in the remaining part of the thesis.
- (2) The theory of compound statements, which is used for handling combinations of statements.
- (3) The truth value calculus, used for calculating the truth value of a compound statement when the truth value of each individual constituent statement is given.
- (4) The \vdash symbol, introduced as a convenient sign to indicate the truth value of a statement. Various tautologies (statements that are always true) are expressed with the help of this symbol.
- (5) The theory of the predicate calculus with one and two variables. Lattice diagrams showing the interconnection of compound statements in the predicate calculus are given.



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