Sur les algèbras de Hilbert, by A. Diego. Gauthier-Villars, Paris, 1966, Collection de logique mathématique, serie A. No. 21. 56 pages. 20 francs.

In the classical propositional calculus one can construct 2^{2n} inequivalent formulas out of n generators or "propositional variables". For the entire intuitionist calculus there are known to be an infinite number of inequivalent formulas even in one generator. The present author has investigated the implicational intuitionist calculus, i.e., that fragment of the intuitionist calculus which deals with the symbol $\Longrightarrow$ alone. He has shown that there exist only finitely many inequivalent formulas in n generators. (It would have been helpful to the uninitiated to give an example in the introduction of two implicational formulas which are equivalent classically but not intuitionistically). More interesting than this result are his methods. A Hilbert algebra $(A, 1, \Longrightarrow)$ consists of a set A with a fixed element 1 and a binary operation $\Longrightarrow$ satisfying the following axioms:

(1) $p \Longrightarrow (q \Longrightarrow p) = 1$

(2) $(p \Longrightarrow (q \Longrightarrow r)) \Longrightarrow ((p \Longrightarrow q) \Longrightarrow (p \Longrightarrow r)) = 1$

(3) If $p \Longrightarrow q = 1$ and $q \Longrightarrow p = 1$ then $p = q$.

Even though this last axiom does not have the form of an equation, the author has succeeded in showing that the class of Hilbert albegras is equationally definable. (Actually he uses the operation $\Longrightarrow$ alone and must then stipulate that A is not empty, not exactly an equational condition). The methods of universal algebra then become applicable, and one may consider free Hilbert algebras in n generators. A topological representation of Hilbert algebras is also considered.

This booklet, a French translation of the author's thesis at the University of Buenos Aires, will be of interest to those who wish to apply algebra to logic.

J. Lambek, McGill University

Stationary and related stochastic processes: sample function properties and their applications, by Harald Cramér and M.R. Leadbetter. John Wiley and Sons, New York, 1967. 348 pages. $12.50.

This account of the sample path functions of stationary processes is remarkable for its completeness and clarity. Without doubt, the book will become a standard reference for researchers interested in either the theory or the application of stochastic processes.

The contents of the book are well described in the author's preface, as follows,

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