Bulletin of the **S**ection of **L**ogic
Volume 4/4 (1975), pp. 136–137
reedition 2012 [original edition, pp. 136–137]

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A NOTE ON THE LEAST BOOLEAN THEORY IN *SCI*

Any Boolean algebra, supplied with an additional binary operation

$$a, b \mapsto a \circ b$$

is called *B-algebra*. Every (Boolean) ultrafilter U of a B-algebra such that

$$a \circ b \text{ is in } U \text{ iff } a = b$$

is called *normal*. A B-algebra A is said to be a *B-semi-model* if the normal ultrafilters of A exist. If U is an normal ultrafilter of the B-algebra A then the pair

$$\langle A, U \rangle$$

is called a *B-model*.

Consider the least Boolean theory in SCI, labelled WB; see this Bulletin vol. 1, no. 4, November 1972, pp. 38–41.

Notice that WB is an equational invariant theory. Then, for each formula α of SCI:

α is not in WB iff there exists a B-model $\langle A, U \rangle$ and a homomorphism h from the SCI-language to A such that $h(\alpha)$ is not in U.

Thus, WB is the set of all those SCI-formulas which are true in every B-model.

LEMMA.* *Every B-algebra is a homomorphic image of some B-semi-model.*

*with B. Tembrowski

Theorem. *The quotient algebra L/WB of the SCI-language L modulo WB is freely generated (by equivalence classes of variables) over the class of all B-algebras.*

Remark. The theorem characterizes equations belonging to WB.

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