

Refutation of Smarandache geometry

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Abstract: We evaluate the Smarandache algebra system without unit as basis of its geometry. On the right inverse operator in the dexter (right) digits, $1 \cdot 1=1$ contradicts $1 \cdot 1=0$. Hence Smarandache geometry is a probabilistic vector space and refuted as an exact, bivalent logic.

We assume the method and apparatus of Meth8/VL4 with Tautology as the designated proof value, **F** as contradiction, N as truthity (non-contingency), and C as falsity (contingency). The 16-valued truth table is row-major and horizontal, or repeating fragments of 128-tables, sometimes with table counts, for more variables. (See ersatz-systems.com.)

LET \sim Not, \neg ; + Or, \vee, \cup ; - Not Or; & And, \wedge, \cap, \cdot ; \ Not And; > Imply, greater than, $\rightarrow, \Rightarrow, \mapsto, \succ, \supset, \vdash, \models, \rightarrow$; < Not Imply, less than, $\in, \prec, \subset, \neq, \neq, \leftarrow, \preceq$; = Equivalent, $\equiv, :=, \iff, \leftrightarrow, \triangleq, \approx, \simeq$; @ Not Equivalent, \neq ;
 % possibility, for one or some, \exists, \diamond, M ; # necessity, for every or all, \forall, \square, L ;
 (z=z) T as tautology, \top , ordinal 3; (z@z) **F** as contradiction, \emptyset , Null, \perp , zero;
 (%z<#z) C as contingency, Δ , ordinal 1; (%z>#z) N as non-contingency, ∇ , ordinal 2;
 $\sim(y < x)$ ($x \leq y$), ($x \subseteq y$); (A=B) (A~B).
 Note: For clarity we usually distribute quantifiers on each variable as designated.

From: Mao, L. (2011). Automorphism groups of maps, surfaces and Smarandache geometries. fs.unm.edu/Linfan2.pdf *maolinfan@163.com*

Definition 1.2.3

Let $(A; \circ)$ be an algebraic system with a unit 1_A . An element $a \in A$ is called to be a right inverse of $b \in A$ if $a \circ b = 1_A$. Certainly, there are algebra systems without unit. For example, let $H = \{a, b, c, d\}$ with an operation \cdot determined by the following table.

\cdot	a	b	c	d
a	b	c	a	d
b	c	d	b	a
c	a	b	d	c
d	d	a	c	b

Table 1.2.3

Then (H, \cdot) is an algebraic system without unit.

Remark 1.2.3:

LET 11, 01: a, c.

a	11	c	01
c	01	a	11
\cdot	11	\cdot	10

In the dexter (right) digits above, $1 \cdot 1=1$ contradicts $1 \cdot 1=0$. Hence Smarandache geometry is a probabilistic vector space and refuted as an exact, bivalent logic.