

From:

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 arxiv.org/pdf/1711.07952.pdf. jdh.hamkins.org/the-universal-finite-set/

We evaluated two parts of the proof of Lemma 2 (Folklore).

We assume the apparatus of the Meth8 modal logic model checker implementing variant system VL4. Meth8 allows to mix four logical values with four analytical values. The designated *proof* value is T.

Definition	Axiom	Symbol	Name	Meaning	2-tuple	Ordinal
1	$p=p$	T	Tautology	proof	11	3
2	$p@p$	F	Contradiction	absurdum	00	0
3	$\%p>\#p$	N	Non-contingency	truth	01	1
4	$\%p<\#p$	C	Contingency	falsity	10	2

LET: ~ Not; + Or; & And; \ Not and; > Imply; < Not imply; = Equivalent to;
 @ Not equivalent to; # all; % some; (p@p) 00; (p=p) 11

Results are the proof table of 16-values in row major horizontally.

$$(3 \rightarrow 2): \text{Not evaluated} \tag{3.2}$$

$$(2 \rightarrow 1): \text{LET } p, q, r, s \text{ lc_psi } \theta \text{ lc_theta } \text{ uc_V } x$$

$$((\%q\&r)\&(q>p)) = ((\%q\&\%s) \& (((s=(r\&q))\&s)>p)); \quad \text{NNNN TTNC NNFF TTTT} \tag{2.1}$$

$$(1 \rightarrow 3): \text{LET } p, q, r, s \text{ lc_phi } x \text{ y } H; \text{ k is uncountable, so } k=(p>(p=p)).$$

$$((\%q\&\#r)\&((p\&(p@p))\&(q\&r))) = ((\%p>(p=p))\&(s\&(p>(p=p))))$$

$$>((\%q\&\#r)\&((p\&(p@p))\&(q\&r))) ; \quad \text{FFFF FFFF TTTT TTTT} \tag{1.3}$$

Eqs. 2.1 and 1.3 as rendered are *not* tautologous.