

We assume the Meth8/VL4 apparatus with τ as designated *proof* value and tables row-major, horizontal:

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: $pqrs$ Emcs where c is a constant r equivalent to s the speed of light, and $E=mc^2$.

The equation for mass-energy equivalence is $E=mc^2$. (1.0)

If necessarily c is equivalent s , and c is not greater than or less than s , then:

$$(\#(r=s)\&\sim((r<s)+(r>s)))> \#(p=(q\&(r\&s))) ; \quad \text{TTTT TTTT TTTT TTTT} \quad (1.1)$$

If possibly c is not equivalent to s , and c is less than or greater than s , then:

$$(\%(r@s)\&((r<s)+(r>s)))> \#(p=(q\&(r\&s))) ; \quad \text{TTTT TCTC TCTC TTTT} \quad (1.2)$$

If possibly c is not equivalent to s , and possibly c is less than or greater than s , then:

$$(\%(r@s)\&\%((r<s)+(r>s)))> \#(p=(q\&(r\&s))) ; \quad \text{NNNN NFNF NFNF NNNN} \quad (1.3)$$

If possibly c is equivalent to s , or possibly c is less than or greater than s , then:

$$(\%(r=s)+\%((r<s)+(r>s)))> \#(p=(q\&(r\&s))) ; \quad \text{NFNF NFNF NFNF NFFN} \quad (1.4)$$

Eqs. 1.2-1.4 show the assumption for the logic of Eq. 1.0 to hold as Eq. 1.1 is that the speed of light is constant. Stephen J. Crothers questioned and showed this is not the case, that the speed of light varies. Hence Eqs. 1.2-1.4 serve as counter examples to Eq. 1.1, making $E=mc^2$ *not* tautologous after all.