Refutation of Riemann hypothesis by two zeta properties

Abstract: Properties of the zeta function of the Riemann hypothesis are *not* confirmed as tautologous and hence refute it.

We assume the method and apparatus of Meth8/VŁ4 with Tautology as the designated *proof* value, **F** as contradiction, N as truthity (non-contingency), and C as falsity (contingency). Results are a 16-valued truth table in row-major and horizontal, or repeating fragments of 128-tables for more variables. (See ersatz-systems.com.)

LET p, q, s: ζ lc_zeta, q, s;
~ Not; & And; + Or; - Not Or; > Imply; = Equivalent; @ Not Equivalent;
% possibility, for one or some; # necessity, for every or all;
(q@q) ordinal zero 0; (%q>#q) ordinal one 1.

From: Rigamonti, N. (2018). Two properties at the base of the Riemann hypothesis. vixra.org/pdf/1811.0099v1.pdf (no email)

$\zeta(s)=\zeta(1-s)$ (2.1)
(p&s)=(p&((%q>#q)-s)) ; TNTN TNTN T**F**T**F** T**F**T**F** (2.2)

$\zeta(\bar{s})=\overline{\zeta(s)}$ (3.1), (4.1)
(p&~s)=~(p&s) ; **F**T**F**T **F**T**F**T **F**T**F**T **F**T**F**T (3.2), (4.2)

Since $\zeta(s)=0$, $\overline{\zeta(s)}=0$ and so $\zeta(s)=\overline{\zeta(s)}$ (4A.2.1)
(((p&s)=(q@q))>(~(p&s)=(p@p)))>((p&s)=~(p&s)) ;
TTTT TTTT T**F**T**F** T**F**T**F** (4A.2.2)

Since $\overline{\zeta(s)}=\zeta(\bar{s})$, $\zeta(s)=\zeta(\bar{s})$ (4A.3.1)
(~(p&s)=(p&~s))>((p&s)=(p&~s)) ; T**F**T**F** T**F**T**F** T**F**T**F** T**F**T**F** (4A.3.2)

$\zeta(s)=\zeta(\bar{s})$ (5.1)
(p&s)=(p&~s) ; T**F**T**F** T**F**T**F** T**F**T**F** T**F**T**F** (5.2)

$\zeta(s)=\zeta(1-s)$ } [Eq. 2.1]
$\zeta(s)=\zeta(\bar{s})$ } [Eq. 5.1] (6.1)
((p&s)=(p&((%q>#q)-s)))=((p&s)=(p&~s)) ;
TCTC TCTC TTTT TTTT (6.2)

Remark 6.1: Eqs. 6.1 reduce to a more compact equivalence with the same truth table result in Eq. 6.2 as: (p&((%q>#q)-s))=(p&~s). (6.2.alt)

Eqs. 2-6 as rendered are *not* tautologous. This means properties of the zeta function of the Riemann hypothesis refute it.