One page Proof of Riemann Hypothesis

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Abstract

There are tenths of proofs for Riemann Hypothesis and 3 or 5 disproofs of it in arXiv. I am adding to the Status Quo my proof, which uses the achievement of Dr. Zhu.

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I. PRIOR RESEARCH RESULT

Because the paper of Dr. Zhu [1] is not published in a peer-review journal (for 4 years) and is very complicated, it could contain a fatal mistake. Thus, I do not start with the final result called “The probability of Riemann’s hypothesis being true is equal to 1” but rather with the starting information of the papers [1, 2] (one of the papers is peer-reviewed), where is proven, that

\[
\lim_{n \to \infty} \inf d(n) = 0,
\]

where \( d(n) = D(n)/n \), and \( D(n) = e^\gamma n \ln \ln n - \sigma(n) \). Hereby the Riemann Hypothesis holds true, if \( \lim_{n \to \infty} \inf D(n) \geq 0 \).

II. MY PROOF

The Eq.(1) means, that \( \lim_{n \to \infty} d(n) \geq 0 \). However, the limit does not exist, because the number \( X = \lim \sigma(n)/n \) can not be determined: the function jumps from one value to another, namely \( (\sigma(n) - \sigma(n+j))/n \neq 0 \) if \( n \to \infty \) for \( j < \infty \). Therefore, instead of Eq.(1) it is mathematically correct to write: \( d(n) = D(n)/n \geq 0 \), when \( n \gg 1 \). The expression \( n \gg 1 \) means, that the \( n \) is always finite \( n < \infty \). But for any finite \( n \) the \( D(n)/n \geq 0 \) implies, that \( D(n) \geq 0 \).

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