

Disproof of the Riemann hypothesis

Ihsan Raja Muda Nasution

November 24, 2013

Abstract

We analyze the anatomy of critical line. As the result, we disprove the Riemann hypothesis.

1 Introduction

In this paper, we disprove the Riemann hypothesis. We can show that the critical line is free from zeros.

2 The results

Theorem 1 (Hadamard-de la Vallée-Poussin). $\zeta(1 + it) \neq 0$.

We denote \bar{s} as the critical strip. And we denote ℓ_{crit} as the critical line. We know that $\ell_{\text{crit}} \subset \bar{s}$. We define $\mathbf{K} := \bar{s} \setminus \ell_{\text{crit}}$. Then in \mathbf{K} , we have

$$|\ell_{\text{crit}}| = 0. \tag{1}$$

Because $|\ell_{\text{crit}}| = 0$ then $\ell_{\text{crit}} = \emptyset$. This shows that all nontrivial zeros of the Riemann zeta function on the critical line do not exist. We conclude a theorem

Theorem 2. $\zeta(1/2 + it) \neq 0$.