

***The Riemann hypothesis (RH) may be the most important outstanding problem in mathematics. This third volume on equivalents to RH offers a full presentation of recent results of Nicolas, Rogers–Tao–Dobner, Polymath15, and Matiyasevich. Of particular interest here are derivations which show, assuming all zeros on the critical line are simple, that RH is decidable. Also included is the classical Pólya–Jensen equivalence and related developments of Ono et al.***

***“Amazing! A magnificent presentation of yet more equivalents of Riemann’s hypothesis, including recent developments, and a deep analysis of whether it is decidable.”***

***R. S. MacKay, University of Warwick***

***“This third volume is principally devoted to research from the past dozen years. For example, the reader will find accounts of recent work on the de Bruijn–Newman constant, and on Jensen polynomials. The final chapters discuss undecidability questions, and the book ends with an extended series of appendices giving important background. As with the earlier volumes, the book demonstrates the impressive range of mathematical ideas that connect with the elusive Riemann hypothesis.”***

***Roger Heath-Brown, University of Oxford***

***“Volume 3 contains a quite diverse range of RH equivalences, going from classical analytic number theoretic involving the divisor function, to undecidability of the RH. Furthermore, impressive recent progress on computing the de Bruijn–Newman constant and connections with special polynomials is reported on.”***

***Pieter Moree, Max Planck Institute for Mathematics***

*Kevin Broughan*