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MATHEMATICAL INTUITIONISM

Carl J. Posy

Hebrew University of Jerusalem



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Mathematical Intuitionism

Elements in the Philosophy of Mathematics

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Carl J. Posy
Hebrew University of Jerusalem

Author for correspondence: Carl J. Posy, carl.posy@mail.huji.ac.il

Abstract: L. E. J. Brouwer, the founder of mathematical intuitionism, believed that mathematics and its objects must be humanly graspable. He initiated a programme rebuilding modern mathematics according to that principle. This Element introduces the reader to the mathematical core of intuitionism – from elementary number theory through Brouwer’s uniform continuity theorem – and to the two central topics of ‘formalised intuitionism’: formal intuitionistic logic, and formal systems for intuitionistic analysis. Building on that, the Element proposes a systematic philosophical foundation for intuitionism that weaves together doctrines about human grasp, about mathematical objects and about mathematical truth.

Keywords: Brouwer, intuitionistic mathematics, intuitionistic logic, philosophy of mathematics, the intuitionistic continuum

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