

H. POGORZELSKI AND W. RYAN

TRANSTHEORETIC  
FOUNDATIONS OF  
MATHEMATICS

(GENERAL SUMMARY OF RESULTS)

SERIES I : NATURAL NUMBERS

VOLUME IA : FOUNDATIONS

RIM

# RIM MONOGRAPHS IN MATHEMATICS

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# TRANSTHEORETIC FOUNDATIONS OF MATHEMATICS

(GENERAL SUMMARY OF RESULTS)

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## SERIES I : NATURAL NUMBERS VOLUME IA : FOUNDATIONS

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## PREFACE

When the series entitled Foundations of Semiological Theory of Numbers <sup>(1)</sup> (cf. Bibliography) was undertaken several dozens of years ago, we had in mind completing the whole series of some ten or so volumes within a decade. We considered and still consider the above-mentioned volumes and this new series to be but preliminary rough presentations of our Goldbach program, and only after their completion do we intend to polish the series down to several formal volumes. Alas, we have managed to publish only three of the projected ten volumes and this General Summary thus far. The unfortunate deprivation we have persistently encountered throughout the years in the way of research support, financial or otherwise, has taken a non-trivial toll on us and our work. Perhaps this was due in part to our failure to convincingly publicize some sort of preview of the whole panorama of our seemingly radical Goldbach Program. This General Summary is our requital to such an excuse.

In places where we took leave of the strict format of a General Summary, for the sake of brevity and time, due to the technical prerequisites involved, we were obliged to follow a somewhat uneven format in these volumes, citing in some cases nontrivial theorems with only hints of a proof and other less nontrivial cases with proofs. It should be noted that so-called transtheoretic proofs of results in our so-called trans-

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<sup>(1)</sup> This series has been terminated. It will be completely revised and incorporated in Series I: Natural Numbers.

theories are quite naturally far less technically involved than the proofs of such results would be if they could be carried out in so-called formal developments of mathematics. It should be noted that all proofs of a formal development of mathematics aligned in a transtheory are also proofs of the transtheory, but not conversely. At any rate, the formal details and much of the machinery already introduced earlier in these series but not mentioned in these volumes will be put into action in the future volumes of RIM Series I, Natural Numbers, and RIM Series II, Irrational Numbers.

## RIM MONOGRAPHS IN MATHEMATICS

### Published

R. Dedekind, *What are Numbers and What Should They Be?* (*Was sind und was sollen die Zahlen?*). US \$49.99 (Hardcover).

H. Pogorzelski and W. Ryan, *Transtheoretic Foundations of Mathematics, General Summary, Series I: Natural Numbers, Volumes IA, IB*. US \$29.99 each volume (Softcover, Typewriter Print).

### To be published

H. Pogorzelski and W. Ryan, *Transtheoretic Foundations of Mathematics, General Summary, Series I: Natural Numbers, Volume IC, Goldbach Conjecture*.

H. Pogorzelski and W. Ryan, *Transtheoretic Foundations of Mathematics, General Summary, Series II: Irrational Numbers*.

R. Dedekind, *Continuity and Irrational Numbers* (*Stetigkeit und irrationale Zahlen*), and Dedekind's Notes on *General Topology*.

H. Pogorzelski and W. Ryan, *Transtheoretic Foundations of Mathematics, Series I: Natural Numbers, Volume IIA, IIB, IIC* (Complete Revisions of *Foundations of Semiological Theory of Numbers*).

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