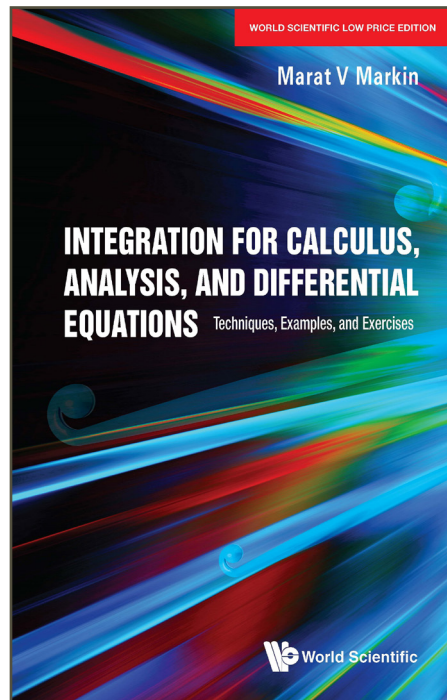# INTEGRATION FOR CALCULUS, ANALYSIS, AND DIFFERENTIAL EQUATIONS
Techniques, Examples, and Exercises

By
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(*California State University, Fresno, USA*)

WORLD SCIENTIFIC LOW PRICE EDITION

Marat V Markin

INTEGRATION FOR CALCULUS, ANALYSIS, AND DIFFERENTIAL EQUATIONS Techniques, Examples, and Exercises

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ABOUT THE BOOK

The book assists Calculus students to gain a better understanding and command of integration and its applications. It reaches to students in more advanced courses such as Multivariable Calculus, Differential Equations, and Analysis, where the ability to effectively integrate is essential for their success.

Keeping the reader constantly focused on the three principal epistemological questions: "*What for?*", "*Why?*", and "*How?*", the book is designated as a supplementary instructional tool and consists of

- 9 Chapters treating the three kinds of integral: indefinite, definite, and improper. Also covering various aspects of integral calculus from abstract definitions and theorems (with complete proof whenever appropriate) through various integration techniques to applications,
- 3 Appendices containing a table of basic integrals, reduction formulas, and basic identities of algebra and trigonometry.

It also contains

- 143 Examples, including 112 thoughtfully selected Problems with complete step-by-step solutions, the same problem occasionally solved in more than one way while encouraging the reader to find the most efficient integration path, and
- 6 Exercises, 162 Practice Problems offered at the end of each chapter starting with Chapter 2 as well as 30 Mixed Integration Problems "for dessert", where the reader is expected to independently choose and implement the best possible integration approach.

The Answers to all the 192 Problems are provided in the Answer Key. The book will benefit undergraduates, advanced undergraduates, and members of the public with an interest in science and technology, helping them to master techniques of integration at the level expected in a calculus course.

READERSHIP

Undergraduates, advanced undergraduates and members of the public with an interest in integration and its applications.

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