Título: Lebesgue's Theory Of Integration: Its Origins And Development: Second Edition

Autor: Thomas Hawkins

Precio: Desconocido

Editorial:

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Sinopsis

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In this book, Hawkins elegantly places Lebesgue's early work on integration theory within in proper historical context by relating it to the developments during the nineteenth century that motivated it and gave it significance and also to the contributions made in this field by Lebesgue's contemporaries.

Hawkins was awarded the 1997 MAA Chauvenet Prize and the 2001 AMS Albert Leon Whiteman Memorial Prize for notable exposition and exceptional scholarship in the history of mathematics.

Readership

Graduate students and research mathematicians interested in real analysis; mathematical historians interested in the background to modern theories of integration.

Reviews

From reviews for the original edition:

"Thomas Hawkins has set out to place Lebesgue's early work on integration theory ... within its proper historical context ... He has succeeded brilliantly ... [He] has been able to convey the excitement of discovery and groping that must attend the birth of any fundamental theory ... [He] has written a book that is the epitome of what a mathematical history should be."

-- Science

"This is a book which can be recommended to every mathematician."

-- Zentralblatt MATH

"A clear exposition ..."

-- Nature

"Hawkins has written an excellent book, of value both to mathematicians and historians of science ... Any teacher of advanced calculus will find the material in this book invaluable in motivating the introduction of Lebesgue's theory."

-- Isis

"The success of the book will be ensured because it is a genuinely historical study."

-- British Journal of the History of Science

"An interesting book ... valuable to the worker in the field ... brings out a number of ideas and results ... It can be recommended highly to students who are getting their introduction to Lebesgue integration, particularly because it shows how an important mathematical idea develops, sometimes slowly, until it becomes an aesthetically satisfying structure."

-- MAA Monthly

"Lebesgue integration is one of the great success stories of modern mathematics, and Hawkins tells it very well. An introductory chapter sets the scene, describing how the first rigorous theory of integration took shape at the hands of Cauchy and Riemann. The book then plunges into fifty years of ferment, as researchers struggle to deal with "assumptionless" functions which will not fit the theory. Differentiable functions turn up with bounded derivatives which are not (Riemann) integrable; do they satisfy the fundamental theorem of calculus? Rectificable curves are defined without assuming differentiability; must we give up the integral formula for length? To prove uniqueness for trigonometric series, we need a term-by-term integration of a series not converging uniformly; can it be justified? [One] falls into traps through not understanding the complexity of nowhere-dense sets, and through confusing them with the sets negligible in integration. The valid theorems have complicated hypotheses and even more complicated proofs. At the end of the century Hermite exclaims, "I turn away with fright and horror from this lamentable plague of functions which do not have derivatives." And then the key idea enters from a quite unexpected source."

-- Bulletin of the AMS

Table of Contents