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formula -- ; 4.6. Uniform convergence and R-S integration -- ; 4.7. References -- ; 5. Lebesgue measure -- ; 5.1. Lebesgue's idea -- ; 5.2. Measurable sets -- ; 5.3. Lebesgue measurable sets and Caratheodory -- ; 5.4. Sigma algebras -- ; 5.5. Borel sets -- ; 5.6. Approximating measurable sets -- ; 5.7. Measurable functions -- ; 5.8. More measurable functions -- ; 5.9. What does monotonicity tell us? -- ; 5.10. Lebesgue's differentiation theorem -- ; 5.11. References -- ; 6. The Lebesgue-Stieltjes integral -- ; 6.1. Introduction -- ; 6.2. Integrability : Riemann ensures Lebesgue -- ; 6.3. Convergence theorems -- ; 6.4. Fundamental theorems for the Lebesgue integral -- ; 6.5. Spaces -- ; 6.6. $L^2[-\pi, \pi]$ and Fourier series -- ; 6.7. Lebesgue measure in the plane and Fubini's theorem -- ; 6.8. Summary-- References -- ; 7. The Lebesgue-Stieltjes integral -- ; 7.1. L-S measures and monotone increasing functions -- ; 7.2. Caratheodory's measurability criterion -- ; 7.3. Avoiding complacency -- ; 7.4. L-S measures and nonnegative Lebesgue integrable functions -- ; 7.5. L-S measures and random variables -- ; 7.6. The Lebesgue-Stieltjes integral -- ; 7.7. A fundamental theorem for L-S integrals -- ; 7.8. References. ; 8. The Henstock-Kurzweil integral -- ; 8.1. The generalized Riemann integral -- ; 8.2. Gauges and $[\infty]$ -fine partitions -- ; 8.3. H-K integrable functions -- ; 8.4. The Cauchy criterion for H-K integrability -- ; 8.5. Henstock's lemma -- ; 8.6. Convergence theorems for the H-K integral -- ; 8.7. Some properties of the H-K integral -- ; 8.8. The second fundamental theorem -- ; 8.9. Summary-- ; 8.10. References -- ; 9. The Wiener integral -- ; 9.1. Brownian motion -- ; 9.2. Construction of the Wiener measure -- ; 9.3. Wiener's theorem -- ; 9.4. Measurable functionals -- ; 9.5. The Wiener integral -- ; 9.6. Functionals dependent on a finite number of t values -- ; 9.7. Kac's theorem -- ; 9.8. References -- ; 10. Feynman integral -- ; 10.1. Introduction -- ; 10.2. Summing probability amplitudes -- ; 10.3. A simple example -- ; 10.4. The Fourier transform -- ; 10.5. The convolution product -- ; 10.6. The Schwartz space -- ; 10.7. Solving Schrodinger problem A -- ; 10.8. An abstract Cauchy problem -- ; 10.9. Solving in the Schwartz space -- ; 10.10. Solving Schrodinger problem B -- ; 10.11. References -- Index -- About the author.

Sommario/riassunto

The derivative and the integral are the fundamental notions of calculus. Though there is essentially only one derivative, there are a variety of integrals, developed over the years for a variety of purposes, and this book describes them. No other single source treats all of the integrals of Cauchy, Riemann, Riemann-Stieltjes, Lebesgue, Lebesgue-Stieltjes, Henstock-Kurzweil, Wiener, and Feynman. The basic properties of each are proved, their similarities and differences are pointed out, and the reason for their existence and their uses are given. Historical information is plentiful. Advanced undergraduate mathematics majors, graduate students, and faculty members are the audience for the book. Even experienced faculty members are unlikely to be aware of all of the integrals in the Garden of Integrals and the book provides an opportunity to see them and appreciate the richness of the idea of integral. Professor Burke's clear and well-motivated exposition makes this book a joy to read.