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Autore	Beck Matthias
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Nota di contenuto	The Coin-Exchange Problem of Frobenius -- A Gallery of Discrete Volumes -- Counting Lattice Points in Polytopes: The Ehrhart Theory -- Reciprocity -- Face Numbers and the Dehn–Sommerville Relations in Ehrhartian Terms -- Magic Squares -- Finite Fourier Analysis -- Dedekind Sums -- Zonotopes -- h-Polynomials and h*-Polynomials -- The Decomposition of a Polytope Into Its Cones -- Euler–Maclaurin Summation in Rd -- Solid Angles -- A Discrete Version of Green's Theorem Using Elliptic Functions.
Sommario/riassunto	This richly illustrated textbook explores the amazing interaction between combinatorics, geometry, number theory, and analysis which arises in the interplay between polyhedra and lattices. Highly accessible to advanced undergraduates, as well as beginning graduate students, this second edition is perfect for a capstone course, and adds two new chapters, many new exercises, and updated open problems. For

scientists, this text can be utilized as a self-contained tooling device. The topics include a friendly invitation to Ehrhart's theory of counting lattice points in polytopes, finite Fourier analysis, the Frobenius coin-exchange problem, Dedekind sums, solid angles, Euler–Maclaurin summation for polytopes, computational geometry, magic squares, zonotopes, and more. With more than 300 exercises and open research problems, the reader is an active participant, carried through diverse but tightly woven mathematical fields that are inspired by an innocently elementary question: What are the relationships between the continuous volume of a polytope and its discrete volume? Reviews of the first edition: "You owe it to yourself to pick up a copy of Computing the Continuous Discretely to read about a number of interesting problems in geometry, number theory, and combinatorics." — MAA Reviews "The book is written as an accessible and engaging textbook, with many examples, historical notes, pithy quotes, commentary integrating the mate rial, exercises, open problems and an extensive bibliography." — Zentralblatt MATH "This beautiful book presents, at a level suitable for advanced undergraduates, a fairly complete introduction to the problem of counting lattice points inside a convex polyhedron." — Mathematical Reviews "Many departments recognize the need for capstone courses in which graduating students can see the tools they have acquired come together in some satisfying way. Beck and Robins have written the perfect text for such a course." — CHOICE.