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Sommario/riassunto

Knot Theory, a lively exposition of the mathematics of knotting, will appeal to a diverse audience from the undergraduate seeking experience outside the traditional range of studies to mathematicians wanting a leisurely introduction to the subject. Graduate students beginning a program of advanced study will find a worthwhile overview, and the reader will need no training beyond linear algebra to understand the mathematics presented. The interplay between topology and algebra, known as algebraic topology, arises early in the book, when tools from linear algebra and from basic group theory are introduced to study the properties of knots. Livingston guides you through a general survey of the topic showing how to use the techniques of linear algebra to address some sophisticated problems, including one of mathematics' most beautiful topics, symmetry. The book closes with a discussion of high-dimensional knot theory and a presentation of some of the recent advances in the subjectthe Conway, Jones, and Kauffman polynomials. A supplementary section presents the fundamental group, which is a centerpiece of algebraic topology.