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Sommario/riassunto

"This book is for readers who wish to understand the mathematical tools that are necessary to produce three-dimensional models and the resulting screen images. Written by an academic with over 20 years of teaching experience, the intent of the book is to show relevant and focused mathematical derivations that help students understand computer graphics. Intuitive, rather than just theorem/proof discussions set the tone for the presentation. Some algebra, high-school geometry, and trigonometry are presumed for adequate comprehension. Notions of why results are important give the reader a sense of ownership and application. Chapters are written in a two-tiered style so as to allow for flexibility in the level of mathematics desired. Two- and three-dimensional vector geometry is covered using transforms, curves, and surfaces. More focused graphics topics like perspective with the accompanying projective geometry, polyhedral as building blocks for objects, and ray retracing help pull the vector technique together. An assortment of other topics helps round-out the discussion. These include noise, randomness, and L-systems. Plentiful exercises are showcased throughout. An author-maintained web site includes further computer programming notes and solutions to selected exercises"--
"Explains the mathematical tools that are necessary to produce three-dimensional models and the resulting screen images. Demonstrates relevant and focused mathematical derivations that help students understand computer graphics"--