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Sommario/riassunto	This open access book provides plenty of pleasant mathematical surprises. There are many fascinating results that do not appear in textbooks although they are accessible with a good knowledge of secondary-school mathematics. This book presents a selection of these topics including the mathematical formalization of origami, construction with straightedge and compass (and other instruments), the five- and six-color theorems, a taste of Ramsey theory and little-known theorems proved by induction. Among the most surprising theorems are the Mohr-Mascheroni theorem that a compass alone can perform all the classical constructions with straightedge and compass, and Steiner's theorem that a straightedge alone is sufficient provided that a single circle is given. The highlight of the book is a detailed presentation of Gauss's purely algebraic proof that a regular heptadecagon (a regular polygon with seventeen sides) can be constructed with straightedge and compass. Although the mathematics used in the book is elementary (Euclidean and analytic geometry, algebra, trigonometry), students in secondary schools and colleges,

teachers, and other interested readers will relish the opportunity to confront the challenge of understanding these surprising theorems.
