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Soggetti	Mathematics History Geometry, Projective Social sciences Geometry History of Mathematical Sciences Projective Geometry Mathematics in the Humanities and Social Sciences Matemàtica Història Geometria projectiva Ciències socials Llibres electrònics
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Livello bibliografico	Monografia
Nota di contenuto	Introduction -- 1. Greek Background -- 2. The Dilation Transformation -- 3. Institutional Transformation of Geometry: France -- 4. Affinity and the List of Transformations by Moebius -- 5. Background for Homology: the Common Secant, the Cross-Ratio, and Harmonic Sets -- 6. Plane-to-Plane Projection -- 7. Homology as developed by La Hire and Poncelet -- 8. Matrices and Homogeneous Coordinates -- 9. Projective Geometry: Steiner and von Staudt -- 10. Transformation in German Universities -- 11. Geometric Inversion -- 12. Moebius Transformation -- 13. Topic after 1855: Beltrami-Klein Model -- 14.

Topic after 1855: Isometries and Dilations in French Schoolbooks.

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Sommario/riassunto

This textbook combines the history of synthetic geometry, centered on the years 1800-1855, with a theorem-proof exposition of the geometry developed in those years. The book starts with the background needed from Euclid's Elements, followed by chapters on transformations, including dilation (similitude), homology, homogeneous coordinates, projective geometry, inversion, the Möbius transformation, and transformation geometry as in French schoolbooks of 1910. Projective geometry is presented by tracing its path through the work of J. V. Poncelet, J. Steiner, and K. G. C. von Staudt. Extensive exercises are included, many from the period studied. The prerequisites for approaching this course are knowledge of high school geometry and enthusiasm for mathematical demonstration. This textbook is ideal for a college geometry course, for self-study, or as preparation for the study of modern geometry.

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