1. Record Nr. UNINA9910781095503321

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Titolo	Polynomial root-finding and polynomiography [[electronic resource] /] / Bahman Kalantari
Pubbl/distr/stampa	Singapore ; ; Hackensack, NJ, : World Scientific, c2009
ISBN	1-282-44090-X 9786612440908 981-281-183-4
Descrizione fisica	1 online resource (492 p.)
Disciplina	512.9/422
Soggetti	Polynomials Visualization Recurrent sequences (Mathematics) Computer graphics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 449-457) and index.
Nota di contenuto	Preface; Contents; Introduction; 1. Approximation of Square-Roots and Their Visualizations; 2. The Fundamental Theorem of Algebra and a Special Case of Taylor's Theorem; 3. Introduction to the Basic Family and Polynomiography; 4. Equivalent Formulations of the Basic Family; 5. Basic Family as Dynamical System; 6. Fixed Points of the Basic Family; 7. Algebraic Derivation of the Basic Family and Characterizations; 8. The Truncated Basic Family and the Case of Halley Family; 9. Characterizations of Solutions of Homogeneous Linear Recurrence Relations 10. Generalization of Taylor's Theorem and Newton's Method11. The Multipoint Basic Family and its Order of Convergence; 12. A Computational Study of the Multipoint Basic Family; 13. A General Determinantal Lower Bound; 14. Formulas for Approximation of Pi Based on Root-Finding Algorithms; 15. Bounds on Roots of Polynomials and Analytic Functions; 16. A Geometric Optimization and its Algebraic O springs; 17. Polynomiography: Algorithms for Visualization of Polynomial Equations; 18. Visualization of Homogeneous Linear Recurrence Relations

	19. Applications of Polynomiography in Art, Education, Science and Mathematics20. Approximation of Square-Roots Revisited; 21. Further Applications and Extensions of the Basic Family and Polynomiography; Bibliography; Index
Sommario/riassunto	This book offers fascinating and modern perspectives into the theory and practice of the historical subject of polynomial root-finding, rejuvenating the field via polynomiography, a creative and novel computer visualization that renders spectacular images of a polynomial equation. Polynomiography will not only pave the way for new applications of polynomials in science and mathematics, but also in art and education. The book presents a thorough development of the basic family, arguably the most fundamental family of iteration functions, deriving many surprising and novel theoretical and practi