1.	Record Nr.	UNINA9910958498003321
	Autore	IAglom I. M (Isaak Moiseevich), <1921-1988.>
	Titolo	Geometric transformations . IV Circular transformations / / I.M. Yaglom ; translated by A. Shenitzer
	Pubbl/distr/stampa	Washington, D.C., : Mathematical Association of America, c2009
	ISBN	0-88385-958-0
	Edizione	[1st ed.]
	Descrizione fisica	1 online resource (viii, 285 pages) : digital, PDF file(s)
	Collana	Anneli Lax new mathematical library ; ; 44
	Altri autori (Persone)	ShenitzerAbe
	Disciplina	511.3/3
	Soggetti	Inversions (Geometry) Geometry, Modern
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Title from publisher's bibliographic system (viewed on 02 Oct 2015).
	Nota di contenuto	Reflections in a circle (inversion) -- Application of inversions to the solution of constructions -- Pencils of circles. The radical axis of two circles -- Inversion (concluding section) -- Axial circular transformations -- Non-Euclidean geometry of Lobachevskii-Bolyai, or hyperbolic geometry -- Solutions.
	Sommario/riassunto	The familiar plane geometry of high school - figures composed of lines and circles - takes on a new life when viewed as the study of properties that are preserved by special groups of transformations. No longer is there a single, universal geometry: different sets of transformations of the plane correspond to intriguing, disparate geometries. This book is the concluding Part IV of Geometric Transformations, but it can be studied independently of Parts I, II, and III, which appeared in this series as Volumes 8, 21, and 24. Part I treats the geometry of rigid motions of the plane (isometries); Part II treats the geometry of shape-preserving transformations of the plane (similarities); Part III treats the geometry of transformations of the plane that map lines to lines (affine and projective transformations) and introduces the Klein model of non-Euclidean geometry. The present Part IV develops the geometry of transformations of the plane that map circles to circles (conformal or anallagmatic geometry). The notion of inversion, or reflection in a circle, is the key tool employed. Applications include ruler-and-compass constructions and the Poincare model of hyperbolic geometry. The straightforward, direct presentation assumes only some

background in high-school geometry and trigonometry. Numerous exercises lead the reader to a mastery of the methods and concepts. The second half of the book contains detailed solutions of all the problems.