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Autore	Liu Andy
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Nota di contenuto	A Brief History of the S.M.A.R.T. Circle -- Table of Contents -- Part I Mathematical Conversations -- Chapter 1 Three Sample Projects : Counting Problems -- Section 1 River-Crossing with Alibaba -- Section 2 Martian Citizenship Quiz -- Section 3 Rook Paths -- Chapter 2 A Sample Minicourse : Tessellations -- Section 1 Platonic and Archimedean Tilings -- Section 2 From Tessellations to Rectifications -- Section 3 Frieze and Wallpaper Patterns -- Part II Mathematical Competitions -- Chapter 3 Past Papers of the Edmonton Junior High Mathematics Invitational -- Section 1 Problems -- Section 2 Solutions -- Chapter 4 International Mathematics Tournament of the Towns : Selected Problems -- Section 1 A Problem on Area -- Section 2 A Problem on Series -- Section 3 A Problem on Communication -- Section 4 A Problem on Divisors -- Section 5 A Problem on Merge-Sort Algorithms -- Section 6 A Problem on Complex Numbers in Geometry -- Section 7 A Problem on Polyhedra -- Section 8 A Problem on Majorization -- Section 9 A Problem on Sequences -- Section 10 A Problem on Lottery -- Section 11 A Problem on Angles -- Section 12 A Problem on Balance -- Section 13 A Problem on Magic Tricks -- Section 14 A Problem on Polyomino Dissections -- Section 15 A Problem on Chess Tournaments -- Section 16 A Problem on electrical Networks -- Section 17 Another Problem on Communication -- Section 18 A Problem on Inversion -- Section 19 A Problem on Sharing -- Section 20

Yet Another Problem on Communication -- Section 21 A Problem on Finite State Machines -- Section 22 A Problem on Tangent Circles -- Section 23 A Problem on Graph Algorithms -- Section 24 A Problem on Fixed Points -- Part III Mathematical Congregations -- Appendix A Canadian Geography -- Appendix B Mathematical Jeopardy -- Appendix C Answers -- Chapter 5 "From Earth to Moon" Sample Contests -- Section 1 Problems -- Section 2 Answers -- Section 3 Solutions -- Chapter 6 Past Papers of the Peking University Mathematics Invitational for Youths -- Section 1 Problems -- Section 2 Solutions.-Part IV Mathematical Celebrations -- Chapter 7 Sample SNAP Math Fair Projects -- Section 1 Problems -- Section 2 Solutions -- Chapter 8 Sample GAME Math Unfair Games -- Section 1 Problems -- Section 2 Solutions.

Sommario/riassunto	This book provides an overview of how to run a Mathematical "Circle," i. e., an organization that discovers and nurtures young mathematical talents through meaningful extra-curricular activities. This is the first volume in a trilogy describing in particular the S.M.A.R.T. Circle project, which was founded in Edmonton, Canada in 1981. The acronym S.M.A. R.T. stands for Saturday Mathematical Activities, Recreations & Tutorials. This book, Volume I, offers a sampling of many aspects, including projects and mini-courses. Volume II, which consists of student projects, addresses the purpose of the Circle, and Volume III, consisting of mini-courses, explains what actually takes place in the Circle. All three volumes provide a wealth of resources (mathematical problems, quizzes and games, together with their solutions). The books will be of interest to self-motivated students who want to conduct independent research, teachers who work with these students, and teache rs who are currently running or planning to run Mathematical Circles of their own.