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Nota di contenuto	Introduction -- 1 First explorations -- 2 Recursion – a fundamental idea -- 3 Mathematical induction -- 4 Graphs -- 5 Counting -- 6 General problem solving strategies -- 7 Logic and proofs -- 8 Elementary number theory -- 9 The pigeonhole principle -- 10 The extremal principle -- 11 The invariance principle -- A A survey of problem-solving strategies -- B Basics on sets and maps -- List of symbols -- Glossary -- Lists of problems, theorems and methods -- Hints for selected exercises -- References.
Sommario/riassunto	Have you ever faced a mathematical problem and had no idea how to approach it? Or perhaps you had an idea but got stuck halfway through? This book guides you in developing your creativity, as it takes you on a voyage of discovery into mathematics. Readers will not only learn strategies for solving problems and logical reasoning, but they will also learn about the importance of proofs and various proof techniques. Other topics covered include recursion, mathematical induction, graphs, counting, elementary number theory, and the pigeonhole, extremal and invariance principles. Designed to help students make the transition from secondary school to university level,

this book provides readers with a refreshing look at mathematics and deep insights into universal principles that are valuable far beyond the scope of this book. Aimed especially at undergraduate and secondary school students as well as teachers, this book will appeal to anyone interested in mathematics. Only basic secondary school mathematics is required, including an understanding of numbers and elementary geometry, but no calculus. Including numerous exercises, with hints provided, this textbook is suitable for self-study and use alongside lecture courses.