

number system works, seeing Cantor's diagonal proof, or finally figuring out what a derivative is—and how the infinite really hooked us on mathematics. Keep this spirit alive in the next generation by making sure this book is in the hands of every imaginative and inquisitive student.

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The Liar Paradox and the Towers of Hanoi: The Ten Greatest Math Puzzles of All Time, Marcel Danesi, 2004. 256 pp., \$15.95 paper. ISBN 0-471-64816-7. John Wiley & Sons; (877) 762-2974; www.wiley.com.

This delightful book consists of ten chapters, each of which begins with a famous puzzle. *Puzzle* means “a challenging problem that conceals a non-obvious answer.” This book, the writing of which was obviously a labor of love, is an outgrowth of a course the author has taught for many years to students with mathematical phobias at the University of Toronto.

Almost all of the topics traditionally covered in an introductory mathematics course are woven into the chapters, together with a little history. For example, chapter 4 starts with the Seven Bridges of Königsberg puzzle; gives a brief biography of Leonhard Euler, mentions Euclidean cycles, Hamiltonian circuits, and the importance of graph theory in contemporary mathematics; then describes properties that topologists study, using the Möbius strip as an example; and concludes with a discussion of how to prove that some problems are impossible to solve. Every chapter ends with exercises, called “explorations.” Solutions are given in the back of the book.

With the guidance of a good teacher, this book could be used to enkindle mathematical interest in the mature student who has a fear of mathematics. Students can profit from reading the elementary yet interesting approaches to a variety of areas of mathematics included in this book.

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Tribute to a Mathemagician, 2004. 350 pp., \$38.00 paper. ISBN 1-56881-204-3. A K Peters; (781) 416-2888; www.akpeters.com.

“A unit square, an isosceles right triangle with legs of length 1, and a right triangle with legs of length 1 and 2 can be fit together along their unit sides in 32 different ways. The entire set has area 80, and the 32 pieces can be arranged into a square.”

Tribute to a Mathemagician derives from “G4G5,” the fifth Gathering for Gardner, held in Atlanta in 2004. The extraordinary diversity of problems from mathematics, linguistics, and stage magic—sliding blocks, planks, hinged dissections, box packings, origami, fold-and-cut magic—constitute an international tribute to nonagenarian Martin Gardner, their foremost popularizer, who still would delight in them. The Polyform Pattern problem, by Ed Pegg Jr. (given above), recalls and builds

upon the polyominoes and kindred forms to which Solomon W. Golomb and his followers have brought the tools of a computer age.

Contributors are world class, in this demanding field, and ideas innovative, even ingenious: a “three-legged hourglass” used to solve a problem was a new one to me.

A tribute to the power and potential of the computer and its taskmasters is provided by likenesses of Marilyn Monroe and John Lennon, each constructed of multiple sets of double-nine dominoes. Robert Bosch discusses the integer programming employed.

This attractive, advanced sampling introduces recent developments and some key personalities and significant browsing for the teacher, with potential to spark and nurture student growth.

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PROJECTS

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Project ResourceMAP

The ResourceMAP project is funded by a grant from the National Science Foundation to the Consortium for Mathematics and Its Applications (COMAP). The project's purpose is to produce secondary-level modular materials that can be used to help prepare students for questions, on high-stakes tests, that have a modeling flavor.

COMAP wrote the ResourceMAP proposal in response to needs identified by teachers who participated in other COMAP projects. Research verified that contextual questions, especially those in open- or short-response format, are answered correctly less often than are other types of questions. Moreover, organizations such as Achieve have emphasized the importance of contextual questions and open-response questions on high-stakes exams.

ResourceMAP modules are designed for flexible implementation; that is, they can be used easily in regular classes as well as in special test-preparation settings. A module contains a collection of contextual problems in several formats: multi-part open response, short response, and multiple-choice. Accompanying these are teacher resources that include the module purpose, the mathematical focus, implementation notes, answers to all problems, and tip sheets. Tip sheets supply information such as formulas, calculator instruction, or brief reviews of the module's underlying mathematics.

For example, a module titled “Nets and Surface Area” contains twelve problems in a variety of contexts, including packaging, building construction, and landscaping. The teaching resources contain two tip sheets. One sheet lists area and volume formulas, and another reviews surface area calculations. This module's resources also include masters for handouts that can be used to cut out nets and fold them into solids.

The project expects to produce about twenty modules. At this writing, fifteen were in a first-draft stage and were being field-tested. Information on the current status of ResourceMAP can be found on the project's Web page: www.comap.com/resourcemap. This page includes a sample module in PDF format. ∞