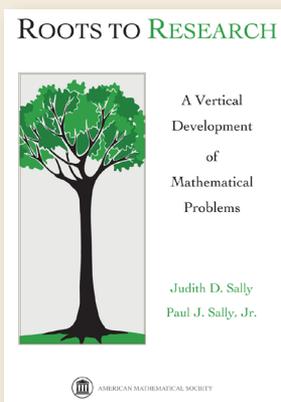


Notable Titles from the AMS



Roots to Research A Vertical Development of Mathematical Problems

Judith D. Sally, *Northwestern University, Evanston, IL*, and **Paul J. Sally, Jr.**, *University of Chicago, IL*

Many references are given but the book is largely self-contained. The authors

have done a remarkable job of giving a seamless presentation of material at very different levels of difficulty. Teachers and students will appreciate this book both for the information it contains and as a model of expository writing.

—**Mathematical Reviews**

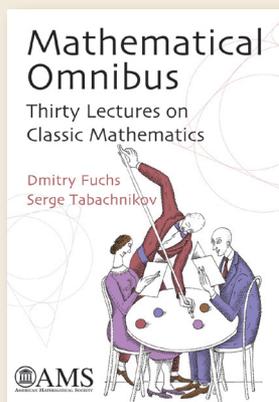
Certain contemporary mathematical problems have captivated the field because their study originates in the elementary school curriculum and proceeds through the high school, college and university levels. This book traces the full range of mathematics needed to understand the emergence of five such problems: The Four Numbers Problem, Rational Right Triangles, Lattice Point Geometry, Rational Approximation, and Dissection.

The five problems are discussed in five separate chapters, each beginning with the elementary mathematics involved at the source of the problem. For four of the problems, the discussion proceeds to an examination of important results in contemporary research. For example, the chapter on Lattice Point Geometry traces the path of study from the properties of lattice polygons in the early grades to the study of Minkowski's theorem on lattice points in convex regions and Ehrhart's theorem at the university level.

The discussion of the full range of mathematics for these five problems makes this book ideal for students and teachers at all levels, as well as for working mathematicians who are curious about results in fields other than their own. Students who begin reading the book in high school can return to it as their experience allows them to delve into more advanced aspects of the problems.

In its coverage of all levels of mathematics pertinent to the understanding of these five problems, this book offers unprecedented depth in its presentation of these important mathematical topics.

2007; 338 pages; Hardcover; ISBN: 978-0-8218-4403-8; List US\$49; AMS members US\$39; Order code MBK/48



Mathematical Omnibus

Thirty Lectures on Classic Mathematics

Dmitry Fuchs, *University of California, Davis, CA*, and **Serge Tabachnikov**, *Pennsylvania State University, University Park, PA*

This is an enjoyable book with suggested uses ranging from a text for an undergraduate Honors Mathematics

Seminar to a coffee table book. It is appropriate for either. It could also be used as a starting point for undergraduate research topics or a place to find a short undergraduate seminar talk. This is a wonderful book that is not only fun to read, but gives the reader new ideas to think about.

—**MAA Reviews**

The 30 lectures on diverse subjects that make up this highly rewarding book were selected to reflect mathematics' beauty and unity. Brought together in this way, the lectures convey a broad sense of the mathematical landscape, and will inspire advanced thought in readers already interested in mathematics.

Each lecture can be read independently of the others, although readers will find some recurring themes throughout the book. The reader who is curious about mathematical topics will be engaged with a question at the start of each lecture. The subjects included in this book are accessible in that they will strike readers as ones they could have theorized about.

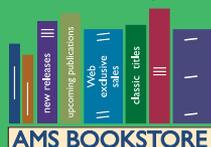
Questions answered in the lectures include: "Can a Number Be Approximately Rational?", "How Many Roots Does a Polynomial Have?", and "Can One Make a Tetrahedron Out of a Cube?" Mathematics judged over time to be the highest-quality of its kind is the focus in the selected lectures. Each lecture resembles its own novel in a collection of like-minded works. The book also features about 200 exercises, many with solutions provided, and is lavishly illustrated.

While the book will challenge the reader in following the details of all arguments presented, it also will reward in filling the reader with awe over the harmony of the subject. Each lecture leads to discoveries that demonstrate that the subject merited the reader's curiosity. This will leave the reader seeking to learn more about these compelling subjects.

2007; 463 pages; Hardcover; ISBN: 978-0-8218-4316-1; List US\$59; AMS members US\$47; Order code MBK/46

**Read a review of both books at www.ams.org/notices/200811/tx081101415p.pdf
or page 1415 in the December 2008 issue of *Notices of the AMS***

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