BOOK REVIEW

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Mathematical Journeys
By Peter D. Schumer, published by the Wiley InterScience, 2004.
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Reviewed by ***Georg Gunther****, Sir Wilfred Grenfell College, Memorial University of Newfoundland, Corner Brook, NL.*

The most common question that non-mathematicians have for mathematicians is "what is it you guys actually do?" This delightful book provides an answer to this question, illustrating the vastness of the subject, the elegance and beauty of the kinds of reasoning that define mathematics, and the intrinsic fascination of the kinds of problems that have driven the development of this discipline for millennia.

Peter Schumer is an award-winning professor of mathematics at Middlebury College in Vermont. This book grew out of a lecture series given within the context of a math seminar.

Whether you are a professional mathematician, an educator, or a student who is interested and wants to learn more, *Mathematical Journeys* has something of value to offer. The sixteen chapters cover a broad spectrum: number theory, combinatorics, geometry, graph theory—all presented with a deft touch and a clear awareness of an ever-present historical context.

In some of the chapters, the author presents a number of problems and lets the necessary mathematics develop naturally. Here is an example taken from Chapter 2 (*The Green Chicken Contest*): *Show that it is impossible to weight two coins such that the probability of the three outcomes, two heads, a tail and a head, or two tails, are equally likely.* The readers are invited to solve this problem on their own; however, having stated the problem, the author gives a brief discussion of the relevant mathematics (in this case, some elementary probability theory) and then provides an elementary solution.

Other chapters single out and develop one particular mathematical idea. For example, Chapter 6 (*The Harmonic Series . . . and Less*) gives a beautiful introduction to the thorny issues surrounding infinite series and the perplexing questions of convergence and divergence, all developed simply and systematically, with numerous historical references.

All the chapters conclude with a selection of interesting and challenging problems. An appendix provides comments and solutions to these problems. For readers interested in digging deeper, the author has included a brief but comprehensive bibliography.

This book should appeal to a wide audience. High-school students should be able to follow the exposition. Teachers at all levels—high school, college, or university—will be able to use this volume as a source of problems or undergraduate research projects. Finally, students wishing to hone their problem-solving skills will find much here to delight them.