

BOOK REVIEWS

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Charming Proofs : A Journey Into Elegant Mathematics

by Claudi Alsina and Roger B. Nelsen

The Mathematical Association of America, 2010

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Alsina and Nelsen have set out to collect some beautiful proofs in elementary mathematics. Although beauty is in the eye of the beholder, I think many will agree they have succeeded.

The book includes chapters individually devoted to results on polygons, triangles, equilateral triangles, quadrilaterals, squares, curves, and results from three-dimensional geometry. Other chapters include ‘Adventures in Tiling and Coloring’, ‘Distinguished Numbers’, ‘Points in the Plane’, ‘A Garden of Integers’, and a final chapter containing assorted results. Each chapter closes with a selection of 10–15 relevant problems for the reader to attempt. Solutions to these challenges are provided at the end of the book.

The selection of content is ripe for supporting visuals, and indeed “*Charming Proofs*” is distinguished by its numerous (over 300(!)) diagrams. The authors have written several other books devoted to the use of diagrams in mathematics, and that experience shows in this book.

This book is part of the Dolciani Mathematical Expositions series and as such is intended to be sufficiently elementary for undergraduate and even some high school students. “Charming Proofs” hardly uses calculus, and even then only in a handful of places. The book should be fully accessible to serious mathematics undergraduates, and much will be accessible to talented high school students.

I must mention an error. In a short discussion about types of proofs, the authors confuse the converse for the contrapositive (page xxii). You may feel the same pang of concern I did upon finding this doozy so early in the book, but I assure you that the very few mistakes I found (like the one on page 108 involving the perimeter of the Varignon parallelogram, as another example) are essentially typos and of no consequence if one is paying attention.

Certainly anyone interested in elegant proofs should consider this book. Also, anyone interested in mathematical competitions should find this a useful problem book, though in this case be mindful of the elementary nature and geometric emphasis of the book. The book contains results both familiar and less familiar, and should be attractive to inexperienced and experienced readers of both classes.

In summary, “Charming Proofs” is a wonderful collection of elementary proofs and related problems and should find its way onto the bookshelves of many.