

## Preface

This is our second book of mathematics columns, following on from *A Dingo Ate My Math Book*.<sup>1</sup> It comprises another 1,000,000 *Maths Masters* columns, from the 11,111,111 columns we wrote in total. Only 1,111,111 to go.

Our columns appeared more or less weekly from 2007 to 2014, in Melbourne’s *Age* newspaper. The mission of our columns, and of the book you are now holding, was to present ingenious, unusual and beautiful mathematical gems in as clear and as entertaining a manner as possible. These newspaper columns were pitched for the general reader, meaning we could assume little in mathematical background beyond a vague “Pythagoras” and a dusty  $x$  or two. Nonetheless, we were ambitious, and our intention was to not just present the gems to be viewed safely in their cabinets, but to *examine* them, to delve into the deep ideas. Whenever possible, our goal was – stone the crows! – to prove things.<sup>2</sup>

In 2009, *Maths Masters* column moved online, which allowed us much more freedom to explore ideas in depth, and to include many more illustrations. Our editors appeared puzzled at our willingness to sweat over *long* columns, still at a newspaper pay-rate, but somehow they never thought to stop us. This move online was the germination of Burkard’s *Mathologer* YouTube channel, and this and our *Dingo* book can be considered a prehistory of *Mathologer*.

The columns as reproduced here are pretty much as they first appeared in *The Age*, except for updating, and other minor corrections and adjustments. Our first, *Dingo* book, contained articles with a particularly Australian theme or framing, but that is less the case here. Nonetheless, there are plenty of Australian references and Australianisms that are likely to be puzzling, and we have added many explanatory footnotes. We have also included a number of references to more technical articles in footnotes; when appropriate, we have indicated when such references are readily available online, but we have refrained from including precise but typically short-lived links. Finally, each column contains a (possibly tricky) puzzle or two, with solutions in an Appendix. We have also taken the opportunity to use some of these puzzles and solutions to tie up some technical loose ends, and to create some new ones.

This book is dedicated to our (now not so) little maths masters, Karl and Lara and Lillian and Eva. The book is also dedicated to the memory of Marian Heckart Ross, a passionate and unqualified teacher, and a passionate and very qualified mother and grandmother.

As for our previous book, we give our humble thanks to the wonderful Simon Pryor, CEO of the Mathematical Association of Victoria. Beyond Burkard himself, Simon is the single person most responsible for the birth of and form of *Mathologer*.

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<sup>1</sup>American Mathematical Society, 2017.

<sup>2</sup>That’s the way Aussies talk, even Honorary Aussies like us. You’ll get used to it.

And thanks again, to Ken Merrigan our first editor at *The Age*, a kind and fiercely intelligent newspaper man from an era when newspapers were intelligent and had news. Thanks also to David Treeby, the third Amigo, for his very careful proof-reading. We would also like to thank the following people and organisations for their very kind permission to reproduce photographs in the book: Arthur Ganson, Henry Segerman and Stanford News Service. Thank you also to our friend and colleague John Zweck for his assistance with Chapter 20.

Finally, our thanks and our apologies to the beautiful, and (almost) always patient, Anu and Ying.