Maths on the back of an envelope: Clever ways to (roughly) calculate anything by Rob Eastaway, pp. 208, £9.99 (hard), ISBN 978-0-00-832458-2, Harper Collins (2019)

This book is aimed at people who liked maths at school but have done little maths since. They are interested in estimating quantities, both as a useful skill in everyday life, but also as a 'fun and stimulating exercise to keep the brain sharp' (p. 4). This book shows them how.

The scene is set by first clarifying issues such as precision and accuracy, variability and sensitivity, using examples such as Olympic dressage scores, blood temperature and election vote counts. The next section reminds the reader of the basic arithmetic and percentages they once knew, whilst also providing handy shortcuts, such as 16% of 25 equals 25% of 16. I liked the innovation of 'zequals' to mean 'calculate to one significant figure', since it gives a clear way to estimate, for someone new to the process; the suggested symbol for 'zequals', a saw-toothed equals sign, takes me too long to write — perhaps an elongated z would suit me better.

Equipped with this knowledge and these tools, the author moves on to estimate amounts in various contexts: currency, compound interest, distances, imperial-metric conversion, etc. I liked the mnemonics 'a litre of water's a pint and three quarters' and 'two and a quarter pounds of jam weigh about a kilogram', and will try to remember them. The reader is regularly challenged with mini-exercises e.g. estimate the area of the Atlantic Ocean (p. 60). Later topics in the book include "Can we plant a trillion trees?" and "How often does a teenager say 'like' in one year?". I checked with our resident teenager if he felt the latter was a bit of a dig, but he thought it was fair game — he did point out though that many adults also use 'like' a lot!

There are a few minor typos, but I spotted nothing significant: the answers to (b) on p. 47 and (g) on p. 60 do not match the questions; the answers at the top of p. 35 are to the question "What is maths?" not "What is the difference between maths and arithmetic?"; (c) on p. 60 seems to draw on knowledge of London's population, missing from p. 59; and on p. 195 the biggest relative zequals overestimate I thought should be for 15×15.

So in summary, a good book for those whose basic maths is a bit rusty, but who would like to dust it down and start playing with it again, using it to check out the everyday figures they encounter on the news and in their day-to-day lives.

10.1017/mag.2021.42

© The Mathematical Association 2021

FRANCIS HUNT
6 Aneurin Bevan Drive, Church Village CF38 1GD
e-mail: *Francis.H.Hunt@gmail.com*

Books received

The listing of a title here does not preclude the appearance of a review in a subsequent edition.

Alice and Bob meet the wall of fire edited by Thomas Lin, pp. 308, £14.99 (paper), ISBN 978-0-262-53634-9, MIT Press (2018)

Applications of diophantine approximations to integral points and transcendence by Pietro Corvaja and Umberto Zannier, pp. 198, £95 (hard), ISBN 978-1-10842-494-3, Cambridge University Press (2018)

Appreciating mathematics: rich complexity or false simplicity by David Wells, pp. 299 (soft), ISBN 978-0-90794-418-8, Rain Press (2018)

https://doi.org/10.1017/mag.2021.43 Published online by Cambridge University Press

The block theory of finite groups by Markus Linckelmann, 2 vols, pp. 505+510, £89.99 (paper), ISBN 978-1-10844-180-3 and 978-1-10844-183-4, Cambridge University Press (2018)

Character theory and the McKay conjecture by Gabriel Navarro, pp. 234, £47.99 (hard), ISBN 978-1-108-42844-6, Cambridge University Press (2018)

Derived categories by Amnon Yekutieli, pp. 607, £64.99 (hard), ISBN 978-1-10841-933-8, Cambridge University Press (2020)

Eisenstein series and automorphic representations by Philipp Fleigg, Henrik P. A. Gustafsson, Axel Kleinschmidt and Daniel Persson, pp. 567, £69.99 (hard), ISBN 978-1-10718-992-8, Cambridge University Press (2018)

Geometry and complexity theory by J. M. Landsberg, pp. 339, £51.99 (hard), ISBN 978-1-10719-923-1 , Cambridge University Press (2017)

Higher categories and homotopical algebra by Denis-Charles Cisinski, pp. 430, £52.99 (hard), ISBN 978-1-108-47320-0, Cambridge University Press (2019)

Lectures on logarithmic algebraic geometry by Arthur Ogus, pp. 359, £64.99 (hard), ISBN 978-1-197-18773-3, Cambridge University Press (2018)

Models of quantum matter by Hans-Peter Eckle, pp. 714, £65 (hard), ISBN 978-0-19967-883-9, Oxford University Press (2019)

Multivariate approximation by V. Temlyakov, pp. 534, £79.99 (hard), ISBN 978-1-108-42875-0, Cambridge University Press (2018)

New directions in locally compact groups edited by Pierre-Emmanuel Caprace and Nicolas Monod, pp. 358, £60 (paper), ISBN 978-1-108-41312-1, Cambridge University Press (2018)

Optimization methods in finance by Gérard Cornuéjols, Javier Peña and Reha Tütüncü, pp. 337, £46.99 (hard), ISBN 978-1-107-05674-9, Cambridge University Press (2018)

Permutation groups and cartesian decompositions by Chreryl E. Praeger and Csaba Schneider, pp. 323, £55 (paper), ISBN 978-0-521-67506-2, Cambridge University Press (2018)

Python by example by Nichola Lacey, pp. 183, £16.99 (paper), ISBN 978-1-10871-683-3, Cambridge University Press (2019)

Quasi-Hopf algebras by Daniel Bulacu, Stefaan Caenepeel, Florin Panaite and Freddy Van Oystaeyen, pp. 528, £115 (hard), ISBN 978-1-10858-278-0, Cambridge University Press (2019)

Robust multivariate analysis by David J. Olive, pp. 501, €77.99, ISBN 978-3-31968-251-8, also available as e-book, Springer Verlag (2018)

Self-exciting fluid dynamos by Keith Moffatt and Ammanuel Dormy, pp. 520, £44.99 (paper), ISBN 978-1-108-71705-2, Cambridge University Press (2019)

Topological methods in group theory edited by N. Broaddus et al, pp. 193, £50 (paper), ISBN 978-1-10843-762-2, Cambridge University Press (2018)

Wigner-type theorems for Hilbert Gassmannians by Mark Pankov, pp. 145, £40, ISBN 978-1-10879-091-8, Cambridge University Press (2020)

10.1017/mag.2021.43

© The Mathematical Association 2021

https://doi.org/10.1017/mag.2021.43 Published online by Cambridge University Press