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How to study for a mathematics degree, by Lara Alcock, pp. 288, £12.99, ISBN 978-0-19-966132-9, Oxford University Press (2013).

We have all come across students who are extremely successful at school mathematics but who struggle to make the transition to a university mathematics degree. Between school and university, teaching styles change, and so does the nature of the mathematics to be learned. In this very readable book, Lara Alcock draws on her extensive experience as a learner of mathematics, university mathematics lecturer and mathematics education researcher to bring together a wealth of practical insights into studying mathematics at degree level. She offers a self-help survival guide overflowing with perceptive observations about the nature of university mathematics and suggestions regarding the most effective and efficient ways to succeed.

The first half of the book deals with mathematics, focusing on ways in which the subject is encountered differently at university. Lara stresses the importance of precise mathematical definitions and clear, rigorous proofs, offering numerous clarifications and thoroughly sound advice throughout. There is a nice contrasting of everyday and mathematical uses of the word ‘if’ and I particularly liked her emphasis on understanding the *category* in which a particular mathematical object lies – a definite integral is a number, an indefinite integral is a family of functions – so that students appreciate the *kind* of answer that is appropriate to a particular question. The second half of the book addresses study skills, offering advice on being organised, managing time effectively and getting the most out of lectures, small-groups and one-to-one conversations. There is even a chapter on what to do when in a panic over falling behind. All the way through, Lara adopts a sensitive but no-nonsense approach to making the most of the opportunities available.

This is an excellent book, which will be of great value to any sixth-former intending to embark on a mathematics-related university course, as well as to undergraduates already doing so. I cannot imagine a better book than this one for helping students to bridge the school-university gap. It would make an excellent gift for anyone thinking of studying mathematics at university and it belongs on every university reading list and in every school and university library.

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