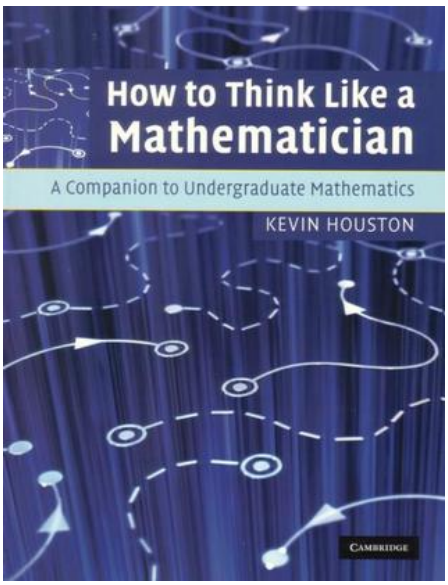

How to Think Like a Mathematician

Kevin Houston

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How to Think Like a Mathematician Kevin Houston
Looking for a head start in your undergraduate degree in mathematics? Maybe you've already started your degree and feel bewildered by the subject you previously loved? Don't panic! This friendly companion will ease your transition to real mathematical thinking. Working through the book you will develop an arsenal of techniques to help you unlock the meaning of definitions, theorems and proofs, solve problems, and write mathematics effectively. All the major methods of proof - direct method, cases, induction, contradiction and contrapositive - are featured. Concrete examples are used throughout, and you'll get plenty of practice on topics common to many courses such as divisors, Euclidean algorithms, modular arithmetic, equivalence relations, and injectivity and surjectivity of functions. The material has been tested by real students over many years so all the essentials are covered. With over 300 exercises to help you test your progress, you'll soon learn how to think like a mathematician.

How to Think Like a Mathematician Details

Date	:	Published February 1st 2009 by Cambridge University Press
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Author	:	Kevin Houston
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Genre	:	Science, Mathematics, Nonfiction, Computer Science, Reference

From Reader Review How to Think Like a Mathematician for online ebook

Ben G says

I bought this so I could understand the language of mathematics (e.g. theorems, proofs, etc.). I'm not a mathematician by trade, but use mathematical techniques (i.e. constructing ODE models of biological systems) in my everyday work. Thus, an absolute necessity to understand more of maths beyond the crash course I did in biomathematics at university.

Beyond chapter 1 which gives a thorough overview of sets theory and brief introductions to maps and functions. Chapter's 2 and 3 are concerned with reading and writing mathematics, however the advice is equally useful to anyone studying for school / college level qualifications in other subjects also.

Sambasivan says

Written with incredible clarity. This book streamlines your thought process and helps you discipline yourself to think logically as well. Surprisingly good.

Perro says

Definitely worth reading even for people who don't study maths, but I find it hard to comprehend, not the mathematical bit but it's a bit dull for me and sometimes it feels like the author spent pages and pages to say about one thing, which should be a lie to explain or clarify in one chapter. Also there are many excises without solution, if you are reading it on your own, how can you know your answer is right?

Ali says

This book contains very useful techniques for anyone who wants to gain a deeper understanding of mathematics, especially chapters on how to read definitions, theorems and proofs. Maybe it requires more acquaintance with mathematics to highly appreciate other advice given, but I found those mentioned the most useful ones. There is also a good treatment of main techniques of proof. Some exercises are a bit challenging for an undergraduate but overall it does not require any especial prerequisite knowledge of mathematics. The only weakness was the part devoted to logic which falls short of exploring subtle points and that is why I decided to drop one star!

Bashnev says

A lot of good material explained well. Wish I had something like this when I was an undergraduate.

Tareq Elderawi says

*Don't believe everything you read .
*simplicity is the ultimate sophistication .
* If it isn't hurting , then it isn't working .
*Be scaptical of everything and try to prove that the text is wrong , search for hidden assumptions and try to use extreme cases and examples .
*Learn as much by writing as by reading .
*It isn't that they can't see the solution , It is that they can't see the problem .
*Everything is simpler that you think and at the same time more complex that you imagine .
*The highest form of pure thoughts is in mathematics .
*Don't confuse reasons which sounds good with good,sound reasons .
*The first precept was never to accept a thing as true until I knew it as such without a single doubt .
*By proving statements we can build mathematics , one statement on top of another ,
this gives real power to mathematics .
*Little by little does the trick.
*But the fact that some geniuses were laughed at does not imply that all who are laughed at are geniuses .
.....

Samuel says

For gradeschoolers entering university

Aleksandra Taranov says

I found the book too basic, but it does give good study tools to people beginning to learn mathematics. However, I was often annoyed by the pompous tone and snide digs at other disciplines like history/sociology that showed ignorance about how they work. There was a lot of 'this matters in math' but you could just look up a date in history to know an event happened. That's a strawman and not how high level history works at all. That said, the math ideas are very clearly written and accurate and I could see this being very beneficial to first year undergrads.

Irene says

Excellent book for anyone taking classes heavy in mathematics.
