

# Homeschool Advanced Mathematics An Incremental Development 2nd Edition Paperback

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an exploration of the analytical tools of advanced math

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college in illinois raised and educated in switzerland he holds a phd in applied mathematical and computational sciences from the university of iowa as well as a master s degree in civil engineering from the ecole polytechnique fédérale in lausanne switzerland his research interests are in dynamical systems modeling applied to biology ecology and epidemiology stephen lovett is a professor of mathematics at wheaton college in illinois he holds a phd in representation theory from northeastern university his other books include abstract algebra structures and applications 2015 differential geometry of curves and surfaces with tom banchoff 2016 and differential geometry of manifolds 2019

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a transition to proof an introduction to advanced mathematics describes writing proofs as a creative process there is a lot that goes into creating a mathematical proof before writing it ample discussion of how to figure out the nuts and bolts of the proof takes place thought processes scratch work and ways to attack problems readers will learn not just how to write mathematics but also how to do

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this delightful book connects mathematical concepts in a dozen areas to magic tricks expositions of the mathematics precede description and analysis of the tricks the expositions are too short for in depth learning the intent is to give sophomores a taste of the content and ideas of later mathematics courses each chapter features exercises on the mathematics and students can have fun practicing the tricks mathematics magazineteixeira and park present over 60 different magic tricks while introducing students to high level math areas readers will learn really interesting ideas that will better prepare them for future courses and help them finding areas they might want to study deeper and as a side effect students will learn amazing magic tricks century old secrets and details from famous magicians and mathematicians the material was written to quickly present key concepts in several mathematical areas in direct way little or no proficiency in math is assumed in fact students do not require any calculus knowledge and since chapters are almost independent from each other this book also work as introduction to several other courses topics covered include mathematical proofs probability abstract algebra linear algebra mathematical computing number theory coding theory geometry topology real analysis numerical analysis and history of math

clearly written and easy to understand the elements of advanced mathematics covers logic set theory methods of proof and axiomatic structures providing an excellent grounding in analytical thinking it facilitates the transition from elementary mathematics generally characterized by problem solving techniques to advanced mathematics characterized by theory rigor and proofs this text clearly identifies and explains the components and methods of advanced mathematics each chapter contains exercises designed to assist the reader in understanding the material

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