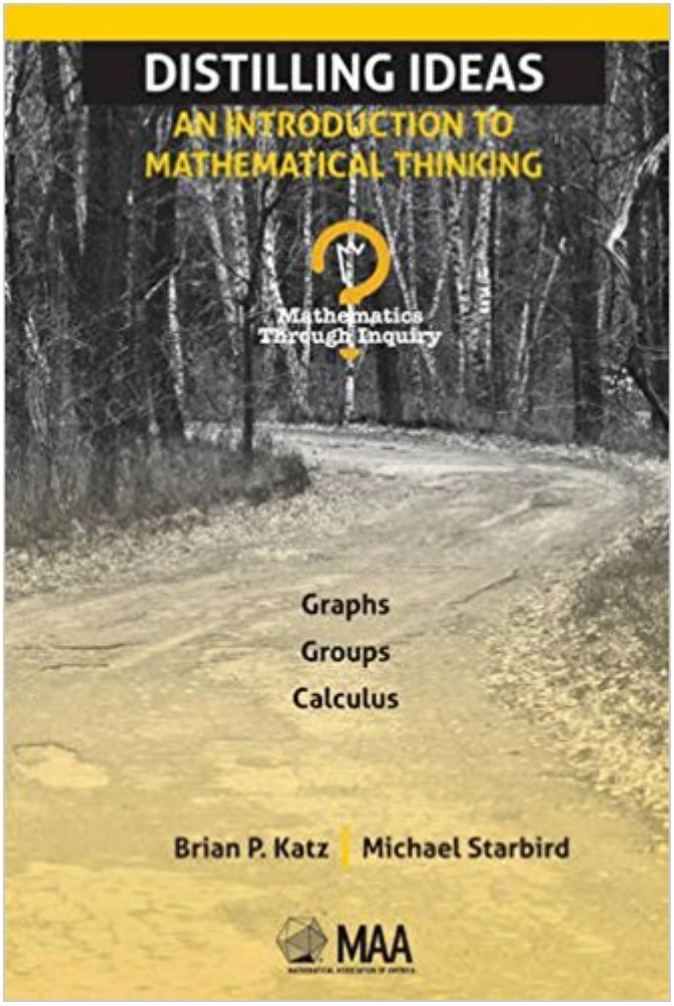
Distilling Ideas: An Introduction To Mathematical Thinking (Mathematics Through Inquiry)



Synopsis

Mathematics is not a spectator sport: successful students of mathematics grapple with ideas for themselves. Distilling Ideas presents a carefully designed sequence of exercises and theorem statements that challenge students to create proofs and concepts. As students meet these challenges, they discover strategies of proofs and strategies of thinking beyond mathematics. In order words, Distilling Ideas helps its users to develop the skills, attitudes, and habits of mind of a mathematician and to enjoy the process of distilling and exploring ideas. Distilling Ideas is an ideal textbook for a first proof-based course. The text engages the range of students' preferences and aesthetics through a corresponding variety of interesting mathematical content from graphs, groups, and epsilon-delta calculus. Each topic is accessible to users without a background in abstract mathematics because the concepts arise from asking questions about everyday experience. All the common proof structures emerge as natural solutions to authentic needs. Distilling Ideas or any subset of its chapters is an ideal resource either for an organized Inquiry Based Learning course or for individual study. A student response to Distilling Ideas: "I feel that I have grown more as a mathematician in this class than in all the other classes I've ever taken throughout my academic life."

Book Information

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Customer Reviews

Designed for undergraduate students and lecturers, this text guides its users to develop the skills,

and habits of a mathematician. Using exercises and theorems on the subject of graphs, groups, and calculus, its users will discover mathematical ideas, and understand the process of mathematical creativity and development.

Brian Katz is an Assistant Professor of Mathematics at Augustana College in Rock Island, Illinois. He received his BA from Williams College in 2003 with majors in mathematics, music and chemistry, and his PhD from the University of Texas, Austin in 2011, concentrating on algebraic geometry. While at the University of Texas, Austin, Brian received the Frank Gerth III Graduate Excellence Award and the Frank Gerth III Graduate Teaching Excellence Award from the Department of Mathematics. Brian is a Project NExT Fellow, supported by Harry Lucas, Jr and the Educational Advancement Foundation.

Great book on introductory graph theory, group theory, and proving elementary calculus theorems. Anything by Starbird is amazing.

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