

Preface

An MAA NOTES volume that illustrates the uses of mathematics in economics would be a valued resource for mathematics faculty who want to enrich their undergraduate mathematics courses and better accommodate the needs of students interested in economics.

Applications of Mathematics in Economics presents an overview of the (qualitative and graphical) methods and perspectives of economists. Its objectives are not intended to teach economics, but rather to give mathematicians a sense of what mathematics is used at the undergraduate level in various parts of economics, and to provide students with the opportunities to apply their mathematics in relevant economics contexts.

The volume's applications span a broad range of mathematical topics and levels of sophistication. Each article consists of self-contained, stand-alone, expository sections whose problems illustrate what mathematics is used, and how, in that subdiscipline of economics. The problems are intended to be richer and more informative about economics than the economics exercises in most mathematics texts. Since each section is self-contained, instructors can readily use the economics background and worked-out solutions to tailor (simplify or embellish) a section's problems to their students' needs. Overall, the volume's 47 sections contain more than 100 multipart problems. Thus, instructors have ample material to select for classroom uses, homework assignments, and enrichment activities.

Although there are books available on mathematical economics, I know of no work that provides such an overview of economic subdisciplines or brings together so many different mathematics applications to such varied economics topics. I believe that mathematics instructors will be much more likely to use this volume's self-contained, stand-alone applications than to search through books on mathematical economics to find or develop their own such applications.

My hope is that in the near future, there will be an online MAA user forum where mathematics and economics faculty can collaborate, introduce new cross-disciplinary applications, and share teaching experiences. Such a forum would begin to address a second stage of issues that this volume does not attempt to address, such as how best to introduce these and other applications into mathematics courses, how to adjust the mathematics curriculum and approach to better serve economics students, and how to develop interdisciplinary programs.

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