

BOOK REVIEW

Lectures in Higher Mathematics for Economists - Ali M. Abbasov and Mahammad A. Nurmamedov (Outskirts Press, Inc., Denver, Colorado, USA, 2008. - 220 pp., ISBN: 978-1-4327-2725-3).

Reviewed by Tamer Başar*

This soft-cover textbook, which appeared in 2008, addresses the need of introducing to the economics curriculum the essential tools of mathematics, with examples and illustrations drawn from that field. The authors have been successful in responding to that need, and have written a book with the student in mind, which is easy to read and follow. It comprises 9 chapters and an appendix, with the chapters following a natural progression of topical advancement. In each chapter, the material is illustrated through examples capturing realistic scenarios in economics, and each chapter also has additional problems for the students to practice. The first chapter provides a general overview of set-theoretic notions, and the second chapter introduces sequences and the notions of convergence and limits. Chapter 3 introduces the notion of a function, and various topological concepts such as continuity. Chapter 4 introduces the notion of a derivative, from both algebraic and geometric points of view, which is a topic further discussed in Chapter 5. The next chapter discusses indefinite integrals, their properties, and methods for integration of rational, irrational, and transcendental functions. Chapter 7, on the other hand, discusses definite integrals, with its applications in economics. Chapter 8 discusses ordinary differential equations, the notion of their solutions, and their existence and uniqueness, with again extensive applications in economics. Finally, Chapter 9 covers functions of several variables, and computing extrema of such functions. The textbook has been written in a lucid, pedagogical style, which should make it easy for the student to follow the material and learn from it the essentials of higher mathematics for economics majors. Exposition of the main topics, such as set theory, mathematical analysis, differential and integral calculus, and differential equations has been supplemented in each chapter by solutions to selected problems, additional practice problems, a number of geometrical illustrations, and mathematical models for economic applications. Following a course on higher mathematics out of this book, the student should be able to compute partial derivatives of functions and work out unconstrained and constrained maxima and minima of functions of several variables. The student would also acquire the knowledge to be able to apply mathematical constructions and methods of solution to problems in micro- and macro-economics.

The textbook will be useful to students following a curriculum in economics at universities, as well as to those engaged in self-education. The inclusion of solved problems and various illustrations from economics makes it a suitable vehicle for self-study outside the structured university environment.

* University of Illinois Urbana, Illinois, USA .