S. Roman

**Introduction to the Mathematics of Finance**

From Risk Management to Options Pricing

Series: Undergraduate Texts in Mathematics

- An elementary introduction to probability and mathematical finance including a chapter on the Capital Asset Pricing Model (CAPM), a topic that is very popular among practitioners and economists

The Mathematics of Finance has become a hot topic in applied mathematics ever since the discovery of the Black-Scholes option pricing formulas in 1973. Unfortunately, there are very few undergraduate textbooks in this area. This book is specifically written for upper division undergraduate or beginning graduate students in mathematics, finance or economics. With the exception of an optional chapter on the Capital Asset Pricing Model, the book concentrates on discrete derivative pricing models, culminating in a careful and complete derivation of the Black-Scholes option pricing formulas as a limiting case of the Cox-Ross-Rubinstein discrete model. The final chapter is devoted to American options.

The mathematics is not watered down but is appropriate for the intended audience. No measure theory is used and only a small amount of linear algebra is required. All necessary probability theory is developed in several chapters throughout the book, on a "need-to-know" basis. No background in finance is required, since the book also contains a chapter on options.

The author is Emeritus Professor of Mathematics, having taught at a number of universities, including MIT, UC Santa Barbara, the University of South Florida and the California State University, Fullerton. He has written 27 books in mathematics at various levels and 9 books on computing. His interests lie mostly in the areas of algebra, set theory and logic, probability and finance. When not writing or teaching, he likes to make period furniture, copy Van Gogh paintings and listen to classical music. He also likes tofu.