

1. Record Nr.	UNINA9910139137203321
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Titolo	Introductory Mathematics and Statistics for Islamic Finance [[electronic resource]]
Pubbl/distr/stampa	Hoboken, : Wiley, 2014
ISBN	1-118-77971-1 1-118-77970-3
Descrizione fisica	1 online resource (498 p.)
Altri autori (Persone)	KricheneNoureddine
Disciplina	300
Soggetti	Banks and banking -- Islamic countries Banks and banking Finance -- Islamic countries
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Introductory Mathematics and Statistics for Islamic Finance; Contents; Preface; Acknowledgments; About the Authors; Part One: Mathematics; Chapter 1: Elementary Mathematics; BASIC MATHEMATICAL OBJECTS; Real Numbers; Complex Numbers; Absolute Value of a Number; Vectors and Arrays; Angles and Directions; Graphics; Reporting Economic and Financial Data; VARIABLES, MONOMIALS, BINOMIALS, AND POLYNOMIALS; Monomials, Binomials, and Polynomials; Polynomial Lags; Identities; Factorization of a Polynomial; EQUATIONS; EQUATIONS OF HIGHER ORDER; SEQUENCES; SERIES; Convergence of a Series APPLICATIONS OF SERIES TO PRESENT VALUE OF ASSETS Applications of Series to Present Value Computation; SUMMARY; QUESTIONS; Chapter 2: Functions and Models; DEFINITION OF A FUNCTION; Parametric Form of a Function; FUNCTIONS AND MODELS IN ECONOMICS; The Market Model: Demand and Supply Functions; The Budget Constraint; The Production Possibility Frontier (PPF); The Utility Function; Production Function; Other Functions in Economics; FUNCTIONS AND MODELS IN FINANCE; The Present Value Function; The Capital Asset Pricing Model (CAPM); Payoff of a Futures Contract; Payoff of an Option Contract Payoff to a Swap Price of an Option; The Forward Exchange Rate; MULTIVARIATE FUNCTIONS IN ECONOMICS AND FINANCE; Parametric Representation; Level Curves; SUMMARY; QUESTIONS; Chapter 3:

Differentiation and Integration of Functions; DIFFERENTIATION; DIFFERENTIATION RULES; MAXIMUM AND MINIMUM OF A FUNCTION; MEAN VALUE THEOREM; POLYNOMIAL APPROXIMATIONS OF A FUNCTION: TAYLOR'S EXPANSION; INTEGRATION; Integration; The First Fundamental Theorem of Calculus; Second Fundamental Theorem of Calculus; Change in Variables in Indefinite Integrals; Double Integral APPLICATIONS IN FINANCE: DURATION AND CONVEXITY OF A SUKUK Duration of a Sukuk; Application of Taylor Expansion to the Convexity of Sukuk's Price; SUMMARY; QUESTIONS; Chapter 4: Partial Derivatives; DEFINITION AND COMPUTATION OF PARTIAL DERIVATIVES; The Chain Rule; Derivatives of Implicit Functions; TOTAL DIFFERENTIAL OF A FUNCTION WITH MANY VARIABLES; DIRECTIONAL DERIVATIVES; GRADIENTS; TANGENT PLANES AND NORMAL LINES; Tangent Planes; Normal Line; EXTREMA OF FUNCTIONS OF SEVERAL VARIABLES; EXTREMAL PROBLEMS WITH CONSTRAINTS; Elimination Method; Lagrange Method; SUMMARY; QUESTIONS Chapter 5: Logarithm, Exponential, and Trigonometric Functions LOGARITHM FUNCTIONS; Logarithm Identities; Change of Base; The Natural Logarithmic Function; THE EXPONENTIAL FUNCTION; POWER SERIES OF LOGARITHMIC AND EXPONENTIAL FUNCTIONS; GENERAL EXPONENTIAL AND LOGARITHMIC FUNCTIONS; SOME APPLICATIONS OF LOGARITHM AND EXPONENTIAL FUNCTIONS IN FINANCE; Simple Compounding and Continuous Compounding of Returns; The Present Value Formula; The Normal Distribution; INTEGRATION BY PARTS; TRIGONOMETRIC FUNCTIONS; SUMMARY; QUESTIONS; Chapter 6: Linear Algebra; VECTORS; Addition of Vectors Multiplication of Vectors

Sommario/riassunto

A unique primer on quantitative methods as applied to Islamic finance Introductory Mathematics and Statistics for Islamic Finance + Website is a comprehensive guide to quantitative methods, specifically as applied within the realm of Islamic finance. With applications based on research, the book provides readers with the working knowledge of math and statistics required to understand Islamic finance theory and practice. The numerous worked examples give students with various backgrounds a uniform set of common tools for studying Islamic finance. The in-depth study of finance requires a strong
