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| Autore                  | Promislow S. David   |
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| Edizione                | [Third edition.]   |
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| Livello bibliografico   | Monografia   |
| Note generali           | Description based upon print version of record.  |
| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | Fundamentals of Actuarial Mathematics; Contents; Preface; Acknowledgements; About the companion website; Part I THE DETERMINISTIC LIFE CONTINGENCIES MODEL; 1 Introduction and motivation; 1.1 Risk and insurance; 1.2 Deterministic versus stochastic models; 1.3 Finance and investments; 1.4 Adequacy and equity; 1.5 Reassessment; 1.6 Conclusion; 2 The basic deterministic model; 2.1 Cash flows; 2.2 An analogy with currencies; 2.3 Discount functions; 2.4 Calculating the discount function; 2.5 Interest and discount rates; 2.6 Constant interest; 2.7 Values and actuarial equivalence<br>2.8 Vector notation<br>2.9 Regular pattern cash flows; 2.10 Balances and reserves; 2.10.1 Basic concepts; 2.10.2 Relation between balances and reserves; 2.10.3 Prospective versus retrospective methods; 2.10.4 Recursion formulas; 2.11 Time shifting and the splitting identity; *2.11 Change of discount function; 2.12 Internal rates of return; *2.13 Forward prices and term structure; 2.14 Standard notation and terminology; 2.14.1 Standard notation for cash flows discounted with interest; 2.14.2 New notation; 2.15 Spreadsheet calculations; Notes and references; Exercises; 3 The life table<br>3.1 Basic definitions<br>3.2 Probabilities; 3.3 Constructing the life table from the values of $qx$ ; 3.4 Life expectancy; 3.5 Choice of life tables; 3.6 |

Standard notation and terminology; 3.7 A sample table; Notes and references; Exercises; 4 Life annuities; 4.1 Introduction; 4.2 Calculating annuity premiums; 4.3 The interest and survivorship discount function; 4.3.1 The basic definition; 4.3.2 Relations between  $y_x$  for various values of  $x$ ; 4.4 Guaranteed payments; 4.5 Deferred annuities with annual premiums; 4.6 Some practical considerations; 4.6.1 Gross premiums; 4.6.2 Gender aspects  
4.7 Standard notation and terminology4.8 Spreadsheet calculations; Exercises; 5 Life insurance; 5.1 Introduction; 5.2 Calculating life insurance premiums; 5.3 Types of life insurance; 5.4 Combined insurance-annuity benefits; 5.5 Insurances viewed as annuities; 5.6 Summary of formulas; 5.7 A general insurance-annuity identity; 5.7.1 The general identity; 5.7.2 The endowment identity; 5.8 Standard notation and terminology; 5.8.1 Single-premium notation; 5.8.2 Annual-premium notation; 5.8.3 Identities; 5.9 Spreadsheet applications; Exercises; 6 Insurance and annuity reserves  
6.1 Introduction to reserves6.2 The general pattern of reserves; 6.3 Recursion; 6.4 Detailed analysis of an insurance or annuity contract; 6.4.1 Gains and losses; 6.4.2 The risk-savings decomposition; 6.5 Bases for reserves; 6.6 Nonforfeiture values; 6.7 Policies involving a return of the reserve; 6.8 Premium difference and paid-up formulas; 6.8.1 Premium difference formulas; 6.8.2 Paid-up formulas; 6.8.3 Level endowment reserves; 6.9 Standard notation and terminology; 6.10 Spreadsheet applications; Exercises; 7 Fractional durations; 7.1 Introduction  
7.2 Cash flows discounted with interest only

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#### Sommario/riassunto

Provides a comprehensive coverage of both the deterministic and stochastic models of life contingencies, risk theory, credibility theory, multi-state models, and an introduction to modern mathematical finance. New edition restructures the material to fit into modern computational methods and provides several spreadsheet examples throughout. Covers the syllabus for the Institute of Actuaries subject CT5, ContingenciesIncludes new chapters covering stochastic investments returns, universal life insurance. Elements of option pricing and the Black-Scholes formula will be introduced.

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