

1. ARTHUR CAYLEY, "Tables of the developments of functions in the theory of elliptic motion," *Memoirs of the Royal Astronomical Society*, v. 29, 1861, pp. 191-306.

98[W].—MARTIN SHUBIK, Editor, *Essays in Mathematical Economics*, Princeton University Press, Princeton, N. J., 1967, xx + 475 pp., 24 cm. Price \$12.50.

This tribute to Oskar Morgenstern by his friends (both old and young) is remarkable for the high level of its articles. A brief biography and a bibliography of Morgenstern, which explains his impact on economics, are presented at the beginning of the volume. The twenty-seven technical articles are grouped into seven areas in which Morgenstern has worked and made his influence felt. To do more than merely list the titles and authors, would take up too much space:

Part I. Game Theory

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| 1. A Survey of Cooperative Games Without Side Payments, by R. J. Aumann | 3 |
| 2. On Games of Fair Division, by H. W. Kuhn | 29 |
| 3. Existence of Stable Payoff Configurations for Cooperative Games, by Morton Davis and Michael Maschler | 39 |
| 4. Existence Theorem for the Bargaining Set $M_1^{(c)}$, by Bezalel Peleg | 53 |
| 5. On Solutions that Exclude One or More Players, by L. S. Shapley | 57 |
| 6. Concepts and Theories of Pure Competition, by L. S. Shapley and Martin Shubik | 63 |

Part II. Mathematical Programming

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| 7. A Property and Use of Output Coefficients of a Leontief Model, by S. B. Noble | 83 |
| 8. Some Approaches to the Solution of Large-Scale Combinatorial Problems, by G. L. Thompson | 91 |
| 9. Minimizing and Optimal Programming, by Leo Törnquist | 105 |

Part III. Decision Theory

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| 10. Alternate Prior Distributions in Statistical Decision Theory, by J. P. Mayberry | 115 |
| 11. Smoothing in Inventory Processes, by H. D. Mills | 131 |
| 12. A Bayesian Approach to Team Decision Problems, by Koichi Miyasawa | 149 |
| 13. Capital Flexibility and Long Run Cost under Stationary Uncertainty, by Daniel Orr | 171 |

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| 14. The Ricardo Effect in the Point Input-Point Output Case, by W. J. Baumol | 191 |
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| 16. The Role of Uncertainty in Economics (Das Unsicherheitsmoment in der Wertlehre), by Karl Menger | 211 |
| 17. Changing Utility Functions, by M. H. Peston | 233 |
| 18. Subjective Probability Derived from the Morgenstern-von Neumann Utility Concept, by J. Pfanzagl | 237 |

Part V. Management Science

19. Some Notes on Oligopoly Theory and Experiments, by D. H. Stern 255
 20. The Role of Economics in Management Science, by T. M. Whitin 283

Part VI. International Trade

21. Competition of American and Japanese Textiles in the World Market,
 by A. Y. C. Koo 299
 22. Moderating Economic Fluctuations in the Underdeveloped Areas, by
 Edward Marcus 313

Part VII. Econometrics

23. The Cost of Living Index, by S. N. Afriat 335
 24. A Spectrum Analysis of Seasonal Adjustment, by M. D. Godfrey and
 H. F. Karreman 367
 25. New Techniques for Analyzing Economic Time Series and Their Place
 in Econometrics, by C. W. J. Granger 423
 26. A Theory of the Pseudospectrum and Its Application to Nonstationary
 Dynamic Econometric Models, by Michio Hatanaka and Mitsuo
 Suzuki 443
 27. New Formulas for Making Price and Quantity Index Numbers, by
 Kazuo Mizutani 467

E. I.

99[X].—D. C. HANDSCOMB, Editor, *Methods of Numerical Approximation*, Pergamon Press, New York, 1966, ix + 218 pp., 24 cm. Price \$9.50.

This volume is a gem! In spite of the fact that it is written by six authors, the articles are remarkably even in style and clarity. The lectures given at a Summer School held at Oxford University in September 1965 formed the basis for this book. Both the theoretical and the practical aspects of approximation methods are developed. A listing of the chapter headings with their authors will serve to indicate the scope of the book:

I. General

1. Introduction, by D. C. Handscomb 3
 2. Some Abstract Concepts and Definitions, by D. C. Handscomb 7

II. Linear Approximation

3. Convergence of Polynomial Interpolation, by D. F. Mayers 15
 4. Least-Squares Approximation. Orthogonal Polynomials, by L. Fox 27
 5. Chebyshev Least-Squares Approximation, by L. Fox 39
 6. Determination and Properties of Chebyshev Expansions, by L. Fox 47
 7. The General Theory of Linear Approximation, by D. C. Handscomb,
 D. F. Mayers and M. J. D. Powell 61
 8. The Exchange Algorithm on a Discrete Point Set, by M. J. D. Powell 73
 9. Calculation of the Best Linear Approximation on a Continuum, by
 A. R. Curtis 83
 10. The Rate of Convergence of Best Approximations, by D. C. Hand-
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