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*3.8. Noncooperative Equilibria in n-Person Quadratic Games4. The Banach Theorem and the Banach-Steinhaus Theorem; 4.1. Properties of Bounded Sets of Operators 7; 4.2. The Mean Ergodic Theorem; 4.3. The Banach Theorem; 4.4. The Closed Range Theorem; 4.5. Characterization of Left Invertible Operators; 4.6. Characterization of Right Invertible Operators; *4.7. Quadratic Programming with Linear Constraints; 5. Construction of Hilbert Spaces; 5.1. The Initial Scalar Product; 5.2. The Final Scalar Product; 5.3. Normal Subspaces of a Pivot Space
5.4. Minimal and Maximal Domains of a Closed Family of Operators*5. 5. Unbounded Operators and Their Adjoints; *5.6. Completion of a Pre-Hilbert Space Contained in a Hilbert Space; *5.7. Hausdorff Completion; *5.8. The Hilbert Sum of Hilbert Spaces; *5.9. Reproducing Kernels of a Hilbert Space of Functions 1; 6. L2 Spaces and Convolution Operators; 6.1. The Space L2() of Square Integrable Functions; 6.2. The Spaces L2 (, a) with Weights; 6.3. The Space Hs; 6.4. The Convolution Product for Functions of L0(Rn) and of L1(Rn); 6.5. Convolution Operators; 6.6. Approximation by Convolution
*6.7. Example. Convolution Power for Characteristic Functions*6.8. Example. Convolution Product for Polynomials: Appell Polynomials; 7. Sobolev Spaces of Functions of One Variable; 7.1. The Space H0m() and Its Dual H-m(); 7.2. Definition of Distributions; 7.3. Differentiation of Distributions; 7.4. Relations Between H0m() and H0m(R); 7.5. The Sobolev Space Hm(); 7.6. Relations Between Hm() and Hm(R); *7.7. Characterization of the Dual of Hm(); 7.8. Trace Theorems; 7.9. Convolution of Distributions; 8. Some Approximation Procedures in Spaces of Functions
8.1. Approximation by Orthogonal Polynomials

Sommario/riassunto

A novel, practical introduction to functional analysisIn the twenty years since the first edition of Applied Functional Analysis was published, there has been an explosion in the number of books on functional analysis. Yet none of these offers the unique perspective of this new edition. Jean-Pierre Aubin updates his popular reference on functional analysis with new insights and recent discoveries-adding three new chapters on set-valued analysis and convex analysis, viability kernels and capture basins, and first-order partial differential equations. He presents, for the first time at a

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