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The only way to learn mathematics iS to do mathematics. That tenet iS the foundation of the do.it.yourself Socratic or Texas method

the method in which the teacher plays the role of an omniscient but largely uncommuni. cative referoe between the learner and the facts. Although that method iS usually and perhaps necessarily oral

this book tries to use the same method to give a written exposition of certain topics in Hilben space theory.

The right way to read mathematics iS first to read the definitions of the concepts and the statements of the theorems and then putting the book aside to try to discover the appropriate proofs. If the theorems are not trivial the attempt might fail but it iS likely to bc instructive just the same. To the passive reader a routine computation and a miracle of ingenuity come with equal ease and later when he must depend on himself he will find that they went as easily as they came. The active reader who has found out what does not work.iS in a much better position to understand the reason ror the SUCCESS of the author'S method and Iater to find answers that are not in books. This book was written for the active reader. Thc first part consists of problems frequently preceded by definitions and motivation

and some. times followed by corollaries and historical remarks. Most of the problems are statements to be proved but some are questions is it

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and some are challenges construct determine .The second part a very short one consists of hints. A hint iS a word

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This book was written for the active reader. The first part consists of problems   frequently preceded by definitions and motivation   and some-times followed by corollaries and historical remarks. Most of the problems are statements to be proved   but some are questions (is it?   what is?)   and some are challenges (construct   determine). The second part   a very short one   consists of hints. A hint is a word   or a paragraph   usually intended to help the reader find a solution. The hint itself is not necessarily a con-densed solution of the problem; it may just point to what I regard as the heart of the matter. Sometimes a problem contains a trap   and the hint may serve to chide the reader for rushing in too recklessly. The third part   the longest   consists of solutions   proofs   answers   or constructions   depending on the nature of the problem

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