



METADATA

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Authors: Varsos, D., Professor, UOA

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Abstract

In this book, some of the fundamental principles of Mathematics are covered and its main aim is to contribute to the effort to “bridge the gap” for a smooth integration of newly admitted students in the Mathematics Schools of Greek Universities. The major problem that first-year Mathematics students in Greek Universities encounter is that they are not properly taught, and thus, they lack the “discipline” needed to think and express themselves mathematically (both orally and in writing). The concepts in study are necessary, not only because first-year students will be able to keep up with the requirements of their classes, but also because their thorough understanding will render them capable of defending and supporting mathematical proofs. Anyone willing to commit to the study of Mathematics needs to adopt a mathematical way of thinking to corroborate mathematical statements and discover (mathematical) facts. In that way, he/she learns to research, judge, comprehend mathematical proofs and formulate his/her

proofs. To study this book, prerequisite knowledge is minimal. By refreshing this knowledge, we can slowly move forward by identifying gaps and even confusion and errors in our previous understanding. We can also observe that the mathematical way of thinking may be different from the way of thinking in other scientific disciplines. Studying Mathematics is a dynamic process that requires energy, and superficial “scanning” is not sufficient. Furthermore, limiting oneself to a single textbook, however good it is, may “trap” the reader. Therefore, as the Mathematics study presents regressions, we need to have flexibility. We must also make clear the line between comprehension, answering a question, and outlining a problem-solving strategy, both orally and in writing. As previously said, this book addresses the needs of students in Greek Mathematics Schools. Nonetheless, it can still be a useful aid for anyone who intends to start studying Mathematics. Thus, it has a flexible structure to support self-learning.

