

Mathematics

A Simple Tool for Geologists

Second edition

Mathematics: A Simple Tool for Geologists is for students who did not follow mathematics through to the end of their school careers, and for graduates and professionals whose mathematics have become rusty and are looking for a refresher course. This second edition contains many new problems and also has associated spreadsheets on the World Wide Web designed to improve students' understanding. These spreadsheets can also be used to solve many of the problems students are likely to encounter during the remainder of their geological careers.

This new edition aims to teach simple mathematics using geological examples to illustrate mathematical ideas. This approach emphasizes the relevance of mathematics to geology, helps to motivate the reader and gives examples of mathematical concepts in a context familiar to students of geology. With an increasing use of computers and quantitative methods in all aspects of geology, it is vital that geologists should be as numerate as their colleagues in other physical sciences.

The book begins by discussing basic tools such as the use of symbols to represent geological quantities and the use of scientific notation for expressing very large and very small numbers. Simple functional relationships between geological variables are then covered (for example, straight lines, polynomials, logarithms) followed by chapters on algebraic manipulations. The mid-part of the book is devoted to trigonometry (including an introduction to vectors) and statistics. The last two chapters give an introduction to differential and integral calculus. The book is prepared with a large number of worked examples and problems for the students to attempt themselves. Answers to all the questions are given at the end of the book.

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