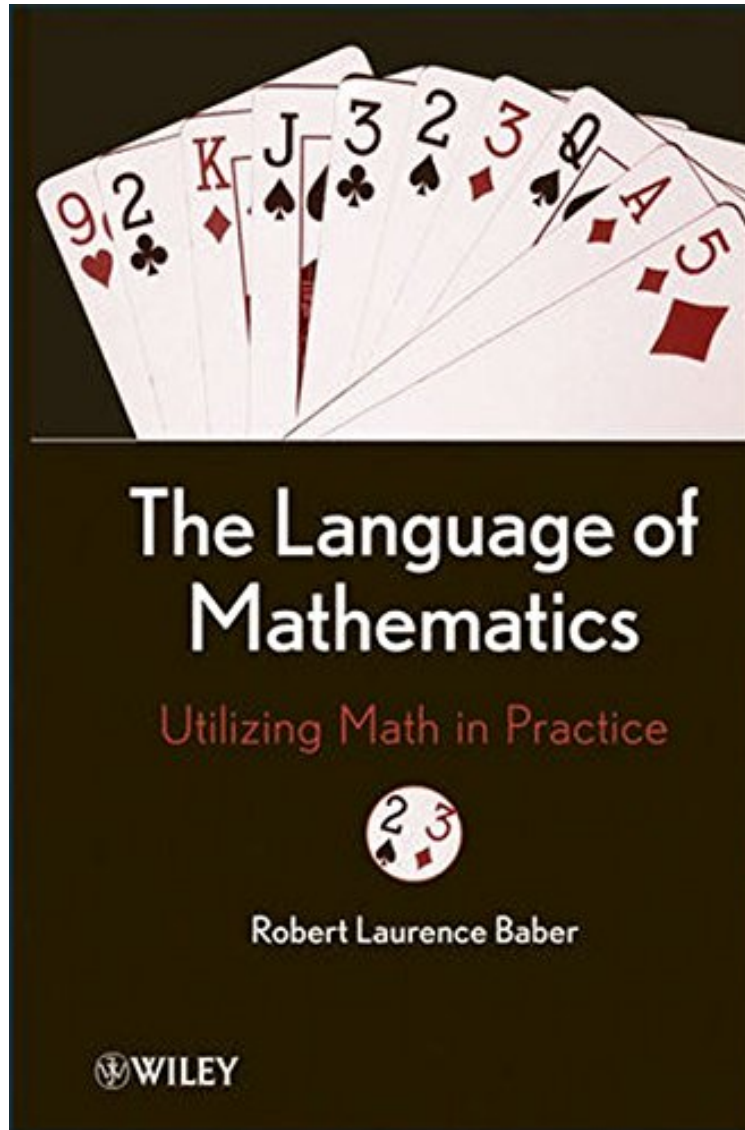


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# The Language of Mathematics: Utilizing Math in Practice

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**Robert L. Baber : The Language of Mathematics: Utilizing Math in Practice** before purchasing it in order to gage whether or not it would be worth my time, and all praised The Language of Mathematics: Utilizing Math in Practice:

5 of 5 people found the following review helpful. Applied maths for the real world.By Paul HAn unusual and useful book; how to take a problem described in natural language (in this case, English) and translate that problem into mathematical notation so that a solution can be derived.Many of us encounter mathematics applied to specific fields. Maybe a physicist is expert in calculus, an economist in statistics, a computer scientist in mathematical logic, and so

on. When we learn these fields we often learn them applied to specific scenarios and are often examined based on subtle variations of those same scenarios. It is not surprising that when we are then released into the 'real world' we find scenarios we haven't encountered before. In many cases we struggle to solve for those scenarios. We are capable of solving a mathematical problem but not a real world problem described in a real language by possibly non-mathematical people. This book aims to bridge that gap; Link the real world description to a mathematical problem we can solve. After introducing the concept, the author spends chapters 3, 4 5 describing mathematical notation. This section in itself would serve as an excellent introduction to mathematical notation for an early undergraduate in a mathematical field, and a great reminder for those of us dusting off previous knowledge. One call out in this section: the notational form stated in 3.4.8-24 describes the general form for quantified expressions. Read it, re-read it, understand it. It is used extensively through the rest of the book and is essential to understanding some of the later translations. Chapters 6 7 then describe the grammatical components and structure of the English language and map those components to mathematical equivalents (where possible). This is the core of the book teaching the reader what to look out for in the English language, when to restate in English to remove ambiguity, how to deal with dynamic (time varying) situations in what is the static language of mathematics, and much more. Finally Chapter 8 puts it all into practice by running through a number of examples culminating in one 50 page monster modelling a Shopping Mall door controller! Here the onus is on the reader to step through the process being described to first translate and then solve the example scenarios. In doing so, by the end, the reader will find they have absorbed many essentials of that process and may never look at a simple English problem statement the same way again. :-) The author states that his goal is to "help readers improve their ability to apply mathematics beneficially in their own work". In this reader's opinion he succeeds admirably.

A new and unique way of understanding the translation of concepts and natural language into mathematical expressions Transforming a body of text into corresponding mathematical expressions and models is traditionally viewed and taught as a mathematical problem; it is also a task that most find difficult. The Language of Mathematics: Utilizing Math in Practice reveals a new way to view this process not as a mathematical problem, but as a translation, or language, problem. By presenting the language of mathematics explicitly and systematically, this book helps readers to learn mathematics and improve their ability to apply mathematics more efficiently and effectively to practical problems in their own work. Using parts of speech to identify variables and functions in a mathematical model is a new approach, as is the insight that examining aspects of grammar is highly useful when formulating a corresponding mathematical model. This book identifies the basic elements of the language of mathematics, such as values, variables, and functions, while presenting the grammatical rules for combining them into expressions and other structures. The author describes and defines different notational forms for expressions, and also identifies the relationships between parts of speech and other grammatical elements in English and components of expressions in the language of mathematics. Extensive examples are used throughout that cover a wide range of real-world problems and feature diagrams and tables to facilitate understanding. The Language of Mathematics is a thought-provoking book of interest for readers who would like to learn more about the linguistic nature and aspects of mathematical notation. The book also serves as a valuable supplement for engineers, technicians, managers, and consultants who would like to improve their ability to apply mathematics effectively, systematically, and efficiently to practical problems.

This text presents a new and original point of view on mathematics that will be useful for simplifying applications of mathematics to practical problems by translating English statements of a problem into the Language of Mathematics. The reviewer shares the author's opinion that \this book will improve and increase the reader's insight into mathematics and how to utilize it in practice. (Zentralblatt MATH, 2012) From the Back Cover A new and unique way of understanding the translation of concepts and natural language into mathematical expressions Transforming a body of text into corresponding mathematical expressions and models is traditionally viewed and taught as a mathematical problem; it is also a task that most find difficult. The Language of Mathematics: Utilizing Math in Practice reveals a new way to view this process not as a mathematical problem, but as a translation, or language, problem. By presenting the language of mathematics explicitly and systematically, this book helps readers to learn mathematics and improve their ability to apply mathematics more efficiently and effectively to practical problems in their own work. Using parts of speech to identify variables and functions in a mathematical model is a new approach, as is the insight that examining aspects of grammar is highly useful when formulating a corresponding mathematical model. This book identifies the basic elements of the language of mathematics, such as values, variables, and functions, while presenting the grammatical rules for combining them into expressions and other structures. The author describes and defines different notational forms for expressions, and also identifies the relationships between parts of speech and other grammatical elements in English and components of expressions in the language of mathematics. Extensive examples are used throughout that cover a wide range of real-world problems and feature diagrams and tables to facilitate understanding. The Language of Mathematics is a thought-provoking book of interest for readers who would like to learn more about the linguistic nature and aspects of mathematical notation. The book also serves as a valuable

supplement for engineers, technicians, managers, and consultants who would like to improve their ability to apply mathematics effectively, systematically, and efficiently to practical problems. About the Author ROBERT LAURENCE BABER is Professor Emeritus in the Department of Computing and Software at McMaster University, Canada. A Fellow of the BCS, The Chartered Institute for IT, he has published numerous journal articles in his areas of research interest, which include mathematical modeling and the conception, planning, and design of computer-based systems for technical and business applications.