

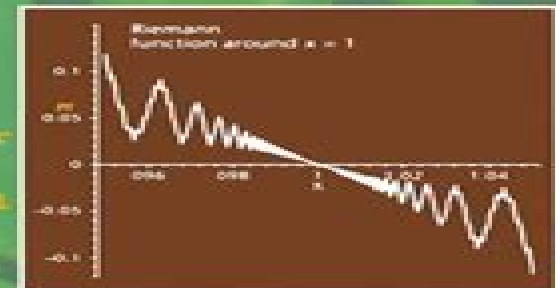
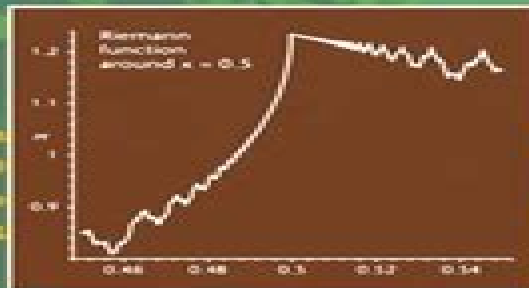
Roelof J. Stroeker  
Johan F. Kaashoek

# Discovering Mathematics with **Maple**

An interactive exploration for mathematicians,  
engineers and econometricians

```
> Factorial  
> if n = 0  
> elif typ  
> else ERR  
> fi  
> end;
```

```
Factorial := proc(n)  
option remember;  
if n = 0 then 1  
elif type(n, posint) then n * Factorial(n - 1)  
else ERROR('invalid argument', n)  
fi  
end
```



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# Discovering Mathematics With Maple An Interactive Exploration For Mathematicians Engineers And Econometricians

**Frank Garvan**



## **Discovering Mathematics With Maple An Interactive Exploration For Mathematicians Engineers And Econometricians:**

Discovering Mathematics with Maple R J Stroeker, J F Kaashoek, 1999-04-01      **Discovering Mathematics with Maple** Roelof J. Stroeker, Johan F. Kaashoek, L. F. Hoogerheide, 1999      **Discovering Mathematics with Maple** R.J. Stroeker, J.F. Kaashoek, 2012-12-06 his book grew out of the wish to let students of econometrics get acquainted with the powerful techniques of computer algebra at an early stage in their curriculum As no textbook available at the time met our requirements as to content and presentation we had no other choice than to write our own course material The try out on a group of 80 first year students was not without success and after adding some necessary modifications the same material was presented to a new group of students of similar size the year after Some more adjustments were made and the final result now lies before you Working with computer algebra packages like Derive Mathematica and Maple over many years convinced us of the favourable prospects of computer algebra as a means of improving the student s understanding of the difficult concepts on which mathematical techniques are often based Moreover advanced mathematical education be it for mathematics itself or for mathematical statistics operations research and other branches of applied mathematics can greatly profit from the large amount of non trivial mathematical knowledge that is stored in a computer algebra system Admittedly the fact remains that many a tough mathematical problem such as solving a complicated non linear system or obtaining a finite expression for a multiple parameter integral can not easily be handled by computer algebra either if at all

Proceedings of the Institute of Industrial Engineers Asian Conference 2013 Yi-Kuei Lin, Yu-Chung Tsao, Shi-Woei Lin, 2013-07-12 This book is based on the research papers presented during The Institute of Industrial Engineers Asian Conference 2013 held at Taipei in July 2013 It presents information on the most recent and relevant research theories and practices in industrial and systems engineering Key topics include Engineering and Technology Management Engineering Economy and Cost Analysis Engineering Education and Training Facilities Planning and Management Global Manufacturing and Management Human Factors Industrial Systems Engineering Education Information Processing and Engineering Intelligent Systems Manufacturing Systems Operations Research Production Planning and Control Project Management Quality Control and Management Reliability and Maintenance Engineering Safety Security and Risk Management Supply Chain Management Systems Modeling and Simulation Large scale complex systems      *The Software Encyclopedia* ,1986

**American Book Publishing Record** ,1999      **Nieuw Archief Voor Wiskunde** ,2004      **Gazette des mathématiciens** ,1999      **Books in Print Supplement** ,2002      *Deutsche Nationalbibliographie und Bibliographie der im Ausland erschienenen deutschsprachigen Veröffentlichungen* ,1996      **Verzeichnis lieferbarer Bücher** ,2002

Maple and Mathematica Inna K. Shingareva, Carlos Lizárraga-Celaya, 2010-04-29 In the history of mathematics there are many situations in which calculations were performed incorrectly for important practical applications Let us look at some

examples the history of computing the number began in Egypt and Babylon about 2000 years BC since then many mathematicians have calculated e g Archimedes Ptolemy Vi ete etc The rst formula for computing decimal digits of was disc

ered by J Machin in 1706 who was the rst to correctly compute 100 digits of Then many people used his method e g W Shanks calculated with 707 digits within 15 years although due to mistakes only the rst 527 were correct For the next

examples we can mention the history of computing the ne structure constant that was rst discovered by A Sommerfeld and the mathematical tables exact lutions and formulas published in many mathematical textbooks were not veri ed rigorously 25

These errors could have a large e ect on results obtained by engineers But sometimes the solution of such problems required such techn ogy that was not available at that time In modern mathematics there exist computers that can perform various

mathematical operations for which humans are incapable Therefore the computers can be used to verify the results obtained by humans to discovery new results to provetheresultsthat a human can obtain without any technology With respect to our

example of computing we can mention that recently in 2002 Y Kanada Y Ushiro H Kuroda and M **The Maple Book** Frank Garvan, 2001-11-28 Maple is a very powerful computer algebra system used by students educators mathematicians

statisticians scientists and engineers for doing numerical and symbolic computations Greatly expanded and updated from the author s MAPLE V Primer The MAPLE Book offers extensive coverage of the latest version of this outstanding software

package MAPL **Maple in Mathematics Education and Research** Robert M. Corless, Jürgen Gerhard, Ilias S. Kotsireas, 2021-07-19 This book constitutes refereed proceedings of the 4th Maple Conference MC 2020 held in Waterloo

Ontario Canada in November 2020 The 25 revised full papers and 3 short papers were carefully reviewed and selected out of 75 submissions one invited paper is also presented in the volume The papers included in this book cover topics in education

algorithms and applciations of the mathematical software Maple Advanced Problem Solving with Maple William P. Fox, William C. Bauldry, 2019-05-29 Problem Solving is essential to solve real world problems Advanced Problem Solving with

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for modeling applications Bridges the study of topics and applications to various fields of mathematics science and engineering Features a flexible format and tiered approach offers courses for students at various levels The book can be used

for students with only algebra or calculus behind them About the authors Dr William P Fox is an emeritus professor in the Department of Defense Analysis at the Naval Postgraduate School Currently he is an adjunct professor Department of

Mathematics the College of William and Mary He received his Ph D at Clemson University and has many publications and scholarly activities including twenty books and over one hundred and fifty journal articles William C Bauldry Prof Emeritus and Adjunct Research Prof of Mathematics at Appalachian State University received his PhD in Approximation Theory from Ohio State He has published many papers on pedagogy and technology often using Maple and has been the PI of several NSF funded projects incorporating technology and modeling into math courses He currently serves as Associate Director of COMAP s Math Contest in Modeling MCM Please note that the Maple package PSM is now on the public area of the Maple Cloud To access it From the web 1 Go to the website <https://maplecloud.com> 2 Click on packages in the left navigation pane 3 Click on PSM in the list of packages 4 Click the Download button to capture the package From Maple 1 Click on the Maple Cloud icon far right in the Maple window toolbar Or click on the Maple Cloud button on Maple s Start page to go to the website 2 Click on the packages in the navigation pane 3 Click on PSM in the list of packages The package then downloads into Maple directly

**Maple V for Engineers** Douglas Meade, Etan Bourkoff, 1997      **An Introduction to Maple : Sample Interactive Session** Bruce W. Char, Keith O. Geddes, Gaston H. Gonnet, University of Waterloo. Faculty of Mathematics, 1983      [Maple V](#) Maple Summer Workshop and Symposium, 1994      **Maple V** Waterloo Maple Incorporated, 2014-08-15      *Getting Started Maple* Waterloo Maple Software Staff, 1994-01-01

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