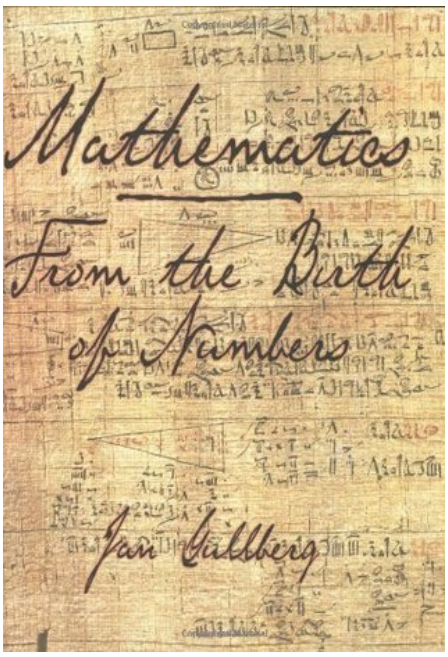

Mathematics: From the Birth of Numbers

Jan Gullberg , Peter J. Hilton (Foreword)

Mathematics: From the Birth of Numbers

Jan Gullberg , Peter J. Hilton (Foreword)

Mathematics: From the Birth of Numbers Jan Gullberg , Peter J. Hilton (Foreword)
This extraordinary work takes the reader on a long and fascinating journey--from the dual invention of numbers and language, through the major realms of arithmetic, algebra, geometry, trigonometry, and calculus, to the final destination of differential equations, with excursions into mathematical logic, set theory, topology, fractals, probability, and assorted other mathematical byways. The book is unique among popular books on mathematics in combining an engaging, easy-to-read history of the subject with a comprehensive mathematical survey text. Intended, in the author's words, "for the benefit of those who never studied the subject, those who think they have forgotten what they once learned, or those with a sincere desire for more knowledge," it links mathematics to the humanities, linguistics, the natural sciences, and technology.

Contains more than 1000 original technical illustrations, a multitude of reproductions from mathematical classics and other relevant works, and a generous sprinkling of humorous asides, ranging from limericks and tall stories to cartoons and decorative drawings.

Mathematics: From the Birth of Numbers Details

Date	:	Published March 17th 1997 by W. W. Norton Company (first published January 1st 1997)
ISBN	:	9780393040029
Author	:	Jan Gullberg , Peter J. Hilton (Foreword)
Format	:	Paperback 1093 pages
Genre	:	Science, Mathematics, Nonfiction, History, Reference

From Reader Review Mathematics: From the Birth of Numbers for online ebook

John Smith says

Marking as read because it would take forever to truly "complete" and this is more of a reference book anyways.

Arlene S says

Some interesting historical information and math categories. Perhaps useful as a reference work.

Bern says

Bought an almost brand new copy of this book spontenously in early 2014 and then forgot about it(probably because the cover looked nice).Only rediscovered it again a few days ago whilst tidying up my book collection and the joy!!
This is a rich source of mathematical history and formulas for both maths and non maths enthusiasts alike. Based on other reviews I would have to agree it serves very well as a good reference point as it can take time to digest some of the contents.
Highly recommended!

Alleykat says

I enjoyed it however, I think that I would prefer something that prioritizes conceptual progression a bit more over temporal progression. Understanding the latter is extremely useful but, right now I'm seeking the former.

Todd N says

I bought this on a whim at Bookbuyers in Mountain View and only read a few parts of it. I'm marking it as read since I gave it to my daughter's math teacher to help her class with their projects on math in ancient civilizations.

This is a very quirky and personal book on math written by a doctor (I think) who has always been interested in mathematics. It's part history, part reference, part cartoons.

Every time I cracked the book open, there was something interesting, whether it was the history of estimates of pi or a primer on Taylor expansions and trigonometric functions.

The layout reminds me of early LaTeX-formatted handouts I used to get in college with all the equations and that strange Bookman kind of font. I wouldn't be surprised if this book is self-published, which in no way detracts from its awesomeness.

Peter says

Numeration
There is infinite beauty in mathematics and numbers!
When I say infinite, I immediately think about Pi and how it extends to infinite decimal places. When I say beauty, I think about how numbers can translate to graphical images with curves, straight lines and multiple dimensions, each with unique relationships and transformations. Picture the very precise yet artistic language of symbols and formatting, especially the Greek alphabet and its evolution from the Phoenician alphabet.

I love traditional poetry where we marvel at the efficient and skilful formation of words to explode images in our minds. In terms of the ability to transform simple notation and symbols into multi-dimensional fractious patterns and images, mathematics is the ultimate poetic staging.

Mathematics has a raw, honest and perfect beauty. Witness the power of the simple symbol =, which conveys balance, equilibrium and pure logic. The world exists with the satisfaction and reassurance that logic will prevail. There is a tendency to assume because mathematics is useful and critical in modern day life, that we can forget its impact on other aspects of nature, culture and history. Galileo Galilei stated, *“Mathematics is the language with which God has written the universe.”*

The book *Mathematics from the Birth of Numbers*, by Jan Gullberg, is a wonderful book that offers a different and informative look at mathematics. We have become fixated with learning how to deliver the usefulness that we no longer try to appreciate the true understanding and beauty. Jan Gullberg enables us to discover the cultural birth and evolution of numbering systems, and the almost mystical and mythical association with numbers such as the 7 arms of the Hebrew candelabra, the 7 wonders of the world, the 10 commandments, abstention for 40 days and nights during Lent, the 40 years the children of Israel wandered the desert, and Ali Baba and the 40 thieves.

The book covers notation and numbering systems from our ancient past. It reviews the numeration from ancient languages dating back thousands of years BC to the main numbering system in use in today’s world – binary. The contents cover the history, background, definition and functionality for all mathematics from algebra to trigonometry, geometry, matrices, calculus, sequences & series, probability and statistics. It is not a how-to book for mathematical formula and methods, it is an evocative story of the birth, growth and maturity of numbers and mathematical techniques.

This is a history book dealing with the origins of numbers and mathematics. This is a mathematics book steeped in a wealth of history. This is a book that you will want to dip in and out of on a regular basis, it's probably not one you will read from cover to cover. Truly original.

Gavin Leech says

Disarming, unpretentious, funny, deep.

Robert says

This is how math should be taught. A top down approach as opposed to rote, with a lot of interesting history and random information to keep it interesting.. it's "why is this interesting / worthwhile and how does it fit in" vs "memorize this or fail."

If you've ever wanted to get further into the math world for its own sake but find it difficult to get going, this is a great place to start.

Rick says

It took me the better part of a year to read Mathematics: From the Birth of Numbers, and at times I found it rather challenging. I suspect that I have greater than average interest in mathematics, and I did manage to make it at least through college calculus, but that didn’t always help me much. Part of my problem may have been that, for every concept, Gullberg presents the most general and abstract case, so even things I thought I understood were confusing. I started out with a pencil and paper to work out every proof and every example, but I gave it up well before page 200 (out of 1,040). Many people will find this book highly valuable, but it is not for the mathematical tourist.

Matthew Richards says

Not the book I was expecting. I assumed this would be a history of mathematics from the birth of numbers, organized chronologically and showing how concepts built over time worldwide. Instead it was organized by subject/field. This approach has its own virtues, as you have to know about algebra and geometry before moving on to integral calculus, for example, but it has the disadvantage of not showing how several branches of mathematics were developed at the same time then became integrated. I also don't feel it was always executed well. The book was at its best for the first 100-200 pages, which showed how mathematics developed simultaneously with language, explaining what a number is and the different types of numbers, how different cultures chose different bases and writing systems and what their advantages were, and expanding on the cornerstones of mathematics, all with interesting cartoons and illustrations. After the first 200 pages the book became more tedious. I became really frustrated by the 350 page point at the chapter about trigonometry, which rattled off a bunch of half-angle formulas and identities without exploring deeper into the why and engendering a greater appreciation of the subject. Most of the book was similarly frustrating. I ended up reading the more interesting chapters that explained why the subject was interesting such as the chapters on topology, fractals, motion, and probability, but I skimmed through the rest of the chapters except for the history sections. Speaking of the history sections, all of them were disappointingly short, some at only 1-3 pages, which doesn't make sense in a book about mathematics over a thousand pages long. I was really interested to read how and why different fields were developed in more depth. All this being said, the book is incredibly useful as an encyclopedia or reference material, as it concentrates so many formulas and strategies from so many branches into one book, but as a book about the history of mathematics it's disappointing.

Dave says

A compendium of mathematical ideas, stories and history. A great book for those interested in recreational mathematics, basic facts about a wide range of concepts in math or inveterate browsers.

Owltime says

One would never completely finish such a volume; rather, (s)he would peruse the pages carefully and quietly, with a pencil in the hand, getting lost in the glimpse of the huge discipline of mathematics that the author has so generously bestowed.

It is also quite amazing that the author's occupation was a practitioner of surgery.

Hemhek Song says

More of a reference

Maureen H. says

I forget where I learned of this book but I thought it would be interesting and probably challenging to see how much of my math I remembered. I didn't find the history portion of the book to be of much interest but the explanation of each concept was thorough and well explained. As I searched and read certain topics I realized I have forgotten much. As I struggled to remember things I received an email from the Kahn Academy with some refresher problems for the SAT test. I could complete those so my mathematical mind is some place beyond high school but not through college. Not only would people with an interest in math enjoy this book but probably those interested in history would find some portions enlightening.

William Schram says

Excellent tome on general mathematics from counting all the way to differential equations. Contains examples galore. If you aren't satisfied after all of this, it contains an extensive bibliography for further reading. The book also contains an index to help find things in the text.

Along with the mathematics, it covers some history of the particular subject being done, with the important people who brought forth the developments necessary and the important works that they were covered in.

For instance, in the section on Trigonometry it explains that the word Trigonometry is not actually a native Greek word and that the term was invented by a German mathematician and astronomer named Bartholomaeus Pitiscus back in 1595. It goes on to cover important developments, how they used it and

relevant problems. This book is a wonderful addition to a library if you can afford it. Though it is more of a reference guide really, it does contain a good deal of history.
