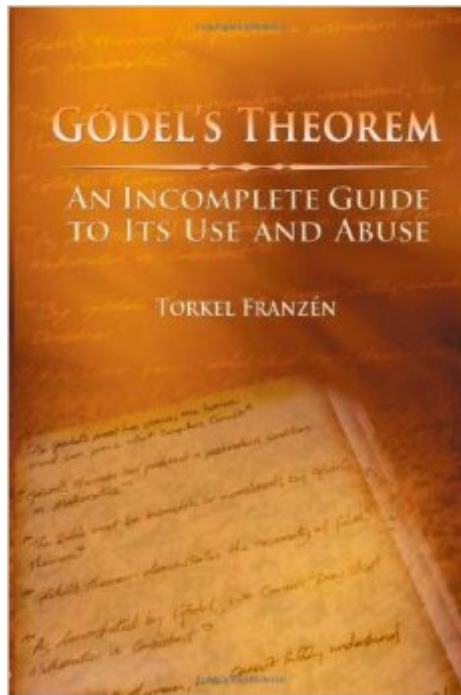


The book was found

Gödel's Theorem: An Incomplete Guide To Its Use And Abuse



Synopsis

"Among the many expositions of Gödel's incompleteness theorems written for non-specialists, this book stands apart. With exceptional clarity, Franz von Thun gives careful, non-technical explanations both of what those theorems say and, more importantly, what they do not. No other book aims, as his does, to address in detail the misunderstandings and abuses of the incompleteness theorems that are so rife in popular discussions of their significance. As an antidote to the many spurious appeals to incompleteness in theological, anti-mechanist and post-modernist debates, it is a valuable addition to the literature." --- John W. Dawson, author of Logical Dilemmas: The Life and Work of Kurt Gödel

Book Information

Paperback: 172 pages

Publisher: A. K. Peters; 1st edition (June 6, 2005)

Language: English

ISBN-10: 1568812388

ISBN-13: 978-1568812380

Product Dimensions: 6.3 x 0.4 x 9 inches

Shipping Weight: 5.6 ounces (View shipping rates and policies)

Average Customer Review: 4.1 out of 5 stars [See all reviews](#) (25 customer reviews)

Best Sellers Rank: #199,352 in Books (See Top 100 in Books) #23 in [Books > Science & Math > Mathematics > Pure Mathematics > Set Theory](#) #81 in [Books > Humor & Entertainment > Puzzles & Games > Math Games](#) #94 in [Books > Science & Math > Mathematics > Pure Mathematics > Logic](#)

Customer Reviews

As evidenced from the title, the primary focus of the book is to identify the specific nature of these theorems, where they apply directly, and where they do not apply directly, and where they are interpreted entirely erroneously. Although the book is aimed at non-mathematicians and those with no knowledge of formal logic, I can't really imagine someone with no understanding of logic and some fair amount of math comprehension benefitting a lot from this book. I mean, by p. 10 he's talking about Diophantine equations and Goldbach-like conjectures, and soon after, "PA" and "ZFC" are tossed about as if they were practically everyday acronyms for most people. The book is however, largely free of formulas and proofs, for those who are dissuaded by such. The overviews of the theorems themselves is not as lucid as I imagine they could be (which is why I rate it a 4 instead of

a 5). The overviews will also seem a bit alien to someone expecting and Nagel & Newman kind of treatment; instead, this is discussed from a more abstract perspective of the characteristics and properties of formal systems, which avoids getting into the gritty details (even Gödel-numbering is not explained in detail!) but may be hard to grasp for someone not used to thinking at this level of abstraction about mathematical systems. With that said, I still think it is quite worthwhile reading, and at a slim 170ish pages, it is a fairly quick read. After the overviews, he takes on various applications/misapplications of the theorems by topic. So, there are discussion of the theorems' relevance or applicability to things such as TOE (Theory of Everything), Turing machines, skepticism, minds, inexhaustibility, computability and so on.

Torkel Franzen has created an immensely valuable, deeply fascinating examination of misunderstandings, misconceptions, and outright abuse of Gödel's theorems frequently found on the Internet (and occasionally in print). He does so in a cogent, non-confrontational style that makes enjoyable reading. Gödel's Theorem - An Incomplete Guide to Its Use and Abuse warrants five stars. A word of caution is appropriate, however. Chapters 2 and 3 will be heavy going for readers not familiar with formal logic. Although Franzen avoids the details of Gödel numbers in his explication of Gödel's proof, he does delve into topics like self-referential arithmetical statements, Tarski's theorem, Rosser sentences, weaker variants of the first incompleteness theorem, computably decidable sets, Turing's proof of the undecidable theorem, and the MRDP theorem. Furthermore, the appendix offers both a formal definition of the concept of a Goldbach-like arithmetical statement and comments on the significance of Rosser's strengthening of Gödel's first incompleteness theorem. (Any reader that stays the course with the early chapters will be able to handle the appendix discussions. The short chapter 7 is also more technical as it discusses the completeness of first order logic.) A word of encouragement is equally appropriate. Chapters 2 and 3 can be browsed, even skipped outright. The later chapters are much more accessible and don't require that the earlier chapters have been mastered; instead, they focus on examples of the misuse of Gödel's theorems - from the merely technically inaccurate to the humorously nonsensical. It is these later chapters that makes this book special.

This book seems cobbled together, and its exposition is unclear. Chapter one is a short seven-page introduction. Chapter two, entitled "The Incompleteness Theorem: An Overview", is forty-eight pages long, and this is where beginners are going to get frustrated and discouraged. Franzen does not sufficiently clarify for the uninitiated the difference between mathematical logic (first-order logic)

as an axiomatic system and a first-order theory (which he usually calls a formal system). So he also doesn't clarify (until he finally does, in chapter seven) the difference between the completeness of first-order logic and the incompleteness of the first-order theory of arithmetic (his mention of negation completeness isn't clear enough to be helpful). Nor is he helpful on the concepts of true or truth in relation to logical truth (tautology), to axiomatic systems, to consistency, to human knowledge, to number theory, or to mathematics. He does not speak directly upon the distinction between validity and provability. He isn't explicit about the distinction between well-formed formula (statement, sentence) and theorem. Confusion about these distinctions leads to confusion about the meaning and range of applicability of Gödel's Theorems, so Franzen has not done a good enough job in this overview chapter of educating the uninitiated. In chapter three, Franzen attempts to introduce the notions of a computably enumerable set and a computably decidable set. He seems to believe that because he knows what he's talking about that what he's saying is clear.

[Download to continue reading...](#)

Gödel's Theorem: An Incomplete Guide to Its Use and Abuse
Bayes Theorem Examples: The Beginner's Guide to Understanding Bayes Theorem and its Applications
A World Without Time: The Forgotten Legacy of Gödel and Einstein
Elder Abuse Prevention and Intervention: A Guide to Dealing With Nursing Home Abuse and Other Elderly Abuse Issues
Hogwarts: An Incomplete and Unreliable Guide (Kindle Single) (Pottermore Presents)
A Poisonous Thorn in Our Hearts: Sudan and South Sudan's Bitter and Incomplete Divorce
The Incomplete Tim Key: About 300 of His Poetical Gems and What-Nots
The City in History: Its Origins, Its Transformations, and Its Prospects
An Incomplete Book of Awesome Things
An Incomplete Education: 3,684 Things You Should Have Learned but Probably Didn't
I Am Incomplete Without You: An Interactive Poetry Journal from the Author of I Wrote This For You
Bayes Theorem Examples: An Intuitive Guide
The Underdog Theorem: How to Bet on the NFL and Win While Outperforming Wall Street (PART TWO)
Como Se Llama Este Libro / What is the Name of this Book?: El Enigma de Dracula y Otros Pasatiempos Lógicos / The Riddle of Dracula and other Logical Puzzles (Teorema / Theorem) (Spanish Edition)
Peregrinaciones/ Peregrinations: Ley, forma, acontecimientos/ Law, Form, Event (Teorema/ Theorem) (Spanish Edition)
La transformación de la intimidad. Sexualidad, amor y erotismo en las sociedades modernas (Teorema Serie Mayor / Theorem Major Series) (Spanish Edition)
Birth of a Theorem: A Mathematical Adventure
Logic for Computer Science: Foundations of Automatic Theorem Proving, Second Edition (Dover Books on Computer Science)
Use Now Dollhouse Wallpaper Vol 3: 6 Ready To Use Dollhouse Wallpapers To Decorate 6 Rooms; Full Color! (Use Now Dollhouse Series)
Male Victims of Elder Abuse: Their Experiences and Needs

(Violence and Abuse Series)

[Dmca](#)