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This website offers support for studying real analysis, a field of math that involves deeply understanding how numbers behave. Real analysis is known as one of the toughest subjects in mathematics, but this site tries to make it more accessible and enjoyable. It provides resources like lectures from Francis Su, who helps explain key concepts in Walter Rudin's "Principles of Mathematical Analysis" (also called "Baby Rudin"). While many people find Baby Rudin challenging without guidance, Su's lectures aim to help readers get the most out of the book.The site is not just about helping with Baby Rudin; its main goal is to facilitate the study of real analysis for anyone willing to learn. Francis Su's lectures are a valuable resource, but they're not the only contribution. The idea is that everyone who wants to learn can benefit from sharing knowledge and insights. This collaborative approach believes that together, people can achieve more than alone. Books like "Baby Rudin" remain influential in mathematics education, despite being challenging due to their concise nature and difficult exercises. The book's unique presentation of mathematical analysis has made it a classic, but it may not be the easiest way for beginners to learn.Real Mathematical Analysis by Charles Pugh is another good choice for learning the subject. Some readers might find Rudin's style more appealing because of its abstract and theoretical approach. To get the most out of "Baby Rudin", it's recommended to first read a more accessible book on mathematical analysis and then return to Rudin as a way to deepen understanding and appreciate its classic presentation.The book covers more specialized topics than I expected, and I enjoyed learning about some new theorems. For example, the rational numbers are dense among the real numbers, despite there being more real numbers in total. The exercises in the book are great, but I didn't solve all of them since my goal was to get familiar with the presentation of the material.I agree with others that the first eight chapters of the book are the strongest parts. It would be a good idea to only read those or skim the rest if you're not interested in the entire book. Overall, I recommend "Baby Rudin" for anyone interested in pure mathematics, especially if it's not your first time reading about the subject.The book includes two exercises that demonstrate some of its key concepts. The first exercise shows that adding a rational number to an irrational number and multiplying it by a rational number results in an irrational number. The second exercise proves that there is no rational number whose square is 12, which involves a clever use of contradiction and properties of integers.My personal copy of "Baby Rudin" has its own strengths and weaknesses, but being a classic doesn't necessarily mean it's easy or helpful for everyone.Considered challenging for beginners, I aim to guide you through understanding Baby Rudin. Specifically, I'll help you learn how to read and comprehend its proofs, as well as complete its exercises successfully. Notably, despite being difficult, Baby Rudin is widely used by mathematics professors due to its elegance, thought-provoking exercises, and logical organization of key content. As part of a series of blog posts on this textbook, I'll provide insight into the challenging parts of the text and help you navigate them. Additionally, I plan to create video lectures on Baby Rudin's content, which will be available at my YouTube channel, "Bill Kinney Math", starting in 2021. This project may take several years to complete, but it's something I enjoy and hope you'll find value in as well.This content will benefit junior and senior undergraduate mathematics majors, graduate students, ambitious high school students, and individuals pursuing advanced degrees in subjects like physics, engineering, statistics, and economics. The book is called Baby Rudin because there are more advanced versions, "Papa Rudin" (measure theory and Lebesgue integration) and "Grandpa Rudin" (functional analysis).One of the most frustrating aspects of Baby Rudin is that many methods and formulas seem to be pulled out of thin air, leading you to question how they were developed. For instance, the proof that the square root of 2 is not rational on page 2 is presented succinctly, but the function created by Rudin to show that the set has no largest or smallest element is mysterious.Given text hereWe're exploring a simpler choice for this function, while still ensuring properties 1-6 hold true. A linear function like is immediately ruled out by property 1, as it would imply , causing issues. Let's try letting instead. This yields a fixed point, but also leads to problems with properties 3 and 4 due to . After some experimentation, we find that might work, satisfying some of our conditions, yet still having an issue with if . We'd rather not complicate the argument further.We consider whether any function of the form will suffice when and . A key observation is that such a function maps rationals to rationals. Calculations reveal that , and using the Quotient Rule, we find that for all if and only if . This leads us to conclude that it's not necessary to choose .The slope of the graph of gets maximized at with a value less than 1 for all . For various values of , remains a root, satisfying property 5. Moreover, for any general value of , we get , implying . By confirming this using the Quotient Rule, we find that . Consequently, if so that , it follows that for all , ensuring property 6 is satisfied.We observe that gets closer to than as increases due to being an attracting fixed point of the function. This is closely related to the fact that for all when .You can use the original content for any purpose as long as you don't restrict others from doing so. You're also not obligated to follow the license for public domain elements or when an applicable exception permits your use. This license doesn't guarantee all necessary permissions, and other rights like publicity, privacy, or moral rights might limit how you use it. Reddit uses cookies to provide a better experience, which includes accepting essential cookies that deliver and maintain services, improve quality, personalize content, and measure advertising effectiveness. Rejecting non-essential cookies may still allow Reddit to use certain cookies for platform functionality. For more information on cookies and privacy, please see the Cookie Notice and Privacy Policy. This book simplifies math concepts with over 120 laws, theorems, paradoxes, and more explained in a clear manner. The Little Book of Mathematical Principles provides simple explanations for fundamental principles like Fibonacci numbers, Euclid's Elements, chaos theory, game theory, and more. Renowned author Dr. Robert Solomon explains complex math concepts in an engaging way, answering intriguing questions like what is the greatest pyramid or perfect number? Principles of Mathematical Analysis, also known as "PMA" or "Baby Rudin," is a famous undergraduate real analysis textbook written by Walter Rudin. Published in 1953, it's one of the most influential math textbooks and earned Rudin the Leroy P. Steele Prize for Mathematical Exposition in 1993.Principles of Mathematical Analysis has been translated into several languages including Russian Chinese Spanish French German Italian Greek Persian Portuguese and Polish. Rudin's text was first modern English text on classical real analysis organizing topics frequently imitated. In Chapter 1 he constructs real and complex numbers outlining their properties. In Chapter 2 topological properties of the real numbers are discussed as a metric space. The rest of the book covers continuous functions differentiation RiemannStieltjes integral sequences and series of functions power series exponential and logarithmic functions fundamental theorem of algebra and Fourier series. After single-variable treatment Rudin discusses real analysis in more than one dimension including implicit inverse function theorems differential forms generalized Stokes theorem and Lebesgue integral.Rudin's textbook on classical real analysis was published shortly after his initial work and aimed to present complex mathematical concepts in a clear and concise manner. The book underwent two revisions: the second edition in 1964 and the third edition in 1976. It has been translated into multiple languages, including Russian, Chinese, Spanish, French, German, Italian, Greek, Persian, Portuguese, and Polish. Rudin's text was the first modern English textbook on classical real analysis, featuring an organization of topics that has been frequently imitated. The book covers topics such as continuous functions, differentiation, sequences and series of functions, and outlines examples like power series, exponential and logarithmic functions, fundamental theorem of algebra, and Fourier series. Additionally, it delves into real analysis in more than one dimension, discussing the implicit and inverse function theorems, differential forms, generalized Stokes theorem, and Lebesgue integral.