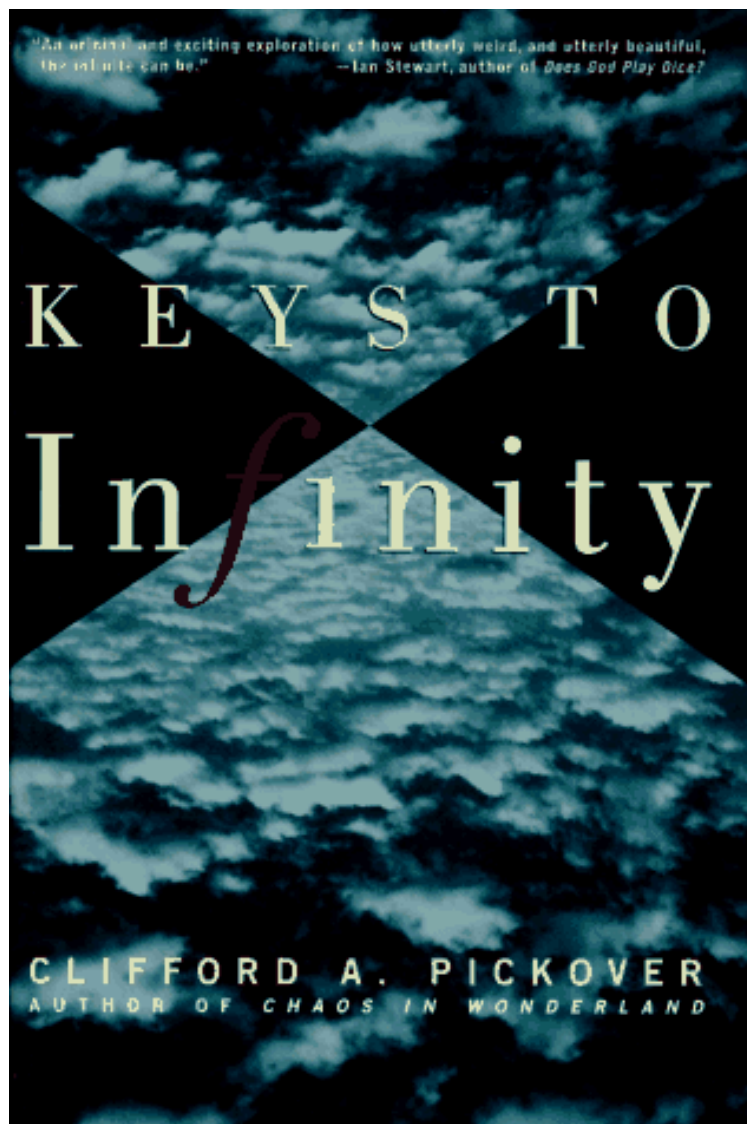


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## Keys to Infinity

Clifford A. Pickover

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**Clifford A. Pickover : Keys to Infinity** before purchasing it in order to gauge whether or not it would be worth my time, and all praised Keys to Infinity:

1 of 1 people found the following review helpful. Very though provokingBy Brantley BeardEven though it was written in the 90s this is a very provocative read. If you've read any of Pickover's other books, I'd highly suggest this one. It gets you thinking.1 of 1 people found the following review helpful. To Infinity...and BeyondBy JungliesI have had this book for some time but only recently got round to reading it because of a connection to something I am

currently working on. Imagine my surprise to discover that it was not what I had thought it to be but was, instead, much, much more. If I could compare it to something I would use an example of a Rubik's Cube. You twist it this way, that way, another way in a struggle to come up with a solution. Having said that, this is insufficient to communicate the richness of the book. This truly is a tale of mystery and imagination, a combined effort with many contributors to capture a little of the cosmos in a relatively few pages. I will not spoil it for anyone who wishes to take up the challenges that the book presents suffice to say that I am reminded of the books by Kit Williams, but I digress. This is mind blowing stuff with one caveat, the computer aspects of the book certainly are in need of an update if not a CD as a supplement to the text. A wonderful book to contemplate on cold, wintry nights, along with the Answer to the Ultimate Question of Life, the Universe, and Everything. 9 of 9 people found the following review helpful. A fascinating exploration of topics on infinity

By P. Barnes\*The book is a collection of fascinating, thought-provoking essays on various topics which are not necessarily all concerned with infinity. Some may be discussions of really big numbers or mathematical constructs, but these may or may not necessarily involve infinity.\*If you absolutely cannot stand math stuff, this is not your book. Otherwise, it has a range of math from very simple to really advanced. I just brushed over the very advanced math stuff that I either did not understand or had long ago forgotten, but I didn't really feel like I missed anything.\*There are a slew of amazing visually complex and striking graphical representations of various advanced functions, etc. All are well worth exploring, even if they do not directly involve infinity concepts. The book is loaded with such graphics, a real visual feast.\*The math is rather advanced in some sections but is quite elementary in others. Best of all, a generous collection of computer programs is included which can be used to explore almost every chapter.\*There are a few "mystery" type things, but mostly it is just very exotic, seldom-explored areas of number theories and other areas of mathematics.\*The chapter on Vampire numbers is really cool, I thought. I have seen them mentioned in posts here from time to time, now I understand what they are and why they are so interesting.\*The chapter on recursion has loads of really cool pattern-type stuff that you can easily explore with a PC. A great topic.\*The chapter near the back of the book on random numbers and random number generators is great background for some anyone interested in quantum theory. I had never seen the RNG cloud graphics before, what a unique and ideal way to show the effectiveness of an RNG. As expected, this is a great book, I heartily recommend it for all.

"An original and exciting exploration of how utterly weird, and utterly beautiful, the infinite can be."-Ian Stewart, author of *Does God Play Dice? What can we know about numbers too large to compute or even imagine? Do the tiny bubbles in the froth of a milkshake actually form an infinite fractal pattern? What are apocalyptic numbers and recursive worlds? These and dozens of equally beguiling mathematical mysteries, problems, and paradoxes fill this mind-bending new book. In each chapter, acclaimed author Clifford Pickover poses a delightful brain-teasing challenge that reveals the scope and splendor of the world of infinity. Try scaling the ladders to heaven, playing a game of infinite chess, or escaping from the land of Fractalia. Along the way you will encounter a myriad of intriguing topics from vampire numbers, to abduction algebra, to the infinity worms of Callisto. Every problem and puzzle is presented in a remarkably accessible style requiring no specialized mathematical knowledge. Over one hundred illustrations enhance the text and help to explain the mathematical concepts, and stunning color images created by the author reveal the breathtaking beauty of the patterns of infinity. A variety of computer programs offer additional ways to penetrate the enigma of infinity. For anyone who has ever wondered just how big infinity really is, or just how small, this book will provide an endless source of insight, creativity, and fun. Advance praise for KEYS TO INFINITY "In this the latest of Dr. Pickover's marvelous books, he breaks all finite chains to soar into the transcendental, mind-boggling regions of mathematical infinity. Written in the author's informal, clear style, it is a treasure trove of recreational problems, many published here for the first time, with special emphasis on computer programs and riveting graphics. As you soar, fasten your seat belt."-Martin Gardner, author of *The Magic Numbers of Dr. Matrix* "Inventive, quirky, fun! Pickover presents an engaging, inspiring romp in the realm of number and mathematical thought."-Ivars Peterson, author of *The Mathematical Tourist* "Join Pickover on his wonderful merry-go-round of ideas, and reach for the infinite. Keys to Infinity is an engaging book. . . a must for those wishing to explore the infinite in all its manifestations."-Theoni Pappas, author of *The Joy of Mathematics* "Keys to Infinity contains a near infinity of absorbing themes: from stepladders to the moon and spiral earths, to worm worlds, random chords, and self-similar curlicues. Fascinating!"-Manfred Schroeder, author of *Fractals, Chaos, Power Laws* "What could be more appropriate to the subject of infinity than a book like this one, so dense with wonderful puzzles, anecdotes, images, and computer programs that you could pore over it forever? In *Keys to Infinity*, Pickover has once again assembled a mathematical feast."-Carl Zimmer, Senior Editor *Discover* "Cliff Pickover has produced yet another book of mathematical puzzles, weird facts, computer art, and simple programs to challenge our minds and enthrall us with the beauty of the infinite mathematical world in which we live."-Dr. Julien C. Sprott, author of *Strange Attractors**

.com Clifford Pickover is by most standards a mathematics geek (Ph.D. research scientist for IBM, associate editor for two computer journals), but he is the coolest math geek you might ever meet. For this book he has compiled 30

chapters of mathematical puzzles (and one short story), all having some connection to the concept of infinity. These problems are open-ended; in the event that the reader actually solves the main puzzle, there are enough digressions, diversions, and tangents to keep even the fastest computer running for hours. Computer modelers will be happy to find that instructive BASIC and C language has been provided for most of the problems. Many puzzles have been previously posted on the Internet, and the best or weirdest replies have been included in this book. If phrases like "Monte Carlo bootstrapping approximation" send you off the deep end, not to worry. These are not dry, dusty puzzles. In problems such as "The Loom of Creation," "Grid of the Gods," "Alien Abduction Algebra," and "The Infinity Worms of Callisto," Pickover has couched mathematical puzzles in bizarre science fiction scenarios to make them both fun and challenging. --Eric Warner "In this the latest of Dr. Pickover's marvelous books, he breaks all finite chains to soar into the transcendental, mind-boggling regions of mathematical infinity. Written in the author's informal, clear style, it is a treasure trove of recreational problems, many published here for the first time, with special emphasis on computer programs and riveting graphics. As you soar, fasten your seat belt."-Martin Gardner, author of The Magic Numbers of Dr. Matrix "Inventive, quirky, fun! Pickover presents an engaging, inspiring romp in the realm of number and mathematical thought."-Ivars Peterson, author of The Mathematical Tourist "Join Pickover on his wonderful merry-go-round of ideas, and reach for the infinite. Keys to Infinity is an engaging book...a must for those wishing to explore the infinite in all its manifestations."-Theoni Pappas, author of The Joy of Mathematics "Keys to Infinity contains a near infinity of absorbing themes: from stepladders to the moon and spiral earths, to worm worlds, random chords, and self-similar curlicues. Fascinating!"-Manfred Schroeder, author of Fractals, Chaos, Power Laws "What could be more appropriate to the subject of infinity than a book like this one, so dense with wonderful puzzles, anecdotes, images, and computer programs that you could pore over it forever? In Keys to Infinity, Pickover has once again assembled a mathematical feast."-Carl Zimmer, Senior Editor Discover "Cliff Pickover has produced yet another book of mathematical puzzles, weird facts, computer art, and simple programs to challenge our minds and enthrall us with the beauty of the infinite mathematical world in which we live."-Dr. Julien C. Sprott, author of Strange Attractors From the Publisher An extraordinarily inventive book that explores a series of intriguing and thought-provoking mathematical mysteries, problems, paradoxes, and "big questions" all related in some way to infinity. 70 illustrations plus a four-page color insert enhance the text, including figures that explain the math and striking computer-generated images which bring the examples to life. For each colorful, mind-expanding example the author provides the mathematical solution and a computer program that can be used by readers to investigate the problem and come up with the answer.