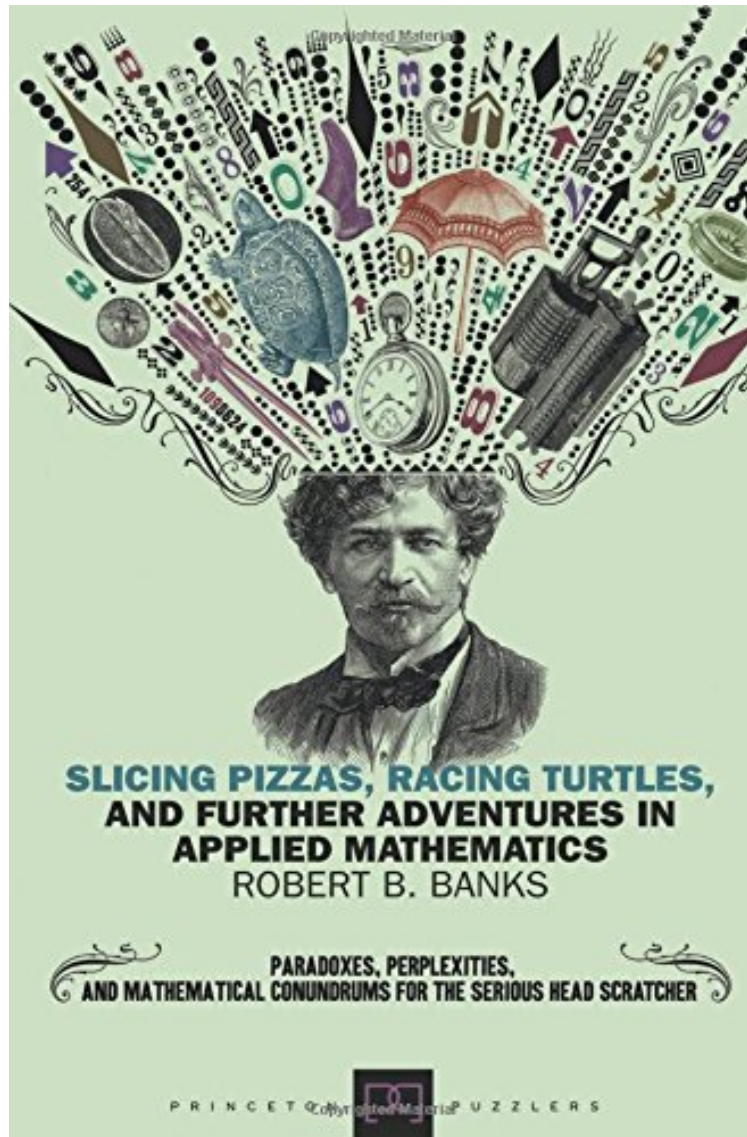


(Free) Slicing Pizzas, Racing Turtles, and Further Adventures in Applied Mathematics (Princeton Puzzlers)

Slicing Pizzas, Racing Turtles, and Further Adventures in Applied Mathematics (Princeton Puzzlers)

Robert B. Banks

*audiobook / *ebooks / Download PDF / ePub / DOC*



DOWNLOAD



+

READ ONLINE

#1841755 in Books 2012-07-22 2012-07-22 Original language: English PDF # 1 8.35 x .76 x 5.511, .65 #File Name: 0691154996304 pages | File size: 56.Mb

Robert B. Banks : Slicing Pizzas, Racing Turtles, and Further Adventures in Applied Mathematics (Princeton Puzzlers) before purchasing it in order to gage whether or not it would be worth my time, and all praised Slicing Pizzas, Racing Turtles, and Further Adventures in Applied Mathematics (Princeton Puzzlers):

18 of 18 people found the following review helpful. Fun with math. By Duwayne Anderson This is one of the most delightful books I've read in a long time. I have one other book by Banks, "Towing Icebergs, Falling Dominoes, and

other adventures in applied mathematics." Like "Towing Icebergs," "Slicing Pizzas" is jam packed with sometimes useful, sometimes trivial, but always entertaining mathematical excursions into some of the most interesting little "didja know?" subjects in applied mathematics. If you have inquisitive kids - or if you are one yourself -- it's a definite must read. The book is a little over 250 pages long, and there are 26 chapters, so each chapter is pretty brief - typically only about ten pages. Most of the mathematics in the book is algebra, trigonometry, geometry, and a little bit of calculus, and the book is literally packed with mathematical equations and diagrams. Just because most of the mathematics is at the high-school level, however, does not mean that it's necessarily easy or trivial. When it comes to "mess'n with math" Banks is a real pro, and I found myself on more than one occasion taking up to 30 minutes filling in the details from one of his equations to the next. What's fun about Bank's book is that it goes after problems you might not have thought about. And when Banks starts going into detail it can really make your head spin. Take, for example, the American flag. How much could you write about the mathematical description of the flag? Well, Banks packs more information than you might suspect into 22 pages (chapter 1 and lots of chapter 2). It seems that just about everything you can say about the flag (mathematically speaking) and about five-pointed stars and golden ratios is tied up in this chapter. Ever wonder what percentage of the flag is blue, white, and red? Banks will tell you. Caroline particularly got a kick out of chapter 3. She is 10 years old and loves pizza, so when Banks decided to write a chapter on how to cut a pizza to get the most number of pieces for a given number of cuts she could relate. Think it's easy? Try working the problem and then compare your answer with Banks. When you are done, do it for watermelons (that is, do it in three dimensions). Have you ever wondered what is the best strategy in getting from one point to the next through a rainstorm? Is it best to run fast and minimize the amount of water on your head whilst soaking your front and splashing your feet and legs? Or, should you run a little slower, get a little wetter on top, but keep your legs and shoes a little less damp? This is yet another example of the seemingly whimsical yet eminently practical and always mathematical problems that Banks entertains us with (chapter 4). Then there are those tidbits for spouting out around the dinner table during awkward times when everyone stops talking. "Hey, guess how many times the oxygen in the world's atmosphere has been breathed by people" Or "Hey, guess how many times the water in the world has been drunk by people" Now here is an interesting idea. Because the earth spins on its axis it is an oblate ellipsoid, which means that its diameter is greater at the equator than at the poles. Banks asks the question, "which rivers run up hill." That is, which rivers have their mouth further away from the earth's center than their heads? Think it isn't possible? Think again and then read chapter 6. Many of the problems that Banks solves deal with spherical geometry and trigonometry. For example, how would you go about calculating the length of the seam on a baseball or tennis ball? Banks does it in chapter 24 in what is probably the most mathematically intense chapter. It's not as easy as you might think. Chapter 9 is about great number sequences, and Banks finds a practical application in - among all things - the problem of how the captain of a destroyer would go about tracking down an enemy submarine. Who would have thought there was a connection? There are too many examples to mention them all, but rounding out my favorites are chapters on how to make a valentine, how to pursue prey, how many people have ever lived on earth, population explosions, and (my very favorite) what makes a rainbow. This book is very much in the same flavor as Bank's other book, "Towing Icebergs." It also has much of the same flavor as James R. Newman's four-volume set "The World of Mathematics." If you are acquainted with any of those books, and found them interesting, I think you will like this one. One of the things I like best about this book is the frequent use of homework assignments. In lots of cases Banks takes the reader through to the bitter end, but in others he leaves tantalizing tidbits for the really enthusiastic readers (though he often provides answers - something welcome, in my opinion). The only real complaint I have about the book is it's utterly useless index. This is such a fun book, and covers so much material that it's real shame you cannot go look up many of the topics it discusses by using the index. For example, some of the most interesting information in the book deals with the golden number and golden ratio, yet neither "golden number," or "golden ratio" is in the index. I read the book with a pen and marker, so I updated the index in several cases. If you love mathematics and doing mental caletshentic I think you will really enjoy this book. 11 of 11 people found the following review helpful. A truly excellent book on applied mathematics By A Customer This book, together with the author's earlier title "Towing Icebergs, Falling Dominoes" belong to the bookshelf of everyone who loves applied mathematics. They contain some of the best examples I have ever seen on "applied" math (versus many other great titles on "pure" math), represented by numerous fun and funny cases. Read the preface and be intrigued by the questions addressed in them. As all good scientists and engineers know, the key to problem solving is really not math, but how to apply them, how to "model" or "approximate" real world cases. That's what these 2 books are all about. To fully appreciate these problem-solving skills, you need to be comfortable with advanced calculus or basic differential equations (probably at the halfway point of these courses). On the other hand, students who are taking these courses should read Banks' books just to see what they are really learning. Math really comes to alive through these pages. I had a great time. 15 of 15 people found the following review helpful. Not for everyone By big nick Don't be misled by the title; this book is not for everyone. Unless you are very comfortable with calculus and have more than a nodding acquaintance with differential equations this book isn't for you. The author does a good job of providing solutions to interesting problems through applied mathematics. However, he does something that mathematics professors always did that used to drive

me crazy and it still does. He sets up a model, develops some defining equations and then makes a leap with something like "using these relationships, it can be established that ..." or "With this information, we easily determine that ..." Some intermediate steps would have been helpful. The book is interesting and entertaining but without a background in calculus and an understanding of ordinary differential equations, you won't like it.

Have you ever daydreamed about digging a hole to the other side of the world? Robert Banks not only entertains such ideas but, better yet, he supplies the mathematical know-how to turn fantasies into problem-solving adventures. In this sequel to the popular *Towing Icebergs, Falling Dominoes* (Princeton, 1998), Banks presents another collection of puzzles for readers interested in sharpening their thinking and mathematical skills. The problems range from the wondrous to the eminently practical. In one chapter, the author helps us determine the total number of people who have lived on earth; in another, he shows how an understanding of mathematical curves can help a thrifty lover, armed with construction paper and scissors, keep expenses down on Valentine's Day. In twenty-six chapters, Banks chooses topics that are fairly easy to analyze using relatively simple mathematics. The phenomena he describes are ones that we encounter in our daily lives or can visualize without much trouble. For example, how do you get the most pizza slices with the least number of cuts? To go from point A to point B in a downpour of rain, should you walk slowly, jog moderately, or run as fast as possible to get least wet? What is the length of the seam on a baseball? If all the ice in the world melted, what would happen to Florida, the Mississippi River, and Niagara Falls? Why do snowflakes have six sides? Covering a broad range of fields, from geography and environmental studies to map- and flag-making, Banks uses basic algebra and geometry to solve problems. If famous scientists have also pondered these questions, the author shares the historical details with the reader. Designed to entertain and to stimulate thinking, this book can be read for sheer personal enjoyment.

From Booklist How fast should you run in a rainstorm to best protect your shoes? As in his previous book, *Towing Icebergs, Falling Dominoes* (1998), Banks turns trivial questions into mind-expanding demonstrations of the magical powers of mathematics. Nor does he restrict himself to trivial questions: his shrewd analyses coax secrets out of such weighty topics as global population growth and the melting of the polar ice caps. Although a few teasers require calculus or spherical trigonometry, Banks can generally get us there with nothing more daunting than algebra and geometry--generously garnished with his unpredictable wit. His lucid and lively approach allows even readers with no advanced training to share the centuries-old fascination with pi and the golden ratio and to peer over Newton's shoulder as he dissects the rainbow. Not a math textbook which teaches readers how to solve set types of problems, this collection of puzzles does something far more important: it teaches us how to delight in unexpected challenges to our numerical imagination. Bryce Christensen "[Banks displays] a playful imagination and love of the fantastic that one would not ordinarily associate with a mathematical engineer. . . . Banks's style is entertaining but never condescending."--*The Christian Science Monitor* "Banks turns trivial questions into mind-expanding demonstrations of the magical powers of mathematics. Nor does he restrict himself to trivial questions: his shrewd analyses coax secrets out of such weighty topics as global population growth and the melting of polar ice caps. . . . Not a math textbook which teaches readers how to solve set types of problems, this collection of puzzles does something far more important: it teaches us how to delight in unexpected challenges to our numerical imagination."--Booklist

About the Author Robert B. Banks (1922-2002) was the author of *Towing Icebergs, Falling Dominoes, and Other Adventures in Applied Mathematics* (Princeton). He was professor of engineering at Northwestern University and dean of engineering at the University of Illinois at Chicago.