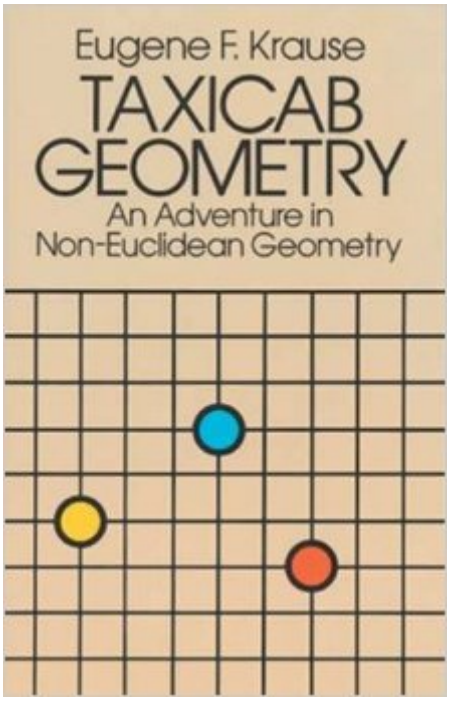
Taxicab Geometry: An Adventure In Non-Euclidean Geometry (Dover Books On Mathematics)



Synopsis

This entertaining, stimulating textbook offers anyone familiar with Euclidean geometry â " undergraduate math students, advanced high school students, and puzzle fans of any age â " an opportunity to explore taxicab geometry, a simple, non-Euclidean system that helps put Euclidean geometry in sharper perspective.In taxicab geometry, the shortest distance between two points is not a straight line. Distance is not measured as the crow flies, but as a taxicab travels the "grid" of the city street, from block to block, vertically and horizontally, until the destination is reached. Because of this non-Euclidean method of measuring distance, some familiar geometric figures are transmitted: for example, circles become squares.However, taxicab geometry has important practical applications. As Professor Krause points out, "While Euclidean geometry appears to be a good model of the 'natural' world, taxicab geometry is a better model of the artificial urban world that man has built."As a result, the book is replete with practical applications of this non-Euclidean system to urban geometry and urban planning â " from deciding the optimum location for a factory or a phone booth, to determining the most efficient routes for a mass transit system.The underlying emphasis throughout this unique, challenging textbook is on how mathematicians think, and how they apply an apparently theoretical system to the solution of real-world problems.

Book Information

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Customer Reviews

I use the ideas in this book in my mathematics teaching in high school. Students learn to think of the

world as Euclidean through most of their instruction; Taxicab Geoemetry gives teachers a very straghtforward way to introduce non-Eucliean Geometry. Admittedly, this book is not thorough, and it is very open ended (which I consider to be positive). Nevertheless, for its intended audience it is outstanding.

Before purchasing this book, realize what it is. This is a book about non-euclidean geometry. Specifically, a specialized form of non-euclidian geometry affectionately referred to as taxi-cab geometry. This is not a table top book, but is a book for mathemeticians and those interested in mathematics. Others need not apply (regardless of how interesting the topic is). This is an excellent introduction to non-euclidean geometry because it strips away common misconceptions about the nature of non-euclidean geometries. This text is excellent for grade school children and those who would like to branch into more advanced non-euclidean geometries like hyperbolic.

This book has about 10-15 pages of reading material and 60 pages of exercises.The topic discussed in the book interesting but fairly simple, had the author decided to actually write and explain the concept, this might be a decent book. Instead, most of the concepts are explained implicitly through 60 pages of utterly repetitive exercises.Unless you are in the mood for some trivial and tedious high school math homework, don’t buy this book

An interesting and very thought provoking introduction to one type of non-Euclidean geometry. This book is suitable for anyone who already knows the Pythagorean Theorem as it uses a variation for the basis of the calculations needed to complete the exercises in the book. It is very easy to read and understand the concepts. Some of the answers to the end of chapter questions are included. The chapters are short and the material is logically presented. Also, it is an interesting book for math lovers who would like to expand their mathematical understanding of how everyday travel works instead of using as the crow flies estimates.

The book is only $6.00 and it describes a non-euclidean geometry - it’s hard to go wrong! This is really more of a workshop book - the math that’s in it is pretty darn simple, yet, it encourages a certain mathematical exploration. So, if you’re getting burned out on Calculus and the other heavy stuff, pick this gem up (Did I mention it’s only $6.00?) and do what the original mathematicians did: Play with math.My only problem with the book, is that some of the chapters could use some more detail - on the other hand, it does encourage the reader to think a bit more deeply about what’s

being presented.

A challenging mind-tweaker, so deceptively simple in concept and as commonplace in its application as traveling our city streets. When did you last delve into a non-Euclidean world with contradictory feelings of familiarity and astonishment? Me--never! Short chapters put a concept to work that you explore through exercises. Get some graph paper and discover Ideal City and its geometry of square circles and area-lines. Accessible for those of any age who have a moderate interest in things geometric.

I learned briefly about the existence of taxicab geometry in a college math class, but I had never considered the implications for various geometrical structures or for other mathematical definitions. I can’t wait to explore this math further myself.

A curious and different look at graph theory based on grids. Ideas presented by the author will not be seen in the usual math texts. Writing is clear, direct, and not extensive (on purpose); as stated the author wants us to explore the concepts.Not trying the exercises will limit a clear development and progress within the topic. Good for those interested in puzzles, problem solving, or math. Not a PhD exposition, but more on the lines of Martin Gardner specific to one topic.Recommended for those that like math -thinking, and exploring; and really kind of fun once you get the graph paper out.

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