

## <<第一届丘成桐中学数学奖获奖论文集>>

### 图书基本信息

书名：<<第一届丘成桐中学数学奖获奖论文集>>

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## 前言

任何科技发展都不能缺乏数学作为根基，数学在科技年代，地位日益重要。而教育的目的不仅要学生懂得书本上介绍的基本知识，也需要培养学生应变、创新和领导的能力。学习基本知识可以在不断的考试中磨炼出来，我想这方面中国的学生在考试里面磨炼不少了，至于应变、创新和领导能力，恐怕单从考试是不够的。

为激发全球华人青少年对数学的兴趣，提升他们的学术水平，并及早发掘与培养全世界的华人数学英才，由我和泰康人寿保险股份有限公司共同主办的“丘成桐中学数学奖”竞赛于2008年在北京正式启动。

第一届“丘成桐中学数学奖”颁奖仪式定于2008年10月24日在北京举行，届时，美国哈佛大学、布朗大学、斯坦福大学等名校的本科招生主任将会出席仪式，并面试部分获奖学生。

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### 内容概要

“丘成桐中学数学奖”由国际著名华人数学家丘成桐教授与泰康人寿保险股份有限公司联合设立。该奖项旨在激发和提升全球华人中学生对于数学研究的兴趣和创新能力，发现和培养有前途的年轻数学天才，增进海内外华人中学生的相互了解与友谊。

第一届“丘成桐中学数学奖”颁奖仪式于2008年10月24日在北京举行，本书收录了获得金奖、银奖、铜奖的优秀论文，由高等教育出版社和波士顿国际出版社在全球范围内发行。

本书可供丘成桐中学数学奖参赛学生和指导教师参考，也可供其他热爱数学的中学生阅读。

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### 书籍目录

丛书序我与数学的缘分(代序)丘成桐中学数学奖手册Guideline of Shing-Tung Yau High School  
Mathematics AwardsGold Award A Research on the Minimum Prime Quadratic Residue Modulo a PrimeSilver  
Award Invertibility Probability of Binary MatricesBronze Award Optimized Methods of the Equalized Sprinkling  
Irrigation for Greenery Patches Modeling and Planning of Snow Sweeping on Main Roads Some Arithmetic  
Properties about the Factor of the Solution to Pell Equation and Its Applications in Diophantine Equations

章节摘录

插图：Mind on mathematics is a theoretical foundation, based on which real problems can be solved. Undoubtedly only with good model building, analyzing and calculating, can various optimizing problems be worked out. As high school students, due to our limited mathematical knowledge, the methods we take to solve problems are not very far beyond the textbook. So we focused on a problem close to daily life as well as one we can more or less solve on our own. Our inspiration came from the small lawn near our classroom in the junior school. Every time the spouts did the irrigation, there was a great amount of water spilled on the hallway, and even sometimes the water would went through the open windows into the classroom, which caused many inconveniences as well as much waste. In today's world where drinking water is badly in need, it is, with no doubt, very meaningful to maximally equalize the amount of water a certain area gets in order to decrease the amount of water wasted. Through the information we got, we found that there were three factors on which sprinkling irrigation mainly depends: intensity, equilibrium and diameter of water drops. We began to develop interests in the equilibrium factor and decided to make an optimized proposal by a series of mathematical methods. Thereupon this paper primarily focuses on the degree of homogeneity in the sprinkling irrigation.

编辑推荐

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