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<<2006恒隆数学奖获奖论文集>>

图书基本信息

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内容概要

《2006恒隆数学获奖论文集》集结了2006年“恒隆数学奖”的获奖论文及数学家的精辟点评。每篇论文都是得奖者自定的数学专题之研习结果，参赛学生经过一年多的努力，得以训练多元智能和创意思考能力，并活学活用数学知识，摆脱传统死读书的学习模式，从中取得考试外的满足感和喜悦感，借以领略数学的美。

每两年一届的“恒隆数学奖”由恒隆地产和香港中文大学数学系主办，乃为香港中学生而设的数学研究比赛。
由恒隆地产有限公司董事长陈启宗先生和世界杰出数学家、1982年费尔兹奖及2010年沃尔夫奖得主丘成桐教授于2004年创立，目的是鼓励中学生尽量发挥数理创意，激发他们对数学及科学的求知热情。

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章节摘录

版权页： 插图： When we started to do our project,we tried to investigate whether the theorems in geometry we have learnt in school are true in non—Euclidean geometry.Lacking time and background knowledge,we chose to work on Poincar é disk model of hyperbolic geometry first,instead of proving or disproving those theorems in general situations. In the course of our work,we used Excel to calculate the Cartesian equations of hyperbolic lines and circles.This helped US find easily that many theorems about circles are not valid in Poincar é model.We were also interested in the existence of Euler line and nine—point circle.but found that both do not exist. Our interest then shifted to construction problems.We learnt methods to construct hyperbolic lines（dlines） and circles using Euclidean com pass and straightedge,from"Compass and Straightedge in the Poincar é Disk"written by Chaim Goodman—Strauss.Bearing in our minds that in Poincar é model,circles were Euclidean circles while lines were circular arcs,we thought that the construction problems of tangents to circles in Poincar é model should be interesting. We have solved three construction problems by Euclidean compass and straightedge in our project,namely. 1.construction of the tangent to a circle at a point. 2.construction of the tangents to a circle from an external point. 3.construction of the four common tangents to two circles. In the process,we tried to imitate those methods used in Euclidean geometry to construct tangents to circles.But the methods we use in Euclidean geometry require the fact that the angle in a semi—circle is a right angle,which is not true in non—Euclidean case.Finally,we developed the method of construction in a totally different way.

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《2006恒隆数学获奖论文集》不仅可供中学生阅读，亦可供数学教师和数学爱好者阅读参考。

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