## Preface

Since the inaugural Hang Lung Mathematics Awards (HLMA) held in 2004, we have been extremely pleased by the enthusiasm and interest displayed among students, teachers and secondary schools who have participated. 2008 HLMA marked the third occasion of the competition held in Hong Kong.

Before the launch of the competition in 2004, we were concerned whether students and teachers in Hong Kong would be interested in this type of research-based competition, and whether it would be too demanding of the students. In hindsight, we are pleased to say that those concerns have been unfounded. Students and teachers have capably risen to the challenge, demonstrated creativity in selecting their research topics and displayed remarkable ingenuity in applying mathematics to solve problems or prove a proposition.

This book has gathered the research papers of the winners of the 2008 HLMA which have reached a high level of academic standards in terms of methodology, execution and scholarship. It is exciting to witness students' tackling a wide variety of challenging mathematical problems with great skill and imagination. They seemed to have discovered how enjoyable mathematics can be.

We are also proud to see that HLMA has been winning tremendous and continuous support from not only the local, but also the international academic community since its establishment. It is our hope that HLMA will continue to motivate young-sters to think more critically and induce their interest in mathematics. We also yearn to position HLMA as a pioneering model encouraging the business sector to support other academic pursuits, so that the government, the business and the education community can join forces to discover talents for our society.

Professor Shing-Tung Yau Director, The Institute of Mathematical Sciences The Chinese University of Hong Kong Mr. Ronnie C. Chan Chairman Hang Lung Properties

October 2012