

Preface

It is said that Plato had inscribed above the entrance to his academy:

Let no-one unversed in Geometry enter here

I have always believed that a good grounding in Geometry gives one a good start for mathematical explorations. Solving geometrical problems involves experimentation. One has first to draw a diagram representing the given information, and then to add to this diagram in order to find a proof of the required result. This can lead to very messy diagrams, which one should then redraw with only the necessary constructions. I am constantly reminded of what I was taught in High School — **GRCP**:

- | | |
|-------------------|---------------|
| (1) Given: | (2) Required: |
| (3) Construction: | (4) Proof. |

The origins of this book lie in a course on Euclidean Geometry given at the third year level at Memorial University of Newfoundland, in St. John's.

Although the students in the course had studied Trigonometry and basic Euclidean Geometry in high school, I found that they had forgotten most of it, and so had to review it. They had no adequate source materials available to them, hence, the genesis of this book. This book contains over 200 problems, of which, most have solutions given.

Added to the work are some modern results. The sections on Remarkable Concurrencies and Remarkable Bisections contain some of my own work.

This book should prove useful to students at high school and undergraduate levels who have an interest in the various mathematics competitions. These competitions act as a stimulus to many students, who enjoy problem solving. I have been involved in helping in such events for many years, and still find it such an enjoyable occasion when students are having enjoyment solving mathematical problems.

Bruce Shawyer, Professor Emeritus
Department of Mathematics and Statistics
Memorial University of Newfoundland, St. John's,
Newfoundland and Labrador, Canada.