

Preface

I never intended to write a handbook on math circles. I was simply delighted that circumstances should conspire that I was able to organize the Stanford Math Circle in the summer of 2005 and to have the opportunity to lead around half of the sessions during its first year. I thoroughly enjoyed the enterprise and felt that it was quite successful as a means for presenting great mathematics to high school students in the area. But as they say, no good deed goes unpunished.

The following spring Paul Zeitz, the director of the San Francisco Math Circle, mentioned that the Mathematical Sciences Research Institute (MSRI) intended to assemble a resource for individuals who were interested in launching a math circle at their institution. It would be a complete package containing advice on creating and sustaining a math circle, tips on how to effectively lead a math circle, some sample presentations, a DVD that would highlight math circles in action, a companion web site to supplement the handbook, and more. A math circle in a box, as the project came to be dubbed.

The first thought that came to mind was, “That’s a wonderful idea; I would love to receive a copy of those materials when they are finished.” However, I could not suppress my enthusiasm for becoming involved in such a project and very shortly found myself faced with the daunting task of creating the handbook now before you. In the process I discovered that I had more to say about organizing and leading math circles than I realized. But I have also learned an enormous amount from my colleagues around the country who have been running these mathematical outreach events for much longer than myself. I am grateful to all those individuals who took the time to share their accumulated wisdom with me—summaries of their accounts appear as “Circle Snapshots” sprinkled throughout the text, and their

collected knowledge is incorporated into practically every single page. Besides the individuals featured in the snapshots I also had very fruitful and enlightening conversations with Mark Saul, Scott Carter, Dan Silver, Cornelius Pillen, Jennifer Jeffrey, Sharon Madison, and Steven Krantz.

Of course I am indebted to Paul Zeitz for recommending the project to me in the first place. I would also like to acknowledge the steadfast guidance and encouragement from the people at MSRI who conceived of and followed through with this project: David Eisenbud, Hugo Rossi, Jim Sotiros, and Kathleen O'Hara. (It was Hugo Rossi, I believe, who originally coined the phrase "circle in a box.") Jim Sotiros also deserves a great deal of credit for sharing his expertise on raising funds; he contributed several sections on the subject towards the end of Chapter 2. The author-support team at the AMS had many helpful suggestions as well; in particular, the "Circle Snapshots" pages are far more effective now than they were originally. I greatly appreciate their advice.

I was encouraged by the fact that many fellow math circle enthusiasts were eager (or at least willing) to read through the preliminary manuscript and offer helpful feedback. My thanks to Tatiana Shubin, Zvezdelina Stankova, Jim Sotiros, and Matt Beck for taking the time to catch typos and offer comments. I am especially indebted to Hugo Rossi for his comprehensive, detailed, and insightful remarks. His suggestions led to many substantial revisions; the handbook was markedly improved as a result.

Finally, if one wishes to truly experience and appreciate the vitality of a math circle, there is no substitute for seeing one in action and hearing the students and mathematicians involved speak about them firsthand. For this reason MSRI has undertaken a project to document math circles. The result of their efforts is the wonderful DVD *Within the Circle*, available upon request from MSRI. For further information contact them by writing to info@mathcircles.org, calling 510-642-0143, or visiting their web site devoted to math circles, www.mathcircles.org.