

Editorial

Dear Readers,

welcome to *Parabola*!

In the last issue of *Parabola*, I reflected on the nature of mathematics and mentioned just three aspects of this multifaceted nature: maths is an art form, offering us beauty, enjoyment, and humour; it is a game that invites creativity, exploration, and collaboration; and it is a scientific discipline that provides us with insight and technology.

This issue of *Parabola* showcases these aspects of mathematics through three excellent articles. In the first article, our expert problem setter David Angell shows how to explore and develop beautiful and interesting art from mathematical pattern-creating methods. These methods are easy to apply, so please feel welcome to play with them and to submit your resulting art work, and any other mathematical artwork!

In the second article, Sin Keong Tong demonstrates the joys of exploration and discovery in maths. To enhance this pleasure of reading this article, you could conduct some exploration of your own, by considering a triangle with side lengths all equal to one, and try to work out the radius of the biggest circle that fits inside this triangle, and also try to work out the radius of smallest circle that contains the triangle. This article shows how to calculate these radii and the radii that you find by looking at this problem in higher dimensions.

The third article, by James O. Hortle, provides a clear and fascinating introduction to *support vector machines* which describe one method from the presently popular technologies of machine learning and artificial intelligence. Not long ago, these technologies belonged to the mythical realms of cutting-edge supercomputing research groups; now, these technologies are accessible and highly useful to data analysts, software developers, engineers and a wide range of researchers.

In this issue, you will also find more of David Angell's beautifully set problems, another of Robert Schneider's hilarious comics strips *2Z Or Not 2Z*, and the problems, solutions, and list of winners of this year's *UNSW School Mathematics Competition*.

This is the 57th year of the Competition, just a few years older than *Parabola*. These two have been companions for more than four decades, serving mainly high school students in the state of New South Wales, here in Australia. In recent years, however, the readers and contributors of *Parabola* have broadened to a quickly growing international community, with 1 300 000 visits to *Parabola* webpages last year alone.

I welcome you and anyone else who might be interested in maths to join and participate in this community, by reading the articles, solving the problems, and, not least, feeling welcome to submit your own material as well!

Happy reading, solving and contributing!

Thomas Britz
Editor