Elliptic Tales: Curves, Counting and Number Theory

Book Review by Anthony Shannon

Avner Ash, Robert Gross. 2012. Elliptic Tales: Curves, Counting and Number Theory. Princeton, NJ: Princeton University Press; 280pp Cloth ISBN: 9780691151199 eBook ISBN: 9781400841714 USD29.95, GBP19.95 [Jessica-pellian@press.princeton.edu; cpriday@pupress.co.uk]

The authors are mathematicians at Boston College, USA.

This book builds on undergraduate mathematics to examine elliptic curves, to lead into an unsolved problem in modern number theory, namely the Birch and Swinnerton-Dyer Conjecture, one of the



Clay Mathematical Institute's million dollar prize problems. The book explains the conjecture and develops the idea of counting the solutions to elliptic curves, essentially as cubic equations in two variables.

The basic number theory of elliptic curves leads to connections between analysis and algebra, as well as algebraic geometry and number theory. It is an accessible entry for the reader into abstract mathematical concepts that are deep and beautiful. Both the cloth and electronic copies of the book are priced the same.