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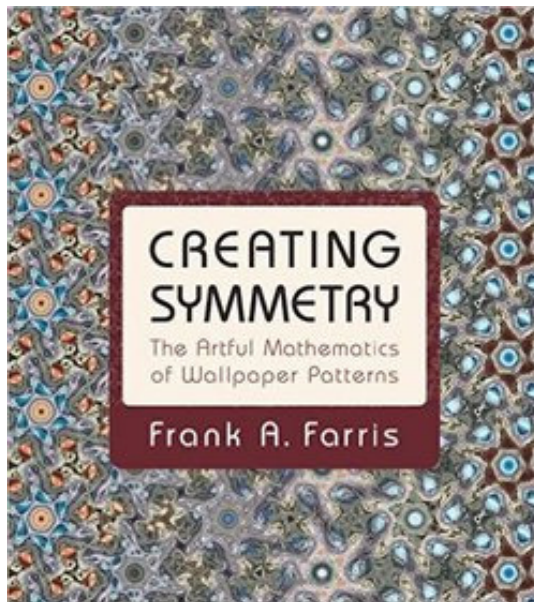
Tea and Origami

Did you know that origami can be studied through a mathematical lens? It can (and is!), and it's engaging and entertaining to both study the folds and to make them yourself. If you're interested in trying your hand at some origami, come to the Tea and Origami event hosted by the Math and Stats Department on October 6th from 3:00 - 4:00 p.m. in CMC 328.

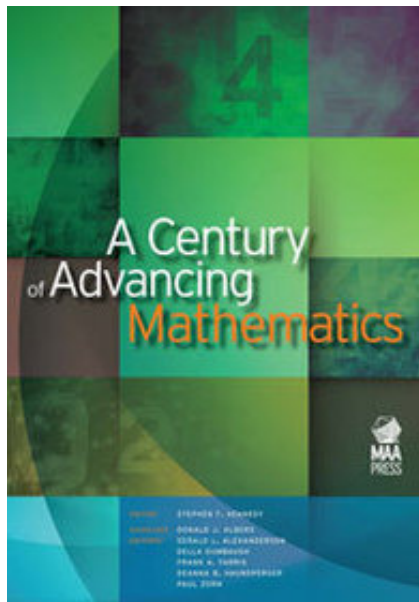## Reading in the Math Department: This Week's Picks

Creating Symmetry: The Artful Mathematics of Wallpaper Patterns

The author of this book, Frank Farris, visited Carleton for the Fall 2011 term. He left behind a series of stunning images that had been transformed into beautiful, symmetric wallpaper patterns. And this book, which was only recently published, was inspired by that work (which currently hangs in the department foyer!).

Combining elements of geometry, abstract algebra, and partial differential equations, this beautifully-illustrated book takes an entirely novel approach to creating images with symmetry-- one that's hands-on, accessible, and also challenging. Farris leads the reader into areas of mathematical inquiry seldom encountered in undergraduate-level mathematics as he explores the transformation of ordinary pictures into murals of whirls, gradients, and rosettes. It's a stunning fusion of mathematics and art-- so if you're curious as to why there are exactly 17 basic types of wallpaper or what his images look like, pick up the book in the department foyer to find out!

A Century of Advancing Mathematics

The MAA was founded in 1915, and is celebrating 2015 as its centennial! In honor of this milestone, *A Century of Advancing Mathematics* was published under the direction of our very own Steve Kennedy as editor! Inside the text, you'll find a collection of 35 essays by a diverse group of authors. And if you needed any more reason to peek inside this volume, one of those authors is Eric Egge!

With essays ranging from the expository and introductory to the historical and from the pedagogical to the cultural, if you're interested in what's happened in math during the last hundred years, this text is sure to captivate you. Age-old mysteries have been solved, new fields of study have been discovered, and our conception of what mathematics is has been revolutionized. Drop by the department foyer to thumb through a few pages, read an essay or two, or to read the whole volume!

Job, Internship, and Graduate Opportunities

UMN Graduate Program in Biostatistics: Fight Ebola with Math
Interested in learning about biostatistics, an exciting field that blends biology, medicine, and math? The University of Minnesota offers MPH, MS, and PhD programs in biostatistics, and is hosting an open house for students to learn about the program at their Twin Cities campus on Friday, October 23rd, from 10:00 a.m. - 2:30 p.m. If you can't make it to the event in person, it will also be live-streamed and archived for later viewing: details are at www.biostat.umn.edu.

L.E.K. Consulting: Associate
L.E.K. Consulting is a global strategy consulting firm that specializes in corporate strategy, transaction services, and performance improvement. The focal point of an L.E.K. project team is at the Associate level. The Associate is responsible for the comprehensive research and analysis upon which each client engagement is based. Success of the team is dependent upon the quality and creativity of the analysis that Associates perform under the guidance of senior team members. 3.4 GPA required. Apply through the Tunnel and through L.E.K.'s online hiring portal.

Council of Economic Advisors: Intern
The White House Council of Economic Advisors is currently accepting applications for full- and part-time internships during the fall semester. The Council of Economic Advisers provides the President with objective economic analysis and advice on the development and implementation of a wide range of domestic and international economic policy issues. Interns at CEA are responsible for helping staff research a wide range of macroeconomic, microeconomic, and international issues. Typical responsibilities include drafting memos, literature reviews, and reports, producing charts, and fact checking CEA products.

New York Federal Reserve: Research Analyst
Research Analysts assist economists in the analysis of current public policy issues and events as well as long-term academically-oriented research projects. RAs also help economists conduct current analysis and other short-term research on monetary policy, bank regulation, payments systems, financial markets, and the state of the U.S. and global economies. Working as an analyst at the Fed, you'll program using packages such as SAS,

STAT, and MATLAB, create and implement models for financial markets, and write and assist with reports and presentations on current economic conditions. Apply at www.newyorkfed.org/careers.

Problems of the Week

Here is the next installment of problems for you to ponder. As usual, you are encouraged to submit your solutions to one or both of these by putting them in my mailbox in the CMC, or by sending via solutions via e-mail (gnelson). If you solve a problem correctly (before my own solution to it is posted, of course), your solution will be acknowledged in this space, and you will also be eligible for a modest prize. In order for your solution to be mentioned in the Gazette that comes out at the end of a particular week, it should reach me by Monday evening of that week. That means I will be looking for your solutions to these problems by October 12.

1. Find, with justification, all possible sets of five positive integers with the property that the sum of these five integers equals the product of the five integers. For example, $(1, 1, 1, 1, 1)$ does *not* have this property because $1 + 1 + 1 + 1 + 1 \neq 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1$.

2. Calculate

$$\lim_{x \to \infty} x \int_0^x e^{t^2 - x^2} \, dt$$

   or show the limit does not exist. Be sure to justify your answer.

My apologies for the misprints in the first set of problems. Please feel free to alert me to any typos that might appear in the future. If any do exist, look for corrections on the white board. As of press time, I have received a partial solution to the first of the two problems from the previous issue of the Gazette. There is still time to submit a solution to the second.

-Gail Nelson

If you're having trouble seeing the Problem of the Week, try enabling images for the message.

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