

L'Augarithms



vol. 25.10 Visit us at <augsborg.edu/home/math/forStudents.html> We're prettier in color. Really.

April 4, 2012

Mathematics Colloquium Spring Lineup

Colloquia are typically held Wednesdays 3:40—4:40 in Oren 113. Immensely appealing refreshments are served.

Jan.	18	Chandra Erdman, '02, Ph.D., US Census Bureau
Feb.	1	Ken Kaminsky, Augsburg College
	15	Loren Larson, Northfield, Minnesota
	22	Sadie Dietrich, University of Minnesota
Mar.	7	Karen Saxe, Macalester College
Apr. →	4	Thomas Sibley, St. John's University ¹
	18	Danrun Huang, St. Cloud State University

¹This week's speaker

Idempotents à la Mod

Thomas Q. Sibley
St. John's University

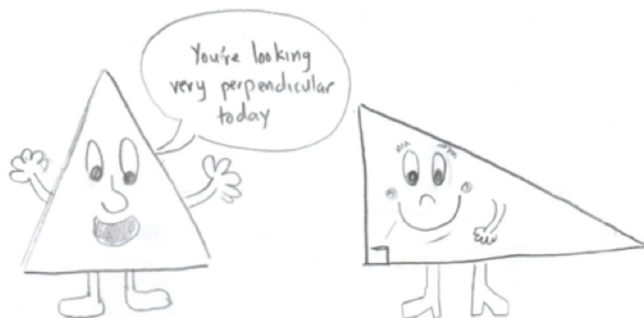


An *idempotent* x , satisfies the simple equation $x^2 = x$. In ordinary algebra, this equation is easy to solve and so, pretty boring. However, when we change the setting even a little, some interesting mathematics appears. Bring a pencil, paper and your curiosity to explore together some of the mathematical potential of idempotents.

Thomas Q. Sibley

Sweets and beverages will be offered.

Cartoon Corner (by John Zobitz)



An orthogonal complement

Problem of the week...

One hundred ants are dropped on a meter stick. Each ant is traveling either to the left or the right with constant speed 1 meter per minute. When two ants meet, they bounce off each other and reverse direction. When an ant reaches an end of the stick, it falls off.

At some point all the ants will have fallen off. The time at which this happens will depend on the initial configuration of the ants.

Question: over ALL possible initial configurations, what is the longest amount of time that you would need to wait to guarantee that the stick has no more ants?

❖ Source: Su, Francis E., et al. "Ants on a Stick." Math Fun Facts. <<http://www.math.hmc.edu/funfacts>>.

Puzzle of the week...

No one counted triangles in the PZOTW from vol 25.09. There were, by the way, 78 triangles. Here is a new PZOTW. Let's get in there and solve this:

An *Egyptian fraction* is a number expressible as the sum of distinct positive unit fractions. For example, $1/2 + 1/7$, or $1/3 + 1/5 + 1/11$ are Egyptian fractions ($9/14$ and $103/165$, respectively). Express $19/94$ as the sum of two positive unit fractions.

❖ Submit POTW & POZTW solutions to kaminsky@augsborg.edu, or under Ken's door at SCI 137E, or in the puzzles and problems box just outside of Su's office.

L'Augarithms

The approximately bi-weekly newsletter
of the

Department of Mathematics
at Augsburg College

Editor.....Kenneth Kaminsky
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Classy Insults²

“He had delusions of adequacy.” - Walter Kerr

“He has all the virtues I dislike and none of the vices I admire.” - Winston Churchill

“I have never killed a man, but I have read many obituaries with great pleasure.” Clarence Darrow

“He has never been known to use a word that might send a reader to the dictionary.” - William Faulkner (about Ernest Hemingway).

“Thank you for sending me a copy of your book; I’ll waste no time reading it.” - Moses Hadas

“I didn’t attend the funeral, but I sent a nice letter saying I approved of it.” - Mark Twain

“He has no enemies, but is intensely disliked by his friends..” - Oscar Wilde

“I am enclosing two tickets to the first night of my new play; bring a friend... if you have one.” - George Bernard Shaw to Winston Churchill

“Cannot possibly attend first night, will attend second... if there is one.” - Winston Churchill, in response.

“I feel so miserable without you; it’s almost like having you here.” - Stephen Bishop

“He is a self-made man and worships his creator.” - John Bright

“I’ve just learned about his illness. Let’s hope it’s nothing trivial.” - Irvin S. Cobb

“He is not only dull himself; he is the cause of dullness in others.” - Samuel Johnson

“He is simply a shiver looking for a spine to run up.” - Paul Keating

“In order to avoid being called a flirt, she always yielded easily.” - Charles, Count Talleyrand

“He loves nature in spite of what it did to him.” - Forrest Tucker

“Why do you sit there looking like an envelope without any address on it?” - Mark Twain

“His mother should have thrown him away and kept the stork.” - Mae West

“Some cause happiness wherever they go; others, whenever they go.” - Oscar Wilde

“He uses statistics as a drunken man uses lamp-posts: for support rather than illumination.” - Andrew Lang (1844-1912)

“He has Van Gogh’s ear for music.” - Billy Wilder

“I’ve had a perfectly wonderful evening. But I’m afraid this wasn’t it.” - Groucho Marx

²Mostly from before the internet. Many thanks to Stuart Klipper for forwarding us these gems.

The Mighty Mathematician You’ve Never Heard Of³

By NATALIE ANGIER

Published: 3/26/12 in the New York Times

Scientists are a famously anonymous lot, but few can match in the depths of her perverse and unmerited obscurity the 20th-century mathematical genius Amalie Noether.



Amalie Noether

Albert Einstein called her the most “significant” and “creative” female mathematician of all time, and others of her contemporaries were inclined to drop the modification by sex. She invented a theorem that united with magisterial concision two conceptual pillars of physics: symmetry in nature and the universal laws of conservation. Some consider Noether’s theorem, as it is now called, as important as Einstein’s theory of relativity; it undergirds much of today’s vanguard research in physics, including the hunt for the almighty Higgs boson. Yet Noether herself remains utterly unknown, not only to the general public, but to many members of the scientific community as well.

When Dave Goldberg, a physicist at Drexel University who has written about her work, recently took a little “Noether poll” of several dozen colleagues, students and online followers, he was taken aback by the results. “Surprisingly few could say exactly who she was or why she was important,” he said. “A few others knew her name but couldn’t recall what she’d done, and the majority had never heard of her.”

Noether (pronounced NER-ter) was born in Erlangen, Germany, 130 years ago this month. So it’s a fine time to counter the chronic neglect and celebrate the life and work of a brilliant theorist whose unshakable number love and irrationally robust sense of humor helped her overcome severe handicaps — first, being female in Germany at a time when most German universities didn’t accept female students or hire female professors, and then being a Jewish pacifist in the midst of the Nazis’ rise to power.

Through it all, Noether was a highly prolific mathematician, publishing groundbreaking papers, sometimes under a man’s name, in rarefied fields of abstract algebra and ring theory. And when she applied her equations to the universe around her, she discovered some of its basic rules, like how time and energy are related, and why it is, as the physicist Lee Smolin of the Perimeter Institute put it, “that riding a bicycle is safe.”

³For the complete article, visit nytimes.com/2012/03/27/science/emmy-noether-the-most-significant-mathematician-youve-never-heard-of.html?_r=1&scp=1&sq=amalie%20noether&st=cse