

math news

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From April

PROBLEM: There are 50 pennies lying on a table, 10 heads up, 40 tails up. Your task is to divide the pennies into two piles such that each pile has the same number of heads. The piles do not need to have the same number of coins. You may turn pennies over as you divide them. You are blindfolded, and have no way to distinguish heads from tails.

SOLUTION: Divide the coins into a pile of 40 and a pile of 10 at random. The heads will be divided somehow between the two piles, with N in one and $10 - N$ in the other, with $0 \leq N \leq 10$. The original coin distribution is then

	Pile 1	Pile 2
Total	10	40
Heads	N	$10 - N$
Tails	$10 - N$	$30 + N$

Turn over all 10 coins in Pile 1, and you will have done it.

	Pile 1	Pile 2
Total	10	40
Heads	$10 - N$	$10 - N$
Tails	N	$30 + N$

Welcome, Dr. Sarah Dumnich

The FSU Department of Mathematics is very pleased to welcome the newly appointed Assistant Professor Dr. Sarah Dumnich, who just received her Ph.D. in functional analysis in May 2016 from Lehigh University. She also earned an M. S. from Lehigh and a B.A. from Washington and Jefferson College. Between Undergraduate studies and graduate studies, she was able to tour Spain, making use of her undergraduate minor subject. (*Si, Español.*)

At Frostburg, she is currently teaching Mathematical Problem Solving, Elements of Applied Probability and Statistics, and College Algebra. Her goals in the classroom are to make her students feel comfortable asking questions, teach them to take an active role in their own education, and inspire a curiosity in mathematics.

Born not too far away in Greensburg, PA, our new colleague is a fan of the Steelers and the Penguins and enjoys crossword puzzles, running, and tennis. She and husband John have recently acquired a kitten named "Petunia". (The cat prefers "Tuna", we're told.)

KME Corner

Kappa Mu Epsilon, national mathematics honor society, will meet on Thursday, September 29 at 5:00 in CCIT 245. Officers this year are Rebecca Lee (President), James West (Vice President), and Emma Seibert (Treasurer). The Secretary slot is still open.

Other MATH activities

A new group is being introduced for MATH students to augment the already-successful Board Game Nights (BGN) and Rock Band Nights (RBN), called the Dead Poet Society (DPS). Named after the film, in which students are encouraged to find their yawp, our DPS will focus on mathematical yawp – "that expression of surprise to delight at discovering the beauty of a mathematical idea or argument." The schedule for October is 10/03: RBN; 10/10: DPS; 10/17: BGN; 10/24: DPS; 10/31: RBN.

Earn some Swag!

The Department of Mathematics wishes to increase the feeling of community within the department. A good way of doing that is by having Swag! (e.g.: tee shirts, water bottles, bracelets, etc.) Students can earn Swag Points, which they can trade in for departmental tee shirts, water bottles, bracelets, and the like. For example, a tee shirt is 12 swag points. Initially, points will accumulate thusly:

- 1 point for each Board Game Night
- 1 point for each Rock Band Night
- 2 points for each Dead Poet Society meeting
- 1 bonus point for bringing sharable food to an event
- 3 points for each verified and submitted puzzle solution

Math Horizons Problem 343

Two jellybeans are chosen simultaneously, one by Alice and one by Bob, from a jar containing g green and r red jellybeans. Alice wins if they have the same color, and if not, Bob wins.

1) Find all $g, r > 0$ for which this game is fair—that is, for which Alice and Bob have an equal probability of winning. In this case, what can you say about $g+r$?

2) If there are n jellybeans in the jar and Alice is more likely to win, express $|g-r|$ in terms of n .

Students may submit solutions to a faculty member at FSU and then perhaps to [MATH NEWS](mailto:MHsolutions@maa.org) or to MHsolutions@maa.org by November 9, 2016.