

Goodσελλ Gazette

Carleton College
Northfield MN 55057

The newsletter for the Carleton mathematics and statistics community

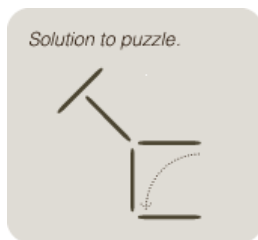
30 October 2009
Vol. 28, No. 7

As If We Don't Have Enough Problems Already...

The annual NCS problem-solving contest will take place this year on Saturday, November 14, from 9 am to noon. As in past contests, participants will work in teams of up to three on ten problems, which are usually at a wide range of difficulty levels. Our part of the contest will take place here on campus, and we'll follow it up with free pizza for lunch. If you are interested in participating, please let Eric Egge know who will be on your team by Thursday, November 12. If you want to participate but don't have a team, let Eric know that too and he might be able to help you find others with whom you could form a team.

Gardner Puzzle

Below is the solution to last week's puzzle by Martin Gardner. Reminder of the problem: Change the position of just one pick and leave the giraffe in exactly the same form as before. The re-formed animal may alter its orientation or be mirror reversed but must have its pattern unchanged.



Card Colm

Explore MATHEMAGIC! Colm Mulcahy investigates mathematical principles and effects in the art of card tricks. His theories and tricks are narrated online at www.maa.org/columns/colm/

Visit the MAA sponsored site to learn about his latest trick, titled "Poker-Face Over the Phone," which is dedicated to our old friend, Martin Gardner.

Research Associate

The Economic Research Department at the Federal Reserve Bank of Kansas City is recruiting for the position of Research Associate. The department has openings for Research Associates in Macroeconomics and Monetary Policy; Banking and Financial Markets; and Payment Systems Research. Contact Deanna Haunsperger for application information.

Hyperbolic Wallpaper

Suppose you lived in a world where given any line L and a point P not on that L , there were infinitely many parallel lines to L through P . What would your world look like to you living in it? What would it look like to an omniscient being looking down on your world? What color is the sky in your world? (Or, at least, what does the wallpaper on your walls look like?) To learn more about this space, visit www.maa.org/news/092409farris.html

Between the Folds

Think origami is just paper planes and cranes? *Between the Folds*, a Green Fuse Films documentary, introduces a determined group of theoretical scientists, mathematicians and fine artists who have abandoned careers and scoffed at hard-earned graduate degrees to forge new lives as modern-day paper folders. Together they reinterpret the world in paper, creating a wild mix of sensibilities towards art, science, creativity and meaning. This November, *Between the Folds* will tour US cities with Community Ci-

nema, and in December, the documentary will be broadcast on PBS's Emmy Award-winning series, Independent Lens. Visit www.greenfusefilms.com/screenings.html for information on screening dates and watch a preview at www.youtube.com/watch?v=VZJ7HvVvDBY

Summer Internship with NASS

Interested in putting your statistics skills to use? The US Department of Agriculture, specifically the National Agricultural Statistics Service (NASS), may have an opportunity for you! The NASS employs mathematicians to help gather basic data about US agriculture (such as livestock inventories, crop acreage and yield, and economic data). For information about an unpaid summer internship, contact Jennifer Rosenbaum Maiwurm ('00) at rosenbaj@fastmail.fm

Eat More Chocolate this Halloween

Studies have shown that binging on chocolate can help you do math quicker and with more endurance. Chocolate contains high amounts of the chemical flavanol, which increases blood flow to the brain. People who had consumed large amounts of this chemical could count backwards in threes much faster and for much longer than those who hadn't ingested any chocolate. So enjoy your Halloween treats while you do your math homework this weekend in record time.

Faculty and Staff Kiddy Photo Contest

How well do you think you know your math professors? Did you know that at one time, they were really young and adorable?! Check out the photos of the math department, either by the

whiteboard in the CMC or on the web at <http://people.carleton.edu/~lchihara/> and try to match the photo to the professor. Submit your entry to Laura Chihara by Monday, 9 November, 5pm. Prizes will be awarded to the person(s) who matches the largest number of people to their photo!

PROBLEMS OF THE WEEK

1. A circle has its center, labeled B on the line m . Tangent to both the line m and the first circle is the circle with center A. Also tangent to both the line m and the first circle is the circle with center C. This third circle is also on the same side of the line m as the first circle. Finally, line l is tangent to all three circles, as shown below in Figure 1. If the circle centered at A has radius 6 and the circle centered at C has radius 4, find the radius of the circle centered at B.
2. Determine all polynomials $p(x)$ such that $p(x^2 - 1) = |p(x)|^2 - 1$ for all real numbers x and $p(2) = 2$.

Both Henry Luo and Shunji Li correctly solved the first of last week's problems. Complete solutions to the second problem came from Danny Wells and Henry Luo while a correct but incomplete solution came from Shunji Li. The lottery winner this week is Henry Luo. He should stop by CMC 217 to collect a prize from the B.B.O.P. As always, to earn a chance to visit the B.B.O.P. you must submit a correct solution to one or both of the above problems by Tuesday night.

Gail Nelson

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Figure 1

