This Week's Mathematics Colloquium

Title: How to Ask a Sensitive Question
Speaker: Tom Moore (Grinnell College)
Time: Tuesday, September 23rd, 1:30 pm - treats at 1:15
Place: SC 182

This Week's Colloquium

When survey researchers seek information about a sensitive question---Have you engaged in unsafe sex in the past year?---respondents may give false responses, even when promised anonymity. In 1965, Stanley Warner devised a brutally clever method of overcoming this problem called the randomized response technique. This talk will introduce his method, give examples, and discuss some of the practicalities of implementing it.

Tom Moore has taught mathematics and statistics at Grinnell College for 23 years. He has been active in the Statistics Education Section of the American Statistical Association, serving as its chair in 1995. He recently edited an MAA Notes volume, "Teaching Statistics: Resources for Undergraduate Instructors."

Problem Solving Contest

The St. Olaf Math Department's annual Carlson contest will be held this year on Tuesday and Wednesday, Oct. 7 and 8. This is a team competition, with CASH PRIZES up to $35 for each member of the two winning teams.

Teams consist of up to three students. First-year students (or anybody who has not yet completed a St. Olaf math course) compete in a separate category and receive a slightly different test. Eight to ten problems are selected from a variety of areas of mathematics, similar to problems from the Math Mess. Teams should find a block of two hours when they can work on problems together on either the evening of the 7th or 8th.

If you are interested, please email molnar@stolaf.edu (subject: Carlson) with the names and current math classes of your team members.

Mathemagics at Carleton

This week Carleton College is hosting a rather unique speaker, Art Benjamin, who will give a talk

entitled "*Mathemagics.*" The talk will be held *Thursday, September 25th* at *7:00pm* (rumor has it that there will be snacks at 6:30) in Olin 141 on the Carleton campus. Here's some info about this exciting event:

Art Benjamin is one of the world's foremost lightning calculators. Don't miss this one---Art is a professional entertainer: he appears regularly at the Magic Castle in Los Angeles and has been on the Today Show, CNN News, and National Public Radio.   He's been featured in USA Today, Scientific American, Math Horizons, Discover, Omni, Esquire, and People magazines.   Art's show, Mathemagics, combines a little bit of magic, a bit of remarkable calculating skill and a mathematical explanation of how he does (some of) it.

Last Week's Problem

Can three CDs (5" in diameter) be placed on one LP (12" in diameter) without overlapping? Determine geometrically the largest possible diameter of three circles which can be packed inside a circle of diameter 12".

Last week's problem was solved by **Kari Anderson '05**, **Adam Thomas '07** and **Randy Bailey**. The solution involves placing the three smaller circles so that their centers form an equilateral triangle whose side is the same as the diameter of one of the smaller circles. Let this diameter be x, and divide the equilateral triangle into six 30-60-90 triangles whose hypotenuse is $x/\sqrt{3}$.   Following the hypotenuse out to the perimeter of the LP, one gets the equation $x/\sqrt{3} + x/2 = 6$, which has solution $x = 24\sqrt{3} - 36$, or about 5 1/2 inches.

Problem of the Week

Peter and Scott are playing a game where they flip a coin until either heads or tails comes up twice in a row. If HH comes up, Peter wins; if TT comes up, Scott wins. So, they have the same chances of winning... until Michael shows up. They decide Michael will win if HT comes up before either HH or TT (figuring HH, TT, and HT each have 1/4 probability of coming up on successive tosses). Now, do Peter and Scott still have the same chances of winning? What are each of their probabilities of winning the three-player game? For more of a challenge, change HH to HHH, TT to TTT, and HT to HHT!

 If you want to get the Mess problems ahead of time, they will be sent out on Thursdays on Molnar's math-probsolv email alias. Let him know if you would like to be added to the alias.

*** Please submit all solutions by Wednesday at 5 o'clock to David Molnar by e-mail (molnar@stolaf.edu) or by placing them in his box at OMH 201.

If you would like to receive a copy of the Math Mess in your P.O. Box weekly, please e-mail Donna Brakke at brakke@stolaf.edu.