Math ❖ Mess

This Week's Mathematics Colloquium

All Hex Breaks Loose

Master of Ceremonies: David Molnar

Time: Thursday, October 4th, 4 pm

Starting Place: SC 182

This Week's Colloquium

Hex is a simple game invented by, among others, Nobel Prize winner John Nash. Ever since last Spring's First Annual St. Olaf College Mathematical Games Tournament, people have been playing Hex on their bathroom floors, wondering "why couldn't we play outdoors, among the fall foliage, with people as the playing pieces?" Now, we can!

David Molnar earned his BA in Mathematics at Wesleyan University, and as a junior was an early participant in the Budapest Semesters program. In his second year on the Math Department faculty, David is a game-playing guru! If you're looking for a fun time, try checking out his website: http://www.stolaf.edu/people/molnar   and   start exploring.

The Hex fest will begin in SC 182 and then move to the outdoor classroom for a brief overview of the rules and history of the game as well as some insight into its continuing allure among mathematicians. After appropriate fanfare, the games will begin.

If you are interested in actively participating, contact either Professor Hamilton, captain of the Black team, or Professor Dietz, captain of the Gold team. You can also find out more about Hex before the colloquium starting at http://www.stolaf.edu/people/molnar/games/hex

Announcements

A Great Deal For Future Mathematics Teachers

Students who are planning to teach secondary or elementary school mathematics are invited to attend the Minnesota Council of Teachers of

Mathematics (MCTM) Fall Conference on October 19 at North St. Paul High School.

The MCTM is an organization of about 2000 Minnesota teachers, and the conference is full of sessions and exhibits that will give you a chance to interact with both mathematics and science teachers and get some great ideas about teaching mathematics. There is a special registration fee for math ed students who register as a group from the same college: for $10 you will receive:
1) a one year membership in MCTM,
2) admission to the fall conference on October 19, and
3) a free lunch at the conference.

If you are interested, check out the conference information at the MCTM web site, www.mctm.org/conferences.html, then contact Martha Wallace to join the St. Olaf group attending the conference. Professor Wallace has to submit all registrations by October 10 to qualify for the reduced rate.

This Month in History

October 23, 1852

First known document to make reference to the **Four-Color Conjecture** is a letter from English mathematician and logician Augustus De Morgan (1806-1871) to his friend, Irish mathematician William Rowan Hamilton (1805-1865). The conjecture states that any conceivable map drawn on a plane or on the surface of a sphere can be colored, using only four colors, in such a way that adjacent countries have different colors. Earlier this month, the brothers Francis and Frederick Guthrie pose the problem to De Morgan who cannot find a method to prove it true or false.

The problem remained unresolved until 1976 when proved by Kenneth I. Appel and Wolfgang Haken in a proof that required over 2,000 hours of computer and several hundred pages of complex detail. (Bruno, Science and Technology Firsts, 1997)

Last Week's Solution

Last week's problem: Find all positive integers that are within 250 of exactly 15 perfect squares.

Solution: You have to find intervals of length 500 that contain exactly 15 perfect squares. The centers of these intervals are the numbers. So the solution includes all integers in [315,325] and [332,350]. Note: 0 is a perfect square so 1,2,3,4,5 do not work. Correctly solved by Barry Cipra, Mike Zahniser and Tom Loome.

Problem of the Week

Here's another former Putnam Problem:

(1995, B5) A game starts with four heaps of beans, containing 3, 4, 5, and 6 beans. The two players move alternately. A move consists of taking **either**

a. one bean from a heap, provided at least two beans are left behind in that heap, **or**

b. a complete heap of two or three beans.
The player who takes the last heap wins. To win the game, do you want to move first or second? Give a winning strategy.

*** Please submit all solutions to Cliff Corzatt (corzatt@stolaf.edu) by noon on Friday.

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.