Mathematics Movie Night

January 28, 2010
CMC 206 4:30 p.m.

Come see two Mathematics movie classics
Donald Duck in Mathmagic Land, and The Great Pi/e Debate.
Bring a friend or make new ones enjoying these two short films.

There will be snacks!

Wabash Summer Institute in Mathematics

Looking for something to do this summer? Starting June 6, Wabash College in Crawfordsville, Indiana will be hosting a summer institute, providing research experience in abstract algebra and applied mathematics. Wabash is a private liberal arts college for men, but the summer institute is open to all U.S. Citizens. Participants will spend the first two weeks working together studying three topic areas in either abstract algebra or applied mathematics. During the remaining six weeks, participants will conduct original research in one of the three areas. Applications are due February 15. For more information go to their website at: http://www.wabash.edu/academics/math/wsim

Mathematica Still Hiring Research Assistant/Programmers

Mathematica Policy Research, Inc (Mathematica) a nationally recognized firm that conducts domestic social policy research on health care, welfare, education, disability, labor, and other related topics is seeking Research Assistant/Programmers to work in either Princeton, New Jersey; Washington, DC; Ann Arbor, Michigan; Oakland, California or Cambridge, Massachusetts office locations and perform tasks in research, programming, and product research. They are looking for students with coursework in economics/social science, mathematics/statistics, or computer science who are comfortable working with a statistical package. To apply submit your resume, transcript and a short writing sample at: http://careers.mathematica-mpr.com/applicants/Central?quickFind=51240 For additional information see: http://careers.mathematica-mpr.com/
Frank P. Ramsey, died this week in 1930 at the age of twenty-six. In addition to his work in mathematics, this father of two made contributions to the world of philosophy and economics before his early death. One of the theorems in his 1930 paper On a problem of formal logic, led to an entire branch of mathematics today called Ramsey Theory, which is concerned with finding similar results to Ramsey’s original theorem.

Math Joke of the Week:

Q: What is non-orientable and lives in the ocean?
A: Möbius Dick

This Week in Tour of Mathematics

This week’s Tour of Math talk (3:30 PM, January 22, CMC 206), is by Jon Armel, and his topic is "Fractals, Dynamical Systems, and the Mandelbrot Set". As always, all are welcome. Hope to see you there!

PROBLEMS OF THE WEEK

1. Here is a description of an iterative process:
   Start with four integers arranged around a circle. Form the average of each pair of adjacent numbers, and put these averages along the circle between the original numbers, then delete the original numbers so that once again there are four numbers around the circle. Repeat.
   For example, if the original numbers were 1, 6, 9, 11 in that order, after one step the numbers would be 7/2, 15/2, 10, 6 in that order, and after two steps they would be 11/2, 35/4, 8, 19/4.
   Suppose that after twenty steps, you find the numbers 1, 2, 3, 4 in some order. What numbers did you have after one step? Can you recover the original numbers from this information?

2. Suppose we have a (finite) set $A$ of $m$ distinct points in the plane and a set $B$ of $n$ distinct lines in the plane such that every one of the points in $A$ is on exactly two of the lines in $B$ and every one of the lines in $B$ goes through exactly three of the points in $A$. Find all possibilities for the pair $(m,n)$ of positive integers. (Make sure to show that all the possibilities you mention really can occur.)

Last week’s first problem was solved by Gabe Davis and by Abram Jopp; Gabe should stop by CMC 216 some time to pick up a "C" block or other B.B.O.P. item. So far there’s nothing to report on the second problem, although at least one person asked for some clarification and thus presumably has been working on it ...

- Mark Krusemeyer

Editors: Laura Chihara
         Beatrice White
         Sue Jandro
Problems of the Week: Mark Krusemeyer
Subscriptions & Web: Sue Jandro