TCU Math Newsletter

Volume 9, Number 4 **December 2000-January 2001**

A mathematician is a blind man in a dark room looking for a black cat which isn't there.
– Charles Darwin

Christmas Buffet

The TCU Mathematics Department will hold its annual Christmas Buffet from 11:00 a.m. to 1:00 p.m. on Thursday, December 7 in Winton Scott Hall 171. All TCU mathematics majors, graders, faculty, and other friends of the department are invited to come.

If you would like to join us, please come to the Math Department office in Winton Scott Hall 112 to sign up.

Bucks for Books

The Bucks for Books winner for the fall semester will be selected at Thursday's Christmas Buffet by lottery using a TI calculator's random integer selector. Entries were awarded for participation in departmental activities this fall.

Graders for Spring 2001 Semester

Students interested in grading for a mathematics course in the Spring 2001 semester should speak with Dr. Victor Belfi before leaving for Christmas break or shortly after returning for the spring semester. Dr. Belfi's office is in Winton Scott Hall 151, and he can be reached by e-mail at v.belfi@tcu.edu.

Summer Mathematical Research Opportunities for Students

Undergraduate mathematics majors who are interested in participating in one of the National Science Foundation Research Experiences in Mathematics for Undergraduates Sites in the summer of 2001 will need to begin the application process soon. Some application deadlines are as early as mid-February, while others are in late March, and the applications typically require letters of recommendation from professors.

In these projects, undergraduate students conduct mathematical research under faculty guidance. They generally run from six to eight weeks in length, and are held at about twenty universities across the United States. The student participants receive a stipend, housing support, and sometimes travel support. The experience gained in these REU projects is particularly helpful for students considering graduate study in mathematics.

Undergraduates who are interested in learning more about or applying to one of the REU projects can find a list of NSF-REU sites at the web site

www.maa.org/students/reustuff/pages/REU.html.

Annual Joint Mathematics Meetings in New Orleans

The 2001 Joint Mathematics Meetings will be held in New Orleans from January 10-13. Activities for undergraduate mathematics students include the MAA Students Lecture, "Building and using mathematical models to guide decision making," to be presented Professor Ralph L. Keeney of the University of Southern California on Friday, January 12, 2001, 7:30 p.m.-8:20 p.m. The meetings will also include an undergraduate poster session, and other talks of interest to students. For more information about the meeting visit the web site

www.ams.org/amsmtgs/2025_intro.html.

Solution to the November 2000 Problem of the Month

Problem: *Assume that knowing a person is a two-way street. In other words, assume that if Harry knows Sally, then Sally knows Harry. Show that some two people in the world know the same number of other people.*

Solution: If there are n people in the world, then a person knows 0, 1, 2, ..., n-2, or n-1 other people. Suppose no two people know the same number of others. Then exactly one person knows 0, exactly one knows 1, ..., and so forth, and exactly one knows n-1. However, the person knowing 0 would know no one else and the person knowing n-1 would know everyone else, a contradiction.

Math major Dustin Sitar correctly solved this month's problem.

Problem of the Month

This month's problem appeared in the Ontario Secondary School Mathematics Bulletin. Are there real numbers x and y for which $x + y = 1,\ x^2 + y^2 = 2,\ x^3 + y^3 = 3$?

Students and others are invited to submit solutions to Dr. George Gilbert (Math Dept. Office or TCU Box 298900). Correct solutions submitted by persons who are not members of the TCU math faculty will be acknowledged in the next issue of the newsletter. Note that a correct solution is an answer and a justification of its correctness. The solution to the problem will be published in the next edition of the newsletter.

The TCU Math Newsletter is published each month during the academic year.
Dr. Hatcher: Editor; Dr. Gilbert: Problem Editor; Dr. Doran: Thought of the Month Editor.
Items which you would like to have included should be sent to Dr. Hatcher (Math Dept. Office or TCU Box 298900).