

---

# ***TCU Math News Letter***

**Volume 11, Number 2 October 2002**

*This paper gives wrong solutions to trivial problems. The basic error, however, is not new.*

--- Clifford Truesdell, *Mathematical Reviews* 12, p. 561

[Editor: Dr. Rhonda Hatcher](#) and [Archive of Newsletters](#)

---

## **Math Department Moves to the Tucker Technology Center**

TCU officially unveiled the new \$25 million William E. and Jean Jones Tucker Technology Center September 14 during dedication and ribbon-cutting ceremony. The building, which features state-of-the-art classrooms, laboratories and equipment, is the new home of the TCU Mathematics Department. The building also houses the Computer Science and Engineering Departments.

The move to the new building actually began at the end of the spring semester, while some of the finishing touches were being put on the building. The Math Department office and chair's office are on the second floor, and the remaining faculty offices and common room are on the third floor.

## **Parabola Meeting on October 8**

Parabola, the TCU undergraduate mathematics club, will hold its first meeting on Tuesday, October 8. The meeting will begin with refreshments at 3:30 p.m. in TTC, Room 300. At 4:00 p.m. Professor Mike Field of the University of Houston will present the talk "Chaos and Symmetry" in TTC 138.

All TCU students, faculty, and other interested members of the community are invited to attend the meeting and talk. Students interested in joining Parabola should contact Professor Igor Prokhorenkov in TTC 311 or by e-mail at [i.prokhorenkov@tcu.edu](mailto:i.prokhorenkov@tcu.edu).

## **Research Lectureship Talk on October 8**

The next speaker in the TCU Research Lectureship series, Professor Mike Field of the University of Houston, will present the talk "Statistics, Symmetry, and Skew Extensions" on Tuesday, October 8 at 12:25 p.m. in TTC 245.

Refreshments will be served in Tucker Technology Center 300 at 3:30 p.m. All TCU students, faculty, and other interested members of the community are invited to attend the lectures.

## **Sign up for the Putnam Exam**

The Sixty-First Annual William Lowell Putnam Mathematical Competition will be held on Saturday,

December 6, 2002. The questions require different amounts of mathematical background, and all require a bit of ingenuity to solve. The scores on the exam are typically quite low, and even answering a few questions is considered an excellent performance. The competition is open to undergraduates enrolled in colleges and universities of the United States and Canada who have not yet received a college degree. Any college or university with at least three entrants also enters the team competition. Prizes are awarded to the top twenty-five finishers and to the departments of mathematics of the institutions with the five top ranking teams.

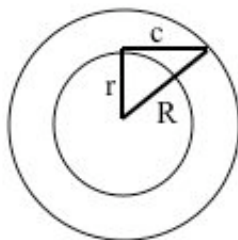
Copies of the exam from last year are posted on the Problem Solving bulletin board down the hall from the Mathematics Department. Those interested in signing up to take the Putnam Exam this year should contact Professor George Gilbert by October 10 (TTC 319 or 257-6061 or g.gilbert@tcu.edu).

---

## Solution to September 2002 Problem of the Month

**Problem:** Given two concentric circles, show that if one knows the length of a chord of the larger circle that is tangent to the smaller circle, then one knows the area of the annular region between the two circles.

Let  $r$  be the radius of the smaller circle,  $R$  be the radius of the larger circle, and  $c$  be the length of the chord. The chord is perpendicular to one of the smaller radii, with a radius of the larger circle as the hypotenuse. Thus,  $c^2 + r^2 = R^2$ , or  $c^2 = R^2 - r^2$ . On the other hand, the area of the annular region between the circles is  $\pi R^2 - \pi r^2 = \pi c^2$ .



This month's problem was solved by undergraduates Kris Garrett, Alissa Grissom, and Carrie McGraw.

---

## Problem of the Month

This month's problem appears in the *The Inquisitive Problem Solver*, a new book by Paul Vaderlind, Richard Guy, and Loren Larson. Seven pennies lie heads-up on a table. In a single move, you are allowed to turn over any four coins at the same time. Using a sequence of such moves, can you get all seven coins to lie tails-up on the table? Can it be done if you are allowed to turn over any five coins in a single move?

**Students and others are invited to submit solutions to Dr. George Gilbert (Math Dept. Office or P.O. 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 will be 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 P.O. 298900).**