
TCU Math News Letter

Volume 7, Number 3 November 98

But you see, I can believe a thing without understanding it. It's all a matter of training.

--- Dorothy Sayers

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

Annual Joint Mathematics Meetings to be in San Antonio

The 1999 Joint Meetings of the Mathematical Association of America (MAA), the American Mathematical Society (AMS), the Association for Women in Mathematics (AWM), the National Association of Mathematicians (NAM), and the Association for Symbolic Logic (ASL) will be held in San Antonio, Texas on January 13 through 16. This is the major annual meeting for professional mathematicians in the United States. TCU undergraduate students are encouraged to take advantage of the fact that it is being held in San Antonio this year, a relatively short drive from Fort Worth. This is a wonderful opportunity to attend talks by first class mathematicians, listen to panel discussions about various issues, and learn a lot in general about the profession.

A special feature for undergraduate students is the MAA Student Lecture. This year's speaker will be Dr. Edward Dunne. He is presenting the talk "Pianos and Continued Fractions" on Friday, January 15, at 7:30 p.m. His talk will be followed by an ice cream social. Also on Friday from 4:00 to 7:00 p.m. is an undergraduate research student poster session.

Several minicourses are offered at the meetings, and one that might be of particular interest to students is the minicourse The Mathematics of the Perfect Shuffle taught by S. Brent Morris of the National Security Agency. Several TCU undergraduates had the opportunity to hear Dr. Morris speak at the MAA meeting last spring and will recall that he is a very engaging speaker. This minicourse will be offered in two parts on Wednesday, January 13, 4:30 p.m.-6:30 p.m. and on Thursday, January 14, 10:15 a.m.-12:15 p.m. The cost is \$55 for the minicourse. Several other minicourses that might be of interest will also be offered.

The registration fee for the meeting for undergraduate students is \$20 if paid by December 21 and it is \$26 at the meeting. (Professors pay \$160 or \$208 to register, so the student registration fee is a bargain by comparison.) There are many housing options that should be reasonably affordable to students. Students interested in attending the meeting should see Dr. Hatcher in Winton Scott Hall 142 for more information and to pick up a registration form.

Two Frank Stones Research Lectureship Talks in November

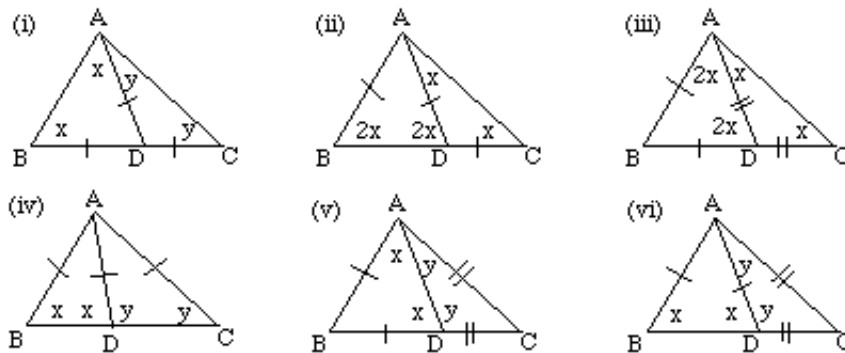
During the month of November, the Frank Stones Research Lectureship Series will feature two guest speakers. The first speaker will be Professor Efraim Armendariz of the University of Texas at Austin. He will present his talk, "The Structure of Semiprime Rings," at 4:00 p.m., on Wednesday November 4, 1998.

Professor John Hempel of Rice University will present a talk in the series at 4 p.m. on Tuesday, November 17, 1998. Dr. Hempel's talk is entitled "The Complex of Curves on a Surface as a Description of Three Manifolds." Both talks will be given in Winton Scott Hall 145, and refreshments will be served in Winton Scott Hall 171 during the half-hour preceding each talk. All TCU students, faculty, and other interested members of the community are invited to attend the lectures.

Solution to the October 1998 Problem of the Month

Problem: (due to Bo Green) Which triangles can be split into two isosceles triangles?

Solution: There are three families: (i) right triangles, (ii) triangles with one angle twice another, with the smaller less than 45° , and (iii) triangles with one angle three times another. There are six types of configurations to consider, shown below. (All others are simply rearrangements of the letters.)



In (i), since the angles of a triangle sum to 180° , $x + y = 90^\circ$ and A is a right angle. In (ii), angle B is twice angle C. Since equal angles in an isosceles triangle must be acute, $2x < 90^\circ$ or $x < 45^\circ$. In (iii), angle A measures 3 times angle C (forcing $x < 45^\circ$). We rule out (iv), (v), and (vi) because they imply $x < 90^\circ$ and $y < 90^\circ$ on the one hand, yet $x + y = 180^\circ$ on the other.

Problem of the Month

One page is torn out of a book. The sum of the numbers on the remaining pages (numbered from page 1 to the last printed page) is 275,349. What page numbers were on the page torn out and how long was the book? (You must verify that your answer works and justify that no other one does.)

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).