TCU Math News Letter

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There was a young student from Trinity
Who tried to take the square root of infinity
He got the fidgets counting the digits -- dropped math --
And took up divinity!

Editor: Dr. Rhonda Hatcher and Archive of Newsletters

Frank Stones Lectureship Talk on October 10

Professor Fernando Rodriguez-Villegas of the University of Texas at Austin will present the next talk in the Frank Stones Research Lectureship Series. He will present the talk "Lattice polygons and the number 12" on Tuesday, October 10, 2000 at 4:00 p.m. in Winton Scott Hall 145. Refreshments will be served in Winton Scott Hall 171 at 3:30 p.m.

Infinity Fest

On Tuesday, October 31, 2000, Parabola, the TCU undergraduate mathematics club, will host a Halloween Infinity Fest. The festival will begin with a party featuring games, prizes, and food from 3:00 p.m. to 4:00 p.m. in Winton Scott Hall 171. At 4:00 p.m., a performance will be given by Dr. Ken Richardenstein and his assistant Igor. All TCU students, faculty, and other interested members of the community are invited to come to the festival.

Companies Conduct On-Campus Interviews

The TCU Career Services office lists full-time positions, internships, part-time jobs, and summer jobs. Students who have a resume in the database are also eligible to participate in on-campus interviewing. Many employers come to the TCU campus to interview for full-time jobs and internships, and several of these employers are interested in interviewing mathematics majors. Students need to have established a web account and have uploaded their resume onto that account before they can sign up. For more information visit the Career Services web site http://www.cpl.tcu.edu or call them at 257-7860.

The Putnam Exam

The Sixty-First Annual William Lowell Putnam Mathematical Competition will be held on Saturday, December 2, 2000. This annual competition consists of a twelve-question written exam. 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 (in Winton Scott Hall 141 or 257-6061 or g.gilbert@tcu.edu).

Solution to the September 2000 Problem of the Month

Problem: Pat states, "I have the same number of brothers as sisters." Pat's twin, Chris, replies, "But I have twice as many sisters as brothers." How many children are in their family?

Solution: The family has 7 siblings. Let the family have g girls and b boys. The two statements taken together imply that Pat is a girl and Chris is a boy. Thus, $b = g - 1$ and $g = 2(b - 1)$. Eliminating g, we find $b = 2b - 3$, hence $b = 3$, $g = 4$, or 7 in all.

The September problem was solved by Tim Bates, Mark Grossman, Amanda Knecht, Joseph Merkel, Janna O'Connor, Dustin Sitar, Lesley Smallwood, Abdullah Sodiq and Muhammad Nageeb-ul-Islam, Marcie Toulouse, and graduate student Dave Puente. Many solutions did not go through the above justification that no other possibilities exist. In the future, credit will not be given for an answer without full justification.

Problem of the Month

This month's problem appeared in the Ontario Secondary School Mathematics Bulletin in 1984. Players A and B play the following game:

$$x^3 + \_\, x^2 + \_\, x + \_$$

Player A begins by writing an integer in any of the blanks; B then plays an integer in one of the remaining blanks; A then fills the last blank with an integer. A wins the game if the resulting polynomial can be factored as $(x - a)(x - b)(x - c)$ for some (not necessarily distinct) integers a, b, c. Which player can guarantee winning? How?

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).