TCU Math News Letter

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The excitement that a gambler feels when making a bet is equal to the amount he might win times the probability of winning it.

-- Blaise Pascal (1623 - 1662)

Editor: Dr. Rhonda Hatcher and Archive of Newsletters

October Parabola Meetings

Parabola will meet on Monday, October 2 featuring a talk by TCU undergraduate mathematics major Darren Ong. DarrenÕs talk will be about the research he did this summer in the National Science Foundation Research for Undergradutes program at Trinity University in San Antonia, Texas. The title of DarrenÕs talk is "The Multi-dimensional McNugget Problem." He will present the talk in Tucker Technology Center 246 at 3:30 p.m. Refreshments will be served at 3:00 p.m. in TTC 300.

The second Parabola meeting, on Tuesday, October 17, will be a pizza lunch at 11:10 a.m. in TTC 300 followed by a talk by Professor Cabral Balreira of Trinity University. The third Parabola meeting in October will take place on Monday, October 30. Professor Igor Prokhorenkov of TCU will present a talk about the winners of the Fields Medals at 3:30 p.m. in TTC 246. Refreshments will served at 3:00 p.m. in TTC 300.

Parabola talks are open to all students, faculty, and others interested in mathematics.

Lectureship Series Talk on October 17

Professor Cabral Balreira of Trinity University will be the next speaker in the Frank Stones Research Lectureship series at TCU. The talk, entitled "A topological characterization of diffeomorphisms" will be presented at 4:00 p.m. in TTC 246. This talk will address the problem of deciding when a local diffeomorphism is bijective. Professor Balreira will discuss how in the finite-dimensional case some basic invertibility phenomena are purely topological.

Refreshments will be served in TTC 300 at 3:30 p.m.

Junior Jump Start

The University Career Services office will host Junior Jumpstart on Saturday, October 21 in the TCU Student Center. Junior Jumpstart is an opportunity for TCU Juniors to learn skills that will help in their search for experience and career development. Participants will have the chance to attend workshops on interviewing skills, graduate school, internships, and networking. Juniors will participate in a Networking Luncheon with employers from the DFW area and listen to motivational speaker Suzie Humphreys.

Juniors can register on www.frogjobs.net or come by University Career Services in the Student Center annex for more information.

Solution to the September 2006 Problem of the Month

Problem: Are there positive integers m and n for which $m^2 + n^2$ is divisible by $3(m-n)^2$?

Solution: There are none. Consider an example with $m^2 + n^2$ minimal. Because $(3k \pm 1)^2 = 3(3k^2 \pm 2k) + 1$, we see that m and n must both be divisible by 3. But then we can check that $m/3$ and $n/3$ form a "smaller" solution, a contradiction.

October 2006 Problem of the Month

What is the last nonzero digit (reading from left to right) in the decimal expansion of 50! ?

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).