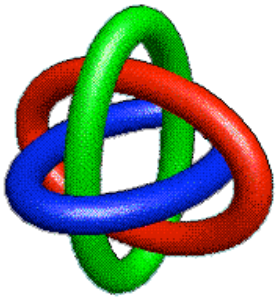
TCU MATH NEWSLETTER



March 2009
Volume 17, Number 5

You can tell whether a man is clever by his answers. You can tell whether a man is wise by his questions.

- Naguib Mahfouz

Pi Day Celebration on March 11

The TCU Pi Day Celebration will be held in the Tucker Technology Building Professional Development Center on Wednesday, March 11 between 11:30 a.m. and 1:30 p.m. (come and go). The celebration is hosted by CSS, SWE, and Parabola. Pi Day is normally observed on March 14 (3/14) due to pi being roughly equal to 3.14, but who wants to have a party on the first Saturday of Spring Break?

This will be a party with food and a couple of contests for students. The winners will get to throw pies at professors from the various departments, including our very own Dr. Igor. In addition, there will be a T-shirt design contest for designing next year's Pi Day shirt with the winner getting a free version of the new shirt. This year's Pi Day shirts are on sale for $10, and can be purchased from Mrs. Baker on the second floor of the Tucker Technology Center.

Student Research Symposium Call for Abstracts

The Seventh Annual TCU Student Research Symposium (SRS) will be held on Friday, April 17, 2009. The SRS will showcase student research from the College of Science and Engineering and offer a relaxed forum in which students can present their work in a poster presentation. Any undergraduate or graduate student who has been engaged in some form of research is strongly encouraged to participate. The deadline for abstract submissions is Friday, March 27.

For more information about SRS and to submit an abstract, visit the SRS website www.srs.tcu.edu.

Problems and Solutions

Solution to the February 2009 Problem of the Month

Problem: In general, it takes $n+1$ values to determine a polynomial of degree n. Suppose, however, that someone has selected a polynomial with nonnegative integer coefficients of degree at most 2009 and that you are allowed to ask for the value of the polynomial at any integer you please. What is the smallest number of questions you need to determine the polynomial? (Due to I. B. Keane.)

Solution: Surprisingly, only two questions are required. Denoting the polynomial by $p(x)$, first ask for $p(1)$. Every coefficient of $p(x)$ is an integer between 0 and $p(1)$, so if we next ask for $p(p(1)+1)$, all we need to do is translate the answer to its base $p(1)+1$ representation and we have the coefficients of $p(x)$.

March 2009 Problem of the Month

With the annual Calculus Bee coming up in April, here is a problem to get you in the

The TCU Math Newsletter is published each month during the academic year.

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spirit. (Given that you have almost a month instead of three minutes to solve it, the problem is harder than Calculus Bee problems.)

Is there any circle centered at the origin that is tangent to the curve $y = \sin x$?

Students and others are invited to submit solutions to Dr. George Gilbert by e-mail (g.gilbert@tcu.edu) or hard copy (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.