

TCU Math Newsletter

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October 1994

*One machine can do the work of fifty ordinary men.
No machine can do the work of one extraordinary man.*

- Elbert Hubbard

October Parabola Meetings

Professor Ze-Li Dou, a new member of the TCU Mathematics Department, will present a talk entitled "String Art" at the next meeting of Parabola. This talk will require no more than a good algebra background, and it should be accessible to undergraduates of all levels. His talk will be presented in Winton Scott Hall 145 at 3:30 p.m. on Tuesday, October 11. Refreshments will be served at 3:00 p.m. in WSH 171.

Parabola will have a special guest speaker, Professor Michael E. Fisher, early next month. Dr. Fisher is a Distinguished Professor at the Institute for Physical Science and Technology at the University of Maryland, working mainly in the areas of statistical mechanics, the theory of condensed matter, and physical chemistry, as well as associated foundational and mathematical problems. He will be coming to TCU as a Phi Beta Kappa Visiting Scholar. Dr. Fisher has graciously agreed to present a talk at a Parabola meeting. His talk is entitled, "The Drunk's Walk or All Roads Lead to Rome; But Not in Three or More Dimensions." His talk is scheduled for 3:30 p.m. in WSH 145 on Tuesday, November 1, with refreshments at 3:00 p.m. in WSH 171.

October 10th Deadline for Putnam Exam Sign-up

The deadline for signing up for the 55th annual William Lowell Putnam Mathematical Competition is October 10. Please contact Professor George Gilbert in his office in WSH 141 or by telephone at 921-7335 for more information or to sign up. The competition is open to all TCU undergraduates.

The TCU Mathematics Department will give the exam on Saturday, December 3 in Winton Scott Hall.

TCU Lectureship Series

The TCU Research Lectureship Series will feature two speakers in October. The first speaker is Professor Dave Larson of Texas A&M University. He will present his talk, "Operator Theory and Wavelets," on Tuesday, October 4 at 4:00 p.m. in WSH 145.

The second Research Lectureship speaker for October is Professor Barbara Keyfitz of the University of Houston. Her talk, entitled "Traffic Flow and Differential Equations," will be presented at 4:00 p.m. in WSH 145 on Tuesday, October 18.

Refreshments will be served before each of the Lectureship talks at 3:30 p.m. in WSH 171.

Student Conference at Stephen F. Austin University

A student conference entitled "Getting Involved in the Mathematical Community" will be held on Friday, October 7 at Stephen F. Austin University in Nacogdoches, Texas. The conference begins at 9:00 a.m. with a keynote address by the TCU Mathematics Department Chair, Dr. Robert S. Doran and ends at 3:15 p.m.

Included in the conference program is a panel discussion on mathematics internships and summer programs. Dr. George Gilbert of TCU will be one of the panelists. There will also be a session on preparing student mathematics presentations for professional meetings or for publication.

Both Dr. Doran and Dr. Gilbert will be attending the conference. Any students interested in attending should contact Dr. Gilbert in his office in WSH 141 or by telephone at 921-7335. Rides are available to students who need them.

Solution to the September 1994 Problem of the Month

Problem: One of two identical bags contains one red and two white marbles. The other contains one red, one white, and one blue marble. (The marbles are distinguishable only by color.) One of the bags is chosen at random and two marbles drawn. If one is red and the other white, what is the probability that the third marble in the bag is blue?

Solution: The probability is $\frac{1}{3}$. When the bag with the blue marble is chosen, the red and white marbles will be drawn with probability $\frac{1}{3}$. When the other bag is chosen, a red and a white marble will be chosen with probability $\frac{2}{3}$. Since the bags are equally likely to be chosen, the probability the remaining marble is blue is

$$\frac{\frac{1}{3}}{\frac{1}{3} + \frac{2}{3}} = \frac{1}{3}.$$

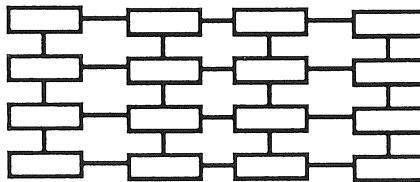
Correct solutions were turned in by TCU undergraduates Santiago Lombeyda and Chris Smith.

Problem of the Month

This month's problem is a recent Macalester College problem of the week. On his daily campus stroll, Wayne visited each building exactly twice using only the paths shown in the diagram below. When he got back to his office, he told Kathy that he had visited the buildings in the order

A O N H K L E C F B P I M G D J M L N H J K D G P B F I E O A C.

After a little thought, Kathy said, "Wayne, you're not quite right." Reconsidering, Wayne responded, "I see that I've carelessly transposed two successive buildings at exactly one point in the order." Without knowing which building is which on the map, name the transposed buildings.



Students and others are invited to submit solutions to Dr. George Gilbert (Math Dept. Office or P.O. 32903). 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.