*I have made such wonderful discoveries that I am myself lost in astonishment: Out of nothing I have created a new and another world.*
— John Bolyai

## Dr. Bob Doran is Named Honors Professor for 1993

The TCU Honors Program students chose Dr. Bob Doran, the current chair of the Mathematics Department, to receive the 1993 Faculty Recognition Award. He received the award during the Honors Convocation on April 15. Congratulations Dr. Doran!

## Steve Scott Receives Awards at the Honors Banquet

Mathematics and economics double major, Steve Scott walked away with several awards at the Honors Banquet on April 15. He was named Senior Scholar of the Mathematics Department and the Economics Department. Steve was also awarded the Phi Beta Kappa Award for outstanding senior in liberal studies and the Sigma Xi Award for outstanding senior in science.

Steve recently received notice that he has been awarded a National Science Foundation Graduate Fellowship, and after graduation from TCU, he plans to attend graduate school in statistics at Harvard University.

## Holly Luttrell Wins Student Presentation Award

Holly Luttrell, a senior mathematics major, is the winner of the 1992-1993 TCU Mathematics Department Award for Undergraduate Mathematics Presentations. Holly won the $40 prize for her presentation *Applications of Number Theory to Cryptography.*

## Ted Strout Wins Integration Bee

Junior mathematics major Ted Strout took first place in the annual Integration Bee at TCU on April 20. Placing second was Jonathan Campbell, a senior mathematics major, and junior physics major Shawn Gay placed third.

The competition was excellent this year with over forty students participating.

## Student Assistants Needed for Fall 1993

Students who wish to be considered for Student Assistant jobs in the Fall, 1993 semester should let Dr. Deeter know before departing for the summer. Graders will be needed for courses from Topics in Mathematics (Math 1033) up to Probability & Statistics (Math 3803), as well as assistants for up to 25 hours per week in the Mathematics Clinic.

Specific assignments will be made during the registration period on August 23–24, 1993. Classes begin on Wednesday, August 25, and graders can expect to have duties beginning by Friday, August 27. The Mathematics Clinic will open on Monday, August 30. To facilitate the assignment process, students should go to the Financial Aid office and obtain employment forms as early as possible. Work can begin before these forms are completed, but pay may be delayed if they are not completed promptly.

Pay rates will once again be $4.25 per hour for students who have worked for the Department for less than two semesters, and $4.45 per hour for those who have at least two semesters of satisfactory work for the department.

## Graphing Calculators in the Classroom

The Department of Mathematics has received tentative funding to conduct a Faculty Seminar on the use of graphing calculators in the mathematics classroom. This seminar will meet once weekly throughout the 1993-1994 school year, and will lead to the required use of graphing calculators by all students in most mathematics courses beginning in the Fall, 1994 semester. Graphing calculators will be furnished for all faculty participants, and the seminar will cover operation of calculators, methods of their use in the classroom, review of text and course materials, design of course syllabi, informational presentations for other departments of the university, and other related topics. More specific information concerning the organization and format of the seminar will be available soon.

## Student Participation in Graphing Calculator Seminar

Applications are now being accepted from students who wish to participate in the Faculty Seminar on Graphing Calculators in the Classroom. It is expected that two or three students will be partially supported by being furnished calculators for their use in the seminar, while other interested students who wish to participate may also apply. Requirements to be eligible for support are:

• Must expect to graduate no earlier than May, 1995

• Must adjust their schedule to attend the seminar as scheduled

• Must agree to be a Mathematics Clinic assistant (with pay) for at least two semesters, beginning Fall, 1994

• Must have a written (informal) recommendation from at least one Mathematics faculty member.

Applications should include personal information (name, social security number, summer address), expected date of graduation, mathematics courses taken, experience as a Mathematics Department Assistant (if any), a statement agreeing to attend the seminar throughout the 1993-1994 school year and to subsequently work in the Mathematics Clinic for at least two semesters, and the names of faculty who have been asked to recommend the applicant.

All applications should be given to Dr. Deeter as soon as possible.

The possibility of obtaining one semester hour of credit for Math 4970, Special Topics, is being investigated.
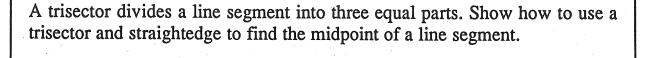
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### Solution to the April Problem of the Month

***Problem:*** *Ten (not necessarily all different) integers have the property that if all but one of them are added, the nine possible results are: 82, 83, 84, 85, 87, 89, 90, 91, 92. What are the ten integers?*

**Solution:**    The integers are 5, 6, 7, 7, 8, 10, 12, 13, 14, 15.

Since there are nine distinct sums, not ten, one integer in the set must be repeated. Let the integers be $n_1, n_2, ..., n_{10}$, with $n_{10}$ equal to one of the first nine. Let $S$ be the sum of all ten integers. Then the sum of all but $n_i$ is $S-n_i$. Adding these sums yields $10S-S = 9S$. Thus $9S = 82+83+84+85+87+89+90+91+92+(S-n_{10}) = 783+(S-n_{10})$ or $S-n_{10} = 9(S-87)$. We see that $S-n_{10}$ is divisible by 9. The only such possibility on our list is 90. Therefore $90=9(S-87)$, so $S = 97$. The integers are $S-92=5, S-91=6, ..., S-82=15$.

# Problem of the Month

A trisector divides a line segment into three equal parts. Show how to use a trisector and straightedge to find the midpoint of a line segment.