

Sinclair Mathnet

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FROM THE CHAIR



The return to campus after six months on sabbatical leave has been a most fascinating experience. A sense of calmness and well being had settled over me as I found myself able to work

through my projects giving careful attention to completing them thoroughly and to my satisfaction. The return to the Office on Monday of break week started off calmly enough, but I quickly realized that the luxury of leisurely attending to my duties, lavishing as much attention on each one as my heart desired was a thing of the past. The situation quickly escalated to a fever pitch as I encountered a variety of old and new issues requiring my attention. In the past four weeks, besides teaching, these have included: finalizing the bi-annual assessment report, submitting a position reclassification application, reporting on the results of my sabbatical projects, looking at full- and part-time faculty candidates, completing payload sheets, preparing the fall schedule, attending the Sinclair Leadership Summit and a variety of other meetings, meeting with a number of faculty and students with concerns, sorting out departmental budget difficulties and other issues.

But there are two matters of critical importance to the Department at present that have occupied the majority of my time and that I would like to discuss in more detail. The first is the AQIP/AtD initiative.

This really represents two separate initiatives within the college, but they have overlapping missions and, from the perspective of the Mathematics Department, they can be thought of as one initiative. The first college initiative, AQIP, is an acronym (What initiative would be worth its salt if it wasn't identified by an acronym?) that stands for Academic Quality Improvement Program. This is a new approach to accreditation offered by the North Central Association, our accrediting agency. Through this process the college seeks accreditation by creating a comprehensive approach to continuous improvement. The college has approved several specific initiatives under the umbrella of AQIP, one of which is improving student success in mathematics courses.

The second initiative, AtD, is of course another acronym, this one standing for Achieving the Dream. It is a national effort to increase success of community college students by having them "complete developmental courses and move on to college level courses, enroll in gatekeeper courses such as introductory math and English, complete these courses with grades of C or better, re-enroll from one term to the next and earn certificates or degrees." This initiative is sponsored by the Lumina Foundation for Education and Sinclair is applying for a \$150,000 grant over four years to pursue the stated outcomes. AQIP and AtD are initiatives that are a major priority for the college and improved success of students in mathematics courses is a key element of both of them.

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PROBLEM OF THE WEEK CONTEST

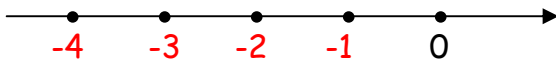
The Math Department Problem of the Week contest is back in full swing! After a winter hiatus, the Problem of the Week is up and running again. If you've never heard of the contest, here is the way it works: challenging, fun problems are posted Monday mornings in the Math Help Room (Room 1315), and also distributed to each student in most of the 200 level math classes. Students have until noon, Friday, to submit solutions, and students who correctly solve the week's problem have their names posted in the Math Help Room. Not only is there a chance for fame, but fortune too awaits the winners. The student with the most correct solutions for the quarter wins \$50, with \$25 for second place. Of course you do not have to be a student to try the problems, and sometimes even faculty members submit solutions just for fun.

The contest is administered and judged by Math Department faculty member Susan Harris, who first ran the contest in the spring quarter of 2000. During the first contest, 7 students submitted at least one correct solution throughout the quarter. This quarter, 23 students correctly answered Problem 1 alone, and for the first three problems there have been 85 solutions submitted. It looks to be an exciting competition this quarter, as so far there are 13 students who have correctly answered all of the problems!

REMINDERS

- ❖ Remember that a grade of Z is only to be assigned in the event that a student has never attended your class. Otherwise the student must be assigned an A, B, C, D or F. Please do not give a grade of Z to a student unless they have never attended any of your class sessions.
- ❖ Please do not allow students to attend your class if they are not on your roster. They should be sent to the Registration Office and they should produce documentation to show that they are registered in your class.
- ❖ Please do not neglect to meet your classes on time and keep them for the full class period
- ❖ Students taking a test late or early should be given a test different from the one given to the rest of the class.
- ❖ All tests should be approximately one hour in length even in classes meeting more than an hour.

Harvey's Joke Corner



We may be negative, but nothing gets past us.

I like to think that I am second to none.

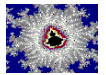
{ 0, 1, 2, 3, ... }

Sudoku: A game for "squares." It pays to think "inside the box."

The Sudoku directions said, "6½ years and up," but I finished in a flat 3 months.

Easiest Sudoku book: Each 9x9 puzzle has 80 givens - finish them all in one afternoon.





THE GREAT CHICAGO FLOOD

In 1899 the city of Chicago started work on a series of 40 miles of interconnecting tunnels deep below street level. This series of tunnels ran under the Chicago River and beneath the Chicago business district, known simply as The Loop. The tunnels led directly into the basements of many of the Loop buildings and housed a series of railroad tracks that were used to haul coal and to remove ashes away from the downtown area. This underground system served Chicago well through the 1940s, but then other power sources replaced the coal furnaces, and these tunnels went forgotten until April 13th, 1992 ...



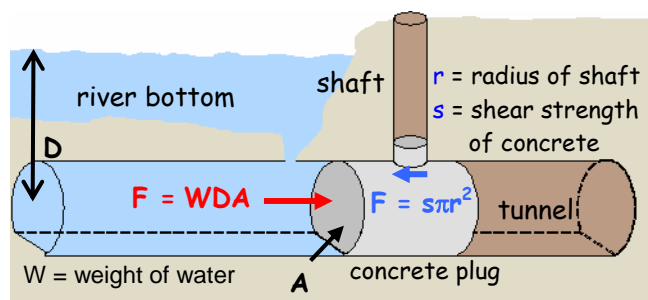
In September 1991, the Great Lakes Dredge and Dock Company set to work driving wooden pilings in the river under the Kinzie Street Bridge. Forty feet below, masonry fell from the ceiling of the tunnel of the old coal delivery system. A crack twenty feet long appeared in the tunnel ceiling.

Exactly when the rupture took place is unclear, but on the morning of Monday, April 13th, several Loop office buildings began to report significant quantities of water in their basements. The flooding was caused by massive amounts of river water pouring into a hole the size of a car at the place where the tunnel ceiling had finally collapsed. A giant

whirlpool formed in the river above the rupture. Like water draining from a bathtub in the northern hemisphere, the whirlpool circulated counter-clockwise under the influence of the Coriolis force. An estimated 250 million gallons of water poured into the tunnel system.

No one was trapped in the tunnels, and there were no fatalities, but the water rapidly flooded the subbasements and basements of 120 buildings. Marshall Field's flagship store, located on State Street in the heart of the Loop, reported water levels reaching 40 feet. Thirty electrical transformers shorted out when they became submerged. To prevent further damage to equipment, the electric utility cut power to the buildings. Office workers began evacuating the buildings, groping down darkened stairwells, carrying boxes and files in stifling air. Approximately 200,000 people were displaced, including 7,000 from the Sears Tower, bringing Loop business to a halt. Workers went home, but for some the trip was complicated by the fact that the subway also was flooded and out of service.

Divers were used to survey the problem, and the Army Corps of Engineers was called in. Their solution was to seal off the portion of the tunnel that was ruptured, using steel-reinforced concrete plugs. The engineers used algebraic formulas to calculate the amount of force the water would have on each plug and how much force the concrete plug could withstand. Once the plugs were in place, the engineers worked on reversing the flow of the water. For over a month, millions of gallons of water were drained off to a water reclamation plant, and the Loop slowly returned to normal.





(Continued from page 1) It is well known that improvement of student success in mathematics courses has long been a matter of utmost interest to the Mathematics Department and a matter to which an enormous amount of time and effort has been given by our faculty. It is quite encouraging to think that this goal is now a matter of utmost importance to the college and it is my hope that this will lead to greater support from the college in the areas of resources, ideas and encouragement. A healthy collaboration and exchange of ideas between the Mathematics Department and the college at large could lead to tremendous benefits for our students.

The second matter of critical importance to the Department at the present time ties in perfectly with the aforementioned college initiatives. After much planning, hard work and give and take of ideas within the Department, we now have prepared a new three-quarter sequence of courses that students could take as an alternative to Math 101 and 102. This new sequence would cover the same material that is covered in 101 and 102, but in 33 weeks instead of 22. Additionally, there would be three extra contact hours attached to this three-quarter sequence in which students would be taught the study skills, test taking skills and fine points of the course content that are so essential to success in these courses. Included would be those things that most students are able to figure out for themselves and therefore are not directly taught, but that we now understand need to be taught to many of our students. Also included in this extra contact time would be the opportunity for students to practice these skills on the actual math content of the course.

The Department believes that this "double-barreled" approach of providing students with

an extra quarter to absorb the material and extra contact time to master essential study skills could be of great benefit to our many students who are currently not successful in Math 101 and 102. We are currently negotiating with the college in the hope of gaining permission to offer this new option for our students.

Al Giambrone ■



DEPARTMENT COLLOQUIUM



We will have a Department Colloquium on Friday, May 5, 2006 at 2:30 p.m. in Room 1001. All members of our full- and part-time faculty are welcome, as well as students or anyone else interested in mathematics. The speaker and title are as follows:

Dr. K. T. Arasu,
Professor of Mathematics and Statistics,
Wright State University
"Applicability of Classical Mathematics
in the Contemporary World"

Following the talk will be the presentation of the Mathematics Department Part-time Faculty Member of the Year Award, as well as recognition of winners in the Mathematics Department student competitions. Please encourage your students to attend.

Refreshments will be served.

