

Sinclair Mathnet

October 2007

Volume 14, Issue 1

FROM THE CHAIR



Hello and welcome back! I trust that you are excited about beginning a new academic year and I hope that fall quarter started smoothly for you. *Mathnet's* editor, Lyn Keeler, asked me to discuss the department's new algebra sequence (MAT 191, 192, and 193) and to elaborate

on the status of the pilot sequence. As many of you know, this is the second year that the department is offering the pilot sequence, so it may not be completely accurate to refer to the sequence as "new." However, much about the way the pilot sequence is structured and the manner in which the many topics are being introduced is new. Before I expound further on that subject, let me first remind our readership about the general format of the pilot sequence.

MAT 101

MAT 102

◆◆◆◆◆

MAT 191

MAT 192

MAT 193

The MAT 191, 192, and 193 pilot sequence covers the same topics as the familiar MAT 101 and 102 algebra sequence, and students who complete either sequence are eligible to take either MAT 108 (Math in the Modern World) or MAT 116 (College Algebra). The pilot sequence requires three quarters to complete while the MAT 101/102 sequence is a two-quarter sequence. The pilot sequence was created in direct response to students' concerns that MAT 101/102 "goes too fast." Obviously then, one of the advantages of the pilot sequence in comparison to the MAT 101/102 sequence

is that less material is covered in a given quarter. In turn, the "cost" to the student is that the pilot sequence requires a minimum of three quarters to complete. This at first may seem like a disadvantage to students, but the reality is that many Sinclair students often repeat MAT 101 or 102 one or more times. Given this reality, it seems prudent that students strongly consider taking the pilot sequence, particularly if they realize that mathematics is a subject they struggle with. Another important aspect of the pilot sequence is the study skills component, which teaches students time management skills, how to cope with test anxiety, and how to study mathematics, amongst other things. Additionally, activities designed to keep students engaged and to work in groups have been incorporated into each course.

So you might ask, "How are things going?" Initial studies seem to indicate that students who complete the MAT 191, 192, and 193 pilot sequence are succeeding at about the same rate as students who complete the MAT 101 and 102 sequence, or a success rate of about 47%. The Math Department was certainly hoping for better results! Some solace can be drawn from the fact that students completing the pilot sequence scored significantly lower on the algebra portion of the placement test than students who completed MAT 101 and 102. So in other words, mathematically "weaker" students were able to succeed in the pilot sequence at about the same rate as the total population of students who typically take MAT 101 and 102. This has to be significant! The college, however, has strongly encouraged the Math Department to determine whether the success rates in the pilot sequence could be further improved. Let's now discuss some of the changes that have been incorporated into the pilot sequence.

One major change to the course is the teaching syllabus. All of the courses in the Math Department have a departmental syllabus that describes, among other things, what *(Continued on Page 2)*



(Continued from page 1) textbook is used, the number of exams in the course, what topics are covered and the order in which they should be covered. Additionally, the department has a handbook which provides instructors with general guidelines concerning class attendance policies, the “weighting” of tests and other assignments, etc. Nevertheless, there can be much variation from instructor to instructor, however, as to whether homework is collected, how is it graded, how much partial credit is given, and so on.

In contrast, the syllabus in the pilot sequence is much more detailed. The instructors teaching the pilot sequence are working closely to ensure a more uniform approach to managing their classes. For example, all students in the eleven pilot sections have the same attendance policy, the same homework policy, the same grading policy, and all are working the same homework problems. In the area of assessment, the pilot sections are using “common” exams, and a “common” grading rubric for each exam is used to ensure consistency of grading from one instructor to another. Another major change for the pilot sections is the use of MyMathLab, an online supplement which the student receives free with the purchase of a new textbook. Students use MyMathLab for drill and practice of algebraic concepts and receive immediate feedback as to their level of mastery.

So, what’s next? Much of what has been done for the MAT 191 will be duplicated in the winter for MAT 192. But for this initiative to be successful, more support from both Math Department faculty and on the part of the college will be required. For example, since MyMathLab is being required in both 191 and 192, faculty will need to be trained in the use of MyMathLab. Can reassigned time be given so that faculty can be trained to participate in the pilot sequence? But the bigger issue is how do we assess the success of the pilot sequence? How can we determine what is truly causing students to be more successful in the pilot sequence? (That is assuming that students in the pilot sequence truly ARE more successful than their counterparts in the Mat 101/102 sequence.) Are the students more successful due to the “common” exams? Perhaps the students are more successful because of MyMathLab? Maybe it’s because the students in the pilot sequence are

taking three quarters to master the material instead of the two quarters required for MAT 101/102? This last point, three quarters to complete an Elementary/Intermediate Algebra tract versus two quarters to complete the same content, will be discussed in my next article. I will also provide some preliminary data concerning success in the eleven sections of MAT 191 being offered this fall.

Tony Ponder ■

Another Look at Factoring Trinomials

We can use grouping to factor the trinomial $ax^2 + bx + c$. We can look for integers p and q such that $pq = ac$ and $p + q = b$. If such p and q exist, then

$$ax^2 + bx + c = a\left(x + \frac{p}{a}\right)\left(x + \frac{q}{a}\right)$$

For $a = 1$, this is just

$$x^2 + bx + c = (x + p)(x + q).$$

Although this is a somewhat mechanical procedure, perhaps it would help some students having difficulty with factoring. For example, to factor $6x^2 - 7x - 3$, find integers p and q such that $pq = -18$ and $p + q = -7$. One finds $p = -9$, $q = 2$ (p and q are interchangeable) and $a = 6$.

$$\begin{aligned} \text{Then } 6x^2 - 7x - 3 &= 6\left(x + \frac{-9}{6}\right)\left(x + \frac{2}{6}\right) \\ &= 6\left(x - \frac{3}{2}\right)\left(x + \frac{1}{3}\right) \\ &= 2\left(x - \frac{3}{2}\right) \cdot 3\left(x + \frac{1}{3}\right) \\ &= (2x - 3)(3x + 1). \end{aligned}$$

The fractions have been removed by “distributing” the factors of 6.

Harvey Chew ■





Milestones



The Department mourns the passing of two of its part-time faculty members – David Tsui died on August 5 and Richard “Dick” Myers on August 22. David was an employee of GE Aviation and taught mathematics part-time at WSU and UD as well as for Sinclair. He is remembered as a person with a great sense of humor, well-liked by his students. Dick was a graduate of Fairview-White High School and U.D. He worked for 33 years with Standard Molding and was president of Jamestown Plastics for ten years. He was married to Sue Myers, who retired from our department a few years ago. Dick taught part-time here for 31 years and will be remembered very fondly.

Part-timer John Sparks has retired from the Air Force, and part-timer Dolores Williams has retired after teaching for 36 years for the Beaver Creek school system. Both John and Dolores plan to continue to teach for Sinclair.



Office worker Tony Crabtree left the Department at the end of Spring Quarter. A fond farewell, T.C.!

Our new office assistant is Carol Bonner.
Welcome Carol!



The Department welcomes three new faculty members this fall. Two veteran part-timers, Lynn Schutte and Tom Whitehead, have moved into ACF positions, and Najat Baji, also an ACF, comes to us from New York. Najat, Tom, and Lynn are shown above with a cake decorated in their honor at the September 14th Department meeting.

CONGRATULATIONS

The Department would like to extend its gratitude and congratulations to the following adjunct faculty members who have been recognized for their many years of service to Sinclair.

Five Years of Service

Nancy Christolear
Anthony DeThomas
Donald Dreesbach
Kurt Hanaway

Ten Years of Service

David Fridenmaker

Fifteen Years of Service

David Cooper

Twenty Years of Service

Vince Miller





What Did You Do
During

SUMMMER

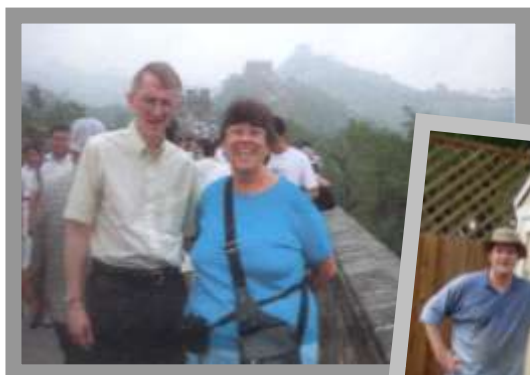
Sinclair's Math Department was well represented around the country and the world this summer - Harvey and Martha Chew traveled to China, Susan Harris and her family toured parts of Europe, and Tom Wilson went to England and Europe, too. Tom Whitehead visited family in Florida and helped his son-in-law build a shed.



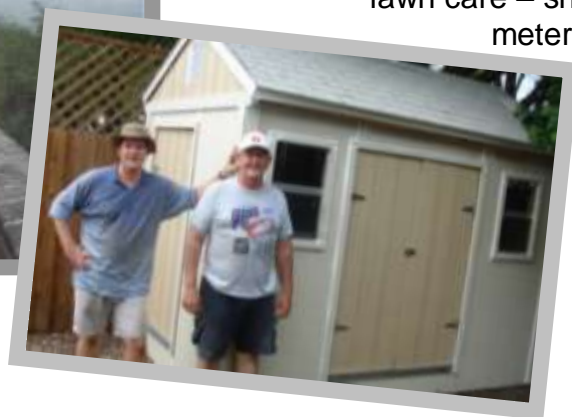
Budapest



Tom Wilson's trip to England included a stop to visit with Department friends Janet and Peter Gill (Peter participated in a faculty exchange in 2001), and with Jorg, an exchange student from Germany who stayed with Tom while he was here. Tom also spent time in Budapest.



Harvey and Martha Chew tour the Great Wall of China, and Tom Whitehead (right) displays his carpentry skills.



DEPARTMENT COLLOQUIUM



We will have a Department Colloquium on Friday, October 12, 2007 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 speakers and titles are as follows:

"My Nines Have Seen Their Glory – a Revered Relic Revived and Ratified"

**Al Giambone, Retired Department Chair and Professor of Mathematics
Sinclair Community College**

"The Defense of the Gungans Episode V, Calculus Strikes Back"

**Samuel A. Wright, Major, USAF
Assistant Professor of Statistics
Air Force Institute of Technology
Department of Mathematics and Statistics**

Refreshments will be served.



Harvey's Joke Corner

A meter maid retired to doing lawn care – she traded meters for yards.



The medical student who needed statistics to graduate had to take Stat Stat.

Algebra students must "come to terms" with polynomials.

Do educated owls say "Whom?"