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FROM THE CHAIR



Let it snow, let it snow, let it snow! Oh wait, as the department chair, am I still allowed to sing that song? Too late! I hope everyone enjoyed the extra days off this quarter! Not so surprising, I did have one faculty member

who was almost in tears when she received my phone call that the college was going to be closed for a second day in a row due to the inclement weather. Where else but in the Math Department can you find faculty with such dedication?

I would like to congratulate the following faculty members (and their spouses) who were blessed with “new” additions to their families. Kinga and Dan Oliver were blessed with the birth of their daughter Liliana Sofia, while Karl and Sharon Hess recently adopted a baby girl and named

her Esther Sharon Hess; baby Hess recently submitted an article to the MAA with a rather clever proof to Fermat’s “little theorem!”

In my article from October 2008, I shared some data on the success of students enrolled in the Math 190 sequence courses during the last academic year, relative to students enrolled in the Math 101/102 sequence. In general, the numbers were very encouraging in that the “average” success rate of the Math 101/102 sequence was 41.4%, while for the Math 190 sequence it was 58.9%. From the above, it appears to be the case that Math 190 sequence students are succeeding at a higher rate compared to their counterparts enrolled in the Math 101/102 sequence. But are students who completed Math 190 sequence courses understanding course content better than their Math 101/102 counterparts? Below you will find tables which display an excerpt of an item analysis of final exam questions administered in the department’s two algebra sequences. The tables examine Math 193 versus Math 102 and Math 191 versus Math 101. *(Continued on Page 2)*

Question Number	MAT 193 SP 2008		Question Type	MAT 102 FA 2007 - SP 2008		Amt by which 102 students outperformed 193 students
	Total Number of students	% Correct for all Students per question		Total Number of students	% Correct for all Students per question	
Alpha	57	63.16%	Finding the distance between two points	1132	60.82%	-2.34%
Beta	57	73.68%	Add/Subtract 3 radical expressions	1132	82.42%	8.74%
Gamma	57	70.17%	Find the coordinates of the vertex of a parabola	1132	59.81%	-10.37%



	MAT 191 FA 2007 - SP 2008			MAT 101 2007 - 2008		
Question Number	Total Number of students	Percent Correct for all Students per question-- MAT 191	Question Type	Total Number of students	Percent Correct for all Students per question-- MAT 101	Amt by which 101 students outperformed 191 students
Delta	262	61.45%	Solve a linear equation	1738	60.41%	-1.04%
Epsilon	262	82.82%	Subtract two polynomials	1738	85.38%	2.56%
Zeta	262	57.63%	Simplify an exponential expression	1738	57.88%	0.25%
Eta	262	66.03%	Division of polynomials	1738	51.27%	-14.76%
Theta	262	77.48%	Factor a polynomial with a GCF	1738	84.58%	7.10%

(Continued from page 1) When comparing the questions on the departmental final exam in Math 101 to 191, it turns out that there are 14 question types the two exams have in common. When comparing the Math 102 final exam to the Math 193 final exam, there are 11 question types on the exam that the two courses have in common. The table below compares how the two groups performed on the final exam. Please note that the data for Math 193 is based on the final exam results from spring quarter 2008 only.

Math 101 average score on the 14 final exam question types	Math 191 average score on the 14 final exam question types
70.50%	68.24%
Math 102 average score on the 11 final exam question types	Math 193 average score on the 11 final exam question types
61.89%	58.53%

Given the limited amount of space in this article, it's very hard to paint a complete picture as to what this preliminary data shows, particularly since this is the first time that any type of comparative item analysis of the final exam has been done. However, from the above "data snapshots," Math 101 students outperformed their Math 191 sequence counterparts on the final

exam, and Math 102 students outperformed their Math 193 counterparts on the final exam, but in each case by a relatively small margin.

To some extent, the above results tend to support the department's belief that "mathematically weaker" students tend to take the Math 190 sequence courses; this belief has in fact been confirmed by data analysis completed by RAR (Research, Analytics, and Reporting). But could there be other factors which contribute to Math 101/102 students outperforming Math 190 sequence students on the final exam? Another question to "ponder" is how do the students fair in the next course? Are students who complete Math 102 more successful in Math 108 or Math 116 versus their counterparts who complete Math 193? I foresee much more data analysis in my future!

Tony Ponder ■

Future Math Majors



Esther Sharon Hess – newly adopted daughter of Sharon and Karl Hess.



Kinga Oliver with Liliana Sofia

How we *GET* it done

- Galois did it the night before.
- Möbius always does it on the same side.
- Algebraists do it in groups.
- Combinatorialists do it as many ways as they can.
- Mathematicians do not do it; they leave it as an exercise to the reader.
- Mathematical physicists understand the theory of how to do it, but have difficulty obtaining practical results.
- Markov does it in chains.
- Real analysts do it almost everywhere.
- Statisticians probably do it.
- Quantum physicists can either know how fast they do it, or where they do it, but not both.
- Logicians do it by choice.
- Fermat tried to do it in the margin, but couldn't fit it in.
- Aerodynamicists do it in drag.
- Cosmologists do it in the first three minutes.
- Pure mathematicians do it rigorously.
- Topologists do it openly.



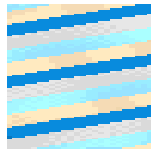
Math Lab Reminder

Just a reminder - all of the worksheets, handouts, and test review sheets that are maintained in the Lab are also on our website (pdf format).

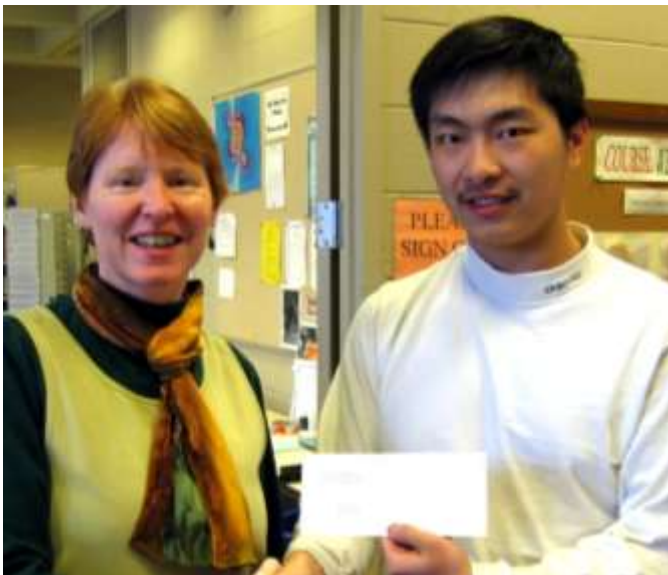
www.sinclair.edu/centers/mathlab.

There are also links to companion websites for the textbooks (if any). This information might be useful to your students.

Willow Cliffswallow
Math Lab Manager
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Problem of the Week winner Fall 2008



Professor Susan Harris presents a check to the first place finisher, [Hang Zhang](#), in the Fall Quarter Problem of the Week Contest. Hang solved eight of the ten puzzles correctly.

And Other REMINDERS

- Please remember that students should memorize the course formulas (the ones included with the department syllabi) and should not be permitted to use formula sheets for them or store them on their calculator.
- Please do not cancel classes even if you have completed the material. Find some way to make good use of the time. If it is impossible for you to make a class please get a substitute.
- Remember to turn in a copy of your tests to the department office.

※ Math Wisdom ※

The right angle for approaching a difficult job is the Try Angle.

Harvey's Joke Corner

When the geometry teacher's road rage led to a crash, it turned into a "wreck-tangle."

Conversation at the Sinclair auto repair shop:
Harvey: My car has a loose fan belt.
Mechanic: You have a "tension deficit disorder."

A recent birthday greeting makes me feel younger:
"Happy 2[^]6th birthday!"