
VITAL SINES

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A newsletter of the Plattsburgh State University Mathematics Department

Safe and happy holidays!

And slam those exams ☺

For some excellent advice on how to study for mathematics exams (including that working problems is vastly more effective than reading through worked problems, and that a good night's sleep before a math exam is essential), look at <http://euler.slu.edu/Dept/SuccessinMath.html#studyttest>

Opportunity knocks...

Here are some opportunities you might want to consider. If you are interested in any of these, talk to one of your professors; they will be able to advise you about application procedures, possible funding sources etc.

Nebraska Conference for Undergraduate Women: February 8-10, 2008

This conference gives outstanding undergraduate women mathematics majors the opportunity to meet other women who share their interests in the mathematical sciences, and find out about graduate school from women graduate students. (One of our students has already registered for this conference. Marie Wass ('05) went to the conference and told us that it was extremely worthwhile.) If you are interested, you should be making plans *now*. <http://www.math.unl.edu/~ncuwm/10thAnnual/>

Hudson River Undergraduate Mathematics conference, 20 April 2008, at St. Lawrence University, Canton. Each year a group of our students travels to this undergraduate mathematics conference – they always have a good time. Each year several of our students give presentations. If you are interested in giving a presentation, now is a good time to begin thinking about it (talk to one of your professors if you are interested).

REU's; Research experiences for undergraduates. These summer programs are offered at many universities in different part of the U.S. The programs typically last 5 to 6 weeks, and the students who attend them have usually completed their sophomore or junior year. They are competitive, extremely worthwhile, and typically call for applications in February or March. There is a listing of REU opportunities at <http://www.ams.org/employment/reu.html>.

Hofstadter's Law: It always takes longer than you expect, even when you take into account Hofstadter's Law. (Douglas R. Hofstadter, of course.)

Glossary of Terms Commonly Used in Math...

1. CLEARLY: I don't want to write down all the in-between steps.
2. OBVIOUSLY: I hope you weren't sleeping when we discussed this earlier, because I refuse to repeat it.
3. RECALL: I shouldn't have to tell you this, but for those of you who erase your memory tapes after every test, here it is again.
4. WITHOUT LOSS OF GENERALITY: I'm not about to do all the possible cases, so I'll do one and let you figure out the rest.
5. SKETCH OF A PROOF: I couldn't verify the details, so I'll break it down into the parts I couldn't prove.
6. HINT: The hardest of several possible ways to do a proof.
7. SIMILARLY: At least one line of the proof of this case is the same as before.
8. BY A PREVIOUS THEOREM: I don't remember how it goes (come to think of it, I'm not really sure we did that at all), but if I stated it right, then the rest of this follows.
9. FINALLY: Only ten more steps to go...
10. Q.E.D. : T.G.I.F.
<http://www.stetson.edu/~efriedma/mathhumor.html>

Ed: Thanks Sarah for finding these.

Any musicians out there?

The MAA (Mathematical Association of America) is having a mathtube contest; see <http://www.maa.org/news/100307mathtube.html> for details. In particular for those of you taking abstract algebra, check out the music video "a finite simple group of order two" that you will find linked from that page.

While on the MAA page, you might want to check out the page for undergraduates - it has lots of useful information on topics such as careers, and research experiences for undergraduates: <http://www.maa.org/students/undergrad/>

Interesting journals...

The mathematics department gets several journals that are of interest to undergraduate mathematics majors. *Math Horizons* is a magazine for undergraduate students; choc full of interesting articles. *Mathematics Teacher* is a magazine published by the National Council of Teachers of Mathematics, which focuses on secondary school teaching. Both of these are on the shelf in the suite near Dr. Kenoyer's office – Hawkins 244. Come in for a browse!

Math club news

Sarah Taylor and **Lucas Tooker** are the math club co-chairs for this year. They started by visiting classes and conducting a survey to find out what kinds of activities students would like the math club to organize. Here, brief reports from them.

By popular demand, Back to Basics workshop...

The Math Club held its first event of the semester on November 8, the Back to the Basics workshop. As this was the first time this event has been held, there was no telling what would happen. Surprisingly, there was a large turnout. There were copies of several sheets of different types of problems that people had reported having interest in reviewing. **Tom Leiberling** did a good job as the main speaker in going over various problems. There is talk about possibly holding another workshop sometime in the near future.

Lucas Tooker

The Math Club is Looking Ahead...

After a good start to the semester with the first "Back to the Basics" Workshop, the math club is looking forward to holding future events. Some of their ideas include more "Back to the Basics" Workshops, guest speakers and potentially even a math competition to be held over the course of next semester.

The math club would like to welcome guest speakers at the beginning of next semester to talk to our math majors about their experiences after graduation. The club intends to have speakers from a variety of fields including teaching, graduate schools, actuarial science, etc. The details of a potential math competition are not fully worked out yet but would include a variety of competitive events throughout the semester between registered teams with various prizes for the winners of each event.

To get your ideas heard and be a part of the math club, look for e-mails about upcoming events and meetings. If you are not yet receiving e-mails from the math club or have any questions, contact Sarah Taylor at tayl2140@mail.plattsburgh.edu. Good luck with the rest of the semester and keep your eyes open for the future events of the math club!

Sarah Taylor

Kudo's to Zach Welch, senior mathematics major, co-captain of the 2008 cardinals baseball team...

Welch, a second baseman from Merrill (Northern Adirondack High School), started all 40 games for the Cardinals last season. He had career highs in batting average (.353), hits (55), runs batted in (31) and stolen bases (26) en route to all-region honors by American Baseball Coaches' Association and Eastern College Athletic Conference Upstate as well as being named second-team All-State University of New York Athletic Conference. (From SUNY Plattsburgh sports information.)

Prof Bodenrader comments: "The release fails to mention, the extent to which his mathematics background contributes to his success in baseball (computing trajectories of balls using calculus, using logic and probability to figure out the next pitch, etc.)" ☺

News from the Learning Center

The Claude J. Clark Learning Center on the first floor of Feinberg library has long been a popular spot for doing homework and discussing what's going on in your classes. This semester, it's also a popular spot for attending -- and for teaching -- review sessions.

With the permission of a course instructor, a Learning Center tutor can schedule either a weekly walk-in session for a specific course, or a one-time review session on, say, the evening before an hour exam. Veteran LC tutor **Lucas Tooker**, for instance, runs a weekly review session for Professor Morrow's Math 133 students, and **Nick Warner** has conducted a pre-exam review for Professor Quenell's Math 225 class.

If you're a Learning Center tutor and you'd like to run a course-specific review session, you need to meet with the course instructor first. Then you follow a little checklist that you can pick up from **Nichole Bennet-Bealer**, the Assistant Director of the Learning Center. The checklist includes things like making sure the time you propose for the review session doesn't conflict with the actual class meetings, and making sure you put all the required information on the flyers that you make to advertise your session.

If you'd like to see a review session organized for a course that you're taking, the first step is to ask around to see if there are any Learning Center tutors who are qualified for your course. Then you'll need to talk the tutor into offering a review session. But that's not too difficult: most tutors who have the time seem more than willing to stand up in front of the blackboards in the Learning Center.

Prof. Greg Quenell

Problems, problems, problems

Congratulations to **Nick Warner**, who solved the first of the challenge problems in the previous issue of Vital Sines.

Here are two new challenge problems. Submit solutions (in writing) to Professor Quenell. A prize will be awarded for the first complete and correct solution to each problem.

1. In a legislative assembly there are $2n+1$ seats to be distributed among three parties. In how many ways can the seats be distributed so that no party has a majority against a coalition of the other two?
2. Find (with proof) the least integer n such that

$$\sum_{k=1}^n \frac{1}{k} > 20. \quad \text{You can use a calculator for this one, but not brute-force computing.}$$

Closing Credits

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Thanks to the contributors to this issue.

Contributions for the next issue would be much appreciated