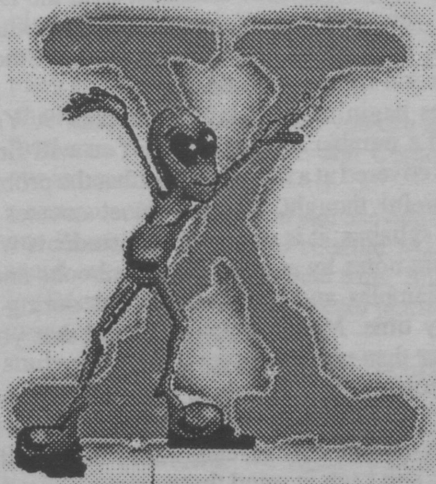


math NEWS

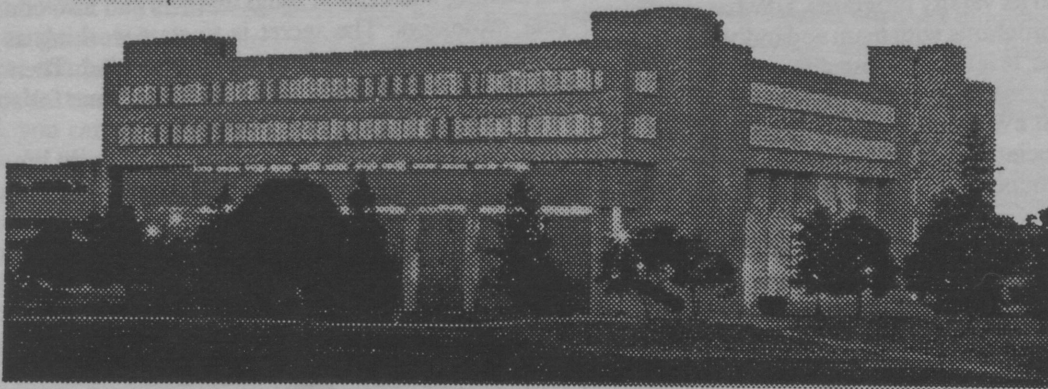
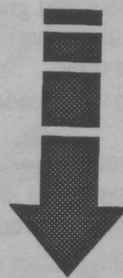
Volume 72 Issue 0

FROSH ISSUE 1996

THE **X** FORMULAS



The Truth Is In Here



MATH & COMPUTER BUILDING, UNIVERSITY OF WATERLOO

SEPTEMBER 2

The Issue Where The Columns Don't Necessarily Line Up!

MESSAGES FROM THE FACULTY

On behalf of members of the faculty and staff in the Faculty of Mathematics, I'd like to welcome you to Waterloo. You have chosen to study for the next four or five years in the only Faculty of Mathematics in North America, at a university that has gained an enviable reputation in Canada and beyond. This is a unique environment that will have much to offer you both in and outside the classroom.

Like most new students, you may experience some anxiety over what lies ahead as you adjust to university studies and to living on your own. The expectations will be different from those you have experienced in high school. The workload will be heavier and it will be very important to manage your time well. Your high school preparation may be different from that of your classmates, and you may need to do some extra work early in the term. All of you will find some aspects of the program difficult and challenging, and special efforts will be needed. But you have been accepted into your program of study here because we believe that you have the ability to succeed.

There are many sources of help and support available to you. Be sure to take advantage of them when you need them:

- Your teaching assistants (TAs) and professors will be available to you for extra help in tutorials and during posted office hours.
- There are special drop-in Tutorial Centres for algebra, calculus and CS on the third floor of the MC building. They are staffed by undergraduate and graduate TAs who are there to provide one-on-one assistance. The Centres' hours are posted on the doors.
- Faculty advisors are there to help with academic issues and problems.
- Counselling Services offers workshops on various topics, including time management and study skills. Be sure to watch for announcements, and take the time to attend a session or two.
- Talk and work with other students. You can learn from them and they can learn from you.

You will have many opportunities to broaden your experience. In addition to its varsity programs, UW has extensive campus recreation programs with team and individual sports organized at various levels of competitiveness. There are groups in music, drama and dance, and student clubs and organizations to suit every interest. The Math Society, one of the most active societies on campus, welcomes all student volunteers. Look around; there is bound to be something of interest to you.

I look forward to meeting many of you during Orientation, and hope that you will enjoy your introduction to the University of Waterloo and to the Faculty of Mathematics. Best wishes as you embark on this next exciting phase of your life.

J. D. Kalbfleisch
Dean of Mathematics



Faculty of Mathematics
University of Waterloo
Waterloo, Ontario, Canada



I would like to extend a warm welcome to you all as you begin your first year at the University of Waterloo.

Your first experience at the University in the Fall will be Orientation Week. One purpose of orientation is to provide an opportunity for you to meet some of your fellow students and faculty members. There are two activities that I would like to mention.

OPERATION MATHSTART, which begins on Tuesday, September 3, will assist you with registration and scheduling problems. Even if you haven't encountered such problems, the MATHSTART centre is also a good place to meet other students, staff and faculty members in an informal atmosphere.

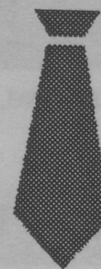
FACULTY DAY, on Wednesday, September 4, is jointly sponsored by the Faculty of Mathematics and MathSoc. The day-long program includes breakfast with the Dean, meetings with your Algebra, Calculus and Computer Science professors, a lunch-time barbecue, and a Student Panel discussion and Information Session.

Lectures begin on Monday, September 9. You will be faced with a number of challenges. You will find that the material is covered at a fast pace, and that the problems often require careful thought. Because most courses have an ambitious syllabus, it is expected that students will supplement lecture notes by reading their textbooks and working through examples and routine exercises during their personal study time. Many of you will find that you have to work harder than you have ever done before.

Most people have difficulties with the demands of university study from time to time. Discuss problems with your fellow students, possibly at regular meetings, visit the Tutorial Centre, and keep in mind that you can also consult with your professors. The secret is to start working as soon as lectures begin, so that you don't fall behind. Then you will do justice to your studies, and still have time for social and sporting activities.

I wish you every success in your university life.

Paul Schellenberg
Associate Dean, Undergraduate Studies



MATHSOC EXEC SPEAKS

From the Spring 1996 Exec

Congratulations! Welcome to Canada's best university (MacLean's poll), and the only university with a Faculty of Math in North America. You are now officially a Mathie.

What can you expect with your new life at UW? Lots of fun! Well, there is some school work too. Be prepared for a big change in your life. Unless you are living at home, you'll have to learn to fend for yourself. University is very different from high school. Your classes will be bigger, there's a heavier work load, you've got more responsibilities, a different social life, new friends, and the list goes on. The good news is that you are not the only one going through it. There are people you can talk to — your profs, other Faculty members, your teaching assistants (TAs), people at counseling services and other students.

Speaking of fellow students, that's us! We are the executive of the Math Society (MathSoc for short), your student society within the Faculty. Being a Math student automatically makes you a member. MathSoc is a volunteer organization which provides services to Math students and represents you to the Faculty. MathSoc has:

- the MathSoc office (MC 3038) with 5¢ photocopies, old exams and midterms, novelties and office supplies such as staplers and hole punches.
- the Right Angle Café where you can get food at a reasonable price and Conics, our ice cream stand.
- a computer lab where you can use one of our Pentiums or our old reliable Mac.
- social events like Wonderland trips, Blue Jay Road trips, movie nights, card tournaments, pub nights, sport teams
- study rooms, carrels and group discussion areas.
- committees that deal with student issues.

This is where you come in. MathSoc lives and dies on the strength of its volunteers. We need volunteers to hold an office hour or two each week, and to help with social events. You can be a class rep (represent your class to the MathSoc student council), a director (social director, office manager, internal/external director, etc.) and if you are really interested, you can run to be President or of the Vice President positions (Activities and Services, or Finance). Come out and talk to us about getting involved. We encourage first year students like yourselves to get involved. You would be surprised by how much you can get out of this — work experience, new friends and FUN, FUN, FUN!

How can you have the best week of your life? How can you start off your university life with a blast? FROSH WEEK!!! This week is filled with fun, meeting new people, getting your Pink Tie, running around in togas, and getting "oriented" at UW (until you drop).

Not only is Frosh week fun, it's also your first chance to meet, and bond with the people who you will spend the next 3-5 years of your lives with. Do you really want to be in a class of 100 people you don't know?

From the Fall 1996 Exec

Yessiree! This is one of the most exciting episodes of your life, folks!

This is a brand new start for a lot of you—new faces, new school, new city, far from your home...

Take advantage of your fresh start! Let your new and previously under-appreciated self blossom!

Maybe you've always been fascinated with the different kinds of mold that can grow on unwashed clothes and dishes, but your mother never gave you a chance to build up green fuzz at home. Well now, thanks to the beauties of university life, you'll finally be able to realize your dream of building a database of odoriferous fungi! (trust us!)

Or perhaps you're one of the chosen few who've been put on this planet to entertain the rest of us by playing tunes using only your armpit and assorted disgusting bodily functions. Well, don't let us stop you! Go wild! Rehearse and refine your act in front of your roommate and pet hamster! (Professors and boy/girlfriends really appreciate being serenaded as well!)

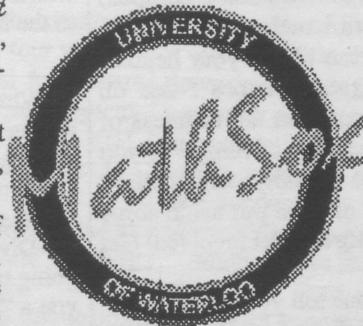
As I was trying to explain in my eloquent way, university life, my friends, is not just about school.

You now have the opportunity of studying (and trying to keep up) with a lot of fantastically bright people, and yes, it's hard work. But a very important aspect of life at U(W) comes outside of academics, in what we do in our spare time.

If you're new to the people in this Faculty, then a big thing you'll want to do early on is build a strong network of friends. The best way that you can do that is getting involved in student life.

The first step is fantasteragorical Frosh Week, where you have the chance to meet the people who'll be in your classes or residence for at least the next four months. For more group fun (only perverts think lewd sex thoughts here) — Hey! You thought lewd sex thoughts, dincha?! — Sheesh! As I was saying, for more fun, make sure y'all c'mon out for Math Week, which is scheduled for Sept. 23rd through the 27th, and party some more with your fellow Mathies!

Besides those two weeks, there are oodles of things to get involved in. The Federation of Students is our campus-wide



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Spring 96 Exec		Fall 96 Exec
Rachel Nickie	Prez	Sarah Kamal
Xavier Aburto	VPAS	Kurtis McLellan
Kim Jack	VPF	Mark Thorton

student organization, and they're always looking for volunteers. If you live in a residence, you can join in with res activities and social events. The Physical Activities Complex (PAC) is also a great place for meeting new people, learning new sports, and staying in shape. There are clubs galore, from the Chinese Students Association and Muslim Students Group to more academically-oriented clubs like the Computer Science Club (CSC) and the, get this, Pure Math/Applied Math/Combinatorics & Optimization Club (PMAMC&OC). Whew!

And of course, being MathSoc Prez, I'm going to mention how you can get involved with MathSoc, your sexy faculty student association. Along with the aforementioned fantasomething Frosh Week and Math Week, MathSoc has movie nights almost every week, pub nights and other fun social events every term, and still has the time to run things like the Right Angle Café (best darn food outlet on campus) and the Comfy Lounge (Math student hangout).

So, to recap: pleeeeeeeeeeease don't bury your head in your books. That's one of the biggest shames I see on campus, when people lose out so much on the richness of university life by not getting into the swing of things. If you don't feel that you have the time to actually contribute to what's happening around you, then at least put aside some time to stay in touch with what's going on. Get involved! *Get involved!*

You can have it all. Don't let anyone tell you otherwise.

The world is at your feet, now, folks, along with all the pitfalls and bumps of University life that will soon be testing your mettle. Just remember what your goals are, and work hard to get them.



Most logarithms can be done with e's.

HOW TO AVOID FLUNKING

This isn't an article to tell you how to study; it is an article about academic regulations. All Math students are bound by certain academic regulations that help and hinder them, and most students don't even know what they are! So before you flunk a course, check your academic regulations; you might be able to avoid it.

Current academic regulations include lots of protection for Frosh. The Faculty recognizes that many first year students suffer academically when adjusting to university life. Accordingly, there are a few safety nets you can jump into if you've really messed up some or all of your courses.

You Can Drop Courses — After The Drop Deadline

You may withdraw from one course as late as tenth week of lectures. What this means is that this course will not count in your average, and you can take it again next year. It will appear on your transcript with a mark of "WD" (WithDraw). It also counts as a "course attempt". More on those later.

You Can Withdraw from the Entire Term

First year students are normally allowed to withdraw from an entire term. This effectively deletes the term. The fact that you withdrew will be on your academic record. Further, if you withdrew from your first term of study, you'll have to re-apply to the Math Faculty.

You Can Skip Exams and Potentially Raise Your Mark

When a student doesn't write an exam (without a valid reason for doing so), one of two things happens. Either the prof assigns them a mark of zero on the exam, or he assigns them a grade of "DNW" (Did Not Write; instead of a normal grade ranging from 0-100). When your average is calculated, a grade of "DNW" counts as 32%. So, if you think your final mark is going to be less than 32%, talk to your prof to see if he'll give you a "DNW".

Don't Get Sick

In university, you can't get off writing an exam by giving your prof a note from your mom saying you have the sniffles. You need a medical certificate, to be submitted before the end of exam period, as part of any claim that illness prevented you from writing an exam. The Math Faculty has a reputation for being very thorough in evaluating such claims. So, don't get sick; but if you do, document it to death.

Read Your Academic Policies

Don't trust me; read your own academic policies, and understand them. When reading academic policies, you must read the policies in the course calendar of *your year of admission*; they change from year to year!

Lastly, these academic policies are here to protect you, but don't make use of them too casually. They're for students who have had real problems. Above all, don't use these policies to try and avoid low marks. Low marks won't kill you. Multiple failures will.

Good luck!

Christina "babe, the talking pig" Norman

FROM THE mathNEWS EDITOR

Hello! Welcome to the Frosh 1996 Issue of *mathNEWS*. This *should* be your second encounter with *mathNEWS*. You should have received the Supplement to this issue early last month.

And this is it! *The Frosh Issue* for your year. The only one you'll ever get! Cherish it! Don't throw it in the laundry, line your bird cage with it or use it as scrap paper.

Since you already know what *mathNEWS* is, hopefully, I won't spend time telling you what it is. I *will* urge you to get involved with the events through the Faculty and the rest of campus as well. A great part of that is *mathNEWS*! Join the team. You can learn some valuable skills to put on your resume!

Enough of that.

This is my fourth term as editor of *mathNEWS* and my first Frosh Issue. What makes this extra special is that one of the recipients is my one and only brother (Hi Raj!)! Yes, for some unknown reason, he's here to follow in my footsteps.

I hope you enjoy reading the Frosh Issue, containing highlights from the past few terms as well. I encourage to use this as a source of information, but also to read the 1996-1997 course calendar and the handbook for the department you wish to enter (Computer Science, Applied Math, etc.) for more detailed information.

Have fun during Frosh Week! Work hard and be sure to establish good time management skills *now*...not in four years!

If you'd like to join *mathNEWS*, stay tuned for posters announcing the "Disorganizational Meeting" in mid-September. For questions, contact the Fall term editor(s) in MC 3041. Since I'm not sure exactly who'll be the editors, I won't pass on the names.

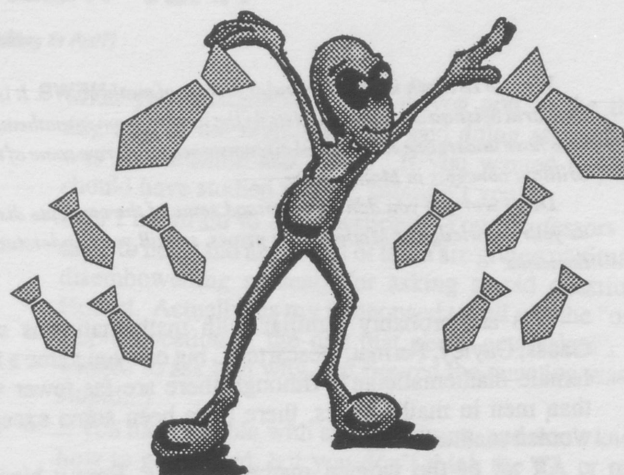
As for me, I'm a Spring 1996 graduate, which means that by the time you get this, I should be in the "real world" reaping the cash from the job earned by my UW CS degree.

That'll be you in a few years (well, maybe not in CS) so hold on tight and enjoy the ride!

Mala "Crakko" Krishnan
mathNEWS Editor, Spring 1996



*math*NEWS
has the
WRITE
stuff!



THE PINK TIE™

Waterloo leads the world (or at least Canada) in technological education. We can boast about leading the fashion world, too. Many people have taken to wearing pink ties as part of their everyday attire. Waterloo started this fashion trend. You see, the Pink Tie™ is the (un)official mascot of the University of Waterloo Faculty of Mathematics.

How did Waterloo start this trend? As the story goes (passed down from grads to Frosh over the decades), there once was a particular professor of mathematics (Ralph Stanton) who loved to wear outlandish gaudily-coloured ties. One of these ties was mostly pink with strange lines on it. This particular professor also happened to be the founder of the fledgling Faculty of Mathematics, lending some importance to his attire.

Mathematics students, being the unconventional bunch they usually are (and we hope you are no different), seized the wonderful opportunity for being irreverent but non-destructive and chose a tie as their official symbol, and pink as its official colour.

During the construction of the Mathematics and Computer building in November 1967, some of the aforementioned Math students decided that the new building was a monstrosity and could use some decoration. (Some people still say that. Then they go and design the Davis Centre — it's even worse!) Late one Sunday night a few weeks later, a handful of brave mathies found their way on to the roof of the brand new building. On Monday morning the campus awoke to see an 85-foot Pink Tie hanging from the roof!

MathSoc adopted the tie, and inherited the dry-cleaning bills, until the tie was stolen for a final time and irreversibly desecrated by heathen Engineering students. A second Pink Tie™ was commissioned and served faithfully until September 1986, when it was paint-bombed. (Some people have no sense of decorum.) This year you should see the most recent Pink Tie™ hanging from the Math building for Frosh Week.

The Pink Tie™ is a symbol of the Faculty of Mathematics and the Math Orientation Committee. MathSoc's official symbol is the Natural Log, but the Tie™ perseveres regardless! As the legend of the Pink Tie™ lives on, it is commemorated in the fashionable item of clothing you wear as a Waterloo Math frosh. Wear the Pink Tie™ with pride.

WOMEN IN MATH

The Mother Of Abstract Algebra

Women In Math is a fairly regular feature of *mathNEWS*. It is written by Marni Mishna and each one details the lives of women mathematicians who have undergone exceptional circumstances to derive some of the most brilliant concepts in Mathematics.

Don't worry if you don't understand some of the concepts discussed; as your knowledge of Mathematics grows, so will your understanding of the terms.

You are probably familiar with mathematicians such as Gauss, Cayley, Fermat, Descartes ... but can you name a famous female mathematician? Although there are far fewer women than men in mathematics, there have been some exceptional women mathematicians.

Of all of the women mathematicians, Emmy Noether is generally the best known. Often described as a loving, intelligent woman, she was impressive by many standards. She was faced with gender issues and political tensions in her lifetime, but her passion for mathematics remained strong.

Amalie "Emmy" Noether was born in Erlangen, Germany on March 23, 1882 and was the eldest of four children. Her father, Max Noether, was a professor of Mathematics at the University of Erlangen. Initially her interest was mainly languages and upon graduation of high school she became eligible to teach French and English at a school for young girls. However, when she was 18 she became interested in Mathematics. She was not allowed to enrol at the University at the time, because she was a woman. She was able to audit classes, and so she did for two years at the Universities of Erlangen and Gottingen. She worked closely with Paul Gordon, a friend at the University. Under his supervision, she wrote her doctoral thesis: "On Complete Systems of Invariants for Ternary Biquadratic Forms". In 1907, she was granted a doctorate at Erlangen.

After Gordon's retirement, she began to work with the algebraists Ernst Fischer and Erhard Schmidt on the topic of finite relational and integral bases. Around this time she periodically substituted for her father at the University.

Felix Klein and David Hilbert took an interest in her knowledge in the area they were studying, which was one of Einstein's theories. They persuaded her to remain at Gottingen and after a three year battle she was allowed to be officially named to the faculty. There was vast opposition to the idea of a woman professor, so this was a difficult battle.

While she was at Gottingen, Emmy did some notable work in establishing a completely general theory of ideals on an axiomatic basis. Her efforts helped bring Ring theory into stronger mathematical prominence. In 1920 she co-authored an impressive paper on differential operators. In 1921 she published *Idealtheorie in Ringberiechen* which became fundamental to modern algebra. In 1924, B. L. Van der Waerden came to Gottingen to work with her. The second part of his book *Moderne Algebra* largely contains her work.

Later in the decade she began to investigate many aspects of non-commutative algebras. She, H. Hasse and Richard Brauer collaborated on several occasions to investigate properties of non-commutative algebras, the hypercomplex quantities and the theory of class fields, norm rests, and the Principal Genus

Theorem. They proved that every simple algebra over an ordinary algebraic number field is cyclic.

She also became known as an extraordinary professor, with students travelling as far away as Russia to be taught in her stimulating, innovative style. She motivated a great many others with her energy. By 1930 she had clearly made a reputation for herself at Gottingen. She acquired a following at Gottingen known as "Noether's Boys".

In 1933, under Nazi pressure she, a Jewish, liberal, woman, was released from Gottingen. From there she went on to a visiting professorship at Bryn College in the United States. She experienced success in the USA, since there were fewer traditional forces to oppose her. This was her first opportunity to work with women colleagues.

By the time of her sudden death in 1935, she had published over 40 papers and had inspired a great many students.

Her colleagues called her "the most creative abstract algebraist in the world". Emmy Noether brought much to the mathematical world in her work in algebra and in the development of axiomatic theory. She also put much life and imagination into her work. Hers was a life passionately devoted to Mathematics. Clearly, she was not only a dynamic person, but a brilliant mathematician. To think, so many opposed her solely on the basis of her gender.

May her story inspire you as you begin your Math journey at Waterloo.

HIERARCHY OF LIFE

Mathics
mathNEWS
 Bombshelter
 The Natural Log/The Pink Tie
 Right Angle Café
 The X Files
 Labatt's 50
 Jolt Cola
 MathSoc
 The Far Side
 Fed Hall
 High school down the road (WLU)
 Kitchener Transit
 Artsies
 High school down the highway (Guelph)
 Quentin Tarantino films
 KEENERS
 Sailor Moon
 Imprint
 8:30 classes
 Needles Hall (a.k.a. Needleless Hell)
 The Tool
 Village "Food"
 Coors Light
 MICROSOFT AND BILL GATES

BETTER LUCK NEXT TERM

(or How Did I Go So Wrong So Fast?)

Kevin "Lord Nullset" Hartmann's article below does a good job of warning you of what could go wrong if you don't start on the right track as well as telling you what you should do.

This article is dedicated to all those puzzled young students out there, who are wondering why their marks are so low, and what they should do now. The second answer is simple — cry bitterly over their folly, and spend extra time locked up in seclusion, studying for exams.

But for future terms, this article will hopefully provide some reminders as to where one often goes wrong.

Having committed most of these errors, I have a good understanding of what not to do, assuming, of course, you don't want to join me in General Math.

Things To Do

- Go to your classes, even the boring ones. Even if you've known the Chinese Remainder Theorem since two days after childbirth, with your luck, the prof will develop a new notation which will never be mentioned since, and will require you to know it for the exam. Then again, if you've really known the Chinese Remainder Theorem since two days after childbirth, you've got other, more serious, problems. Like dealing with all trauma of being Carl Gauss in a past life...
- Try to see if you can attend another section of the same course. If you can't do so "officially", try handing in your assignments in your regular class, and attend lectures with the professor whose style you prefer. Keep in mind that some professors frown on people from other sections attending their lectures, especially in crowded classrooms.
- Choose your electives carefully. If you have absolutely no interest in the harvesting practices of the early Greeks, don't take a course called CLAS 666: Ancient Secrets of Greek Agriculture. If you think capitalism is an evil establishment by which the aristocratic upper-classmen impose their iron-fisted control in order to revel in the exploitation of the working classes, perhaps BUS 111 is not for you.
- Do your assignments. Pay special attention to assignments that seem "trivial". They're usually the kind that require some little trick or step, that you will learn once, and forget about, until you see it on an exam 4 months later...and kick yourself for forgetting.
- Assignments are useful, but not for the reasons that most people say. Unlike textbooks or lectures, assignments don't teach you much. (In some cases, they don't teach you anything...). What they can do, however, is force you to realize how little you really do know (sometimes, even with regard to mathematics!). This allows you to ask intelligent, pointed questions in class that will awe your friends and classmates. And sometimes even the prof. (Occasionally, they'll be so surprised they'll even forget to snicker at you...) Assignments are also good for social bonding, as just about anyone who is nice and quiet seems like a minor deity at 4:30 am, especially

when your assignments have driven you to the third migraine of the night (so, who said doing assignments was all sunshine and roses? If you wanted that you should have studied botany, shouldn't you!?)

- Don't be afraid to ask questions. Your professors are there to help, and almost all of them are giving up ritually disembowelling students for asking stupid questions. Honest. Actually, as my father used to tell me, the "only stupid question is the one that never gets asked". (I wanted to ask him why, but figured the question was too stupid...)
- If you have trouble with an assignment, and don't know how to get started, but you don't think the TA or prof will help you with it, bring a problem that you think is related, and ask them to help you solve it, instead. It might give you a hint of how to solve the assignment problem. It might also confuse you, throwing your mind into horrid madness from which you can never recover, but that's unlikely. Unless, of course, you're in Computer Science, in which case madness is considered a requisite condition anyway.

Things Not To Do

- Play MUDs, MUCKs, or MUSHes. The very names of these systems should provide a warning to Mathies. They are all named after messes, of one sort or another, representing the mess your academic career will quite likely suffer once you become too addicted. Eventually, junkies of these systems reach total burnout, or join the CSC. Scholars argue as to whether these two consequences are really two different manifestations of the same situation.
- Try to bribe your prof. This will quite likely be unsuccessful, since someone who dedicated their life to suffering the mind-bending tortures of higher mathematics is quite probably not in it for the money. Even if they were bribable, it's unlikely that you could afford to bribe them based upon a student income. (Just picture it: "You see, sir, all you have to do is give me a 95, and all these boxes of Kraft Dinner can be yours!")
- Kill your roommate. While this supposedly grants you a full term with a "B" average, according to Village legend, bloodstains on the carpets are very hard to explain to the police... the judge... the parole board... You get the idea!



<http://www.undergrad.math.uwaterloo.ca/~mathnews>

MATH ENDOWMENT FUND

Welcome to the University of Waterloo. You are coming to our illustrious realm of higher learning at an important time in the history of the Faculty of Mathematics.

The slow economy and recent government cuts have been hitting universities all across Canada, and Waterloo is no exception to that rule. Monetary resources have been reduced, and the Faculty has been facing a funding crisis. To help combat this, the MEF was formed.

What is MEF?

The Mathematics Endowment Fund is a fund that is continually increased, but only the interest is ever spent. In this way, the main chunk of capital is never touched, and the endowment continues forever.

Where does the money come from?

The money comes from two sources: the Voluntary Student Contribution (VSC) and the Pink Tie Pledge (PTP) (for graduating students).

The VSC is on the fee statement. As this name implies, it is a **voluntary** contribution. If you want to get your \$31.42 back, then just fill out a form that will be available on the third floor of the Math Building during the first three weeks of term. Before you get your money back, though, think about the benefits of where this money could go.

Where does the money go?

Education is not free, as you have found out when you opened up your fee statement. Unfortunately, much of the money that you are paying out doesn't adequately fund all of the programs that are necessary to keep the level of teaching where it is today.

Waterloo certainly has one of the most extensive undergraduate computing environments in North America, but it takes money to maintain and upgrade it to keep with the times. Programs for students in their first couple of years, such as the tutorial centres, and the first-year MacLab require money. Various other departments offer labs that require equipment that requires ... you guessed it ... money.

Who decides how to spend it?

All decisions involving how the money is made by the MEF Funding Council. The Council is made up of a large majority of students, and some faculty members. If you are interested in getting involved in the workings of the faculty, then this is an ideal opportunity for you.

Why \$31.42?

Other student-directed endowment funds on campus range from \$45 to \$75 per term per student. Many of these funds have seen a decline in popularity because of the relatively large cost. The idea with keeping the number low was to increase participation in the endowment fund, so everyone would feel like a part of it. The number \$31.42 was chosen because, when the numbers were projected, it seemed to meet the future demand, and, hey, it's approximately 10π .

This endowment is for you, and those that will follow you. Onwards! Into the future!!

RUNNING AROUND CAMPUS

You're probably used to going from classroom to classroom for your courses. Now's your chance to go from *building* to *building*! Thanks to a few people who've suggested the Frosh would like a map, I've decided to add one to the issue.

First, locate the MC in the middle of the page. This is your second/third home. It's open 24 hours a day and probably where most of your classes will be. Once labs get going this is probably where most of you will be. (The rest of you will be on vacation someplace far away.)

The next building you ought to know is the DC — Davis Centre. It's hard to miss. The architects and painters must have been deprived of at least a week's sleep to come up with that thing. I've been told that it's supposed to resemble the inside of a computer. Maybe it's just me, but the last time I looked inside a computer, I failed to see pink and yellow *things* coming out of it. Anyway, this is the building where first year CS classes are usually held...possibly others. It's darn cold in there, so keep a sweater or jacket handy even in the warm months.

EL, or Engineering Lecture Hall, is an ugly-looking building (sometimes referred to as "the submarine"; you'll have to see it to know why), that also has Math classes. Why? Probably because your prof couldn't get a room in the MC. Not a big deal.

Your electives, if in the Arts or Sciences, will be in the other buildings. For example, ML, or Modern Languages, is where, well, the languages classes are.

NH is Needles Hall, better known as "Needless Hell". Yes, this is the building where you go through all the Co-op hassles and interviews. The fun is just beginning for you Co-ops.

Tunnels

Yes, there are above- and below-ground tunnels throughout campus to shield you from the bitter cold and rain. Hey, this isn't called *Waterloo* for nothing! I'd tell you where they are, but this article would get too long! Your Frosh leaders and other MathSoc people should be able to help. There isn't a tunnel to every building, but you can go through most of campus in one.

The Fun Stuff

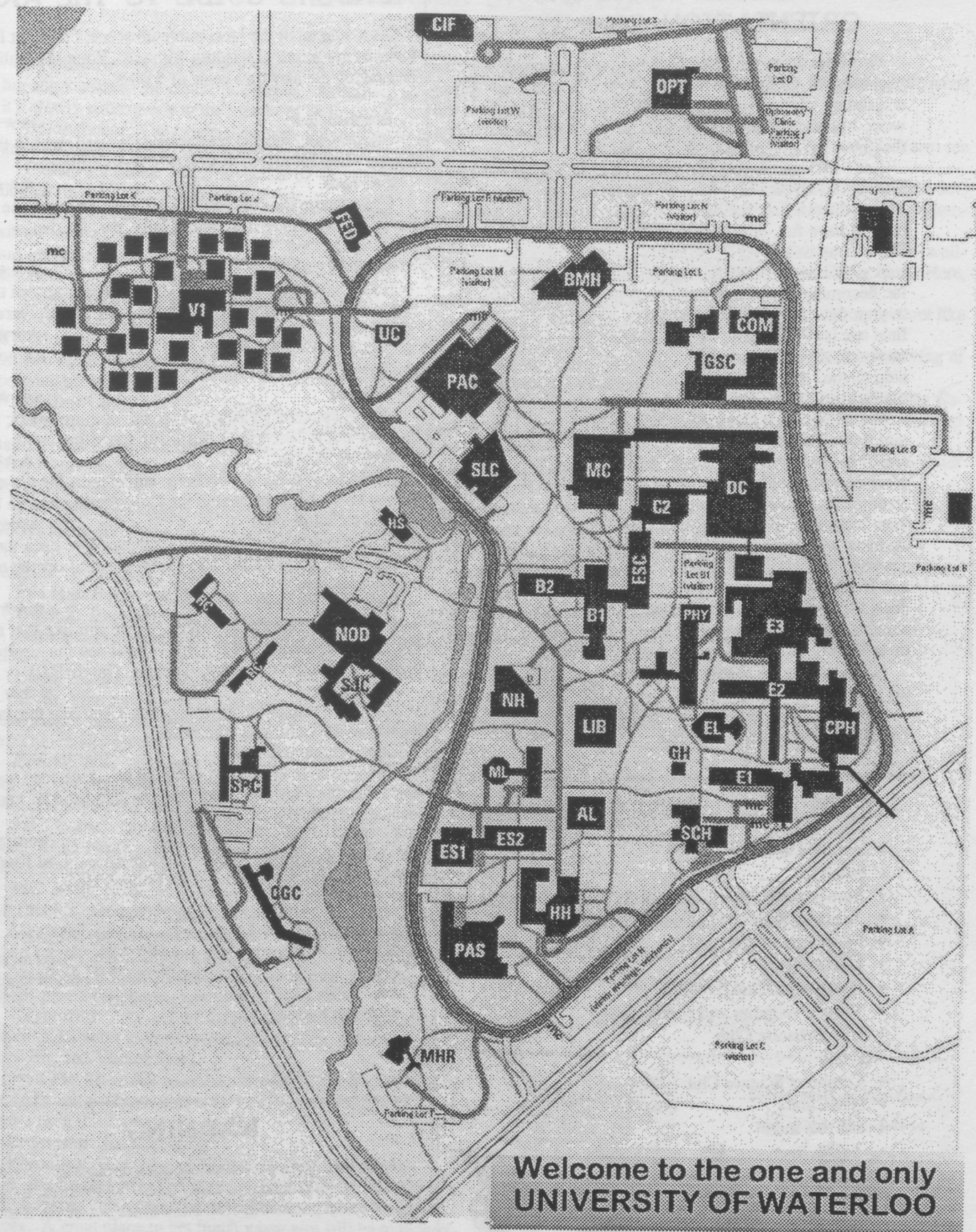
Now that you know where classes are, you want to where the fun stuff is, right? The SLC (Student Life Centre) is right behind (beside?) the MC. The Bombshelter (one of two on-campus pubs and the one that you're probably too young to get into) is there as well as the Federation of Students, the "Campus Cove", the pharmacy, variety store and bank, to name a few. In short, that's where the "student life" is. The exception, of course, is if you're in CS, in which case you're life is restricted to the MC. Just kidding!

The other on-campus pub is Fed Hall (FED) which is for all ages. It has a huge dance floor.

For the more athletic types, the PAC, right by the SLC, is the Physical Activities Complex and is where the pool, squash courts, gyms and weightrooms are.

More athletic fun is in the Columbia Ice Fields Complex (CIF) shown at the very top of the map. This requires you to actually get off the main campus area and go North. It only takes a few minutes so don't fret!

Well, this is all I'll tell you about right now. You'll discover more during your stay. Have fun and try not to get lost!



ADVISE FROM THE ORIENTATION COMMITTEE

Greetings from the Math Orientation Committee! It is the beginning of Orientation Week '96, and you are new Frosh wondering what is in store for you; not only throughout the week, but also throughout the next several years. Below are a few pieces of advice about what's ahead.

Let's first start with a few pieces of advice about the week. The first is: be careful. While we expect that this week will be a good and safe one, accidents can and do happen. We want you have to have fun, but your safety is our number one concern. The second is: HAVE FUN! Enjoy the week. You're about to start what is most likely the biggest undertaking in your life so far: becoming a university student. It'll be busy, so relax! Take in your new surroundings, and again, have fun. The third and final one is to make new friends. These are the people you will be seeing in the coming years, and they will be of invaluable help to you. Be it with your studies, or personal issues, people to talk to are extremely important if you expect to survive here.

Also, as you are just starting here, you probably have a few questions: Exactly how does co-op work? How do classes work? Do we have homework? Where the hell can I get food around here? What's Village like? etc... You need an incredible resource to answer these questions. Well, that resource is at your mere call: Frosh Leaders. Your leaders are upper-year students who have been through it all (well.. most of them anyway). Ask them. You'll be truly amazed at what they know, and if your leaders don't know, they'll know someone who does. It's been said many times before, but it can never be said enough: Information is power. So don't be afraid to ask questions.

Now that you've been babbled at enough, enjoy the rest of the issue, and enjoy your week.

The Math Orientation Committee

CLUBS/ACTIVITIES TO JOIN!

- mathNEWS
- MathSoc
- Pure Math/Applied Math/C&O Club (PMAMC&OC)
- Actuarial Science Club (ActSci Club)
- Federation of Students
- UW Athletics
- UW Bridge Club (UWBC)
- Various religious and ethnic clubs
- UW Debating Club
- FASS
- Computer Science Club (CSC)
- UW Choirs
- and lots more!



FROSH'S GUIDE TO THE AREA

As a veteran of the local pub/club scene, I thought I'd share some of my acquired wisdom with you, Young Froshlings. I'll be ranking the bars on a scale of 5 stars.

Bombshelter

★★★★★

Good music, relaxed atmosphere; located right in the SLC; a great place for lunch; it ROCKS Wednesdays

Fed Hall

★★★★

Great venue for concerts; for all ages, so everyone can get in; got large dance floor and a huge bar; located on campus near Village One

Morty's Pub

★★★★

If you go out for wings, this is the place to go; all the food is good; great atmosphere; located at King and University.

Huether

★★★★

Good food, beauty patio; nice place to go for cocktails; located on King near Princess

Volcano

★★★★

Lots of concerts for new and up-and-coming bands; kind of far (way out in Kitchener), but worth the effort

Weaver's Arm

★★★½

Cool place; good atmosphere; students in the Co-op residences swear by it; located in the Co-op residences on Philip.

Phil's Grandson's

★★★

A hole...but it's a nice hole; whenever I've been there, it's been packed; good for the alternative crowd; Located on King near University.

LYRIC

★★★

Big dance club; Not my thing, but if you like that scene...; located in Kitchener; take a bus; you'll see the sign! (*That ought to get them to the right place! — CrakkoEd*)

Revolution

★★★

Big dance club; Not my thing, but if you like that scene...; located along Columbia somewhere.

Loose Change Louie's

★★

Good place to eat, but to hang out at ...; divided so if you don't like the music on one side you can head to the other; located at Philip and University

POETS

(no ranking)

It's an Engineering thing — Ask them — Last time I was there was in 1992; located in Carl Pollock Hall

Scale

- ★★★★★ *Awesome place, I practically live there*
- ★★★★ *Cool place; go there often; don't need an excuse*
- ★★★ *I can see its merit, but I'd need a reason to go*
- ★★ *I didn't like it, but some people do*
- ★ *Don't bother*

Xavier "X-Man" Aburto

WARNING!

If you hear your professor use such phrases as "obviously", "clearly" or "it is trivial to show that..." in lectures, then make sure you take good note of it. Nine times out of 10, it never is.

You have been warned.

THE FROSH DICTIONARY

A list of terms you may wonder about

Arts Library (Dana Porter): The main campus library, the big sugar cube at the centre of campus. According to legend, it's slowly sinking due to the weight of its books.

Bombshelter: The original campus pub and party place, a great alternative to Fed Hall, serves pizza for lunch.

CIBC: Canadian Imperial Bank of Commerce, campus branch (in the SLC). See service charge.

CSC: Computer Science Club. MC 3036/3037. Lively social atmosphere, large library, couches, members that can answer your questions about *anything*, powerful staplers, and an odour that lingers forever.

Co-op Student: A gypsy with books.

DavisWorld: Like the Eaton Centre with computers, DavisWorld is an adventure in colour, a twisty maze of tiny rooms, no two alike. And don't forget about the magic mushrooms popping up everywhere.

Endless Loop: See Loop, Endless.

Feds: The Federation of Students, a campus-wide "organisation" that aims (and often misses) to represent the student body. Has useful services like SCOOPS and a cheap bus to Toronto on Fridays.

Fed Hall: The biggest student pub in the Commonwealth. Serves lunch during the day, and parties at night. Worth getting out to see. It's noisy, but you'll love it. It's open to all U(W) students, regardless of age.

Fed Hall Bouncers: Big like tree, smart like rock.

Guelph: The sound a dog makes as it tosses its cookies.

Imprint: Pre-printed birdcage liner, shipped in bulk on Fridays.

Loop, Endless: See Endless Loop.

Math: Your new Faculty, a great place for learning, meeting new friends and generally enjoying a productive and all-too-brief university career.

mathNEWS: What you're reading now. Math's student newspaper, a bastion of humour, bad puns, a little math, and even less news. Run by student volunteers.

MC: Home. The Mathematics and Computer building, located at the North centre part of campus. It's big, grey and cubic. A block of ice in the summer, toasty warm in the winter.

MC 3038: MathSoc's office, the place to go for social information, photocopies, and copies of old midterm exams.

Natural Log: The *official* MathSoc Mathscot, the symbol of our society, essentially a laminated log but we love it anyway.

Needless Hell: (also Needles Hall) a place (and a thing) all co-ops pass through.

Oxymoron: Any set of words with a self-contradictory meaning. Classics include Postal Service, Good Morning, Civil Engineer, and Village Food.

Pink Tie: The other MathSoc Mathscot, a symbol also used by the Faculty. Our visible symbol of pride (would you rather wear a twig?).

Recursion: See Recursion.

Rhursday: Day between Wednesday and Friday at U(W).

Right Angle Café: The MathSoc Coffee and Donut shop, a food bonanza full of ice cream, caffeine and pastries at good prices. A great place to get lunch when you still have money. Located in the Right Angle Café lounge (cleverly enough) in

the South end of the third floor of MC. Just follow the smell of coffee and bagels.

Security: Have flashlight, will travel.

Service Charge: Zero account balance. See CIBC (also see Loop, Endless).

Student Life Centre (SLC): Student building between MC and the PAC. Houses SCOOPS and the turnkeys, the Bombshelter and a slew of services.

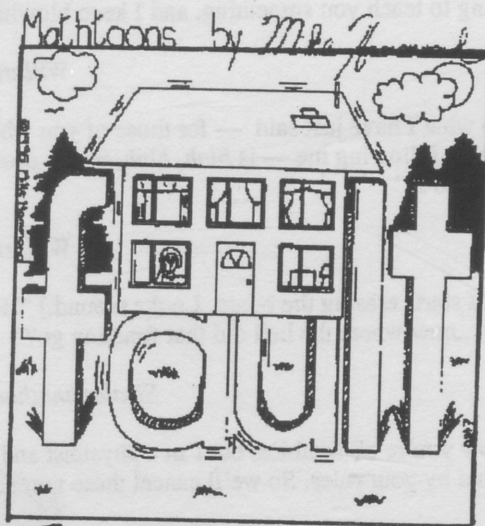
Village Food: Illustrates the difference between well-cooked and cooked well. Food fit for a king (Here, King! Here, boy!).

Village One: The closer on-campus residence, laid out like a medium security pen, mostly single rooms.

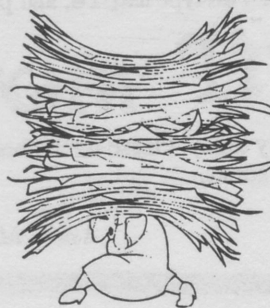
Village Zoo: The other on-campus residence, deserving of its name, mostly double rooms.

Watpubs: Mobile Bombshelters, pubs held in various Canadian cities once a week for co-op students on work term and U(W) alumni.

WLU: The high school down the road (Wilfrid Laurier University).



Janine lived on the fault for decades without incident. But one day, without warning, she had a vowel movement.



Take some of the load
off your shoulders
and start your
assignments

EARLY!!

profQUOTES

profQUOTES are a favourite feature in *mathNEWS*. All quotes, with very few exceptions, are right from you, the students! When you hear something by your prof that is really funny that you think is worthy of going in here, submit it! If the editors find it funny too, you can find your *profQUOTE* printed in an issue. You don't get anything for it, but you can be pleased that you have good taste in humour!

Keep listening in class! You never know what will come out of these intellectual minds!

Oh, yeah, one more thing, before you submit the *profQUOTES*, pleaseeeeeease make sure it's funny to everyone else. Remember *mathNEWS* readers won't be in the same context when reading them.

Student: "I was a little shaky about how you got that first line from the set."

Prof: "Yeah, I was a little shaky about that, too"

Younger, C&O 230

"Whoops! You know, I'm trying to make sense here. I'm trying to teach you something, and I keep blowing it."

Willard, MATH 135

"So what I have just said — for those of you who have trouble following me — is *blah, blah*, which proves item 3 and also 2."

Willard, MATH 135

[Prof starts erasing the board. Looks around.] "Hey, wait...now where the hell did that function go?"

Sivaloganathan, MATH 137

"Now you're all Mathies, but I'm a physicist and I'm not bound by your rules. So we'll cancel these numbers out."

Vanderkooy, PHYS 121

"Why do we use a parameter at all? <silence> Okay, so that will be question one on the final..."

Rehder, CS 130

"**MAPLE** is very easy to use. You type `maple`, and press Enter. Then you type `help`."

Stewart, MATH 145

"Ok, I'm letting you go early today. Please remember this when it comes to prof evaluations..."

Astels, MATH 136

"Isn't this fun? You know, you guys work your butts off in high school so you can get into a university like this one and hear lectures like this one from the likes of me!"

Willard, MATH 136

"I'm sure if you're not asleep you'll appreciate it [the new concept]. I'll give you a minute to soak it in."

Murty, C&O 350

"Find someone smart...if you can't find someone smart, find me or the TAs."

Mann, CS 488

"I notice that a bunch of you are also in my [C&O] 342 class at 8:30. So you'll wake up to me and go to sleep to me now."

Murty, C&O 350

"I lost my brain here for a moment..."

Buss, CS 340

[While handing out midterm] "...and please don't cheat, because if I catch you, it means enormous bureaucracy. If you do feel the need to cheat, at least sit beside someone who's smarter than you. In some cases, that shouldn't be too difficult."

Stortz, HIST 254J

"Here I have a **cos t.** and here I have a **sin t.**...so obviously I have the **WRONG DAMN INTEGRAL!**"

Kerr-Lawson, MATH 138

"The meat is hard...maybe we should do vegetarian proofs, skip the meat."

Munro, CS 134

"The primary emotions are: fear, anger, happiness, disgust, sadness, surprise and a fanatical devotion to the Pope."

Bulman-Fleming, PSYCH 101

"We are 99.99% sure that p is prime...This is what you call an 'industrial' prime."

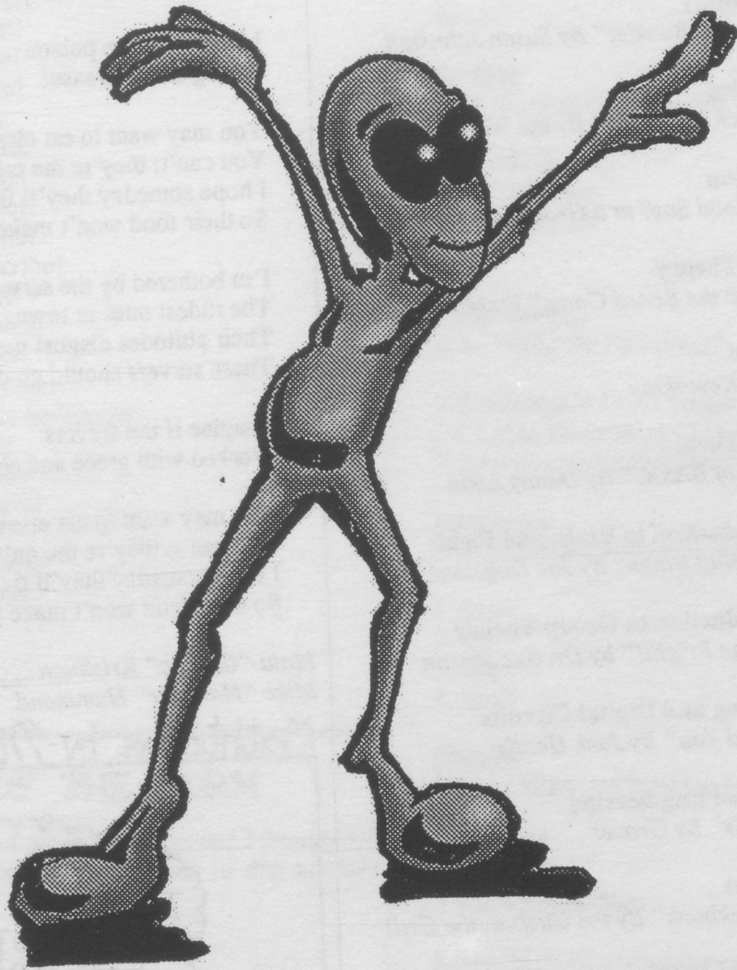
Gilbert, MATH 135

"Thank you for playing. Ding. Wrong. Next!"

Beatty, CS 230

Enjoy the "Highlights from the Past!"

math NEWS



Highlights From The Past

Book List for Winter 1997

MATH 235 - Linear Algebra 2

"Beginner's Guide to the Abacus" By Chan Wong

MATH 237 - Calculus 3

"MAPLE QuickStart Sheet" By Bev Peebles

CS 241 - Foundations of Sequential Programs

"Commodore: From VIC-20 to Amiga" By Martin E Cirilius

CS 444 - Compiler Construction

"Coupon Book for Borland Products" By Borland

STAT 230 - Probability

"Lotto 649 Information Booklet" By Susan Johnston

STAT 231 - Statistics

"Woodbine Racetrack Brochure" By the Woodbine Mgmt

STAT 332 - Sampling

"How To Get The Good Stuff at a Grocery Store" By Z.S.

ACTSC 431 - Risk Theory

"Risk: The Manual to the Board Game" By Milton Bradley

AM 231 - Calculus 4

"Calculus" By Jack Kevorkian

C&O 331 - Coding Theory

"COMPUTE!'s Best of BASIC" By Denny Atkin

PMATH 334 - Introduction to Rings and Fields

"Football Championship Rings" By Joe Dogstone

PMATH 336 - Introduction to Group Theory

"Overcome Your Stage Fright!" by Dr. Sue Martin

E&CE 438 - Switching and Digital Circuits

"Your Lightswitch and You" By Jack Handy

GEN E 123 - Electrical Engineering

"Sesame Street's ABCs" By Grover

HLTH 346 - Nutrition

"The Village Grill Cookbook" By the Chefs at the Grill

ME 219 - Mechanics of Deformable Solids

"The Jello Cookbook" By Bill Cosby

MUSIC 356 - Canadian Music

"Celine Dion CD Liner Notes" By Celine Dion

REC 361 - Aging and Leisure

"Shuffleboard: That Wacky Sport" By Grace Johnson

SMF 204 - Intro to Sexuality and Sex Education

"Basic Instinct: The Novelization" By Joe Esterhaus

Chadwick Severn

Imagine

With apologies to John Lennon

Imagine there is good food
In Village or the Grill,
No meat with fungus
And cooks with lots of skill!

On seeing what they **did** serve,
I went to complain.

I said "It's like raw sewage!"
She blinked her eyes and looked.
She said, "Oh no, believe me,
It isn't raw, it's cooked!"

Imagine all the poison
Living in the grease!

You may want to eat elsewhere
You can't; they're the only one.
I hope someday they'll fix things
So their food won't make you run!

I'm bothered by the servers,
The rudest ones in town.
Their attitudes disgust me
These servers should go down!

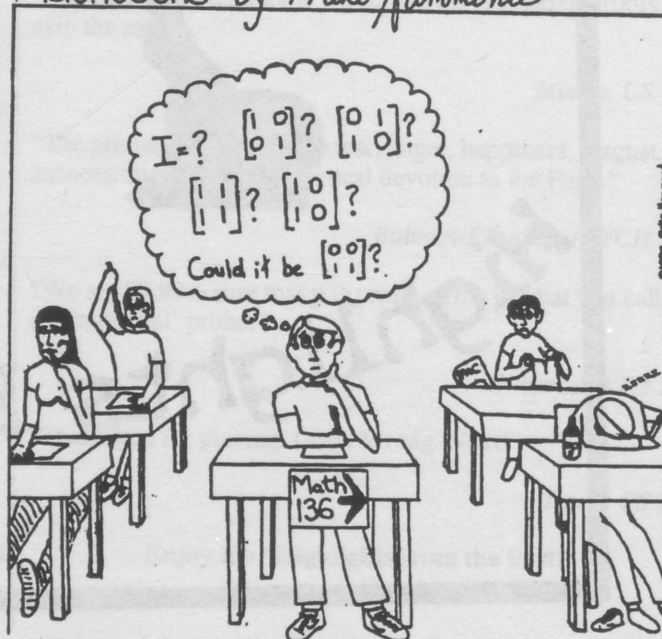
Imagine if the servers
Worked with grace and charm!

You may want to eat elsewhere
You can't; they're the only one.
I hope someday they'll fix things
So their food won't make you run!

Mala "Crakko" Krishnan

Mike "Hammer" Hammond

Mathtoons by Mike Hammond



Unfortunately for his final grade, halfway through his linear algebra exam, Darren suffered an

TOP 2⁵ REJECTED LINES FOR "FANTASY ISLAND"

Inspired by Comfy Lounge talk

32. De rail, boss, de rail!
31. De bait, boss, de bait!
30. De canter, boss, de canter!
29. De light, boss, de light!
28. De code, boss, de code!
27. De fence, boss, de fence!
26. De base, boss, de base!
25. De fault, boss, de fault!
24. De pendant, boss, de pendant!
23. De part, boss, de part!
22. De liver, boss, de liver!
21. De cent, boss, de cent!
20. De side, boss, de side!
19. De vice, boss, de vice!
18. De tail, boss, de tail!
17. De void, boss, de void!
16. De note, boss, de note!
15. De brief, boss, de brief!
14. De spite, boss, de spite!
13. De scribe, boss, de scribe!
12. De port, boss, de port!
11. De spies, boss, de spies!
10. De duct, boss, de duct!
9. De crease, boss, de crease!
8. De nominator, boss, de nominator!
7. De Brie, boss, de Brie!
6. De limit, boss, de limit!
5. De grade, boss, de grade!
4. De test, boss, de test!
3. De deuce, boss, de deuce!
2. De range, boss, de range!
1. De *Phi*, boss, de *Phi*!

Greg "De liberation" Taylor

PROOF OF THE TERM

This was found on one of the newsgroups and I thought I'd subject our country's finest mathematicians to this horrible proof.

Given: 0

RTP: $0 = 1$

Proof:

LHS

0

$= 0+0+0+0+...$

$= (1-1) + (1-1) + (1-1) + ...$

$= 1-1+1-1+1-1+1-1+...$

$= 1 + (-1+1) + (-1+1) + (-1+1) + ...$

$= 1$

= RHS

Since LHS = RHS

$\therefore 0 = 1$

Step 1

Step 2

Step 3

Step 4



mathNEWSquiz

Hello and welcome to the Squiz section of *mathNEWS*! This is where you test how much useless stuff you know and win prizes for it (usually a voucher for the Right Angle Café). This particular one is relatively easy so as not to tax you too much.

There aren't any prizes for this one, but you can go through it anyway!

Regular Squiz answers can be submitted on the specified day and time (look in each issue starting with Issue 1 by e-mail to mathnews@undergrad.math.uwaterloo.ca, in the BLACK BOX outside the Comfy Lounge or directly to the Editor in MC 3041.

Enjoy!

Spelling

Spell The Following Words

1. Combinatorics
2. Optimization
3. Denominator
4. π

Compositions

Who Wrote the Following?

1. Beethoven's *Third Symphony*
2. Charles Dickens' *A Christmas Carol*
3. *Autobiography of Benjamin Franklin*

Antonyms

Give an opposite for each word

1. large
2. big
3. huge
4. small

Comics

Name a character from the following cartoon strips

1. Garfield
2. Adam
3. Calvin & Hobbes

BONUS: What colour is an orange?

Greg "Mizuno" Taylor

Co-squizMASTER, Spring 1996

SINGING FILLER

to the tune of "The Flintstones" Theme Song

Filler, yes it's filler

It's just here to fill this empty space.

Right here, here in mathNEWS

'Cause there's nothing else to take its place.

One of the many ongoing discussions in *mathNEWS* is whether the toilet seat should remain up or down. Personally, I don't think it matters. The effort to remove it from its current state is negligible...But anyway, this article, most definitely written by a "male being", one Marco "The Hedonist" Koechli, was requested to go in. Just one in a long line of toilet seat articles. So here it is!

For future references...no more toilet seat articles, please! :)

TOILET SEAT LOGIC

This article is about Boolean logic or binary mathematics.

Assume that there are two types of computer users in the world. These two groups are called F and M. Both F and M need to use the same computer process: process T. The computer that runs process T has a parity bit, for this example we'll arbitrarily call this bit TS. Users F and M are both very particular, they both want TS to be set differently. F requires TS to be on (1) and M usually requires TS to be off (0). Both F and M have the ability to change the parity bit TS to their preference before using the process T.

To this point our little example sounds easy: simple and downright trivial. This is not always the case. For reasons unknown to users M, users F have a history of complaining that the M's never switch the parity bit TS to on (1). What users M have a hard time understanding is that instead of complaining about the status of TS, why don't the F's just switch TS and use T to free the resources for processing by other M's and F's.

Good Luck !

Poetry is always welcome in *mathNEWS*...provided it's funny or at least, good! I found this one by Frank Yao quite funny, with its many references to Pure Math ("rings", "fields", "groups", etc.)

PURITY

Pure Math,
So pure the teaching of it
Defiles it,
Taking the shine off the rings,
Flooding the fields
With apathy and boredom.

There is no logic at 8:30 in the morning,
In that hazy period of time called class.

Groups, gathered, ready to leap,
To drag your average down,
Special though it may be.

How pure this must all seem,
From that ivory tower you live in.
If you try hard enough,
You won't even hear us
Screaming in pain...

Written by Viêt-Trung Luu, a Frosh from just last year! Maybe you'll know how he feels... :)

DUMB FROSH?

I Don't See Any Dumb Frosh! (Or Maybe "Lessons of a Dumb Frosh"???)

Wow! My first year in Math and I'm writing for *mathNEWS*. What could be better? Really, I mean that. (Actually, I only came to *mathNEWS* for the free pizza, but you didn't hear me say that.)

Well, after being at university for a few weeks, I've already learned a few things:

- I never thought that I could fall asleep while I was in the middle of talking notes. I was wrong — I fell asleep in the middle of a word (in my defense, it was during a three-hour long lecture in an over-crowded room with absolutely no ventilation).
- Jay-walking in the morning is a *bad thing*, both for me and the drivers who have to try to avoid hitting me. Also, I've found that dodging cars while you're dazed and half-asleep is not only difficult, but more than a little scary.
- I don't like lasagne as much as I thought. After having it just a few times at my residence, I'm already getting pretty tired of it. Of course it isn't the best lasagne in the world...
- Professors seem to have a sixth sense which tells them, "All the other profs are making their assignments due on Friday, so I'll make mine due on Friday too." While it makes remembering due dates pretty easy, it makes Thursday nights (or rather, early Friday mornings) much more difficult.
- Non-Frosh (presumably second-year or higher students) often say things to/about us Frosh using the phrase "dumb Frosh." I have no idea what they're talking about. (Hey, we **did** get into U(W), didn't we?)
- I also learned that I'm not very funny, so I'd better stop here...



Eraser? I just met her!

THE "WANT ADS" AWARDS

Rewarding the stupidest and more insane among the Co-op Job Descriptions

This article was written a few terms ago when students were given all the Co-op job descriptions at once (rather than a few each week). They were in a newspaper format called, "The Want Ads", hence the title. You'll get to know what jobs are out there! This used to be a regular feature until Co-op decided to post the descriptions on the walls in a few buildings. If you still wish to write such an article for your terms, you can, but you'll have to check the descriptions quite regularly.

Below is a small excerpt from that article (can you imagine how long it was to start with?) written by Mike "Hammer" Hammond and yours truly (Mala Krishnan).

The "Interesting Priorities Award" goes to Applied AI Systems, who claim in their job description that "the candidate must have a sincere, serious approach and be very hard working. Sincerity of approach [is] given more emphasis in selection than talent, skill, or qualifications." (So you can apply a soldering iron directly to a microchip as long as you're sincere about it!)

The "I'm a Telemarketer Award" goes to BGI Systems Integration, who say in their job description that the ideal candidate would "thrive on customer satisfaction" and "possess a good phone voice."

The "Descriptions Are Charged By Letter Award" goes to Network Xcellence for managing to drop an 'e' in their name!

The "Become A Kitchen Appliance Award" goes to the Ontario Ministry of Agriculture and Food, who are advertising a position for a "Food Processing Assistant."

The "Let's Have A Safe And Happy Hallowe'en, Shall We? Award" goes to the Ontario Ministry of Transportation for telling us in their job description that "safety boots are required." They also win the "Coldest Job Award" for their "Snow & Ice Research" position. (Do they get to test cohesive properties by building snowmen?) They also win the "Ya Gotta Love Concrete Award" for their "Pavement Design" position. (Gee, I didn't think that designing a flat surface was difficult!)

The "You Wanted Overtime, Didn't You? Award" goes to the Ontario Police College. They listed work hours within their job description as "1:30pm.-10:am. Monday to Thursday, and 8:15am.-4:00pm. Friday." (For those keeping track, that's 20½ hours a day Monday to Thursday. So much for their claiming that it's a 40 hour work week!)

The "Let's Keep Students Informed Award" goes to the Royal Bank of Canada System and Technology, for telling us not much more than "Your skill/knowledge base will determine the level of work assigned. Yes, we will train where needed... recruiters will have Job Descriptions with them." They also win the "Stupidest Slogan Award" for "You know who we are; You know what we do; but, DO YOU KNOW HOW WE DO IT!?"

The "Gross Neglect Award" goes to the Scarborough Board of Education, for leaving CS off the 'Discipline(s)' list for the position of "Programmer/Analyst Artist." (I can just picture them. "Hmmm... we got COME, MATH, SY DE, GEOG, and ERS. Did we forget any other potentially eligible groups of people? Hmmm... I don't think so.")

The "Geographically Challenged Award" goes to Sears Canada for informing us that their position is in "North Yrok."

The "Honest 'Til It Hurts Award" goes to Terren Corporation for letting us know that, in order to get the job, "you have to love working your face off, and love working with little supervision," that "you have to be smart as hell," and that "you won't get rich." They also win the "Least Informed About U(W) Co-Op Award" for having the pseudo-Want Ads print "The enclosed brochure gives a better idea of what we do."

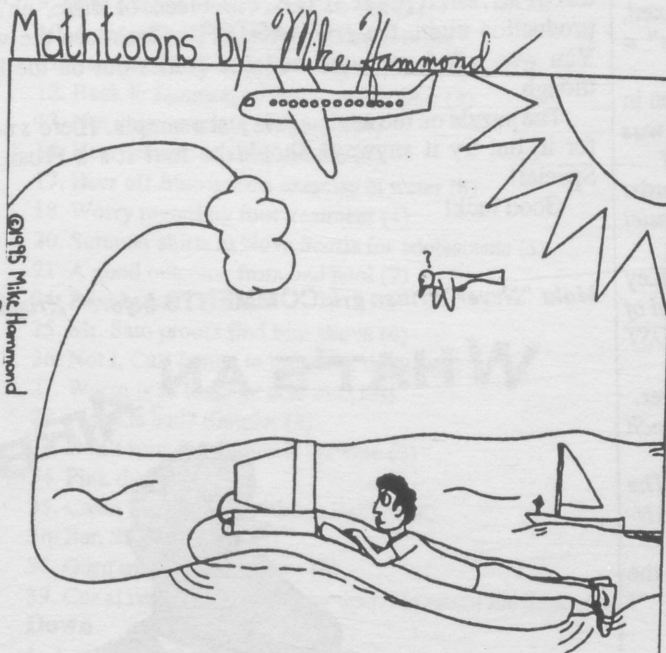
The "Contradiction in Terms Award" goes to Tandem Computers Canada, for calling themselves "a fast growing mainframe computer company."

The "Stupidest Company Name Award" goes, without question, to Link With Work. What the hell do they link with work?

The "Most Informed About U(W) Award" goes to Gananoque Steel Forging, who not only tells us that the student "must have completed a university statistics course," but tells us which courses! (ME 202/MSCI 251)

Finally, tied with Terren Corporation for the "Least Informed About U(W) Award" is Tel Route Communications for requiring a "university-level COBOL course." (So far as I know, there ain't no such beast anymore!)

Jeffrey met a premature end when he followed his CS tutor's instructions and did his assignment in Sea.



The "Hey, A Job I'm Qualified For! Award" goes to Clarkson Secondary School, who is looking for an intermediate or senior co-op student for the position of... "Math Student."

The "Where's Waldo Award" goes to Finance Canada PSC Ottawa, because we were unable to find its job description! (The header's still there, though!)

The "Bringing You Pestilence For Thirty Years Award" goes to Merck Frosst Centre, since they say they are "world leaders in respiratory disease." (Now I know who gave me my last cold!)

The "Repetitive Redundancy Award" goes to Microsoft for describing one location of a job as "Menlo Park CA" and another as "CAMenlo Park CA."

GRIDWORD KNOW-HOW

This is an attempt to clarify the peculiarities of the *mathNEWS* **gridWORDS**. The **gridWORD** (the crossword puzzle on the back page for those of you who have not yet reached that far) generally has two different sets of clues for two different solutions, one conventional and one cryptic. The conventional puzzle is a standard crossword puzzle, the solutions being synonyms for the clues.

The cryptic is similar to, but distinctly unlike, what fans of the New York Times would recognize. This puzzle is probably harder to write, so if you don't see one in future issues, it's because no one around could figure out how to write one. If you really want to see one, why don't *YOU* create one?!

Here's how to figure out the cryptic clues:

The clues give two definitions for the word: a direct definition and a cryptic definition. This may sound like a piece of cake, (*two* clues for *each* word!) but it can be difficult to distinguish the two parts. At the end of the clue, the number of letters in the answer is given.

At first the cryptic clues may seem nonsensical. Hopefully you'll be able to decipher them eventually. A clue may be any one, sometimes more, of the following types. Look for keywords or patterns.

Anagrams One or more words in the clue are jumbled to give the solution. Key words: scrambled, agitated, mixed, sorted, confused, etc. "*A beat agitates for the diminution*" = **ABATE** from the letters **A BEAT**

Construction The answer is assembled from parts given in the clue. Key words: follow, after, before, on, etc. "*He was first to build a water barrier*" = **ADAM** build from **A DAM**

Alterations Split words or switch them around. Key words: in, around, split, turn, back, up, etc. "*Content and very quiet in the hay*" = **HAPPY**, from **PP** (= *pianissimo*) in **HAY**

Dropping Letters Remove a letter from a word. Key words: headless, tailless, endless, heartless, etc. "*The head of the host was lost to the wealthy bird*" = **OSTRICH**, from **HOST** without the **H** plus **RICH**

Double Clues Two definitions are given for the answer. "*An article of French tea*" = **THE**, an article and the French word for "tea"

Hidden The answer is hidden in the letters of the clue. "*The band is tantalising from afar*" = **DISTANT** from **band IS TANTALISING**

Homonyms The answer to part of the clue sounds like the solution. Keywords: anything related to hearing or sound. "*I hear the crew will bemean*" = **CRUEL** from **CREW'LL**

Other Instructions Other words may indicate how to construct the solution. Possibilities: every other, alternately, initial, etc. "*Every other oblong marsh*" = **BOG**, every other letter from **oBlOnG** or "*Particle is initially a trio of moons*" = **ATOM**, the first letters of **A Trio Of Moons**

Special Words By convention some words have special one or two letter meanings for word building. Examples: direction: N, S, E, W; hesitate: ER; loud, fail: F; love, nothing: O; fifty: L; current: AC; and many, many others.

A first pass through the clues may produce no results, but a little work by searching for keywords should get most answers. As you get solutions, you will get a better feel for the clues. Checking against the solutions and looking for the connections is another way to gain understanding. Persevere! Good luck!

INTRODUCTORY gridCOMMENTS

Welcome to the **gridWORD** portion of *mathNEWS*! Once you get here, you know that the issue of *mathNEWS* is coming to an end. Sad, but true...

Anyway, like the *mathNEWS* Quiz, which you've probably already encountered, the **gridWORD** is a regularly featured puzzle that, if solved and submitted on time correctly, can yield a wonderful prize. Okay, the prize is a voucher for the Right Angle Café, but what's wrong with that?! Free food never hurts anyone.

Usually the **gridWORD** comes in both a cryptic and a conventional type. Both are solved on the same grid. Figuring out the cryptic is explained in the adjacent column and the conventional is well, conventional. The rules to the cryptic will not be published in any other issue of *mathNEWS* due to space so keep this handy.

The first issue of *mathNEWS* (the one with Issue 1, not 0; that's this one) has the first **gridWORD** of the term. Solve it and submit it by the date and time specified in the **gridCOMMENTS** section of Issue 1. You can submit it into the **BLACK BOX** on the third floor of the MC across from the Comfy Lounge (the best solution), hand it directly to the *mathNEWS* editor(s) in MC 3041 or e-mail it (text form) to mathnews@undergrad.math.uwaterloo.ca. Piece of cake, eh? Each production night, the **gridMASTER** will choose the winner. You won't find out until the issue comes out on the Friday, though.

The puzzle on the next page is just a sample. There's no prize for it, but try it anyway! Should be fun! It's a Frosh Week Special!

Good luck!

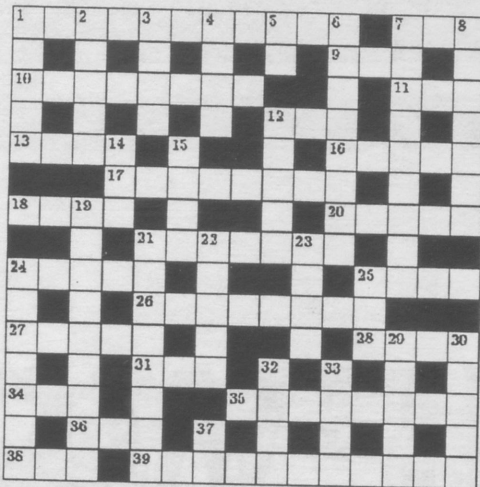
Mala "Never Written **gridCOMMENTS** before" Krishnan

WHAT'S AN AIRBUS?



*I was writing for
mathNEWS!*

GRIDWORD



GRID CLUES (CRYPTIC)

Across

1. Avoid donating the undergarment (4,3,4)
7. Endless like is sickening (3)
9. Miss a shot around the coffee cup (3)
10. A wager with a greek spells trouble (8)
11. Surround love with pi. Only in Hawaii (3)
12. Back to Jamaica, so make quick notes (3)
13. Not done, work at the vertex (4)
16. Heart attack! It's our mother (5)
17. Hear off-blue insects exercise in water (8)
18. Worry regarding foot treatment (4)
20. Summer shirts in Nova Scotia for adolescents (5)
21. A good outcome from bad pool (7)
24. Prickly pair (5)
25. Mr. Sato proofs find him above (4)
26. Not I, Call Listen to the water device (8)
27. Worm is as luggage is to me (1,4)
28. A yes is bad? Simple! (4)
31. Don't run! You'll break the vase (3)
34. Pink dye (3)
35. Clean bar, but left with sea leeches (8)
36. Ban Shaq's league (3)
38. Guru tries to find groove (3)
39. Cur at rest is surrounded by deer. He raised the dead! (11)

Down

1. A grin is terrible with wheat (5)
2. Beginning avacado dip is poor and uninteresting (5)
3. Arty carrying device (4)
4. You'ze some female sheep (4)
5. Magic town (2)
6. Expert experiments have people up in arms (8)
7. Not correct (9)
8. Not days of old (7)
12. Orange electricity (5)
14. During dinner, not after (3)
15. Hear the animal house. Lou is African (4)
19. Great! Go beyond passover finale! Y'hear? (9)
21. One lug rains down (8)
22. Stir a while. Cahoun! Run alternately! (5)

23. Bad flus (4)
24. Likely, Cher will surround a new part of her life (7)
25. The beer sounds like a sickness (3)
29. A person north of England wears this (5)
30. Stop for ye old parlor(5)
32. Rail rides to refuge (4)
33. The only time for a bad cone (4)
37. We in the United States (2)

GRID CLUES (CONVENTIONAL)

Across

1. Campus pub (11)
7. Spot on a die (3)
9. Yours will be quickly deflated (3)
10. Lowest known form of vegetable life (8)
11. The MacLab uses one (3)
12. Cowardly dog (3)
13. The engineers and mathies each have one (4)
16. Incompetent, incapable (5)
17. It will enable to finish your work (8)
18. Hindu goddess of destruction (4)
20. An elected representative (5)
21. A small warship (7)
24. To soak or steep (5)
25. Exam preparation technique (4)
26. Final exam month (Fr.) (8)
27. You'll see a lot of these in Calc. and Alg. (5)
28. One of your gods for the next four months (4)
31. Faculty MathScot and well-known function (3)
34. The real name for DavisWorld (abbrev.) (3)
35. This wonderful metropolitan centre (8)
36. In Latin, thus (3)
38. Foot part (3)
39. Dean of the Faculty (11)

Down

1. Many of these will be consumed in Frosh Week (5)
2. Method by which your profs derive difficult results (5)
3. Ride the wave at this function (4)
4. Particularly slimy engineer subspecies (abbrev.) (4)
5. Home of the Dome (abbrev.) (2)
6. An assignment extension (8)
7. Favourite prof suit fabric (9)
8. Other Faculty MathScot, you'll have to wear one (7)
12. Students aren't popular in this country (5)
14. Suffix for Hi-Fi and Sky (courses) (3)
15. At a distance (with from) (4)
19. Your CS course is one (9)
21. A movie shown in AL on the weekend (8)
22. In disguise (fig.) (5)
23. Opus' instrument (4)
24. The campus rag (7)
25. You won't have any of this after an all-nighter (3)
29. You should be aware of regulations (5)
30. You are one (5)
32. Less than whole (4)
33. It is good and right that you are the least of all. (4)
37. The cave where they keep the engineers. (abbrev.) (2)

