

math NEWS

Volume 99, Issue 3

Friday, October 21st, 2005

THE LONG AWAITED O(1)
SOLUTION TO THE TRAVELING
SALESMAN PROBLEM



A Classic *math* NEWS Cover

Originally appeared Volume 80, Number 6



lookAHEAD

mathNEWS

October 21	Issue #3 hits the books
October 31	Production night #4 6:30PM, MathSoc (MC3038) All are welcome!
November 4	Issue #4 eats your leftover candy

Math Faculty

October 22	Fall Convocation
October 28	Deadline for 50% tuition refund
October 29	Class enrollment appointments end
October 31	Open enrollment begins
November 4	Drop, penalty 1 period ends
November 5	Drop, penalty 2 period begins
December 5	Lectures End

MathSoc

Thursdays	Movie Nights, 7:00 PM, MC 2066 2 movies, 0 dollars!
October 31	Halloween Activities 3 rd floor MC
November 12	Charity Ball

Math Grad Committee

Wednesdays	Pizza Day! Buy cheap pizza to support the grads!
December 1	Last day to file "Intent to Graduate" for Spring Convocation, if studies complete

CECS

October	Various Workshops www.careerservices.uwaterloo.ca
October 27	Last day of initial phase interviews
October 28	Ranking Day
November	First continuous posting opens Various workshops

Student Awards & Financial Aid

October 31	Last day for F&W bursary applications
November 1	OSAP Rollover form for Winter
November 22	Last day for Confirmation of Enrollment form

Miscellaneous

October 28	Warrior weekends
October 29	East Asian Festival
	Renison College, 10:30-3:00
October 31	Halloween
November 11	Remembrance Day

MCTF Take 3

No good sub header this time

Last one was great, a very long game (over one hour long), with a lot of running around and us having a great time. The next date has been set for the evening of November 6th, starting at the normal time of 11:59 PM. As per always, meet in the comfy, rain or shine. Noobs are always welcome.

See you there!

The New Management



MEF Deadlines

The deadline for submitting funding requests and nominations for funding council is **Friday October 28th**. The forms for both are available outside of MC 3050, and at www.mef.uwaterloo.ca.

More information on each of these is below:

Funding Requests

MEF funds projects, events, or equipment which benefits undergraduate mathematics at UW. These requests can be made by *anybody* (including faculty and staff). In the past, requests have included travel to conferences, inviting guest speakers to campus, equipment for student clubs, creation of course materials, new lab equipment, and so on. A complete list of projects funded is available on our website. This term, we have about \$40,000 allocated for spending.

If you have an idea for funding (or know somebody who does), submit a Request for Funding form by the 28th and be sure to email us if you have any questions.

Funding Council

The Funding Council makes decisions regarding which proposals receive funding. It is made up of a combination of undergraduate, faculty, and alumni representatives. If you are interested in joining funding council to help decide how this term's money is spent, feel free to submit a nomination form, available outside our office and on the web.

Terry Anderson
MEF Director F05/S06
Office: MC 3050
mefcom@student.math.uwaterloo.ca
www.mef.uwaterloo.ca

FILLER!! MWAHAHA!

ISSN 0705—0410

Established 1973

mathNEWS is normally a fortnightly publication funded by and responsible to the undergraduate math students of the University of Waterloo, as represented by the Mathematics Society of the University of Waterloo, hereafter referred to as MathSoc. mathNEWS is editorially independent of MathSoc. Content is the responsibility of the mathNEWS editors; however, any opinions expressed herein are those of the authors and not necessarily those of MathSoc or mathNEWS. Current and back issues of mathNEWS are available electronically via the World Wide Web at <http://www.mathnews.uwaterloo.ca/>. Send your correspondence to: mathNEWS, MC3041, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N2L 3G1, or to userid mathnews@student.math.uwaterloo.ca on the Internet. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/2.0/ca/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA. Terms may be renegotiated by contacting the editor(s). The editor(s): Mark Toivanen, Emerald Kushnier, Chris MacGregor

Prez Sez

Now with 100% more stress

I am slowly going crazy, 1, 2, 3, 4, 5, 6, switch.....

Alright, so the last two weeks have been very stressful, but now that they are over, hopefully things can go back to normal, and I can catch up on my assignments and readings, But enough venting, here's the lowdown of what is going on

1. Once again, anyone who is interested in being a Scunt god should e-mail me by 5:00 tonight
2. Math Charity Ball tickets have gone on sale
3. Be sure to go to the Hallowe'en movie night on October 31st

As always, if you have any questions, give me a shout! 'till next time.

Michael Tersigni
President Fall 2005

Math Grad Committee

Social Events

Hey everyone! Just letting you know about the next few social events from the Math Grad Committee.

- **Bonfire** - You missed an extremely wet bonfire on Monday. Marshmallows were eaten, wood was burned — too bad the weather didn't co-operate. Thanks to everyone who came out, especially the two new people I met!
- **Cross-Faculty Casino Trip!!!** - We're teaming up with all the other faculties' Grad Committees and heading to Fallsview Casino (the new casino in Niagara Falls) on Saturday, November 5th! Tickets will be \$10 and you will be given \$10 worth of casino chips to spend at your leisure. Non-grads are of course welcome, but their tickets will be \$12. Don't miss this fantastic event (and chance to make some money!), tickets will be on sale in the 3rd floor of the MC.
- **Pimps & Hos Night** (aka CEOs & Hos Night) - Inspired by MGC 2003, we're having a themed Bomber night, tentatively scheduled for Thursday, November 17th. Come dressed up as a Pimp/CEO or Ho of your choice!! Tasteful food and beverages will be provided. ;)
- **Dooly's Night** - Come hang out and shoot some pool with your fellow grads one last time before finals set in. Tentatively scheduled for Monday, December 5th, the last day of classes.

If you want more information about these events, get on the MGC mailing list (sign up at the same place where grad photo sign ups are), email me at social@mgc.student.math.uwaterloo.ca, check the website at <http://www.student.math.uwaterloo.ca/~mgc/2006/>, or watch for posters around the MC.

That's all from me. Remember to make your last year here one to remember!

Diana Chisholm
MGC Social Director

VPAS Sez

Don't worry, there's tons of stuff happening

I hope everyone is enjoying the season that is midterms! If you ever want a study break, I've still got some cookies and events to keep you from going insane.

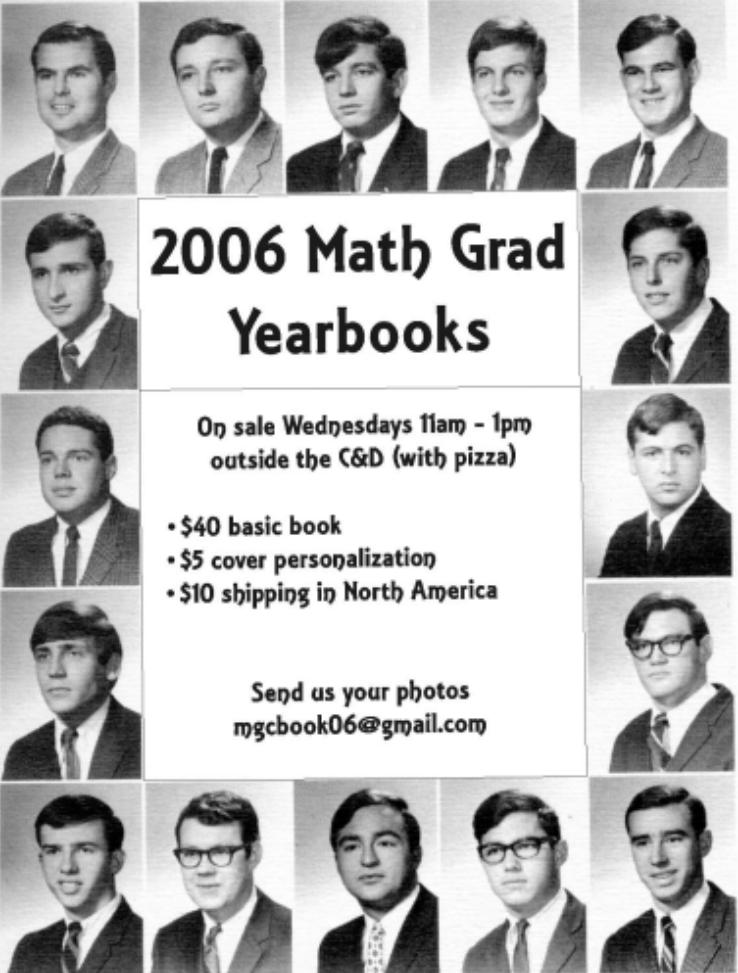
Halloween means that MathSoc will be running a candy casino on the 3rd floor of the MC; gamble for chocolate! Also, there'll be some pies being served to celebrate pumpkin pie day. (Note: there will be pies that are not pumpkin, for those of you who dislike pumpkin pies). Over in the Comfy Lounge, starting at 5pm, there will be a Halloween movie-a-thon. Should be lots of fun! If you're not interested in candy, pies or movies, the wonderful Office Directors bought a few new games for all mathies (and their friends) to enjoy.

Anyone who's interested in helping out with a possible Super Smash Brothers Tournament, please e-mail me at: vpas@mathsoc.uwaterloo.ca.

Last but not least (at least until we book the Bomber for Pints with Profs), buy as many charity ball tickets as you can. \$35/one, \$65/two, \$256/8 — Nov. 12th, at Waterloo Inn. It's a semi-formal dance and dinner, with a live and silent auction (even Bill Gates donated stuff when he came by), transportation provided to and from campus. You can't lose! Tickets are on sale on the 3rd floor.

Thanks so much to all the MathSoc Directors and volunteers so far. They keep the MathSoc running. You guys rock!

Elaine Wong
Vice President, Activities and Services
Fall '05



2006 Math Grad Yearbooks

On sale Wednesdays 11am - 1pm outside the C&D (with pizza)

- \$40 basic book
- \$5 cover personalization
- \$10 shipping in North America

Send us your photos mgcbook06@gmail.com

Exam Bank Raffle

Midterm season is upon us, and this seems like a good time to advertise the MathSoc Exam Bank. For those of you who don't know, the MathSoc Exam Bank is a treasure trove of past exams that you can peruse to get an idea of the format of an exam in a particular course, or the type of questions the professor may ask. We have exams from classes in every department in the faculty, and some from outside the faculty as well.

Best of all it's free. In fact it's better than free. Here's how you can get a chance for the Exam Bank to pay you!

Now, for those of you who have looked in the Exam Bank recently, you may have been disappointed with the selection, especially for more recent exams. Sure, it's of great historical importance to have exams older than some students in this faculty, but they aren't that useful. So we're launching the Exam Bank Raffle. When you get your midterms back this term, instead of burning them (or whatever it is you do with your tests), bring your midterms in and trade them for raffle tickets. There will be prizes. *Good* prizes. Lots of them. Look out for posters with details and rules for the Exam Bank Raffle in the near future.

We only need a copy of the midterm so you will get your original back.

Carol Tam
Resources Director, Fall 2005
resources@mathsoc.uwaterloo.ca

Tired of Studying for Finals?

GAMES! GAMES!! GAMES!!!

So you've just finished a tough week of midterms, and probably have another one ahead of you. You're going to need a little procrastination to get you through the next rush without losing your sanity somewhere along the way; and, thankfully enough, I have a solution for you! Since *mathNEWS* production night has already come and gone, (and by the turnout, most of you forgot about it [*Or were trapped in the aforementioned midterms — StatsEd!*]), I'm left to recommend MathSoc Office Games!!! The MathSoc office has been open a lot lately (and we need to feel important), so drop by and borrow a game. We have all your old favourites, and some new ones you might not know about.

We just acquired a copy of 'Risk 2210'. It's your chance to break up studying with an attempt to dominate a techno-world of the future *DUM-DUM-DUH* (insert maniacal laughter here). A war strategy game is the perfect 4-hour break during a night of cramming.

Also new to the office is a copy of 'Munchkin'. This is a card-based RPG-style game. If you don't have quite enough time to play a round of Risk, or run through a D&D campaign, it's the perfect choice. Adventure your way through dungeons killing Tongue Demons with the Singing & Dancing Sword, plunder treasure, or even curse one of your friends with crabs! A great time for 3-6 players.

I don't know about you, but that's enough to get me through. Not sure how finals are going to work out, though...

val = nachos.return(OfficeManager getManager())
taQUOTES

"A house is not a home without people, just like the perfect sandwich isn't perfect without love. This is a sentimental class today."

Cooking 101

Lab 2

After much discussion, we decided for your second lab to present you with a recipe essential for students. Good for exam stress, parties, late-night studying. It's fast and easy and sugary. Plus it's a perfect procrastination method. That's right! **Chocolate Chip Cookies!** Mmmmm.

Ingredients:

- 1 cup margarine (OR 1/2 cup butter and 1/2 cup shortening. I prefer the 1 cup margarine, it gives a better texture)
- 1 cup packed brown sugar (the store has several types, and they all work)
- 1/2 cup white sugar
- 1/2 tsp baking soda (NOT baking powder, they are *different*)
- 2 eggs (You can substitute 1/4 cup plain applesauce for each egg. In this recipe that means use 1/2 cup applesauce)
- 1 tsp vanilla
- 2-1/2 cups all-purpose white flour
- 1 12-oz package chocolate chips (OR butterscotch chips OR peanut butter chips, they are all good)

Directions

1. In a large bowl, soften the margarine. You can either leave it out for a half hour or use a bit more elbow grease when stirring. Add in the white and brown sugar and stir them together.
2. Add in the baking soda, the eggs, and the vanilla. Stir them in until it is all smooth.
3. Add in the flour, a half-cup at a time. It will get more difficult to mix in, but persevere. This is the basic dough. Now add in the chips, the more the better!
4. Using a teaspoon, scoop out a small amount of dough from the bowl. Using another teaspoon, scrape off the dough onto a non-stick cookie tray (flat and rectangular). The dough lumps should be an inch or so in diameter, and be placed at least an inch apart.
5. Place the tray full of potential cookies in an oven set to 350 degrees Fahrenheit. Set the timer for 8 minutes, but keep an eye on the cookies, because they bake fast. (Also, your oven may suck and the thermostat may be broken, like ours. In this case, keep a very sharp eye on them, so they don't burn!) Properly baked cookies will be cakey but gooey, and brown around the edges.
6. Remove the tray from the oven, and set it to cool. Cookies are edible as soon as you can get them off the tray in one piece. Be careful to use oven mitts when touching the hot tray.
7. Or, omit steps 6-8. Eat the cookie dough. (This works better when you substitute the applesauce in. We'd hate for you to get salmonella.)

And as the Cookie Monster would say, "Cookie, cookie, cookie, starts with C!!!" Or as they have changed it due to American children being overweight, "Cookies are a sometimes food." Damn fat American kids.

Ali and Jenn
Who *should* be eating cookies

Renting in Waterloo

Stuff you should know

Living on your own? If you're currently renting a place, just thinking about it, or even if you think you know everything, you'll probably learn something new if you keep reading.

Because you live in Ontario, you have rights under the *Ontario Human Rights Code*. In general, if you're renting a house in Ontario, you have even more rights as a tenant, provided under the *Tenant Protection Act*. There's also a pertinent Waterloo by-law that you should know about just for living in Waterloo. Disclaimer: I'm not a lawyer, so I'm also including references to the different parts of the Human Rights Code (HRC) and Tenant Protection Act (TPA) for your informational convenience. My advice is from "student to student", from someone who's experienced, researched, and dealt with all of these problems.

- **Discrimination by Age/Sex/Other:** Every person has a right to equal treatment [HRC 2]. Common things I've heard landlords say are "I only rent to females", or "You have to be 18 to rent from me". Both of these statements are a violation of the Human Rights Code - the first is discrimination based on sex [HRC 21], the second is based on age (With respect to housing, the HRC applies when you turn 16 [HRC 4]). If you attempt to exercise your rights under the HRC, it's also a violation of the HRC for any attempt to "punish" or "get even" with you [HRC 8].
- **Living with your landlord:** If you (a) share a bathroom or kitchen with your landlord, or (b) rent a room in a house from another tenant living there, then **you're not a tenant - you're a "licensee"**. In this case, you're *not* covered by the Tenant Protection Act [TPA 3i] (which is what most of the rules in this article are covered under), and you have relatively little legal protection - you can even be evicted for no reason (with required notice based on your rental period length). Basic advice if you're considering this scenario is to sign a fixed period lease - one that specifies both start and end dates. This way, as long as you pay your rent and aren't evil (don't break the law or the lease), you can't be evicted before the end of your term.
- **Leases:** A lease is a written legal agreement to rent a house/apartment/hole in the wall. Make sure that both you and your landlord sign and date one, and that you have a copy. If part of your lease conflicts with rules in the TPA, those parts of the lease are not binding - your rights given in the TPA come first [TPA 2, 16]. A lease should specify the address, rental cost, who pays utilities, and any parking or common area rules.
- **Staying at the same place:** If you've been leasing a place for a year, you don't have to sign another lease to stay there. Unless your lease specifically mentions an end date, you can stay in the same place on a month-to-month basis under the conditions of your original lease [TPA 40]. Most people (including myself) don't find this out until too late.
- **Rent increases:** Your rent may only be increased at most once every 12 months, and not within the first 12 months [TPA 126]. The maximum increase is defined as a percentage each year by the Ontario government - in 2005 the rate was 1.5%, and in 2006 it will be 2.1%. You must also be given 90 days written notice of rent increases [TPA 127].

- **Deposits - Keys and other stuff:** This is the most common issue I hear of where students are taken advantage of: **It's illegal for a landlord to charge any deposit totalling more than one month rent, and such a deposit can only be applied to the last month's rent**. This includes deposits for keys, damages, cleaning, or utilities. It's also illegal to charge any type of fee for process or review a rental application, or to clean/repair a unit [TPA 117,140]. Some landlords I've met will try their hardest to convince you otherwise. If the landlord insists on a damage/key/etc deposit, I find it's easier to pay it and withhold the amount plus interest from one of your rent cheques (a common ruling). [TPA 193.4]. If they complain, wave the Tenant Protection Act in their face.
- **Interest:** For any deposits given to your landlord (ie: last months rent), you can charge 6% interest, compounded annually [TPA 118.6] A common way of getting your interest owed is to withhold it from your last rent cheque.
- **Pets:** A "no pets" rule is not enforceable - you can have pets if you want [TPA 15]. However, due to allergy concerns, if you share a house with roommates, your pet must be restricted from common areas (ie: keep it in your room) unless agreed to by all roommates.
- **Privacy and Entry:** Your landlord needs to give you 24 hours notice before entering your rental unit, and can only enter between 8AM and 8PM; you may choose to give your landlord permission otherwise though. [TPA 19] I've known landlords who would just "show up" to show the place to prospective future tenants, or to do an "inspection". Make sure to remind your landlord that such activity is illegal if they try it without your permission.
- **Lodging Houses:** Waterloo has a "lodging house" bylaw. Basically, a lodging house is defined as a rental unit (house, apartment, etc) that contains 4 or more unrelated people living in it - much of student housing around UW and Laurier campuses. What you'll want to look for if you're considering such a living arrangement is an unexpired Lodging House License posted visibly inside the main entrance of the house. If it doesn't exist, you may want to contact the By-Law Enforcement Office at 747-8785 - the landlord would be subject to a fine of up to \$5000 [City of Waterloo By-Law 140]. If you're currently living in a place like this, I recommend waiting until near the end of your term to contact By-Law Enforcement, and warning any prospective tenants that come by; if the house cannot be licensed it may be shut down (I've only heard about this, not experienced it).

Remember - the Human Rights Code and Tenant Protection Act aren't just "suggestions" - they're the law. You can make Human Rights Code inquiries toll free at 1-800-387-9080, or visit the website at <http://www.ohrc.on.ca/>. You can also contact the Ontario Rental Housing Tribunal at 1-888-332-3234 for information about the Tenant Protection Act, or visit the website at <http://www.orht.gov.on.ca/>

Don't be intimidated by a landlord. If you're not comfortable dealing with them or feel they are being too 'pushy', it's better to walk away. Information is power; knowing your rights will hopefully help raise that comfort level.

Want to write for mathNEWS?

But can't make Production Night?

So, you want to write for *mathNEWS*, but you can't make it to production night? That's fine! We still love you! Now, here's the easiest way to do it:

Write us an email. Here's the catch: *mathNEWS* uses an HTML-like markup language, and we really like it when we don't have to tag the dozens of articles that come in untagged. So, you can always look up our mNmL markup language at:

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

Once you've gone through this, you'll see how similar it is to HTML. The other things you'll need to know is that the *mathNEWS* system doesn't like seeing just &. Instead, it likes seeing & (same goes for > and <: it likes > and <). Now, about actually submitting your article, here's our easy-to-use system:

Email address: mathnews@student.math.uwaterloo.ca

Subject line: article (or any funky combination of those letters together, like aRtiCLE or any other of the 27 permutations)

Body of the email itself: your TAGGED article.

Attachments: DO NOT ADD ATTACHEMENTS. Our system doesn't like them and we don't either. If you want to send us an image, send us an email with the subject as image and not your article in the body.

If you have any questions about how to do this, just email your friendly editorship team. We'll be GLAD to help you.

Mark Toivanen
Emerald Kushnier
Chris MacGregor

Living in Sin

Week 3: Wrath

And now, we reach a difficult sin to write about — how do I speak of “inappropriate feelings of hate” for a significant other without using *mathNEWS* as my livejournal (since we really really don’t want that)?

Hate is probably too strong a word. I would love to be able to tell you how to learn to live with the more *astounding* habits your boy/girlfriend might have (like freaking out when you don’t use a trivet for a hot pan, or using their fingers to fish out olives from the jar), but this week I am seriously struggling myself.

Living with someone is the only way to find out that they consider shirts optional, even when you have company over; or that they would rather let the dishes pile up for a week than let you or anyone else wash them.

The first step to tolerance is avoiding “wrath” and encouraging discussion of where habits come from and why they are clung to. If you can come to the bargaining table with a compromise ready you’ll be better armed to handle the discussion.

I’m still in the process of working out the next few steps, but I know one thing: if you’re not willing to come halfway on anything, you’ll only drive each other crazy and miss out on the fun parts of living together, like... er....

Half-pint

NHL keeps on ticking...

5/6 games in

As this article is written, each team has played a minimum of 5 games, and some have played 6. It is very interesting to notice that some of the teams that were expected to tank (Buffalo, Toronto, Washington and the NY Rangers) have not, while some teams expected to excel have tanked (Atlanta, Pittsburgh (still looking for win #1), Boston, NY Islanders and Colorado). While those teams that are mid-pack are still doing well, it’s teams like Nashville, Buffalo and the NY Rangers that have been thus far the biggest positive surprises. Nashville is tied at the top of the NHL with 10 points with the Ottawa Senators and the Detroit Red Wings. Detroit is at the disadvantage of having played 6 games, whilst Ottawa and Nashville have only played 5 apiece. But that’s all easy enough to search out online, and the numbers will likely have changed by the time you guys all read this on Friday. Now’s the time to talk about all the exciting new stuff, like game details and surprising players.

Surprising Players

Very few people (myself included) expected Eric Lindros to come out of the gates as fast as he has. What a bargain deal this has been (thus far) for the Toronto Maple Leafs. If he keeps up his current pace (hell, even if he backs off a bit and “only” gets 75 points), he’d be one of the best bargain acquisitions of the off-season. Jeff O’Neil is also coming to his own nicely, as is linemate Jason Allison. The Leafs are all of a sudden looking a little smarter for those three deals. They still have the defensive problems, but hey, it’s Pat Quinn’s Leafs... they’ve never been known for defensive abilities.

Eric Staal has been leading by example in Carolina, scoring 5 goals and 8 points in 5 games, and holding up a nice +3 rating. And look! He’s a left winger! There aren’t all that many decent ones out there (granted Steve Sullivan (4,10 in 5 at +1) and Simon Gagne (7, 10 and +8) are tied for first). Let’s hope he can keep up the pace!

Game Details

The first night of the season was definitely exciting. We got our first taste of the shootout in the Leafs-Sens game, the highest attendance numbers in NHL history, and a whole whack of other (similar) records. As the weeks went on, teams have either excelled or tanked (see the lists above), but here are a couple of notable exceptions: Toronto went from a bad start (0-1-2) to a 3 game winning streak (3-1-2 at publication time), Ottawa sprinted out of the gate with a 5 game winning streak (one game shy of the franchise record for starting the season), Buffalo surprised many critics with a great start. Sure, they got shut down against Ottawa and humbled by Montreal, but they’re still over-performing. Anyway, it’s definitely been a great start to the season, with highlight reel goals and saves galore!

Mark “Beatlemaniac”

The Co-op Haiku!

Why do we each pay
Almost five hundred to be
Told to bend over?

This filler is just one line long

vb::sheep

Bill Gates Visit

What didn't happen

Eight days ago Bill Gates, Microsoft bigwig and all-around richest guy ever, visited the UW campus to give a speech to students about software and the nature of the computer sector over the coming years. Only a few lucky students were allowed to view the presentation, selected pretty much at random from a pool of applicants. Then there was me, who got a personal request from Microsoft to attend. I got, among other things, a place in the shortest line to get in, and got a center seat just four rows back. I could have rushed the stage, and probably actually reached Billy Boy before security guards took me down, injected drugs into my neck, and hauled me off never to be seen again.

NOTE: The above is actually true. Somehow, Microsoft thinks I'm important enough to request my attendance. I have very little idea why. However, the following is likely not true.

As students were filing into the room and sitting down, there was some rock music playing in the background that later turned out to be personally written for Bill as his theme music. When everyone was sitting down, Gates rocked his way onto stage laying down some mad beats from an electric guitar. After a few killer riffs, he proclaimed 'RAISE THE ROOF!'; a cue to the technicians (who had modified the Hagey Hall structure with hydraulics), to physically raise the lecture hall's roof a full seven feet. With sunlight shining down upon him in a heavenly-like beam, he began his talk.

Taking a cue from Steve Balmer, the first 45 or so words of the talk were "Students! Students! Students!", drawing wild cheers and hooting from the crowd. The next five minutes of the talk was him saying three hundred variations of the sentence "Microsoft is great!", including, "Not Microsoft sucks!", "Greatness comprises Microsoft!", and the like, spoken in several languages including French, Spanish, Quenya and Draconian.

Once the crowd had been thoroughly convinced that Microsoft is, in fact, great, Bill moved on to the Xbox 360 demo. "There are three-hundred and sixty degrees in a circle", he said, "so this new Xbox has come full circle. It's right back where it started." Onlookers commented that the console looked suspiciously like an original Xbox that had been hastily spray-painted white. Bill played a level of "The Great Microsoft Adventure", a never-before-seen upcoming launch title where you play as Fluffers, a timid forest rabbit that must join forces with a heavy-metal singing, pierced, and swearing turtle named RockHard to collect all the Xboxes that have mysteriously fallen off a truck and return them before the launch day arrives. At the end of every level, RockHard sings a heavy metal song about how piracy isn't 'dope', 'fly' or even 'rockin', and that in fact it is more closely associated with 'squareness', 'ugliness', and 'terrorism'.

The last half of Bill's speech was a lot like the first, since it seemed to him like a few people in the audience were starting to doubt the obvious greatness of Microsoft. The floor was then opened up to questions, covering such diverse topics as "Why is Microsoft great?", "What could I do to become even half as great as Microsoft?", and "Is Microsoft in fact bigger than Jesus?". His indoctrination complete, Bill thanked the audience for coming, lowered the roof, and left to be escorted out of the building by a task force easily twice as big as the population of Iceland.

All in all, it was an exciting look at Microsoft, even though Bill didn't really talk about any actual software. This editor looks forward to one day approaching the greatness of Bill Gates.

The Approachable One

What makes a person approachable? Do we seek aid solely from people who possess some sort of "approachable" factor? Would such a factor be based purely on appearance or on a personal vibe? These are questions I've often asked myself. Whether it be at MC, walking home from campus or at the mall, I have been approached by strangers who have asked me for directions, for the time, for my personal opinion, to complete surveys, to borrow notes, for extra paper, about next week's assignment, where to park on campus, and for my number (okay, the last maybe not so much). What strikes me is that, even without making eye contact, strangers would approach me for help. Like all kind and friendly Mathies do, I act willingly to help these poor strangers get to their next destination in life (or simply to their next class). The only problem is that I have no knowledge whatsoever of campus parking. I am sure that many of you can relate to this, as most of you have probably been approached by someone sometime in your life. But note that a person with an extremely high "approachable" factor finds themselves answering strangers' questions on a frequent basis. Maybe Mathies are not so anti-social after all! And for those of you who have never been approached, here are some tips for you to increase your level of approachability:

1. Smile [/D — BeatleEd]
2. Make eye contact
3. Carry *mathNEWS* in your hand
4. Line up at the local Tim Hortons
5. Walk with a buddy and double your level of approachability
6. Work on your next assignment in the computer lab
7. Do not spend too much time in the Comfy
8. Walk around campus instead of just loitering at MC
9. Show up to class
10. Get a car, since you will then be able to help others regarding parking on campus

qw

WoW, That's Annoying

10 World of Warcraft Things that grind my gears

1. The sad fact that a GIRL Character In-Game = Guy In Real Life
2. Paladins: Just Bubble, go home and stay there
3. On Elune, # Night Elves > # Horde
4. On Elune, # Night Elf Hunters > # Undead
5. Blizzard favoring the Alliance (e.g. exploit to kiting Cairne from TB)
6. Mage who rolls on and wins Dal'Rends Sacred Charge for "tanking situations"
7. People who say the reason they don't play Horde is because Horde are ugly, /cry more n00bs
8. "Hunter Gear" jokes
9. Warlocks crying about 3500+ Shadowbolt Crits not being enough
10. Warriors who refuse to enter Dungeons that don't drop Valor [Yeah, those guys are bastards — SheepNinEd]

Squee on Elune

profQUOTES

So, lots of *profQUOTES* this week. We even got some that were typed, printed and then put into the **BLACK BOX**. And hey, while we love seeing the **BLACK BOX** packed full, if you've gone to the trouble of typing them, don't let that time go to waste! Email them to us at mathnews@student.math.uwaterloo.ca.

"You can even explain it to your grandmother. I explained it to my grandmother once, she's not alive anymore."

Verstraete, CO 342

"Start killing things until you see some movement."

Selby, CS 350

"Don't come expecting to cheat, because this is a Religious Studies course and you'll get the plague."

Snyder, RS 230

"If you don't feel the urge to use the bilinearity property here, you're weird."

Andre, PM 331

"Some asshole instructor may ask you to prove this result some day."

Willard, PM 334

"This example showed something important. [pause]... I wasted your time."

Willard, PM 334

"Here are the integers... [starts drawing dots] There are a lot of them!"

Willard, PM 334

"Everyone in the real world... Well, every algebraist in the real world... Well, every algebraist..."

Willard, PM 334

"For those of you that follow American elections, the recounts are a little dodgy."

Furino, CO 350

"3 and 2 is 6 [pause] Can I just go to bed?"

Furino, CO 350

"Powerful secret political organizations generally get enemies."

Furino, CO 350

"You're at a party. Your friend introduces you to a dual LP. You don't want to go out with *any* LP: you want a feasible LP."

Furino, CO 350

"I get given free textbooks in the hopes that I pick one of them, and you buy them... making the publisher rich."

Lubiw, CS 341

"Circles are messy. It's easier to argue in terms of squares."

Lubiw, CS 341

"You could define it formally — it's no problem. It's just a pain in the ass. [Continues] Oh, that shouldn't show up in *mathNEWS*."

DiCesare, STAT 230

"Forgive me if I give you anything extra that you don't need for the test."

DiCesare, STAT 230

"Everyone's laughing because it's drugs."

DiCesare, STAT 230

"If you make a mistake, you will be deducted some marks."

Alan Huan, AFM 372

"Try to put trig identities into an easy to calculus form. I'm using calculus as a verb — it's blatantly not one."

McKinnon, MATH 137

(On the difference between the regular and advanced version of the class) "Someone asked me what we're going to be doing [in this class]. We'll be doing the usual stuff, [but] in the right way."

David Jackson, MATH 245

(Gesturing with hands and saying "blah") "Blah blah blah blah blah. Blah blah blah. Blah blah blah blah. Theorem 3.9."

David Jackson, MATH 245

"Does everyone understand this? Because what I'm going to do is generalize the hell out of this."

David Jackson, MATH 245

House of Nerds

Last time I made mention of the character's names being changed, then didn't give any names. I also only showed two characters, well here's everyone				
Jim: 2A PHYS	Karl: 2B CS	Dave: 1D ARTS (undecided)	Lyle: ?? ??	Dan: 3A CS
				
Is rarely seen anywhere but in his room gaming. Despite that ALWAYS gets "Owned"	The "coolest" guy in the house. Only nerd qualities are his anime watching, gaming and being in CS	His last name is Thomas and he works at Wendy's, we go there a lot and make fun of the fact.	We're not sure what program he's in, we don't even know if he is even a student here at all. By the way the 'L' is for loser, not Lyle	Younger than everyone else but furthest schoolwise because of being a genius. Is the author so gets to bias the comic

Dan

Age of Empires III: The Gathering

It's been over six years since Ensemble Studios and Microsoft released Age of Empires II: Age of Kings. Now, this week, they have finally shipped the sequel that we all knew was coming: Age of Empires III. In the past six years there have been many enhancements to the RTS genre, such as cavalry charges that actually trample infantry. Age III, however, completely omits many of these more advanced features RTSs have been adding lately in favour of two things:

1. Very, very pretty graphics. I mean, they look really good. Especially the boats.
2. Turning the best Real Time Strategy series of all time (yeah, that's right, screw you you Blizzard fanboys*) into a card game.

Although it seems out of place, the cards have somehow found a way to add depth to the game and not make it seem like some bad stunt. Linked to the cards is the new home city feature which shows Ensemble to be jumping on the 'let's add RPG elements to everything' bandwagon, a feature which seems as misplaced in this RTS as it was in the FPS Battlefield 2; but like BF2 they seem to have mostly been able to pull it off.

The setting for the game now focuses on the Americas, so this now brings you the closest any major game like this has ever been to letting you play as Canadians on a path of world — or at least continental — domination.

The game has added many new features yet doesn't really stray much at all from their previous games. It's not revolutionary, but it is still a pretty good game that takes place in an era not often covered (since it's not Medieval OR World War II)

*Go check out their website, in the job openings section it says they're even working on some new MMO game — it's so gonna own WOW!

DanS

Signs of the Apocalypse at UW

- Someone who whines about the co-op process actually got a job through it
- The SoftEng degree requirements of one year match those of the the next
- You can get a wifi connection in the MC without difficulty
- The Admin have an opportunity to raise tuition that they don't take
- Mark Johnston, the Imprint hack, has a thought independent from Liberal party policy
- Over 1% of the students who pay for CKMS actually listen to it
- *mathNEWS* online edition comes out same day as print version
- Someone who gets a MEF refund can name one thing it does
- Someone votes in a FEDS election for someone other than whose last name sounds ethnically closest to theirs
- The Realtime lab contains more than 3 people with pants on

Ian W. MacKinnon

ElseWhen

25 Years Ago in *mathNEWS*

Welcome back to the *mathNEWS* archives, etc, etc. You know the drill. I'm kinda sick this week, so we're gonna keep it short. I'm wrapping up Volume 24 Numbers 5 and 6, because they were also both short. Like this column. Natch.

ink_13

Number 5

What a boring issue. Here's what was notable:

- MathSoc is considering hiring a full-time C&D worker
- MathSoc will be having elections soon
- In non-MathSoc news, Feds refunds were below 5%
- MathSoc will be having a Scavenger Hunt October 20 to 27. First prize: \$50. Second prize: a 24 *[Yes, of beer — ink_13]*
- **Quote of the week:** "I think if people were a bit quitter in this class then we could see the board better" — Trent on the lighting in CS331 *[The original profQUOTE? — ink_13]*

A Limerick

The analyst couldn't be pressed —
He insisted sparse data was best!
When the skeptics were snide,
He succinctly replied:
"Oh, I estimate all of the rest!"

Number 6

Now this is more like it:

- The Dead Ringers, the Math floor hockey team, scored a 10-2 rout in their last bout against, er, it doesn't say.
- The Social Director is organizing a pub night in connection with Kinesiology at the Waterloo Motor Inn *[Now that's using the old noggin. Yay, women! — ink_13]*
- The perennial *mathNEWS* comic, Matt the Mathie, includes neither alternate X-rated captions nor humour in the primary ones.
- It seems Mike Gore draws a good Snoopy.
- The in *mastHEAD*: "jo says hi and that she is proud of us guys... aw shucks was nothing really!" *[Back in the day, the mastHEAD was stuff manually added by typewriter to fill out the last page of layout — ink_13]*
- **Quote of the week:** "No matter what the sport, it's the mistakes that beat you." — Howard Cosell

More *profQUOTES*

(On the propensity of math students to change to engineering)
"[Don't] desert to that other building [DC] which looks like a beached caterpillar, with its green guts spilling out the doors."

David Jackson, MATH 245

"Take an inefficient computer scientist..."

David Jackson, MATH 245

"So you go off and have some spring water and some marmite and some Brussels sprouts, and the Brussels sprouts were too much for you..."

David Jackson, MATH 245

Even More profQUOTES...

"This classroom has, yes, a number of girders for stringing people up. Good."

David Jackson, MATH 245

"And then we could get into hermaphrodites and that's for another time."

Porreca, LAT 381

"The blessing of a priest. For those of you who play D&D, it's kind of like what a paladin does."

Porreca, LAT 381

"And we'll see that when we look at cleavage a bit later."

Morgan, EARTH 121

"I'll put it up on the website, 'Angel' or whatever it's called. Devil, more like."

Morgan, EARTH 121

"Hands up, everyone who's never had diarrhea!"

Morgan, EARTH 121

[Discussing Tibetan exiles] "Oooh, they have great pancakes there!"

Jakobsh, RS 333

"Here you have 20 computer chicks... err chips. [...] Guys, stop laughing, ok?"

Cesare, STAT 230

"Everyone's just dying to leave? Well, how about this? Let's leave!"

Cesare, STAT 230

"I'm just assuming that whenever you pull out a rock, another will grow in its place."

Cesare, STAT 230

[Student offers answer after two failed attempts] "You want to answer, but three strikes and you're out." [Correct answer] "Right... so you're in."

Cesare, STAT 230

"Just lie to me and tell me you know a lot of linear algebra."

Furino, CO 350

"Invertablity and zero columns don't get along well."

Furino, CO 350

"I'm seeing some very painful faces at the mention of Gram-Schmidt."

Furino, CO 350

"And by now, all of you without ambition should have already dropped the course."

Smith, ECON 101

"Hydroelectric dams? Even an artsie can understand. Water. Water fall. It's like standing in the shower."

Smith, ECON 101

"I hate everybody. I'm an equal criticizer."

Smith, ECON 101

"Since Fermat didn't write down a lot of his proofs..."

Lawrence, MATH 145

"If somebody says to you, 'You're in prison for 30 years OR until you show this is irrational', you could cut down your sentence a bit."

Lawrence, MATH 145

"I haven't proven anything, I'm just waving my hands."

B. Ingalls, Math 237

"Now let's talk about this in 3-space. I didn't really prove this in 2-space, but at least I waved my hands at it."

B. Ingalls, Math 237

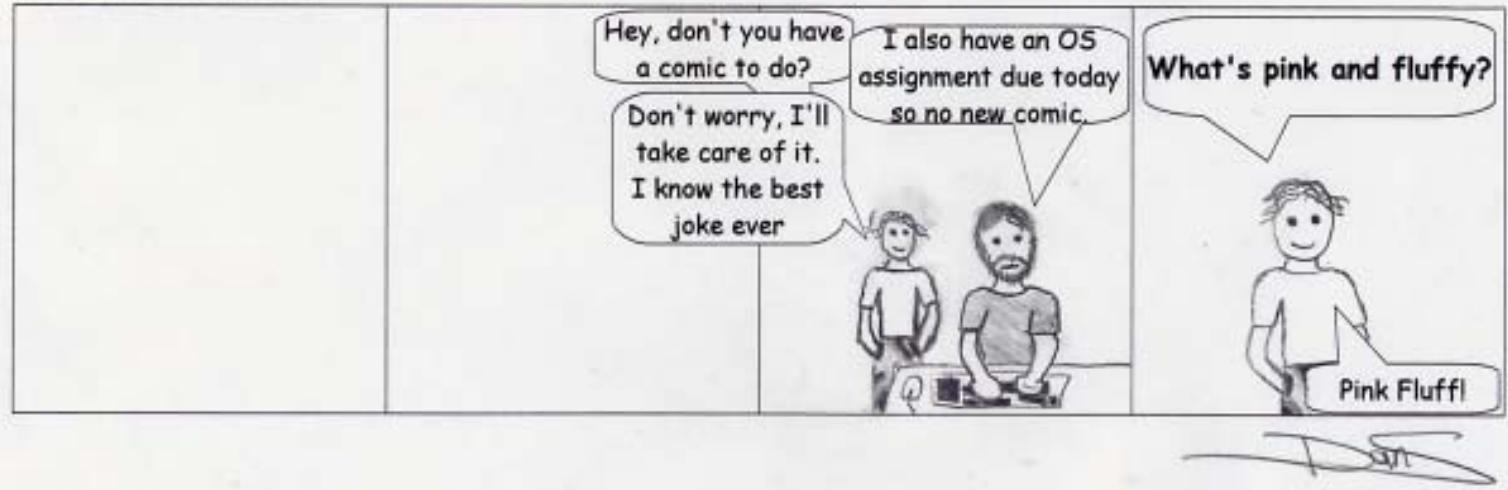
"We're livin' on borrowed theorems."

McKinnon, PMATH 345

"Who said there's no room for violence in math?"

McKinnon, PMATH 345

House of Nerd



mathNEWSquiz #3

The squiz reborn

Well, I've met my goal of getting two submissions to the past issue's quiz, so true to my work, I'll keep things going this issue. Diana Chisholm send in the most correct answers, but Dave Vandervies sent in the funniest answers. I need to acquire a random number generator, like the D20 I carry around in my pocket, to see who wins. It appears that Diana wins, with the roll of a 9. On to this week's quiz.

CEOs

Name the CEO(s) of the following organizations

1. Microsoft
2. Apple
3. Google
4. RIM

Space

1. Who was the first country to put a man in space?
2. Who was second?
3. What was the most recent country to do it?
4. When did the first Canadian go up in space? Who was it?

Video Games

Which company makes/made the following video game systems?

1. Game Gear
2. Virtual Boy
3. NES
4. Saturn
5. PSX
6. XBox
7. Atari 2600

As always, submissions are due via e-mail or in the BLACK BOX before next production night.

π

mastHEAD

Boo! I'm sick!

So, right now, I'm the editor with time on hand. And I'm sick. This sucks. Fortunately, it looks like this will be a smaller issue because we had a lot lower turnout than for the last two issues.

I'm supposed to ramble on about something (heh..Zeppelin songs are awesome!), but I really could care less because of my stupid being sick, so without further ado, here's the question we asked our production staff...How do you service your customers?: Kaitlyn "Half-pint" (You'll find out when I write about Lust next issue), Ian "imack" (Bow chicka Bow-wow), Eric "ink_13" (Quickly and efficiently), Michael Perkins (Your work report has been marked as "unsatisfactory"), Chuck "Orcus" McPhail (Quite thoroughly, with a side of mint sauce), Mathew (Customers? I still have customers?), π (Lots of lube), Val (With both hands. Who wants half an ass?), DanS (With plenty of disdain).

Mark "BeatleEd" (I'll service YOU!)

Emerald "StatsEd" (Depends on how much you pay me)
Chris "SheepNinEd" (In FIFO order, with no preemption)

Are there enough profQUOTES for you?

"That's the imaginary term, being the one I made up."

McKinnon, PMATH 345

"K is a common letter to use to refer to a field because k is the first letter of field."

McKinnon, PMATH 345

"Not many calculators have a 'ring' button."

McKinnon, PMATH 345

"I spelt it here with an 's' and here with a 'z' and that is because I don't know which one is right."

McKinnon, PMATH 345

"That's a good point you made, and I'm going to ruthlessly plow over it."

McKinnon, PMATH 345

"Pictures are good. I always like pretty pictures."

Hare, PMATH 370

"This is one of those psychic, "What am I thinking?" games."

Hare, PMATH 370

"C is totally disconnected, a lot like most of your math profs."

Hare, PMATH 370

Prof: "This is all mathematicians do. They make up a definition, then prove something satisfies the definition. If nothing satisfies, they just don't tell anyone."

Student: "It's mathematical masturbation!"

Hare, PMATH 370

"Anytime we can think about sex in stats, it's fun."

Fugelsang, PSYCH 391

"I like deep. Even though I'm about as deep as your average puddle in person."

Fugelsang, PSYCH 391

"I have a terabyte of storage in my office alone. It makes me feel like a man."

Fugelsang, PSYCH 391

"I spend most of my time up here trying not to say anything inappropriate."

Fugelsang, PSYCH 391

[Writing proof] "d=0? This is BULLSHIT!"

Csima, MATH 135

"Plus, minus, same thing. Actually, don't use that advice for the midterm."

West, AM 250

"A lot of things in mathematics are attributed to the second person who discovers it, usually because the first person was Euler."

McKinnon, PM 345

gridCOMMENTS

Congratulations to Adrian Dewhurst who has won his pet dragon; he shall now burninate whatever (or whoever) made the maze not use solid lines. Aargh! Welcome back to another week of the gridword, designed to test your general knowledge and mastery in sexology. This week's *gridQUESTION* is: If you could add fizzy bubbles to anything, what would it be?

GridMaster Fox

Across

1. UW 5 floor residence
12. Lyric poem type
13. Companionless
15. Star Trek movie title
17. West African country
19. Pakistan neighbour
20. Time survivor
22. Winter holiday (abbr.)
23. Depressed
24. Mythological sea-nymphs
26. Legislative statute
27. Cold
29. Hockey statistic (abbr.)
30. European eagle
32. Christian creed
34. Semi-circular outdoor bench
35. Maize
36. Record
37. Legal hockey position
40. Patch up
42. In Hebrew, the highest
43. North Dakota city
45. Retired (abbr.)
46. W.C.
48. Within a smaller epsilon than others
51. Victor Hugo's _____ Miserables
53. Common User Access guidelines menu item
55. Tropical American plant fibre
56. Archimedes' inspiration
57. Samson's enemy
59. Sharp-toothed fish
61. Lesbian performer _____ DeGeneres
62. Base eight
63. UW dance club

Down

1. Home of school of social work
2. The Flying Dutchmen or Carmen
3. Of no fixed home
4. No longer the 14th letter?
5. Affirm
6. Stunning devices
7. Game division
8. Enemy of peer-to-peer trader
9. Game show host _____ Trebek
10. Gluttonous
11. First Turing-complete computer
14. UW Fine Arts Wing
16. Industrial Risk Insurance (abbr.)
18. Polar constitute
21. Former Spanish kingdom
24. Relating to celestial bodies

25. Master of sexology
28. Final Fantasy IV (or II) main character
31. Superman actor
33. Previous to
34. Tool for hearing
38. Spanish city
39. Right
41. Dukes of Hazzard movie destination
43. Successor of Moses
44. Famous temple location
47. 20th century dictator _____ Hitler
49. "Over My Head" band
50. Famous Carnegie Mellon research center (abbr.)
52. Mother of Caer from Irish mythology
54. Fastened
56. Classical composer
58. Saturated hydrocarbon suffix
60. A Beautiful Mind producer _____ Howard

