

math NEWS

Volume 105, Issue 3

Tuesday, October 23rd, 2007



The world is watching, eh?
WATCH THIS!



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lookAHEAD**mathNEWS**

Oct 23	Issue #3 ascends to the throne
Oct 30	Production Night #4, the day just keeps on changing!
Nov 6	Issue #4 regenerates from a thumb

Math Faculty

Oct 29	Pre-enrollment for the first in a long time! Thousands expected to be wounded.
Oct 31	Approximately π^2 day and Halloween costume contest
Thursdays	Games night!
Fridays	Movie night!

CECS Assuming Jobmine doesn't crash

Oct 29	First interview cycle match results
See www.cecs.uwaterloo.ca/students/datesF07.php for details	

Student Awards & Financial Aid

Oct 25	Deadline for OSAP reviews (appeals)
Oct 30	Last day to submit Undergraduate Bursary Applications for Fall & Winter

Feds

See feds.ca/events for details

Miscellaneous

Oct 23	International Fail Midterm Day
Oct 25	Let's Reduce our Waste Event (SLC)
Oct 25	Pablo Picasso's Birthday (1881)
Oct 31	Halloween!
Nov 2	Daniel Boone's Birthday (1734)
Nov 5	Guy Fawkes Day

VPAS Says

It's been a while since you've heard from me so there's plenty to say. We have lots of fun events coming up.

On the 31st of October we are having a loosely approximate π^2 celebration with free pie for all mathies. There will also be a pi recitation, costume contests, and a new event: Over 9000. Over 9000 involves determining whether a formula evaluates to value that is more than or less than 9000. It should be a good time.

We are also having movie nights every Friday night and games nights every Thursday. Both are free events. Games nights are a great way to work out some stress from assignments while playing random board/card games with other mathies.

If you want to keep up to date on upcoming events, check out the whiteboard outside the C&D or go to mathsoc.uwaterloo.ca and sign up for the Google calendar. Hope to see you all soon!

Alex McCausland
Vice President, Activities & Services
Fall 2007

What do sex, heroin, and iPods have in common?

About as much as Imprint and journalism

Well, you can put them in the same sentence, but it doesn't mean anything.

InsideR

mastHEAD

Transcending history and the world, the publication of souls and swords infinitely better than the Imprint: *mathNEWS*! We tried to accomodate the Froshies by moving production night to Wednesday, but we only got one Froshie. However, we did manage to confuse a lot of people who still thought that the production night was on Monday. Boy, did they stay at the school for no reason! We would like to take a moment to laugh at these people. It is their misfortune that gives our lives jovialty and the gift of a child's laughter.

Seeing as how we performed a simple linear transformation to our production night and the film Transformers made its DVD debut recently, we asked our production staff "What do you transform into?" Before answering, they dragged me to the back of the SLC and beat me with tennis racquets. Then, they said: Val "A proof of the existence of god. Or an extra 3 inches", Thor "Robotic Richard Nixon", Matt "A proof of the non-existence of god", DanS "Depends on the matrix I'm being multiplied by", π "Shaft", Kaitlyn 'Half-pint' "A wife (July) and mother (???) (Step 3: profit)", Andrew "For all to there doesn't exist", snippet "Something with the ability to self-teleport", Daniel Goc "T-2000 to go back in time and battle Robotic Richard Nixon before he's created", Richard "1.21 gigawatts", Robert "A universal Turing Maching", The Rage "Your doom", MJB "Your mom", ebering "A lean, mean compiling machine"; InsiderR "OVER 9000!!!". Also, one *mastHEAD* answer disappeared from the last issue: the question was "What's your favourite flavour of orphan?", to which snippet answered "Joseph Collins style with Angelo sauce."

Special thanks goes out to Graphics who made a rainbow just for me. Thank you Joan of Arcadia for showing us that witches really do burn, emo music for cutting my wrists just by listening to it, the tooth fairy for the one-night stand, and indigestive cookies for eating through my stomach.

Michaelangelo 'Angelo' Finistauri "A Canyonero"
Peter 'mossEd' Simonyi "A d2w typist"

Ubuntu Gutsy Gibbon

Was released on October 18

I'm sorry, I'm not really into pokemon.

(For the uninitiated: <http://www.xkcd.com/178>)

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Editormon: Peter Simonyi (the Least Common Multiple)

Interview tips you'll never hear from CECS

I'm willing to admit that interviewing well isn't everything. There will always be interviews where the employer wants skills that you just don't have. There's nothing I can do to magically fix that. But interviewing well does make a difference. My qualifications for discussing this matter? Well, I don't really have any formal training in the subject — CECS would probably fire me on the spot. But I did get ranked #1 by 4 of the 9 companies I interviewed with last term — and I don't even have any useful skills. I'm also involved in speech and debate, meaning I can think on my feet and converse intelligently. You can get normal, boring interview tips from anyone — and you probably already know how to answer the standard questions like "tell me about yourself". But there are a few other things you should think about. Here are some unusual interview tips:

- Spend at least 5 minutes before the interview reading the employer's website. They love to ask you what you know about them. If it's a tech job, comment on their website if you know what technology it's using.
- Remember the interviewer's name. Use it at least once.
- Make the interviewer feel comfortable — relax the formality of the situation. Maybe even make a joke.
- Have things in your resume that are a little unusual — it gives the interviewer something to focus on. "Cheese club" always gets a response, for example. Be an interesting person, even if you have to fake it.
- Don't be afraid to stray away from the traditional formal outfit. Change things up with bright colours — pink tie, maybe? I definitely believe that 95% of interviewers couldn't care less what you wear, and you'll stand out from the endless herd of co-ops. Interviewing is very boring work.
- Do *something* to stand out if you're in the middle of a lot of interviews. Anything!
- Don't act like a damn idiot if you're asked a question that's a little different. "How would you test a potato?". Have a basic understanding of the concept of metaphor.
- If interviews are spread over multiple days, you can't use JobMine to figure out how many people you are up against. RIM does this.
- When the time comes for you to ask questions, seize it! This is your chance to shine.
- Find out what the job actually involves. Find out what their current co-op student is working on. Companies try to make the job sound a lot better than it is.
- Get the interviewer to qualify himself. This is a great idea. Make them tell you why **you** should pick **them**.
- Then, and this is key, make sure you let them know that they've **convinced you**. This is good because it makes you seem like a valuable employee, but they're worried that you'll take a better job, so they don't want to waste their #1 ranking on you. But if you're now convinced that they're the ones for you, then they'll give you the offer. Very meta. Assure them that they have the job you want.

Thor

Next time on *Lost*...

A lot of nonsensical crap happens with pseudo-intermissions filled with trite vignettes about someone's past.

mathNEWS editors eat their shirts

And their words...

Every mathNEWS tends to have a couple of mistakes and typos. That notwithstanding, last issue had one hell of a surprise! For that reason, we would like to clarify a *profQUOTE* and apologize to Professor Zorzitto for misquoting him in the most spectacularly unfortunate way. Not only did one editor misspell the word "shirt", but the other didn't pick up on the typo. We use the excuse that it was one in the morning at the time. Regardless, Professor Zorzitto, we are sorry. Please don't kill us.

Michaelangelo Finistauri
Peter Simonyi

The corrected profQUOTE

"If this is not invertible I'll eat my shirt, but I'm taking a chance here."

Zorzitto, MATH 245

Fast paced life shown to extend longevity

A relatively recent scientific paper and following studies suggest that a lifestyle full of quick movement can reduce or prevent the effects of aging. They suggest that by moving very fast you will stay younger longer. Many jet flights throughout your life work better than most ways available to the general public; however, something even as simple as taking a jog every day will, over the course of your life, have an effect. "That's funny," various test subjects mentioned, "I feel as though I've been aging normally, fast movement or not."

DanS

Google steals the internet

Some of you may have noticed that access to external sites were down between 10am and 2pm this past Tuesday. You may also have noticed that UW users could still access all of Google's services. IST claims that the disruption was caused by outside providers. However, through covert means, mathNEWS has discovered that IST has secret dealings with Google. Tuesday was only the first step in a pilot program that involves Google's hostile takeover of the internet. By offering co-op placements to the higher-ups of IST, Google was able to try their program on UW's network with great success. What better way to increase their market share to 100% than to simply steal the whole internet?

What can you do to prepare for the coming armageddon? You should begin immediately by downloading the internet. That way, you will still have access once the internet is no longer publicly available. This may be easier if you and a few of your friends try this together. If you don't have a few hundred terabytes of free disk space, you should just spend as much time as possible surfing the net over the coming weeks. Your friends may think you're stupid when you don't bother to study for midterms, but you'll be the one laughing in five years when you have hundreds of tales of adventure, intrigue, and suspense that you recovered while surfing the net that no one else will remember.

A warning of things to come...

Val
Undercover Reporter

profQUOTES

Sorry, maybe I'm not sober enough.

Mavaddat, CS 251

Would it help if I said "midnight plus epsilon" on January 1st, while everyone else is celebrating the New Year?

Hardy, ACTSC 231

Democracy of mathematics: if more people say it's right, it's right.

Hardy, ACTSC 231

[The authors] must have geared this towards American students who must find "theorems" too scary... so they're "important facts".

Hardy, ACTSC 231

(Of R code.) It's awesome. Not just because I wrote it; statisticians are unbiased.

Metzger, STAT 231

(After mistake in calculating error.) See, these errors come in handy. 1.7 plus a bit of an error is 3.7!

Metzger, STAT 231

Look, I've saved 3-4 letters. I've given you more time to do your homework now.

Metzger, STAT 231

Good old calculus, I try to forget it too. I blank it out of my mind.

Metzger, STAT 231

Let's go back to STAT 230. The course you all slept in... until you got to this part: Gambling!

Metzger, STAT 231

I won't stoop so low and put it on the midterm, because it's so easy. But you never know, I might; I have no pride.

Zorzitto, MATH 245

(Of Laplace and Lagrange.) Two French guys, lived about the same time. You're bound to mix them up, right?

Zorzitto, MATH 245

If I make a mistake, laugh at it after the bell rings.

Zorzitto, MATH 245

(Of "dollar-weighted rate of return".) I learned this as the "money-weighted rate of return" because I'm English, and we don't have dollars. At least not yet; at least not till we get invaded.

Hardy, ACTSC 231

(Looking at a used tire ad with a beautiful woman on it.) I'm not sure what sort of connotative connections there should be between that picture and used rubber.

Kenyon, PHIL 145

This is why I don't let you use sports journalists for critical thinking examples. It's too easy, like clubbing baby seals.

Kenyon, PHIL 145

We have a 6 month old daughter. I think she's mine; at least, I hope so.

Vasiga, CS 135

Have I lied to you that you know about?

Vasiga, CS 135

Elegance is like figure skating: no one knows what a 10/10 is but in programming it most likely means short. Like if you just stepped on the ice and were done I'd give you a 10/10 because I wouldn't have to watch anything.

Vasiga, CS 135

Like my thesis, great bedtime reading: will put you right to sleep.

Vasiga, CS 135

So you get to see my interpretive dance, but no real code.

Vasiga, CS 135

And what he's implying by this is: drop it like it's hot.

Kenyon, PHIL 145

So when you use a Poisson to approximate a binomial, all you need is μ . Hey! That sounds like a song! (Sings and dances.) All you need is μ !

Chisholm, STAT 230

To use the method of undetermined coefficients, you need to have a 'nice' function. When I say 'nice' function I mean a function I wouldn't hesitate to take out on a date.

West, AMATH 250

(Bumps into overhead projector.) That was not very graceful, but I never really got points for artistic merit.

VanderBurgh, MATH 135

How do I know to do this? Well, because I've done this question before.

VanderBurgh, MATH 135

We can get pretty darn high with this method... wow, that sounded so wrong...

Kaplan, CS 135

Euclid's the guy named after the grade 12 math contest.

VanderBurgh, MATH 135

It's a really good way to pass time while you're running in the country, to factor those huge 9 - 11 house numbers into primes.

VanderBurgh, MATH 135

You don't go around saying "I'm not a computer".

Griggio, ITAL 101

We girls can do whatever we like. It's nice.

Griggio, ITAL 101

He translated 'female boss' correctly as 'wife'.

Griggio, ITAL 101

The last time I checked, one is bigger than zero.

Drekic, STAT 333

If you don't write this with the constants, then you're not doing this wrong. You're just screwing everything up.

Springer, STAT 231

*Has your prof said something quotable? Type it up and send it to mathnews@student.math.uwaterloo.ca, or write it down and drop it in the **BLACK BOX** (located on the MC 3rd floor, between the Comfy and the C&D).*

Your Surrogate Mother

Nagging away from home
Week 3: The Talk

The following is basically a reprinting of a previous column on the subject by this author. Information was provided by Tammy Hoffmann at Health Services.

Now that you're at university, you may be facing the big S word for the first time. No, I don't mean "sequences and series" — you won't see those until Math 138 anyway; I mean sex.

Whether it's because you have a new partner or just because you finally have access to a room with a lockable door, if you're thinking about having it, ask yourself the following — even if it's not the first time.

Are you ready?

Not everyone is doing it, and not everyone should! [For example, some people are ugly. — Angelo] Abstinence is a perfectly reasonable choice for any couple. Choosing to abstain from sexual activities will decrease your risk of contracting STIs (although, there are other risky activities that can spread some infections) and will *definitely* protect you from an unwanted pregnancy (and if abstinence fails you, you get the added bonus of starting a religion as a result).

We're mathies — we know that $99.9\% \neq 100\%$.

Are you safe?

So now we'll assume you're mentally and emotionally ready to take the leap with your special someone.

Health Services has information on ways to protect yourself and your partner from both STIs and unplanned pregnancies, but the surest way to protect your partner is to have yourself checked out. A clean bill of health is quite a turn-on.

You can request an STI checkup with your annual physical, which you should be getting even though you're at school (health services acts as your family doctor away from home), or request an appointment for one specifically.

Seeing a Health Services doctor for an STI checkup is strictly better than seeing your family doctor since your family doesn't know your Health Services doctor, meaning you have one fewer "squick" factors to getting checked out.

If you both come out healthy, then you can move on to picking a birth control method, and you'll have more options.

(I'm not completely naïve, and I know that sometimes some people may end up in a situation where a checkup can't be scheduled before or while sex occurs. Be sure that you use a method

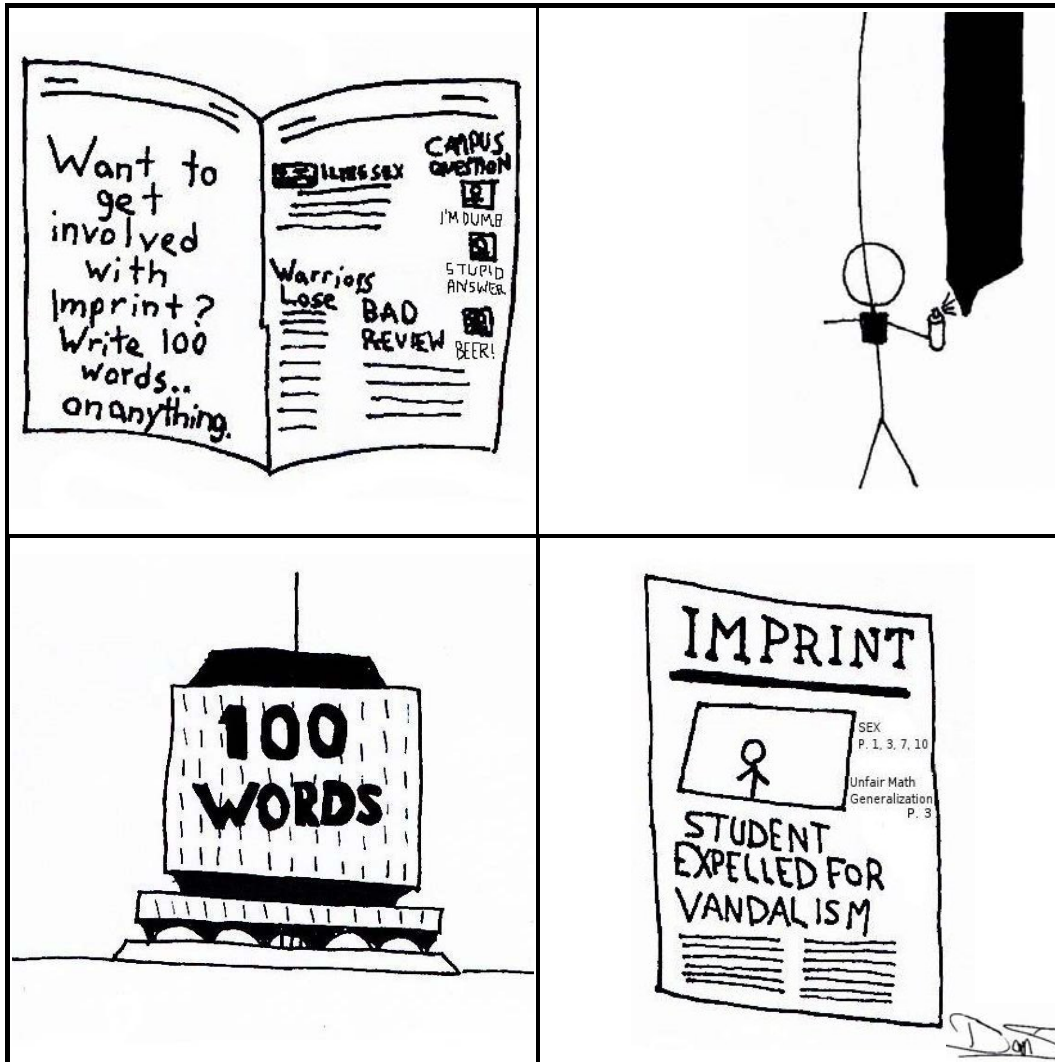
of protection that protects you from infections and unplanned pregnancies. Free condoms are available around campus, including from your don).

The nurses at Health Services can help you learn about the different choices that are available. Your doctor can help you choose the method that's best for you and your partner, and can write a prescription for those methods that require one. The student drug plan partially covers most methods, and many forms of oral contraceptives are available free of charge with the student drug plan if you pick them up from the dispensary in the Health Services building. How can you argue with free?

If you have any remaining questions, Health Services can answer them. They are at ext. 84096 (which is 888-4096 from home), and many of their information kits are available on their website if you prefer the anonymous approach.

Even though you don't want to hear it from your substitute-mother-figure, if you're emotionally ready and have taken appropriate precautions, safe and loving sex can be just that: safe and loving.

Half-pint



Over 9000 used over 9000 times. Oddly enough, its humour level is under 9000!

Interesting Math

By popular demand, I'll be writing about two pieces of interesting math this issue!

Part 1: Mobius Strips

Most of you know about the Mobius strip — take a strip of paper and join the ends with a single half-twist. If you draw a line down the middle of the strip, you'll end up traversing both "sides" of the strip, and wind up where you started. This is why I put "sides" in quotations; there really is only one side (and boundary) to a Mobius strip. Compare this to a strip of paper that is joined with no twists, where it is fairly plain that there are two distinct sides and boundaries.

Now, what happens if you cut the normal, untwisted strip down the middle? You would get two new separate strips, with no twists. Try cutting a Mobius strip in the same fashion: you don't get two strips, but in fact a single strip with twice the length of the original, and this time, the new strip has four half-twists. Cut this new strip in half again. Instead of getting two separate strips, you wind up with two interlocking strips, each with four half-twists. You can try to arrange one strip so that it forms an oval, and the other strip will form a figure 8 through and around it (it has two connection points). Cut each of the two strips down the middle; what do you get? Well it's not very interesting to see how many half-twists each has (this should be clear after the last step), but try to see what happens to how the strips are connected. In general, let $M(0)$ be the original Mobius strip, and $M(n)$ be the result after cutting each of the strips in $M(n-1)$ down the middle for step n . How are these strips in $M(n)$ connected?

Let's move away from the traditional Mobius strip. As you may have figured out, if you attach a strip of paper into a loop using an odd number of half-twists, you get something with only one side. So instead of one half-twist, try three. Cutting this in half yields something quite interesting for knot theorists (try it out). But what about five half-twists? Or an arbitrary $2k + 1$ half-twists for natural number k , for that matter. Feel free to let me know about any cool results you come up with.

Dating Advice from The Single Guy

It's not you, it's me

Well, I have good news and bad news: I'm taking an elective in Arts this term. Furthermore, there's this girl in the class that I've been goofing off with in class since the beginning of the term, and about two weeks ago, we finally went out on a date. She's definitely the most incredible girl I've ever met, and we've been pretty much inseparable since. This means that I can no longer be "The Single Guy." It also means that I can't just change my name and continue writing, because I've decided that my girlfriend is more important to me than some free pizza. I would also be unable to give impartial, unbiased advice, and the quality of my articles would suffer (look at how bad last issue's was, and that was just in anticipation of my upcoming date). Thus this is my final article for you guys out there. Any future things written will be by an imposter. Sorry all, it's been great. I'll finish this off with the piece of advice I have offered for almost everything in my original six-part series which will always apply: don't be dumb. *[RIP Single Guy. You will be missed. — Angelo]*

The (No Longer) Single Guy

Part 2: The Kissing Number Problem

Put plainly, the kissing number is the maximum number of hyperspheres of radius r that can simultaneously be in contact with a single hypersphere also of radius r in n -dimensional Euclidean space. The problem is to find the kissing number as a function of n . Consider in one dimension to start out. Here, our hypersphere is simply an interval of length $2r$. It should be fairly clear that the kissing number is 2: you get an interval on the left and the right of the target interval. For two dimensions (the hypersphere in question is a circle of radius r), it's also fairly easy to prove that the kissing number is 6: create a regular hexagon of side length $2r$ with the centre being the centre of the target circle, and each of the vertices being the centre of a circle of radius r . Let's move to three dimensions, where our hyperspheres are spheres of radius r . If you stack spheres in the form of a regular icosahedron in the same manner I described the construction for two dimensions, it is easy to see that all 12 balls can touch the centre ball. However, there is a lot of room left over — you can try this out with marbles or clay. Sir Issac Newton thought the kissing number should be 12, whereas David Gregory believed another ball could fit if you move the 12 balls around to increase the gap. As it turns out, 12 in fact is the answer (found in the 1950s). Newton's not that bad, huh?

Higher dimensions are pretty difficult. In the fourth dimension, it is relatively straightforward to produce a scenario with 24 hyperspheres touching the target hypersphere, by use of an icositetrachoron, the 24-cell. But there is so much space remaining, one could even swap the positions of any two hyperspheres while maintaining contact, so it's not so clear that the kissing number couldn't be more than 24. There are some pretty decent bounds on the kissing number for many other dimensions, but I won't go into them here. Try playing around with the fifth dimensional scenario and see where you end up. That's all for this issue, hope you have some fun with these!

Vince Chan

Sonic the Hedgehog is in Super Smash Bros Brawl

And Capcom announces Street Fighter IV

It is currently known that Capcom has finally learned how to count to at least 5 with the announcement of Resident Evil 5. They are expected to discover the number 6 by at least 2017. Further, Valve has released Team Fortress 2 after a nine year development cycle.

In other news, Hell has been recording record low temperatures, and a rash of mutations have resulted in all pigs being born with wings.

Reporters are now converging on 3D Realms' headquarters in Garland, Texas, and are anxiously awaiting an announcement regarding Duke Nukem Forever.

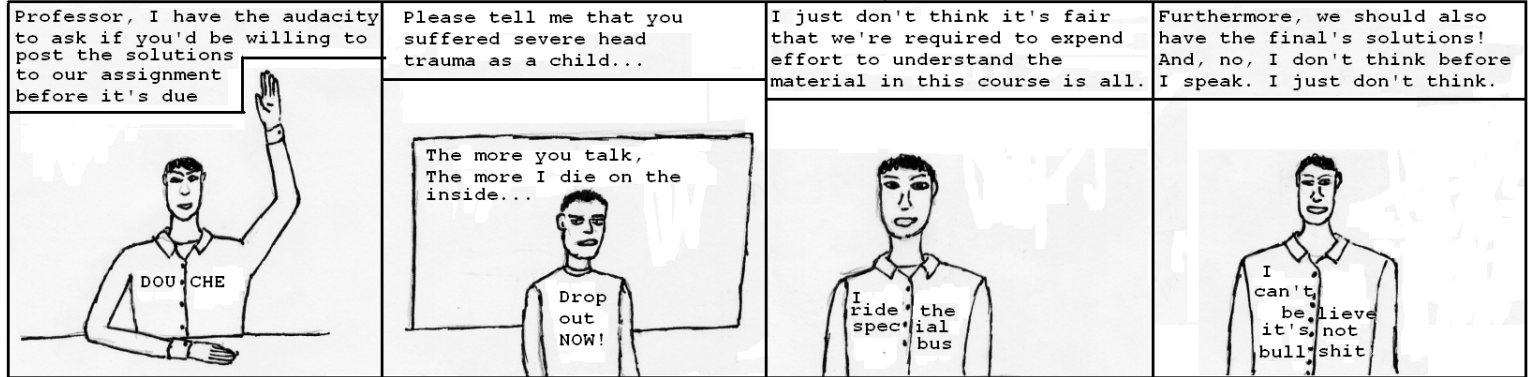
MJB

Smoking on campus

I'm pretty sure there is no place on campus that is "within 10 metres of all buildings".

Peter

Close to Infinity



Fun facts you can learn at a mathNEWS production night

- Dave has a flock of attack geese. Steve has a horde of ninja squirrels. Trying to pretend you're the Penguin and shooting an umbrella at either one is probably not a good idea.
- You get to hear the editors shoot down questionable article ideas with a crossbow.
- Free pizza comes with whatever toppings you desire. Every slice assumes the flavour of its eater's ideals, whereas the crust takes the flavour of its consumer's greatest fear.
- One of the writers appears to be a dog.
- The Single Guy managed to kill all his trans-dimensional doppelgangers; now, he is immortal.

Richard

The autobiography of every Robert Heinlein character ever

"Here I am, living in exciting times. Incidentally, I am a libertarian. I am strongly opposed to all forms of taxation, and I strongly believe that "TANSTAFFL", There Ain't No Such Thing As A Free Lunch. Watch as I get up to wacky adventures with a cast of like-minded individuals. And now: group sex!

Thor

Dissed Connections

Fragged

We were playing Counter-Strike and you kept headshotin' me. I really like pain. Msg me. ;D

Invalid Argument

Unexpected type. Given "", expected "p". (Line 14, Column 21)

404 - Page not found

<http://www.evilmagnum.com> could not be found or does not exist.

Academic Integrity

You helped me in the tutorial centre but I couldn't stop staring long enough to take notes. Please help me again. The assignment is due tomorrow at 8:20.

Facebooked

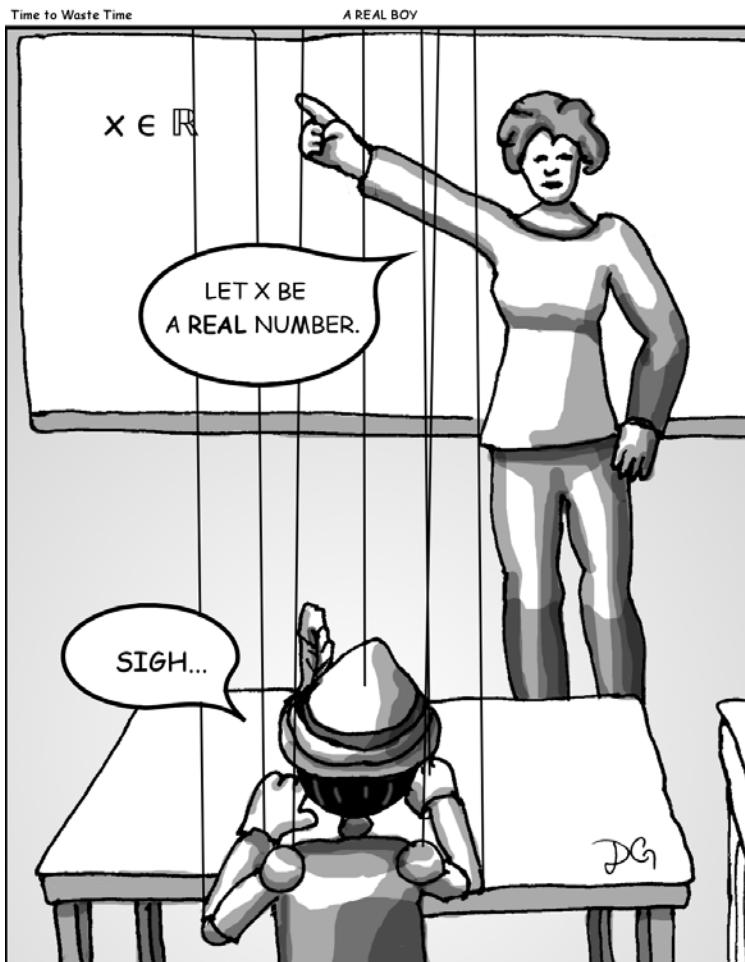
I saw your profile on Facebook and so I read more and more about you. The more I learned about you, the better I get at timing when you left your house. Next time you're in the shower, don't bother closing the shower curtain. I'll be the one looking in the window via a ladder.

Lagged

I was trying to access files on magnus and the server was really slow. Was it because the CSC was the only mirror for the new version of Ubuntu, was it because the school's IT seems to be a rock on a chair or maybe is it just because the school's servers always seem to suck?

Inverted

After seeing you in class, I thought we were compatible, but it turns out I'm the inversion of you. Stay away! If we touch each other we'll become a unit person.



His classmates never truly understood why the usually cheerful Pinocchio would become so depressed during Calculus class.

Midterms

Do them in style

Have you ever had a midterm to write and wanted to make it a little more interesting? The class was either way too easy and you were going to finish the entire test in twenty minutes, or the class was way too hard and you were going to finish the test in twenty minutes. You've probably been in one of these situations at some time in your undergrad career. In the interest of making exams more fun, I bring you this list of things you can do to spice up your midterms.

- **Be the first one to leave** — If you see someone about to hand in their midterm before you do, run up there and get yours in first. You can have a ranking competition with your friends in that class. You score n for being the n^{th} person to submit their paper. Like golf, lower scores are better.
- **Be the last person to show up** — Instead of trying to leave before everyone else, don't go to your exam on time. Wait as long as you can before showing up. Scoring for this game is one point for each person who arrives after you. Again, lower is better.
- **Ask the prof the most questions** — This works very well if you know everything and can ask questions that actually sound legitimate. It also works well if you actually know nothing and want to try fishing for answers. One point for each time the prof comes to answer your question. Two points each time he sends the TA because he's tired of answering your questions. One hundred bonus points if the prof ignores you.
- **Take off your clothes** — Come in wearing as many articles of clothing as possible. Take them off one at a time and make a pile. Score a point for each article removed. Score 10 bonus points for becoming topless. 50 bonus for being bottomless. 100 bonus points for each phone number you get.
- **Do the dairy challenge** — Bring 4 litres of milk and try to drink it during the first hour of your exam. No points for this one; there are no winners in the dairy challenge.
- **Liquid consumption** — Similar to the dairy challenge, but pick a different liquid. Pop works well. Bring as many cans of your favourite soda as you can carry to the exam. Score a point for each one you finish off during the test. Score a bonus of n^2 points for building a tower n cans high on your table.
- **I have to pee** — Try to spend as much time as you can in the bathroom. Accomplish this by a combination of multiple trips and long trips. Score = # of minutes gone $\times$ # of trips.
- **Start the wave** — Randomly do the wave every 5 minutes. Score a point for each person you get doing it with you, 2 points for people writing another exam who do it, 5 points for the TA joining in, and 25 points for the prof.
- **Lots of pencils** — Bring as many pencils as you can and put them on your desk. Everyone will give you funny looks and be distracted. One point for each one that you can get onto your table without being helped by a pencil case or other things.
- **Write your exam** — Score 1 point for each mark you get on your exam. First to 100 wins!

π

What if life were more like Final Fantasy

- Fights would be well organized because everyone would stand in a line and wait for their turn.
- Walking between buildings would leave you open to ambush from animals and monsters of all sizes. In fact, regardless of the size of animal, they would appear out of nowhere just to fight you.
- You would kill anything that you saw moving between buildings and towns.
- At least one female you know would be gifted with the most powerful magic — powerful enough to destroy the world, even! She would be dainty and soft-spoken and, more often than not, the bitch would lose her voice.
- In the midst of battle, any injury could be cured by throwing a bottle of healing potion in the air and having its contents spill all over you.
- The damage caused by guns and swords would be equivalent to the damage caused by rods and gloves.
- Your day could be summed up as a sequence randomly generated from the elements of the following set: {cutscene, dungeon, town, FMV}.
- The very moment that you defeated your midterm, the room that you were writing in would either blow up or crumble in a matter of minutes. In fact, your midterm's existence would be directly tied to the existence of the classroom.
- Being poisoned, petrified or killed instantly by magic could all be cured by resting in an inn/Comfy Lounge (the latter may re-inflict poison just for being in there).
- One currency and language would be universal. Every store would take the same currency and every person in the world would speak the same language.
- You would have at least one friend who could wield a sword at least 1.5 times the size of their body.
- There would be a negative correlation between the surface area of clothing women wore and how evil they were. The more evil the woman, the less clothing they would have on.
- People would wield powerful weapons, cast destructive magics, and destroy monsters with relative ease. However, the moment they came across a locked wooden door, they would be unable to continue without the key.
- Regardless of the size of the monsters, the environment would be able to support, indefinitely, an infinite supply of them in the local area.
- Using ether would give you magic powers without the nasty trip to the hospital.

Angelo

Production/Publication changes

The dates are changing!

You've probably noticed that we're publishing on Tuesdays now. Just to keep you, our loyal readers, sane, we'll publish the next issue on a Tuesday as well. After that, I make no promises.

Production nights, however, are a different story. Following the current pattern, the next one would be on Halloween. Instead, we'll make it the day before that (a Tuesday) so you can do Halloween things on Wednesday.

I hope you're less confused than we were!

mossEd

Help us make fun of *Imprint*

Ever notice that *mathNEWS* is often making fun of the previous week's copy of *Imprint*? Think we should be talking about more current things? Well, here's where you can help. We need someone to infiltrate the *Imprint* production, and report back the stupidest things that are going into it this week. That way, when the issue comes out we can be making fun of the currently available *Imprint* instead of one that's a week old.

DanS

Help me!

I'm stuck somewhere between Monday and Friday

So, it's finally been revealed: a lab on the second floor of the MC is right in the middle of a rift in time. I suppose I shouldn't be surprised; how else does a Monday night turn into a Friday morning and back? For a brief moment, I sit back and look upon the world, as it changed this past week, realizing that, eventually, I will have to trudge through it myself, as I leave for the free pizza back on Monday night.

As I sit here at the end of the week, something feels wrong. I look at the news from this week, and realize that it's not over yet. Monday is there, and some of Tuesday too, but what am I to know going into the weekend? That was when it dawned on me.

It was Wednesday just a few moments ago, but now it's Tuesday. Have I gone back in time? When I leave the room, will I go forward? Will I be sent on to dreaded Thursday?

I think I'm losing it. The well-worn paths through time are nowhere in sight; I can't see the way back home. And so, am I lost in the middle of the week, doomed to relive the same two days over and over again?

Hmm... what's this light I see before me, could that be the Big Bang? Or is it something else? I'm compelled to see — but, if I do so, will I find my way back to Tuesday? Or was it Wednesday? Where am I supposed to be anymore? Is it too late?

If anybody is reading this, please try to find me. I need to return to my own time.

Richard

Math saves royal life

An almost-suicidal Danish prince, named after a very small village, became distracted enough thinking about the Law of Excluded Middles to decide he'd rather live to see another day.

DanS

Justifiable Homicide

Post-partum abortion

This time, let's cover something new to most of you: bus rider etiquette. Or, how to not to piss off the people around you while using public transit.

The number one problem I have with people on buses is their strange need for noise. Can't you ride the bus quietly? Do you really need to scream to the person sitting next to you about how your teen pregnancy baby was up four times last night so you're pissy? I don't fucking care! Die! But first, give the baby up for adoption. Hopefully, the baby will take your demise as a lesson.

Worse than the conversations is the obscenely loud music. What's the point of ear phones? Why don't you just bring a bloody stereo on with you? It's loud enough. I don't need to be able to sing along to the garbage coming out of your shitPod. On a similar note, why is it always horrible music? Rap, country, or fucking Cascada. Recent studies have shown that listening to loud music with earbuds can damage your hearing. Take it to heart, asshole, 'cause someone's gonna damage your face if you keep it up.

People also need to learn how to read. Questions like "Is this the number <number that is lit up on the side> bus?" and "How do I stop looking like a fucking moron when trying to open this door?" can be answered by simply looking up. Read the signs! It's very simple! You're in university now — try to act like it. Also, on a similar note, know your god-damned route. Why are you **still** asking the driver where the bus goes? Would a little research kill you? You know, <http://www.grt.ca> tells you where you're going and when you get there. Use it! [*TeleRider is also useful. Dial 888- <bus stop number> for the next departure times and destinations for that stop. — mossEd*]

Finally, what really pisses me off is people who, once again, don't get the fuck out of my way. When there is standing room only, move your ass all the way to the back. Not to the back door. **The back.** People need to get on, so move your ass. But even worse than those jackasses are the ones who get on and just stand at the front. What the hell is your problem? Get out of my way! That little aisle way right when you get on the bus? Yeah? You know that one? It's not for you to stand in! And when people are forced to push past you or tell you to move, don't give them dirty looks: get out! Or, get off the bus. You don't deserve to get where you're going.

You know, I feel better now. It's good to let these things out. Why not do so yourself? Agree with me? Hate me? Hate other people? Say so in the BLACK BOX.

The Rage

Ways to annoy your future self

If you hate yourself that much

If you've been driven insane by oncoming midterms and have developed a sense of self-loathing, here are some things you can do to induce even more insanity later:

- Write your notes in one-time pad and lose the pad
- Hide random food behind everything else in the fridge
- Set your alarm clock for random times in the middle of the night
- Hide all of your socks in different locations
- Put glitter between random pages of all of your textbooks
- Go to your music folders and move some songs to a hard-to-find location of your choice

- Mail yourself a letter bomb
- Randomly permute the pieces in all of your board games
- Get a job in the Northwest Territories for the winter co-op term
- Introduce several carcinogens into your daily life
- Enroll in graphics, real-time, and compilers for next term
- Throw away all of your receipts
- Put salt in a container labelled "sugar"
- Change your root password to a random 32-character string

snippet

Old school gaming tips

Seiken Densetsu III

It's almost undeniable that Super Nintendo was the pinnacle of awesome gaming, especially for RPGs. For those who have heard of or played Secret of Mana, SD3 is the third in the line of Seiken Densetsu series (SOM was SD2). This gem was never ported to North America, so the only English copy you can find would be online in a translated ROM. It's an awesome game; look it up sometime!

The premise of SD3 involves 6 characters, of which you choose 3. Depending on the first character you choose, the story will take a different turn mid-way through, and depending on the characters, some may have more "synergetic" lines than others. For example, Angela the magician and Duran the swordsman exchange a funny little blurb outside Duran's house in Forcena. Here're some tips for the game for if you decide to start!

- The characters are paired up: Duran-Angela, Hawk-Lise, Kevin-Carlie, in that they produce the "most" synergetic lines.
- Carlie and Angela are both as fragile as paper. Putting them together in the party makes the game slightly more challenging (unless you decide to cast spells on every screen, they will be doing 1 damage to most things until they fill their charge gauges).
- The first class change is level 18; the second is 38 (this time with a seal item)
- Load up on recovery items, especially if you don't have a healer on you (that is, Carlie, Light Duran, or Light Kevin). Poto Oils are especially useful
- Poto Oil should be used by the character with the highest Spirit. Attack magic items should be used by the character with the highest INT, except for light element spells, which use Spirit instead.
- Hawk and Kevin attack twice. Duran's recovery is damn slow. Kevin transforms at night to double attack power!

Hope these bits of data have piqued your interest in the game!

Megaton Panda

Thor's Thoughts

Exploring famous thought experiments

Consider the following hypothetical scenario: you are on Pluto. I am on the sun. I am also in possession of a device that can cause the sun to implode. Pluto is five light-hours away from the sun. If I blow up the sun, at what point will Pluto spiral out of its orbit due to the sun's absence? Immediately? Or five hours later?

The answer, according to our modern understanding of physics, is five hours later. Einstein postulated, and he has not been proven wrong, that gravity travels at exactly the speed of light. This is contrary to most people's understanding of the nature of gravity, as an instantaneous force permeating the universe.

This experiment also raises questions about how gravity is transmitted. It seems to imply the existence of gravitational waves or even gravitons — particles that transmit gravity. Since I have no background in theoretical physics, I won't continue this line of speculation, and will instead say: the Gravity Gun in Half-Life 2 was totally awesome. If gravity is transmitted by some sort of particle, I'm sure you physicists can make me one. So get on that.

Thor

CS Nightmare Theatre Presents

CS341

Strange things occur when working on assignments in the dead of the night. Hogswash, you say! Working on assignments at unheard of hours of the AM is common fare! Alas, unlike the rest of you, I enjoy getting a decent night's sleep so I can cheerily attend my 8:30 lectures. Usually, that is. But today I have a tale of horror and woe that stems from CS341 (that's Algorithms for those of you who haven't memorized the Calendar yet).

I had left my assignment until late Sunday night, before the Monday deadline. A few cursory glances earlier in the week made me believe that it shouldn't be too difficult, so I relaxed all week-end playing Portal.

I lost track of time, with my space warping escapades, and started the assignment shortly after dinner. I breezed through the first few questions, with cunning applications of the Master Theorem and Recurrence trees, and it wasn't until I began analysis of a nasty recursion that I noted something was amiss. There was a rapping on my chamber door.

I raised myself from my desk and open the door. But then my assignment said, "Write down more". It's funny when paper talks; its voice is dry and crisp. My face aghast, I slowly turned to my paper.

What had been lines of carefully ordered mathematical symbols and discourse had become marching flecks of pen and pencil. I stared, and it dawned that my assignment was sorting itself, with the carefully crafted pseudo-code I was analyzing previously. I foolishly reached out and touched the dancing lines.

With a snap I was back at my desk, scribbling furiously on the the paper, with a will not my own. The dancing symbols began to shift and reform. A bed. A dresser. A desk. A chair. A person. A t-shirt coalesced on that person with the slogan. It wasn't until colour filled in that a sickening sensation crept into my stomach. I realized I was gazing at myself.

I looked up and saw an infinite sequence of myself rising above my now roofless room. I was caught in my recursion trees, dividing my assignments into sub-problems and conquering them. I knew what was next: it was going to be painful. But the combine never came.

When the assignment was done, the algorithm began to work on me, greedily tossing parts away because it seemed like the best idea at the time. I felt myself break apart and then... no more.

And then I woke up, on my paper. My paper was done. I glanced at the time. My assignment was late.

42

Word 2007 is the crowning achievement of the human race

Pretty GUI is more important than functionality. Just accept it. Steve Jobs was right all along.

Thor

Flirting in lecture

To those who like to flirt in the front row of lecture, I kindly request that you stop. It makes me want to hurt something — namely, you.

InsideR

mathJOKES

I had submissions! Yay!

However, I only had 5 jokes from two people. Using my new-found editorial power, not only am I only going to print the two that made me laugh, I'm going to edit it into the version I tell, which is funnier.

Power is yummy. [Mmmmm... *electrici*— — *mossEd*]

So thanks to **Ian Charlesworth** in Computer Science for the inspiration. Through the power of teamwork, together we bring you the joke-pairing of the week:

Q: What do you get when you cross an elephant and a banana?

A: |elephant| |banana| sinΘ

Q: What do you get when you cross a mountain climber and a mosquito?

A: Fool! You can't cross a scalar with a vector!

Ian, you can swing by the lovely MathSoc office (MC 3038) to pick up your prize.

Thanks for all the submissions, and please send in your jokes any way you can submit a puzzle solution. Each week's pick will win a \$5 gift certificate to the Coffee and Doughnut shop, a.k.a the Right Angle Cafe. I'll print the top two or three that make me laugh, and if yours isn't printed it's not that I think you're a bad person or anything. [*It's just that you aren't good enough in general.* — *Angelo*]

Half-pint

About Mice

Let **A** be the set of all animals. Let **P** be the subset of **A** such that **P** = { x | x eats mice, or x is a mouse}. Let x be an arbitrary element of **P**. Then $x + \text{mouse} = x$, since either x is a mouse-eater and eats the mouse, or x is a mouse and two mice glued together will produce another mouse. Thus, by definition, $\text{mouse} = 0$ in **P**. Since **P** is a subset of **A**, then $\text{mouse} = 0$ in **A** also. Therefore, the mouse is the zero-animal.

Properties of Mice

(Let x and y be arbitrary animals)

1. $\text{mouse} \times x = 0 \times x = 0 = \text{mouse}$
Cross-breeding a mouse with any other animal will result in a mouse.
2. $\text{mouse} \times (x + y) = 0 \times (x + y) = 0 \times x + 0 \times y = 0 + 0 = \text{mouse} + \text{mouse}$
Cross-breeding a mouse with the unnatural offspring of two other animals is the same as gluing two mice together.

Please make me anonymous

If Sir Isaac Newton lived now...

He would:

1. Urinate on Einstein's grave
2. Urinate on a Christmas Day parade for not having a float dedicated to him
3. Urinate on Apple for naming a terrible product after him
4. Urinate on this *mathNEWS* writer for portraying him as a crude buffoon

...And then return to his alchemical investigations, proceed to turn lead into gold, prove that up is down, black is white, and get trampled at the next zebra crossing.

ebering

I want my WinXP

To the tune of "Money for Nothing" by Mark Knopfler

Now look at them yo-yo's, that's the way you do it

You play that Madden on your WinXP

We ain't workin' that's the way you do it

Nothing's supported but the source is Free

Linux ain't workin' that's the way we do it

Lemme tell ya them guys ain't dumb

Maybe get a virus on your gaming desktop

Maybe get a bed sore on your bum

We gotta install Debian stable

Custom kernels, CVS-vs-vs trees

We must reverse this engineering

We gotta compile new binaries...

The little fucker with the suitcase and MBAs

Yeah buddy, Powerpoint's there.

That little fucker got the girls in high school

That little fucker he's a millionaire

We gotta install Debian stable

Custom kernels, CVS-vs-vs trees

We must reverse this engineering

We gotta compile new binaries...

I shoulda learned to essay a star

I shoulda learned to quote them Strunk

Look at that mama she got it stickin' in philosophers

Man we could have some fun

And he's up there, what's that? Postmodern noises?

Bangin' on the LSAT like a chimpanzee

That ain't workin', that's the way we do it

Nothing's supported but the source is Free

We gotta install Debian stable

Custom kernels, CVS-vs-vs trees

We must reverse this engineering

We gotta compile new binaries...

Now that ain't workin', that's the way you do it

You play that Madden on your WinXP

We ain't workin' that's the way you do it

Nothing's supported but the source is Free

Nothing's supported but source for Free

(I want my, I want my, I want my WinXP)

//C.A. Beret

Peter <magnus.student.math> 3 <70 filler

filler: Command not found.

Peter <magnus.student.math> 3 <71 filler must exist!

filler: Command not found.

Peter <magnus.student.math> 3 <72 whitespace? whitespace?: No match.

What do you do when your players root for the other team?

And other notes from the NHL and sports in general

So how about that Bryan McCabe? In case you missed it, go to YouTube and look up “McCabe own goal” from October 15, 2007. Own goals seem to be the norm nowadays, with the Calgary Flames scoring 4 of their own in a 5-4 defeat to the Colorado Avalanche on October 16th. So what do you do as fans when your players are playing like crap? As a Leafs fan, I know that feeling way too well.

First off, for any of the boo-birds out there, it amazes me that one would boo their own team **during** a game! Raycroft, in the 8-1 domination over the Isles, was booed the first time he even touched the puck (to steer it wide of goal, mind you, not even a save). Do the viewers in the stands think that booing your team at home is a morale booster or something? Then there was the night against Buffalo, when McCabe was booed while touching the puck. And mind you, this was before his game ending gaffe. The concept of the home team seems lost on these fans. During a game, the best thing you can do as a fan is to cheer for your own team and boo the opponent, not the other way around! Once the game is over, if you are dissatisfied with the result, feel free to rain the boos onto the ice, since the results can no longer matter. *[In fact, when your actions don't master is the best time to be spurred into action! — Angelo]*

There are those out there who disagree with me but they're wrong.

With that out of the way, here are some other news and notes around NHL:

- Philly is playing some good hockey recently. The emergence of Biron as a solid starter and Briere showing last year wasn't just a fluke is helping them win a good chunk of their games. Make no mistake though, they won't be this good for the rest of the season. Brodeur's sv% won't be .879 the rest of the season. NJ will make that inevitable push for the division lead eventually (soon? I have NJ in a fantasy league!). The Penguins are also not this bad. Come on, Crosby at less than a PPG?
- Montreal is also playing some fine hockey. They've been playing their opponents well even in losses, evident by Oct 16th's 2-1 loss to Florida, where they outplayed Florida for 59:49 and still lost. They started this well last year too, but went into a tailspin around Dec/Jan and fell out of the playoffs. Will this repeat? No idea, but if Huet's healthy and Kovalev looks like he cares (Which he should, contract year

and all), they should still make a push for the playoffs.

- What's wrong with Atlanta? Their goal tending is letting them down, since their D is very under represented in the All-Star department. Hartley just got fired, maybe this will be the spark that will lead the Thrashers back to their first win of the season?
- Paul Statsny has 13 points in 6 games as of this writing, tied with Zetterberg for the league lead. What a monster!
- LA Kings just sent Jonathan Bernier back to Juniors, and activated JS Aubin from IR. Aubin did well to help the Kings beat the Wild, but with only Aubin and Lababera in their lineup, let the rumours of Gerber/Raycroft to LA fly!
- With the current standings as such, do I want to retract my predictions in the last issue? No chance! The season is barely 7 games long, and anything can still happen!

Now that those notes are out of the way, here are some miscellaneous fantasy hockey notes you may be interested in:

- **Martin Havlat**, CHI: Originally feared to be out for the season, an updated report notes that he does not need surgery, and can be back in a month. Owners who dropped him early in single season leagues should be kicking themselves now (for drafting him in the first place!). I'm taking bets on how many games he plays when he returns before he gets injured again (over/under starts at 3).
- **Martin Brodeur**, NJD; **Miika Kiprusoff**, CGY; **Roberto Luongo**, VAN: three struggling all-stars. Are they going to struggle the rest of the season? Undoubtedly not! Buy low if you can. If you own any of them, don't sell for anything less than their pre-season value! (Ha, contradiction!)
- **Ray Emery**, OTT: Emery's rehab stint in the AHL proved useful, and he's just about ready to return. Does this mean Gerber is a goner? Nope! Gerber's fantastic start all but guaranteed him regular playing time when Emery comes back, even if Gerber has to play only once every 3 games! This is extremely valuable on a team like Ottawa (lol LA Kings).
- **Alexander Semin**, WSH: This kid can't seem to get healthy! He's doubtful for Thursday's game, but reports say he should be back by Saturday. It won't be long before we see him all over the ice again!

And finally, how about those Rockies? I'm rooting for a Rockies — Indians final. Go Rockies go!

Megaton Panda

ElseWhen

25 years ago in mathNEWS

Welcome to yet another edition of ElseWhen, where we look back to *mathNEWS*'s red-bound past. This time, I've dug up Volume 30 Number 3, published Friday, October 29, 1982. The cover claims it was under sleepy management. I can sympathize. It seems *mathNEWS* was shifting to the humour side of news in this issue.

Peter 'mossEd' Simonyi

Halloween — It seemed to inspire the 1982 writers more than it did the 2007 ones. Here's a selection from *Trick or Treat*, by “MELMOR”.

Some things to give out on Halloween for very little.

- assignments

- one hour free WIDGET time
- PHIL 140 notes
- Rice Krispies — 4 per person or 6 on a toothpick

In other news:

- November 18 is time to stop crying after not getting a job.
- Pre-registration for Spring '83 is the week of November 1st.
- Ottawa's population is 700,000. Don't forget Aylmer and Hull in Quebec...
- The trip to Fort Lauderdale costs \$384.99 for airfare, accomodation, and taxes.

I wish I had room to reprint a column titled, “The Story of Polly Nomial”.

Puzzles!

For those of you who want the answers to these, they're all at euri.ca/puzzles. The puzzles are:

Drywaller #73890

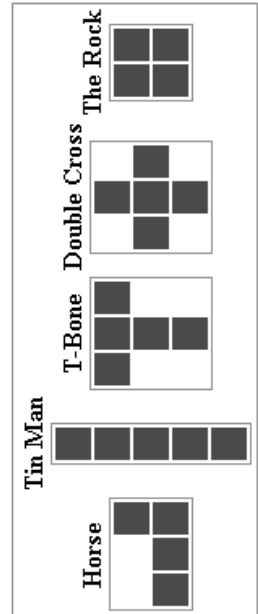
Umbrellas #98696

SigInt #9000

[illegible]

The precious 10x8 grid that we call home has been infiltrated. Signals intelligence tells us that the following agents are somewhere nearby, all they can tell us about their locations is

- ◆ How many squares in a row or column are occupied
- ◆ They've been ordered to disperse so they aren't touching, not even diagonally.
- ◆ Remember: they can rotate.



Place the following 10 squares on the 10 circles so that the overlapping numbers match up.

3	7	0	9	5	4	8	4
1	1	1	8	3	7	0	3
7	1	1	8	2	5	7	7
4	8	8	6	1	3	1	5
2	0	5	8				
4	4	2	0				

eurica

gridCOMMENTS*SymmetricallacirtemmyS*

Well, there actually were submissions for the *gridWORD*, despite the omission of four clues. I decided to ignore the words without clues when checking answers. I'll check the *gridWORD* before printing it this time!

Congratulations to **Nick Murdoch** for submitting the correct solution, minus the words with no clues, and for his answer to "What is your kind of calculus?" ("Calculus of immovable objects"). Drop by the MathSoc office for your prize!

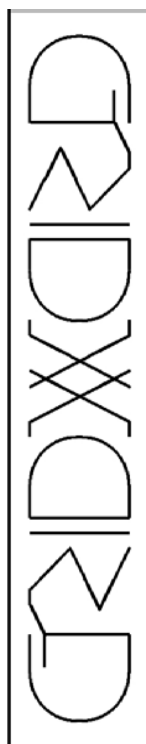
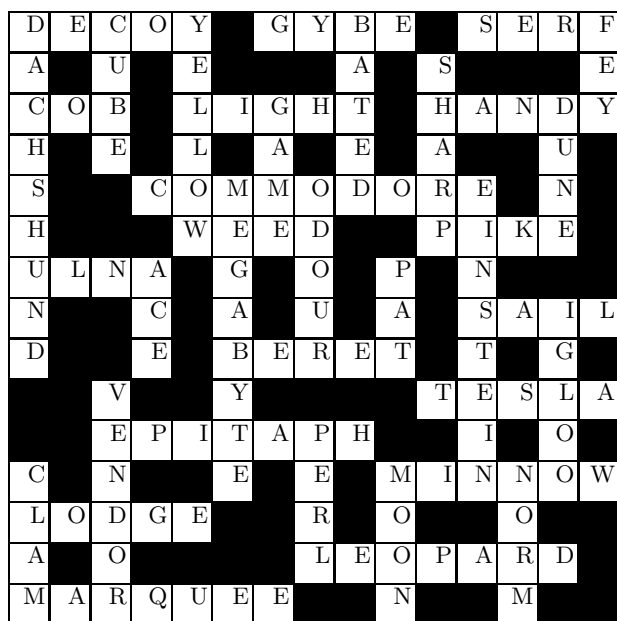
For the rest of you, here's a new grid with a Z pattern and more overlapping words! (How appropriate that the clues all have integer numbers...) If you submit a correct solution, you could win a \$5 gift certificate to the C&D. The tie-breaker, as always, is the *gridQUESTION*: "How will you prepare for the coming darkness?". Oh, and this goes for the Sudoku, too!

Also, if you're interested in having a Cryptic version, (or want to *make* one), let me know by email at mathnews@student.math.uwaterloo.ca.

Peter

Horizontal

- | | |
|--|---|
| 1. Relating to earthquakes | 23. Move with engaged clutch |
| 6. Aim for this | 26. Not just |
| 9. Void | 27. I did this to the last 3 clues in Issue 2 |
| 11. Horse | 28. Almost whistling |
| 12. Shout | 29. GRT has these |
| 13. A collection of animals of the same type | 30. Trail mix |
| 14. Farewell | 31. The God of Awesomeness |
| 15. If you say it is, it is. But it's not. | 32. Expunge |
| 16. Run away! | 33. A South American mountain range |
| 17. Go back on a promise | 34. Womb |
| 19. Hit | 35. Everything is smaller than it |
| 20. Commotions | |
| 22. Whiner | |

Out with the old*Solution to Last Issue's Puzzle*

4	7	8	2	6	5	1	3	9
1	9	5	3	4	7	2	8	6
2	6	3	1	8	9	5	7	4
5	1	9	6	2	8	3	4	7
7	2	6	5	3	4	9	1	8
3	8	4	7	9	1	6	5	2
9	3	7	8	1	2	4	6	5
8	4	1	9	5	6	7	2	3
6	5	2	4	7	3	8	9	1

Sudoku*This Issue's Puzzle*

4	5			8			9	
6	1		7	9			8	
	9	8		6		5	7	
	6	9		7			4	
	2		9	5	3		6	
	3			4		7	5	
	8	5		1		4	2	
	7			3	4		1	8
	4			2			3	5

Vertical

1. She glides in quickly; she ____
2. Return
3. Noble
4. "You have been ____ for a million dollars!"
5. The least amount that'll kill you
6. TB
7. Give up
8. Stretch
10. Swift
14. PDAs from RIM
18. Food elevator
21. Send
24. Violent wind
25. Grave, solemn
28. Swarm, drove
30. ____-ho
32. Equality

In with the new