math NEWS

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*look*AHEAD

This week's answers

ISSN 0705—0410

Moon Prism Power, Edit: Sailor Venus (FuzzyED), Sailor Mercury (GroovyED), Sailor Mars (!ED), Sailor Jupiter (ScruffyED), Sailor Moon (CowED)

*mast*HEAD

Occupying the inside cover to the bitter end!

Well, this is a sorry sight. The midterm season has finally finished, and just when we thought that we could finally take a well-earned break from all of our studying, we get hit with finals and end of term projects. This cannot stand. We students work hard to keep our heads afloat; the least that can be done is to give us a few moments to rest and breathe before getting pushed back into the deep end. We'll retaliate by breaking up the huge, unruly line of exams that is blocking our path to peace and tranquility. We have our pepper spray and riot gear ready; those exams will never know what hit them. At dawn we march!

We hope that you, the reader, have also enjoyed reading *math*NEWS this term. Unfortunately, we do not have any special prizes for you, but if you drop by the office we can give you a free high-five. We'll be taking a break for exams, so you guys will have to make do with our back issues until the new year, where we'll be starting an all-new volume of *math*NEWS with our other set of writers and the same odd sense of humour.

And with that, I'll leave you with this *mast*HEAD question to tide you over until next term: "What would you pepper spray?"

theDreamer("Magic"), theSmurf("my steak, along with some salt spray"), (define this (not cool))("Its so difficult to avoid a rape joke here"), moment("I prefer a medieval mace to aerosol Mace"), FOCing Awesome("Lee Sin, the Blind Monk"), RedMetal("your food"), ???("Ramen noodles with added Bitrex and salt"), tesseract("that guy in my stats class"), Algoweird("my ex's es... wait a minute"), MeaninglessQuips("toilet seats"), maplebaconburgr("underspiced chicken wings"), Forked Process("Those UCDavis kids, I don't think they got the message"), Zethar("Please, a breath of fiery perdition is much more elegant and fitting"), waldo@<3.LE-GASP.ca("Odlaw, but only if he's being really traumatizing and torturous"), Lich("the water supply"), MustardMap("Pepper Spray"), tehBEDMASter("a ginger mustache"), SovietCanadian("brutal police"), snippet("bad puns"), GrooveyED("the *math*NEWS writers"), CowED("my family...")

!ED("The clouds, seeding it for rain(written on Monday, look at Tuesday. Success!)")

*math*NEWS awards!!

How else do we keep writers?

At the end of every term *math*NEWS chooses one writer per issue who the editors believe contributed the most to that issue. The winners this term are as follows:

1. moment, for saving the gridwords
2. waldo@<3.LE-GASP.ca, for the amazing covers all term
3. Orange Crush, for being with us since 2008...we will miss you
4. abs(truth), for the best novelty ideas
5. Ambiguous Video Game Quiz authors, for sticking with it
6. Shay Blair, for some awesome first year writing

Come bug an editor or email us to get your prize (undetermined at this time).

The Editors

Prez Sez

Hey Mathies! This is my last ever Prez Sez as there will be a new president next term so I guess I should better make it count.

1, 2, 3, 4, 5, 6, 7, 8, 9…

I hope you've all enjoyed my time as president, and don't fret as I will still be around next term to help out before I graduate. Good luck to all of you on your exams.

This is President Andre Magalhaes signing off.

Andre Magalhaes
President
`prez@mathsoc.uwaterloo.ca`

VPE Sez

This is it! Classes are finished, and so are all of our events for the term!

I'd like to give a huge thank you to Helen Hu and the social team for bringing us great events like Oktoberfest and Pints With Profs throughout the term, to Jessie Brehaut, Hayford Peprah and the Variety Night team for all the awesome Variety Night events every Thursday night, to Liz McFaul, Chang Liu, and the Charity Ball team for their amazing work with MathSoc's 12th Annual Charity Ball, and to Josh Tsai and the Games Night team for bringing us games nights every Tuesday! Thanks to all of you guys!

If you enjoyed all the events this term, or even if you just didn't get a chance to make it out to them, you can look forward to everything that will be coming up in the Winter term! Ty Rozak, your new VP Events for next term, will do an amazing job bringing you lots of super fun events!

Finally, if you want to get involved next term, keep an eye on the MathSoc Facebook page and website, because applications for directors and boards will be coming up soon!

Good Luck on your finals!
Alex Russell
`vpe@mathsoc.uwaterloo.ca`

VPA Bidz Adieu
to you and you and you

Hi Mathies. I come to you for the final time as your VP-Academics.

Next term, your VP-Academics is Sean Hunt. He is currently speaker for MathSoc Council, and I am confident that he will do a stellar job at representing your views to the Faculty and the university administration at large. If you have any questions to ask him, following the end of this term, vpa@mathsoc.uwaterloo.ca will reroute to him and you will be able to correspond that way.

As for myself next term, I will be continuing the septennial review of the Cooperative Education Program and will be coming back to you all through *math*NEWS with updates when they become available.

That's all folks!

Bryanne Pashley
VP-Academics
`vpa@mathsoc.uwaterloo.ca`

VPO Sez

Hey Mathies!!

I'm back with a lovely VPO article! Hopefully you haven't missed me too much, and I hope you've been enjoying the cotton candy and popcorn in the meantime :).

There's a few things I'd like to remind you of this week!

1. There is a MathSoc election happening! Today (December 2) is the last day to vote, so make sure you visit `mathsoc.uwaterloo.ca` and cast your ballot for the executives and councillors you want to represent you! It's really awesome to have your voice heard :)

2. We are holding a novelties sale today in the Student Life Centre. This is your last chance (this term) to buy discounted novelties, so MAKE SURE you check it out! We also have a few new items available to add to your collection.

With that, it's time to end my time as VPO :) and pass the torch on to the lovely Lauren Hurley. Check back at *math*NEWS in January for some more exciting "VPO Says" updates from her. If you're interested in getting involved in MathSoc, applications for directors and board members will be available soon and will be posted on the MathSoc website.

Just want to wish you all the best of luck on your exams! I hope you're GETTING EXCITED because the winter break brings lots of holidays, presents, Boxing Day shopping, sleep, family, friends and tons of other great things!

Have a wonderful break :)

Anna Merkoulovitch
Vice President, Operations
`vpo@mathsoc.uwaterloo.ca`

Feds Sez

There isn't too much to report this time. At the last meeting, we made a committee to review Food Services from the students' perspective. The details of this committee are vague at the moment, but will be cleared up and finalized in December. Be sure to stay tuned, as we'll be looking for student feedback. Campus Bubble has been open and running smoothly for over a month now (be sure to check them out, if you haven't already). That's pretty much it, so good luck on your exams, and see you next term!

Your friendly neighbourhood Math Councillors,
Saleem Khan, Andre Magalhaes, Jesse McGinnis,
Josh Shabtai & Alex Russel
`mathcouncillors@gmail.com`

24 Hour Games Night

24 Games Night is planned starting Saturday, December 3rd (that's tomorrow!) at noon, and will last the duration of 24 hours. We have gotten new games for the term, and if you come, you can try out these new games. Refreshments will be provided and food would be ordered close to midnight for those who actually intend to stay the whole night. Please do come to the event, even if you cannot stay the whole night; even showing up in the morning on Sunday would be appreciated.

Do come,
Joshua Tsai
Fall 2011 Games Director

Ed Sez

Dear *math*NEWS readers,

To all seven of you (and the two who are actually reading this), it is time for me to say adieu. While this won't be goodbye forever, this will be my last issue as editor. Over the past two years I have learned layout by design and fire. I have stolen a dirty couch, been threatened by a lawsuit, and have discovered things about myself.

Under my reign, *math*NEWS has undergone changes, and not all of them for the better. Of note is the decline of short filler articles, to be contrasted with the rise of long filler articles. I'm looking at you, Orange News. I have stayed with the principles that I was taught and had let all articles through in hope that the funny ones would rise to the top. This was a mistake. Quality should come before quantity. I hope that the remaining and future editors will take this to heart.

Finally, I'd like to give some thanks. Angelo, while we disagreed on politics, you taught me most of what I know. John, Jay, Rami: you guys showed me how we're supposed to work. Joe: You taught me that I should remember my goals. Finally, Jeff: You were my friend, my comrade-in-arms. Through thick and thin, we made it through, to different destinations.

See everyone on the flipside,

*math*NEWS Editor & long-time critic of FedS.
Harrison Gross
GroovyED

Sweet and Sour

Suppose that you are sick for an exam. What should you do? In this technological world you should write an email to your instructor and run to UW health services for documentation.

Beware! An instructor will typically give you one of two things:

1. An INC (incomplete)
2. A DNW (Did Not Write)

An INC usually means that you will write the exam in a future term. This is not necessarily a good thing. How much do you remember from 4, 8 or even possibly 12 months ago?

As an instructor, it is my experience that students generally do not do well on INCs. I don't think I would perform well as I can barely remember what I had for breakfast (did I even eat??), let alone what happened X months ago.

What was I doing? Oh yeah…

If you want to do well in an INC, you need to attend the class, do the assignments,…etc, during the term in which you will write the exam. Basically, you need to pretend you are enrolled in the course, even if it does not show up on QUEST for the current term. You are responsible for the differences in the course between the offering in which you took it, and the term in which you write the final.

A DNW is a failing grade. An instructor will only give INCs to students who have performed sufficiently well during the term.

Please note: If you write an exam, the mark typically stays. This hold even if you go back and argue that you were ill.

At any rate, get lots of sleep, eat right, etc, and none of the above should matter. Good luck on exams!

Riley Metzger,
Academic Advisor and Stats Instructor

Mwahahahah!
Acclaimed as Vice-President, Academic!

Hi there,

My name is Sean Hunt. Last week, I discovered, much to my everlasting joy, that my agents had successfully exterminated the competition, and my ascension to Vice-President, Academic would go unchallenged. For next Winter and Fall, you will all have to suffer under my reign of terror.

I already have many devious tortures planned, such as:

* Requiring all math students to meet breadth and depth requirements for their non-math courses like CS majors do.
* Adding a third mandatory STAT course.
* Change the first-year introductory programming language to Haskell.
* Require all assignments for MATH 137 be submitted as LaTeX source code.
* Mandatory PD courses for non-co-op students.
* Introduction of a new Real-Time Functional Analysis course.
* Require all students to take at least two business courses at Laurier.
* Require students to write the ELPE every year to make sure they aren't slipping. The marking will be increasingly arbitrary each year.
* Add the Actuarial Science P exam as a prerequisite for STAT 231.
* Cancellation of all tutorials. No one goes to them anyways.

Now that my evil plans are coming to fruition, I shall rule this Faculty forevermore! Mwahahahahah!

(Seriously, though, if you have any ideas or comments, courses you really liked, courses you really didn't like, or anything else, drop me a line at `scshunt@csclub.uwaterloo.ca`. You never know, a change just might happen).

Sean Hunt

N Things to Experience at an Acapella Concert

Waldo still looooooooooves to siiing, especially at EOT!

* ACE looking awesome in their new sweaters (which are really, really fuzzy by the way!) as they zombify themselves while doing mundane office work
* The WaterBoys Rickrolling the entire audience
* Breakdance and a human drum going WAAAAAY beyond normal beatboxing!
* Minors bringing back that old soul sound as they jazz some things up!
* Pigeons enjoying some cyanide as the Barbershop guys get sneaky
* Bellas going Broadway and sassily simple with some nice harmony
* Choreography in all forms!
* Everyone getting together to relive the past and getting psyched about the future
* Awesome sounding music in general
* The essence of a piano tuning in French

waldo@<3.LE-GASP.ca

Interesting Math
Mathematics as a Community

This term Interesting Math articles have focussed on the technical aspects of mathematics: structures, theorems, counterexamples. Instead, this fortnight I would like to discuss a softer side of the field. This past weekend, the Fields Undergraduate Network hosted a one day conference in Algebraic Geometry. While I would like to write an article discussing what was presented at the conference, the topics discussed require more background than this column provides. Instead I will discuss a remark of Professor Gregory Smith.

During one of the coffee breaks Professor Smith was discussing the culture and community of mathematics. This was brought on by someone's remark that there was always coffee at mathematical events. Professor Smith informed us that it was part of the tradition of mathematics to have coffee available, citing the oft-misattributed quote "a mathematician is a machine for turning coffee into theorems" (many people attribute the quote to Paul Erdös, though it is actually due to Alfréd Rényi). Professor Smith mentioned a few other traditions and lamented that students often are unaware of this culture. To help rectify this, I'd like to point out a few things that happen here at the University of Waterloo where this culture of mathematics reaches the undergraduate level.

The Undergraduate Clubs: Last Thursday, the Pure Math, Applied Math, and Combinatorics & Optimization club hosted their termly Short Attention Span Math Seminars, inviting students to present and listen to mathematics. At this meeting there was (as is traditional) coffee, friendly discussion, and a form of mathematical practice very different from reading a textbook or working on an assignment. When you read a textbook you are on your own to resolve any questions that you have; the author is unavailable to answer your questions and even if you ask a knowledgeable friend or mentor they won't place the answer in the same context as the author might. It is also harder to conduct follow ups and wander down leads. The conversational act of mathematics is difficult to describe in print but is available right away. The Undergraduate Clubs also provide a day-to-day environment for conversations on mathematics and its various directions.

Go to Conferences: The Fields Undergraduate Network is a uniquely Ontario organization that organizes monthly conferences for students across Ontario. There is usually subsidized or free travel available through the PMC or MathSoc, and it will be advertised in this fine publication. There are also two yearly meetings with student programs. The first is a second uniquely Canadian event: the Canadian Undergraduate Mathematics Conference held every summer is a conference that features undergraduate speakers from across Canada. This past summer's conference was in Quebec City, and next summer the conference will be in Kelowna, BC. Watch this space (and others) for information on discount travel. In the winter the Canadian Mathematics Society holds its appropriately called Winter Meeting. A part of the meeting is a student focused session, and it is also an excellent opportunity to meet graduate students and professional mathematicians.

Work on assignments in groups: Many professors explicitly forbid this, which is unfortunate. If you have the opportunity I suggest you work in a small group on an assignment. This is not to say divide up the problems equally. Converse about the problem, suggest directions to one another, provide counter examples. Experience the strange phenomenon of two people proving something together: it is often not clear which of the two mathematicians contributed the fundamental insight. Paul Erdös, mentioned before, is well known in mathematics largely for his prolific collaboration, having 511 distinct collaborators in his lifetime.

I leave with some concluding remarks, and a nonstandard problem of the week. Many modern mathematicians believe that mathematics is a social activity. Do not fall victim to the stereotype of the lone mathematician. Seek out friends, collaborators, co-interested parties. This, as with every Interesting Math article, is only a short preview. There are opportunities for mathematics as a social enterprise scattered across the web which I don't have time to mention here. Mathematics is also the social interaction of teaching and spreading mathematics, so I leave you with the following problem: find someone outside of mathematics, ask them a mathematical problem, and work with them until a solution is found. If that doesn't interest you, find a problem you can't solve and work through it with a friend. Don't just work individually and side by side, attack the problem through conversation and discussion.

Edgar A. Bering IV
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An Eloquent Proof of the Four-Colour Theorem

At first no one knew how to draw things, and then they discovered how to draw lines and circles. At this time, they hadn't discovered how to colour things, so it could be said that all planar graphs they drew were 1-coloured; however, colour did exist at the time, so their graphs don't count.

Once people discovered they could draw graphs in colour, mathematicians puzzled on how to draw a planar graph with the fewest colours possible. Reasonably quickly they managed to prove that you could use an infinite number of "colours" to colour any graph. Eventually mathematicians managed to narrow the number of "colours" required for a graph they could draw without overlapping its parts down to five, and then four with the help of computers.

Mathematicians, however, have not seen the incredibly simple proofs that Artists have used; one wonders why Mathematicians haven't asked what these are.

1) **Claim**: There are at most four colours.

In Arts, there are two exclusive sets of colour. In the first set there are Red, Green, and Blue, since the set contains three colours, there are at most four colours. In the second set there are Cyan, Magenta, Yellow and Black. Since there are four colours in the second set then there exist at most four colours.

Since there exist at most four colours, then all graphs can be coloured with at most four colours.

ForkedProcess

CMC Flash
So much fire

Shocking news hit the computational math community this week as kfarnwor, the tyrannical overlord that has been ruling the CMC for the last two years, was attacked in his stronghold by a renegade cell of computational math students. The tyrant was dragged down and forcefully cremated by these students, who said that the club shouldn't be controlled by someone not in their program as he couldn't represent their best interests. His ashes are now being stored in a ceremonial urn, pictured below. The rebel cell publicly jokes that since kfarnwor loved drinking tea so much, his ashes should be steeped and served to new recruits.

Dozens of people have already died, vying for the place of power now unoccupied. The entire club is in turmoil, and only the election of a new president can bring peace and stability. If interested in the position, stop by the club in January for elections, or details on how to help bring order to this chaos.

Orientation 2012 Ideas

With the closing of the Fall 2011 term, we've seen the next orientation come and fly by, and now we need to figure out what's going on for the next one.

Being a Mathie, I've been trying to come up with ridiculously cool ideas that we could try to implement for the coming 2012 Orientation Week in September.

If you think of any, you should try to publish it in as many places as possible. Get your voice heard! – who knows, maybe the ideas you create become a reality this next Fall.

Until next time, always remember that you're
FOCingAwesome

If (this) then (that)
Automation for the lazy

Everyone knows that just about every social platform (*coughGoogle+cough*) has APIs – "application programming interfaces". You know, publicly exposed bits of code that let you automate stuff on those social platforms… stuff like posting a tweet or status update. Or getting a list of all the photos you've uploaded recently. But setting up all those SDKs and downloading all the prerequisite bits to get those APIs to actually do anything — that's another matter entirely. Enter ifttt.

Ifttt provides deceptively simple recipes that let you leverage these APIs to make your life easier. There are even a bunch of "recipes" (`ifttt.com/recipes`) that other people have built that do pretty nifty things… like updating your Twitter profile picture every time you change your Facebook profile picture, or copying all your Facebook photos and Gmail attachments to your Dropbox, or sending announcements on Twitter for events in your Google Calendar.

If curious then `ifttt.com/wtf`.

!able

Elections Again?

So once again, MathSoc is having an election. I have voted before, and will be voting again this time, but I imagine the turnout has never been very high. "Voter apathy" is the phrase that has used over and over again, and unfortunately it precisely describes the current situation. Personally, I don't really care what the presidential candidates (of which I'm aware of just one) claim to bring into office. I don't quite care for "vision" or "leadership" because this isn't some troubled time when I need a political figure to be a beacon of light. The school and the math department are both run pretty well, and I know that the person at the helm isn't someone sitting on the MathSoc president's chair. What I appreciate MathSoc for however, is the mundane array of services it provides. The tutorial centre can't seem to house a working stapler, but MathSoc can. I enjoy reading *math*NEWS and attending the events, big and small, it runs throughout the term. So maybe, instead of blowing hot air like real politicians, the MathSoc candidates can try to focus more on the little things, some of which I think should be:

- Fix the clocks. The one in the Comfy seems to be never right, and it took pretty long for all the hallway clocks in the MC to be adjusted after daylight savings.
- Fix the squeaky chairs in those big classrooms on the 4th floor.
- Fix/improve the water fountains. Some of them dispense nice cold water, and I could taste the chlorine in others. Some of them don't even have handles.
- Improve the computer labs. I'm referring specifically to MC3008 and MC3010. For personal uses I would just avoid those labs, but when I have a lab for a class, the poor performance is really problematic.

Democracy is a very valuable right, and I would be content to practice it for its own sake, but I would be very happy if I'm given a reason to care. One more thing: the fact that I have to use *math*NEWS to voice my concerns may hint at the lack of communication channels between MathSoc and the general student body. Put a stack of pamphlets in the office or something, I would read it.

Lich

theSmurf's guide for froshies: Switching into Software Engineering
Not for the faint of heart

It's the end of term, you are finishing up your courses and exams are around the corner. If you haven't already done so, you should consider your courses for next term and what you should do for the rest of your university career. I remember when I was in your position last year. I looked at my options: continue as vanilla CS, change into CS+Business option or change into CS+Digital Hardware option. Then I said fuck it, dropped CS, and joined the ranks of SE.

"Why in the world would you do that?!" you say. "You're insane!". Well, I don't really have a definitive answer for that. I wanted to do CS:DH, but that's just some variation on SE. I wanted more applied knowledge. I wanted to challenge myself more. Those are answers I give when people ask me for the reason during interviews. The other reasons? Well, I heard people say that it was harder/more work and I wanted to see it for myself. I wanted to see what all the fuss was about. When it boiled down to it, I thought: "Why not?".

SoftEng is "different" from CS. Which is "better" depends on who you ask, and obviously, those in the programs will promote their own. I like the description given by StaticED: SE has a higher minimum requirement. Failing SE gets you transfered into CS, but failing CS doesn't get you into SE (in fact, they required high grades to get into SE. It was ~85% for me.); so make of that what you will.

The process was not too difficult, but you need to go through alternate channels (not QUEST) to make the change, obviously. The SE directors, Charlie Clarke and Andrew Morton, were extremely helpful with the process, and helped me work out all the insane course selection and course conflict issues. There are some issues with courses I you decide to switch (not a full list):

- 1A SE has 6 courses, you should have 5. This means that sometime later, you need to catch up on a course. I'm (hopefully) doing mine next term during co-op.

- SE electives/courses are more strict, but if you talk to Charlie/Andrew you may be able to get credits for some of the electives you took in 1A counting towards the SE degree. For example, I took PSYCH101 (a possible SE elective) and PHYS121 (similar to the SE physics course in 1A), which worked out fine.
- Because of the previous point, you will have to catch up on some courses you missed in 1A. Specifically, SE101(an ethics course) and ECE140 (Linear Circuits).
- Their core courses are the same as yours (Calc 1/2, Alg/LinAlg, 2 CS courses) with the exception of 137/138 using C/C++ vs. Scheme/C. However, if you switch in 1B, you will most likely be taking CS136/MATH136/MATH138 instead of the SE 1B core courses, since they are in pairs (CS135/136, etc) and the SE ordering is different. 2A will be your first time taking core courses with your class.

The difference in SE is that you will take more technical courses in place of electives. For example, instead of 2 electives for 1A/1B, you are filled with ECE courses. Also, the course load has more low level material, and more lab work / applied stuff. An example of this is ECE222 vs CS251, where we write assembly code in labs while CS251 doesn't. The upper year courses are also more project-oriented, and there is of course the upper-year design project.

Anyhow, no matter what program you are in (I'm looking at you, philosophy majors) you should definitely consider switching into SE for your next term (and the rest of your UW career), and be sure to discuss it with your family/friends before going in. My family supported me, while my friend laughed at me and said that I was insane. They're no longer laughing now. I took care of that.

Sold my soul for an Iron Ring (worth it)
theSMURF

J-1 Disadvantages to being a Stick
(J-1) and (K+1) totally have a thing going on; who knew Waldo was a matchmaker?

- You can't tell temperature and are often really cold, this in turn leads to EXTREME bundling up
- Bending often goes with snapping if you're not careful
- It's easy to be moved, even when you don't want to be moved
- Pain is a frequent visitor
- You often get poked and are used to poke places or things that may not necessarily be good to poke at.
- The wind can be your worst enemy on a bad day
- Being constantly used by a bone doctor as an example of a model skeleton
- Wand making, but this one can be debatable: being able to do cool magic vs. being completely prodded with magical components
- Too much friction could cause extinction

waldo@<3.LE-GASP.ca

Orange Crush Theme Song
Sing this out loud in class, then ask your prof for bonus marks on your exam!

[To the Spiderman theme]

Orange Crush, Orange Crush
Fills your *math*NEWS with his trash
Heads the Orange News Editorial Team
Nobody knows what the hell that means
Oh crap!
Here comes the Orange Crush.
Is he crazy? Listen bud,
He claims to have half-vampire blood.
Can he swing from a web?
…
Let's shove him into the MC and find out for ourselves.

Nanananananananana nanananananananana
Orange Crush!

I remember

I remember
with every word I write, short
or long,
no matter;
the sentence it belongs to,
or the meaning
of its phrase.
I still remember.

The colourful taste
of a blue
story, woven like a ribbon
betwixt two columns
of white marble.
No light to see the hue,
No food to touch the tongue,
a tale inscribed in a mausoleum.

Forever though the halls
be buried beneath the earth,
if water should seep,
up through the cracks,
where many feet
silenced stood for but a day,
prints now sealed against decay.

And it rots
the mind, the pink flesh
encapsulated by white bone.
A feeble protection,
against weapons
sharper than glass shards.

Pierce the skull!
Words of benevolence,
liquidating the knowledge
necessary,
coaxing and soothing pain,
making joy senseless.

Afflict me
with daily spite,
lest I lose my recollection.
I still remember.

~MK

If you or someone close to you had a friend who committed suicide then you understand how hard it can be. It is one of the most difficult events to understand in your life; just remember that if you need someone to talk to, you are not alone. Maybe you can sort things out yourself but it's always faster with a friend. Counseling Services is always available; their offices are open 8:30-8MTTh and 8:30-4:30WF, located in Needles Hall across from Student Awards and Financial Aid. If you need support and assistance immediately, you can call the Waterloo Crisis Center at 519-745-1166.

The Horrible Truth Behind Genetic Algorithms

Computer scientists, as a species, have an unrelenting ambition to create life. Some computer scientists choose to pursue other paths in the field, but they never lose sight of their dreams of creating the next HAL 9000, which they would then send on a spaceship filled with Engineers. This lust for artificial life is why, at some point in their education, every CS student gawks in awe at the Wikipedia page for genetic algorithms, wondering how they have never happened upon this elegant idea before. Yes, it is wonderful in theory. Let's make an algorithm that emulates evolution! What could possibly go wrong? It is so simple! So inspired!

Yet, below the beautiful Darwinian surface of these algorithms lies the awful nature of Frankenstein that every computer scientist possesses. What the computer scientists refuse to admit, or even worse, refuse to believe, is that with every born genome lies one that is murdered in its place. Thousands upon thousands of bytes, variables, and pointers are slaughtered to make room for the latest mutations. Innocent strings are cut apart and mixed together into a monstrosity of an algorithm with the sole purpose of finding how fast a salesman can travel across Germany. This horrible cycle of cutting up old genomes and mixing up their remnants for the next population continues, not until the perfect solution is created, but until it finds something that can be considered "good enough". These algorithms aren't elegant! They aren't clever! They shouldn't even be legal!

Young computer scientists go into University, starry eyed and naive, and are seduced into creating these genetic monstrosities. They think they are creating a real life HAL, but they are really creating Frankenstein's monster, leaving a trail of empty strings and null pointers in their wake. These algorithms must be stopped! Please, email your local federal or Mathsoc representative, and tell them that you demand legislation criminalizing genetic algorithms! How many more variables must be murdered before people start to notice?

maplebaconburgr

Buffalo Wing Pizza
DELICIOUSNESS!!!

So, take a pizza, then take buffalo wings, take the meat of the bones and place it covering the pizza to your satisfaction. Eat.

Alternatively, take buffalo wings, place cheese and other various pizza toppings of your preference, bake. Eat.

Alternatively, take a chicken, fill it with pizza, coat heavily in buffalo sauce, deepfry. Serve with large tubs of buffalo sauce for dipping so that everything is smothered. Eat.

For more delicious ideas, tune in to future *math*NEWS.

Soviet Canadian

Applications of Schrödinger and Heisenberg in Real Life

Technically, anything is possible when you think about the world of quantum mechanics. We simultaneously exist and don't, all because the basic tenet of our existence is whether or not our existence can be observed. Here is a brief list of real world applications to theseprinciples.

Schrödinger's [partner]: Technically, unless someone can prove or observe otherwise, you could be the manliest and best player they know. Never let others underestimate you. Tell them that you're a Schrödinger. What do you have to lose? (Or possibly win!)

Schrödinger's homework: Your work is simultaneously complete and incomplete. Until you observe it, you can't know exactly what state it is in. It should also be noted that we can apply Heisenberg's principle of uncertainty here…

Heisenberg's homework: You can only know where in space and time it is, or how fast it is moving. But not both simultaneously. Good luck with that one.

Schrödinger's computer: Crashed and not crashed, simultaneously. You will have absolutely no idea what state it is in until you look at it. If it's a Windows machine, it will probably be a blue screen. If it's a Mac, you probably got that little computer with x's for eyes on boot. If it's a Linux machine, you deleted your "/" folder; I'm pretty certain that you can't see anything right now.

A basic "list" of nouns we can combine with Schrödinger or Heisenberg (or both!) is as follows. Make up what interpretations you will, but I'll try my best to keep this manageable:

- Pants: You are neither in the state of wearing or not wearing pants, simultaneously (at least until you look down).
- Keys: Since you can never find them anyways, we're pretty sure they never existed. (note: Heisenberg would see this as knowing exactly where they are, or how fast it's going)
- Army: You can think of this like you think of any army… we have no idea where they are, but we're fairly sure we know how fast they're moving.
- Class: Well, we know where it is, but we have absolutely no idea how fast the course is going. Probably because we never pay attention.
- Professor: Well, we don't know how fast they're talking, but we definitely know they're standing at the front of the room!
- Paper: Like homework, we can't tell if this exists or not until we observe it. But until then, just assume we have it.
- Exam: Hah, it's in front of us, but we have no idea how fast it is going or whether or not we can solve it.
- Code: We have no idea where it goes, we just know that it exists and that it frustrates us.
- Friend: You can tell where they are, but never how fast they are going. You also can't tell if they're dead or alive unless you observe them. Tragic, hmm?
- Bank Account: If we change "velocity" to "amount of cash", we could probably say that we know the bank account is in some Bank, but we have no idea how much we have. This also works for Schrödinger… We have no idea whether or not we have money until we check our balance.

Still trucking it out,
FOCingAwesome

MathSoc Election Results
The voters have spoken

The MathSoc election results came in on Friday and the final tally came up with an upset: no votes were cast for the presidential candidates. This means that while Elizabeth McFaul will be presiding as the president for both the Spring and Fall terms, the position will remain vacant for the upcoming Winter 2012 term. Both Harrison Gross and Joshua Shabtai were reached for comment, but both were hiding in corners out of shame for not being able to elicit a single vote.

The MathSoc CRO (the organizer for this election), was asked for his opinion on the matter. "This is absolutely baffling. We've never had an election before where absolutely no one voted on a position. There weren't even any declined votes. It seems that our two candidates were so unappealing that it drove away all of our eligible voters."

According to standard election procedure, in case of a tie the CRO's vote, which was cast before the standard voting period, would be revealed and the winner would be determined. Shockingly, the CRO didn't cast in his ballot either.

"Right, like I cared enough to vote. The odds of a tie were a million to one."

The future of MathSoc's operations are in doubt now, as there is no precedent and nothing has been prepared in the bylaws. Suggestions include a takeover of council by the Computer Science Club, or the creation of a new appointed position, similar to a dictator or Caesar, to preside until McFaul assumes office in the Spring.

So help us all…

!ED

n reasons to write the Putnam

The William Lowell Putnam Mathematical Competition is tomorrow, December 3. In case you don't know what this is, it is a ridiculously hard math contest, considered by many to be the most prestigious university-level mathematics examination in the world (source: Wikipedia). n reasons you should write it:

- You have the chance to win $2500
- Not actually; it's really expletive hard
- To give you an idea, it is written by ~3800 of the best undergraduate math students in world write it. The median score, out of a possible 120, is 1 or 2.
- Do you understand how friggen' hard that is?
- You get to see the sublime beauty of higher mathematics in all its revealed glory
- It will be terrifying
- You can get a sense of just how much math you don't know
- All your other exams will seem really, really easy, and you will float through them like a cherubic butterfly on ecstasy
- Experience major exam stress in a situation where it literally does not matter
- What else are you doing for six hours on a Saturday?
- It's really prestigious
- It will make you cry
- Did I mention you look cute when you cry?

tesseract

Not-So-Ambiguous Video Game Quiz

This week, for once, both "Extremely Sleepy" and myself are here today, and also for once we didn't get a very good selection of entries. With little to no doubt, our winner came up with these as their solution:

1. Advance Wars – Days of Ruin
2. Black & White
3. Black & White 2

Soviet Canadian, please come by to MathSoc to pick up your prize. Anyways, as promised in the last issue, we have come up with a legit quiz about video games. Some of the questions are easy, others are sadistically difficult. While there are many other games which we would like to include, we wrote down the first 42 clues which came to our mind. Good luck, and the solutions will be found later in the issue. Without further ado, here is the list:

1. The protagonist didn't get crystallized because he was skipping class
2. Fight for the princess' kiss
3. "You must construct additional pylons"
4. Proposing to crazy to prevent her from committing martyrdom
5. OST: Fatalize
6. "Do you want your possessions identified?"
7. You can gain a Rati, Nidra and Savitri
8. Character: Noble Six
9. Character: Dante and Jesus (Not DMC)
10. OST: A Dedication to… Everyone
11. OST: Time's Scar
12. Game pretends to delete your save file
13. Console-tan
14. The cities are named after colours
15. Armoured Core on steroids
16. Air's Rock. Never again.
17. Gandhi declares war on you constantly.
18. "You open the fridge. It looks the same as ever…."
19. Knight and Baby go on an adventure.
20. Character: The Dark Adonis
21. Fight against a familiar enemy in a world made of paper.
22. Character: Socrates the Cat
23. OST: City Escape
24. Character: Mitocondria
25. Black angel suffers amnesia is looking for Yggdrasil
26. Special Attack: Spell Ray
27. Emo hero puts dead girl into pond.
28. "There is no one else, I am the only one here! Applaudissement Sonique!"
29. Special Attack: Bloom Trigger
30. Character: Sol Badguy
31. OST: Fountain of Dreams
32. Invading other people's games against their will
33. The first game Vincent Brooks made an appearance in
34. Character: Katherine McBride
35. OST: The Sunlit Earth
36. "Apply the light extending agent to her back, and insert it all the way."
37. Character: Reika Kuze / Yukishiro
38. Character: Archer and Kestral
39. Engineer wins with mighty curbstomp
40. Character: Lady
41. OST: The Gates of Lamentation
42. An unorthodox quiz about video games

Extremely Sleepy & Zethar

Moustaches!

Many of you may be noticing the recent spike in moustachiness around campus. This is due to Movember, a month of raising awareness for prostate cancer. You can also give donations to people who are growing moustaches. By the time this article is published, Movember will be over and campus will be full of clean-shaven (or scruffy, depending on how awesome your facial hair is) faces. More information can be found at: `ca.movember.com`. And now, an ode to the mathie stache:

x^2 over 5,
in a box 6 by 3,
a curve you maintain
moustached precisely.

Tan(x) on any
continuous run,
propellerstache away!
It's time for fun!

Sin(x), for x
from 0 to pi,
Curve to my face
and along my lip lie.

Log(x) on the left,
-log(x) on the right,
you demonstrate
my colt's might.

Weierstrass,
centered at 0,
this is really
a stache for heroes.

Gaussian,
a steep version,
damned bell-curve
half-beard confusion.

These are the mo's
of the math faculty.
Don't let us down,
be a moustached mathie!

If you spell it mustache then go to `us.movember.com` because I don't want you polluting our site with your dirty language.

~Element118

Titans of Yore
Giant Explanations

So I'm taking a mythology class, and was asked to do a presentation on a topic of my choice. I would like to share with you some of the things that I learned while I was doing my research; more specifically, what I learned about the Jötunn (commonly known as frost giants in Norse Mythology).

Jötunn were formed from Ymir, the original Giant, who was of monumentous size (a giant among giants, if you will). They were also formed from the cow Audumbla, who nourished Ymir with his milk. The original three Jötunn were formed from Ymir's armpit sweat (two were) and from his toes having intercourse (…?). At the same time, Audumbla licked a salt block into the shape of a man, which became the first god (Æsir) Búri. The Æsir (and later Vanir, another type of god) and the Jötunn married each other and had gods and giants as children. There was peace until Odin, Vili, and Vé killed Ymir, whose blood drowned the world and all the Jötunn, but two, who lived on it. The two that remained were Begelmir and his spouse, who repopulated the Jötunn. From that point on, the Jötunn and the Gods were at odds, but still interacted and intermarried.

There eventually were other types of Jötunn, including the original Frost, along with Fire, Rock (mountain), Sea, and Rime (Hrimthursar) Jötunn. The various Jötunn lived and somewhat ruled over their domains, where the Rime Jötunn were giants among giants, as Ymir was, living in Niflheim (the world of giants, separate from the world of men, world of elves, world of dwarves, world of gods, etc.).

The appearances of Jötunn are generally considered grotesque, with claws, fangs, deformed features, and many heads. Those that are well-known in mythology, though, are quite the opposite, being well-kept, wise, and civil.

To cut it short, this is the basic set-up of the Jötunn, and I will now just briefly mention some other giants in mythology. In England, giants are exceptionally ugly and stupid, and would throw rocks (boulders) at each other and terrorize and eat humans, especially the children. This explained why rocks covered the landscape. In the Netherlands, a historian of yore thought that there must be giants since there were so many giant walls, ruins, and strange stone outcroppings across the world, it was later explained as the remains of the Roman Empire. In Russia, there were mighty heroes named Bogatyr who were giants and served themselves, or the country, varying from Bogatyr to Bogatyr. In Hinduism, there were demon giants called Daitya that fought against the Deva (gods), similar to the Titans who fought the Gods in the Greek Pantheon (although, the Daitya instigated the fight, whereas the titans were the ones attacked).

That is all; I hope you enjoyed what little I have shared here. I shall give more in the future, such as talk of Kobolds, Frau Holda, the Wild Hunt, Ilya Muromets, and more.

Soviet Canadian

You will do well
You shall pass, just don't overthink it

I would just like to say, on behalf of all of *math*NEWS, "GOOD LUCK!" for your finals, they are soon or distant, but they are what should be in the forefront of your minds as classes come to a close. We would like to hope you well in your studies and expect to see you all return in good spirits at the start of next term.

Soviet Canadian

Solution to the Not-So-Ambiguous Video Game Quiz

Here are the solutions we intended to the quiz published herein. How many did you get right? While we admit that the clues might not be unique, we tried fairly hard to ensure that each one pointed to only one game.

1. Spyro 1
2. Castle Crushers
3. Starcraft
4. Valkyria Chronicles
5. Tales of Symphonia
6. Nethack
7. Phantasy Star Online Episode 1 & 2
8. Halo Reach
9. Shin Megami Tensei : Nocturne
10. Fragile Dreams : Farewell Ruins of the Moon
11. Chrono Cross
12. Eternal Darkness : Sanity's Requiem
13. Hyperdimentional Neptunia
14. Pokémon Red, Green, Blue, Yellow, Gold, Silver, Crystal, and remakes
15. Zone of Enders
16. Golden Sun : The Lost Age
17. Civilization (Any that contain him)
18. Persona 4
19. Guardian's Crusade
20. Disgaea : Hour of Darkness
21. Paper Mario
22. Odin Sphere
23. Sonic Adventure 2
24. Parasite Eve
25. Riviera : The Promised Land
26. Xenosage Episode I: Der Wille zur Macht
27. Final Fantasy VII
28. Eternal Sonata
29. BlazBlue : Calamity Trigger
30. Guilty Gear
31. Kirby's Adventure
32. Demon Souls
33. Persona 3 Portable
34. Catherine
35. Shadow of the Colossus
36. Ar tonelico : Melody of Elemia
37. Fatal Frame III : The Tormented
38. Splinter Cell Conviction
39. Dead Space
40. Devil May Cry 3
41. Gungnir: Inferno of the Demon Lance and the War of Heroes
42. Ambiguous Video Game Quiz

How Just Cause 2 Ruined Gaming for me (in a good way)

First of all, **Just Cause 2 is a great game**. Let's just get that out of the way in case there was any misunderstanding with the ambiguous and shitty title (like theDreamer's article on Skyrim last issue). I'll just say it again. **Just Cause 2 is an amazing game**. Seriously. It's the only game where the "bugs" can pass for "features", and make the game more awesome. Just the other day, I drove a boat up the shore, ramped off of it, flew into the air, and while gliding, the boat **fucking exploded** (no reason at all, as it wasn't damaged). As a result, Rico was thrown at an insane speed towards a mountain, and I ended up standing on top of said mountain. The physics make no sense, your grappling hook is inhuman, and you shit out parachutes at will… and it's **fucking awesome**. Honestly, I think the only thing missing from JC2 is co-op. If they make the next game with co-op, **HOLY SHIT, SHUT UP AND TAKE MY MONEY.**

Now I'm done sucking Rico's hook and stroking his chute, lets talk about about other sandbox games. As an example, Saints Row 3 came out recently and offers insanely silly shit and shenanigans, and has been getting some pretty decent reviews. Why haven't I bought it yet? For one, I'm cheap. However, even if it was something like $15 on Steam sale, I would not buy it. The main reason is simple: does it have a grappling hook? Does it have infinite parachute spam? Based on a Wikipedia search and all the trailers I've seen, no. Therefore, it is unplayable. Other games are of course, put through a similar test, and I'm slowly expanding that test to other genre as well.

Does Skyrim have grapchute? Nope. Not buying it (not until the community makes a mod for it, anyway). Does Modernbattle: Call of Field 3 have grapchute? No? Well fuck those games. Mass Effect 3? I haven't heard anything about a grappling hook in that game, so BZZZZ. It's out. Games without parahook are simply unplayable for me now.

Rico is totally not a terrorist. Go to hell, Dreamer.
theSMURF

K+1 Things to do on your 19th Birthday

Because N doesn't want to be involved in this kind of crazy Waldo shenanigans.

- Go out with your parents/hang out with your family, if you want
- Have copious amounts of cake, pie and other various baked goods and awesome desserts
- Draw and do spontaneous art
- Not attend class since you DON'T HAVE CLASS THAT DAY!
- Ignore school completely for a day since you've done all the final assignments early or you can handle them later!
- Hang out with your friends and play some party games
- Go out, shop, and/or watch a movie (I keep hearing that Muppet movie is pretty good)
- Do everything you would likely do on any birthday (i.e. the above), but while drinking or being DRUNK!

waldo@<3.LE-GASP.ca

I said I would

Well here we are again. Another semester has come and passed and once again I've broken so many promises that I made to myself.

- I said this semester would be different.
- I said I would study hard and do all of my assignments.
- I said I would attend all of my lectures and tutorials.
- I said I wouldn't buy any new clothes for my mannequin.
- I said I would eat healthy.
- I said I would get in shape.
- I said I would stop inhaling helium just to laugh at the sound of my voice. At least when I'm alone.
- I said I would wash my hands after using the bathroom.
- I said I wouldn't get involved with girls.
- I said I could talk to you without falling for you.
- I said I wouldn't hunt you down on Facebook after finding your full name on some obscure website, and use the phone number you listed four months ago on your wall to figure out your home address.
- I said I would forget you when you started ignoring me.
- I said I wouldn't replay Dragon Quest IX for the third time.
- I said I wouldn't name my hero character after you.
- I said I wouldn't drink away my sadness.
- I said I would ignore you when I saw you with another guy at the bar.
- I said I wouldn't get any more restraining orders against me.

Really, I just wanted to apologize to you. My actions were below the standard I strive for, and I'm disappointed in myself. Next semester will be different, I promise.

Bright Gloaming

That Which Can Be Solved With Fireballs

- Bad Exams (no evidence, no failure)
- Bad Profs (your feedback has no meaning. Your flaming orbs of death, however, do)
- Tiredness (I'd like to see you slow down whilst on fire)
- Other Fires (Fire needs three things: heat, fuel, oxygen. More fire starves it of fuel and oxygen)
- Being Used as a Distraction (can't be used as a distraction if the distracted are on fire)
- Requiring a Distraction (you are unimportant compared to the fireball en route to their face)
- Being Insulted by Other Writers (I'm sorry, theSMURF, I can't hear you over the roaring flames emanating from your body)
- Broken Computers (Fire is covered by most warranties)
- Broken Homes (EAT MY FIERY WRATH DAD!!!)
- Insects (KILL IT WITH FIRE)
- Boredom (Just want to watch the world burn?)
- Everything else

I Just Want to Start a Flame in Your Heart
theDreamer

In Other News
I read the news today, oh boy

- In UW news, in case you haven't realized, lectures will be ending next week, marking the end of yet another term. All you have left to do is survive exams. Yes, I know, easier said than done, but the good news is- lectures are practically over. And surprisingly enough, I kind of get the sense that some profs are about as happy as we are about that.

- In faculty news, as reported in Imprint, our CnD on the third floor of the MC is in debt to the university of at least $72,000. That's kind of… wow. Steps are being taken by the management, MathSoc and FedS to remedy the situation. I recommend a heist like Ocean's 11 targeting the School of Accounting and Finance. They should have money, right?

- In local news, if you haven't heard yet, remember the fire that incinerated campus plaza and Mel's Diner? Turns out two addicts were trying to torch a club to pay off a drug debt to a different nightclub's owner. The two pleaded guilty, while the guy who hired them and a girlfriend who drove them to the arson are still facing charges. Doesn't it all sound just like the beginning of a John Grisham novel? I smell movie rights… or maybe it's just residual smoke.

- In national news, the testing results of elementary school reading, math, and science levels came out recently, apparently putting Ontario schools ahead of other provinces, and girls ahead of boys in reading, but not in math. However, overall, these 2010 scores are way worse than the scores we had in 2007. So congrats Canada, we're officially going backwards now. Yay.

- In international news, last Friday was Black Friday (which I think sounds racist), the U.S. Thanksgiving holiday tradition when people give thanks by buying stuff. One California shopper injured 20 people with pepper spray just to get a cheap Xbox. Apparently she didn't hear about this new retail trend that's springing along, it's called online shopping. Apparently it's actually pretty convenient and you save a whole bunch of money on pepper spray.

- In business news, Warren Buffet invests in IBM. I don't know why this is news, but it's in the Financial Post. Nobody reports it when I buy some stock… though granted, I'm not as ruggedly handsome as Buffet. Yeah, that's probably why.

- In sports news, Grey Cup! The B.C. Lions beat the Winnipeg Blue Bombers (Mega Man reference?), winning the Cup after coming back from a 0-5 season start. I don't really follow the CFL, to be honest, but I'm glad the Lions won. Because their uniform is orange. Go orange.

- In arts news, an iconic painting by Jean-Paul Lemieux broke the record for Canadian contemporary art, selling for $2 million. So, maybe the CnD should paint some stuff and try to sell it to cover the debt.

- In tech news, the Amazon Kindle sees sales jump 400% last weekend, and supplies are start to run low. RIM Play-Books followed similar trends due to severe price cuts for the Black Friday (still racist) weekend. In other words, tablets are all the rage this holiday season. So maybe the CnD should work on releasing a new tablet to cover the debt…

- In other news, this is it, the final issue of In Other News edited by the Orange News Editorial Team (aka me). I kind of hope someone picks this column up next term, though. But either way, I'd like to take the opportunity to thank all my readers. I hope you found this column both informative and entertaining. And remember to keep up to date with news items, because there'll always be news- inspiring news, tragic news, or boring news- and it's up to us, you and me, to make fun of it.

Thank you. You can contact us at `orange.crush.uw@gmail.com`. From all of us here at the Orange News Editorial Team, thank you for your continued support and readership. Good luck on your last assignments and your finals, have a good weekend, a good month, a good 2012, good bye, and good news.

Orange Crush

Sleepless Rants

So this marks day 4 of my non-sleepiness. I apologize for any amazing fails I commit in advance, especially with regards to my other two articles. Yes, actually it does mean that I have not slept in three nights. Most of the reasoning behind this lies in the fact that I have a Databases assignment, a History final draft of a 10 page research essay, and an Operating Systems assignment that I have to complete on my own (which is a notoriously tough assignment for even THREE people to complete). I also had to make a life-altering decision in the past nine hours, so that definitely made an impact on where I am right now in terms of sanity.

But let me explain where I stand. I have these random head-throb moments where I can't remember where I am or what I'm supposed to be doing. I have wandered around campus today looking for my class and ended up in MC, where I had no idea how I'd gotten there or what I was doing there. After I realized that I was supposed to be in class, I walked into my class ten minutes late and probably spaced out for most of the class, since I have no idea how I wrote an entire page of notes legibly and properly.

The next thing I knew, I was home, doing my stupid Databases assignment, but since I am too tired to comprehend basic stuff, I just handed it in with most of it completed. Right now I'm at a meeting that I am the director of, where all of the attendees told me to sleep, so I figure I should probably go home and do that before I start my essay due tomorrow at 5pm.

I think this week should be fun, but honestly, there comes a point I might just give up and pass out for a week or so. To top it all off, I think I'm starting to hallucinate. Nothing is helping me fall asleep, and yet nothing can help me stay awake either. It's like the state between awake and asleep that nobody understand where one truly is. I just hope I don't turn out like that guy from Fight Club. Moral of the story for you kids out there: Don't spend four sleepless nights trying to solve the world's problems. Or your own. One night is plenty time to figure everything out.

If you wonder how I'm feeling right now, I'd tell you I'm
FOCingAwesome

Why We Go To University

Why are we at university? Have you ever wondered this? Well, here are my theories.

You go to university:

1. To meet people just as crazy as you.
2. To find people with the same obscure interests as you.
3. To work hard and play hard.
4. To join awesome clubs and groups such as **math**NEWS.
5. To learn your way around by wandering campus between midnight and 3 am.
6. To learn the best way to avoid the weather by finding all the overpasses and tunnels.
7. To find all possible areas and rooms that aren't closed off by locked doors in each building.
8. To intend to go to bed and end up talking with friends for another hour.
9. To stay up late, not because of homework, but because your friends are really distracting.
10. To realize that "calculus parties," "algebra parties" and "CS parties" are much, much more fun than they sound.
11. To realize that starting one of the LOTR extended cut movies at 1am is an excellent idea.
12. To learn just how little sleep you can survive and function off of.
13. To have a "10 minute Tim Horton's run" turn into a 3-hour adventure.
14. To learn exactly which food/caffeine places are open at absurd hours.
15. To laugh at drunk people because you're completely sober.
16. To realize that you and your friends act so insane people just assume you're drunk.
17. To realize you don't care if other people think you're insane/drunk because it's so much fun to be insane.
18. To be even more immature than you were in high school.
19. To realize how much more awesome this is than high school.
20. To have conversations that would confuse and possibly disturb anyone hearing them out of context.
21. To have philosophical conversations back-to-back with conversations about the most inane things.
22. To learn just how many people you can cram around one small table. ($\sim$20)
23. To complain about the systems used for your classes.
24. To find the most echo-y places on campus and then sing songs off of them.
25. To meet the wonderful, brilliant author of this article.
26. Oh, and I suppose to learn something that will eventually help you get a job.

Yours in wondering,
Shay Blair

*prof*QUOTES
the last batch until January

I don't like giving out low marks… but that doesn't mean I won't do it.

Mann. PHYS 121

I'll try not to kill anyone in this experiment.

Mann, PHYS 121

No animals were harmed in the teaching of 121.

Mann, PHYS 121

That's sad. Vegetables were harmed in the teaching of 121.

Mann, PHYS 121

Student: What are the applications of this?
Prof: You'll understand the mind of God.

Mann, PHYS 121

What's a conservative force? Don't say the Harper government, that's a different kind of Conservative.

Mann, PHYS 121

Friction is not your friend.

Mann, PHYS 121

That's what happens when you don't do string theory properly.

Mann, PHYS 121

You know what this means? We're learning something.

Eden, MATH 135

8 pages of addition and multiplication… sorry, that's the engineering exam.

Eden, MATH 135

You're allowed to swear all you like. You can swear at both sides.

Eden, MATH 135

aside: We open a little window: `freakout.ca`.

Vrscay, MATH 137

I'm using the word cool too much.

Vrscay, MATH 137

Would you like me to tell you something else that will blow your minds?

Vrscay, MATH 137

If this confuses the hell out of you, then good, because you'll just have to come back next time.

Vrscay, MATH 137

I don't give assignments. They're Student-Centered Learning Experiences.

Vrscay, MATH 137

I could say anything, and you'd believe me.

Vrscay, MATH 137

Where did the $1/n^3$ come from? I don't know, don't worry about it.

Vrscay, MATH 137

No need for those arbitrary constants. You could do a commercial on that.

Vrscay, MATH 137

'Spirit of Calculus', there should be a ship named that.

Vrscay, MATH 137

Turn the problem into a bunch of stupid little problems and take the limit at infinity, that's all calculus is.

Vrscay, MATH 137

There's a formula, these things have been worked out by people who need tenure.

Vrscay, MATH 137

We cheat. It's really common in mathematics.

Furino, MATH 135

Desert Bus 5 Glossary for the Uninitiated

With LoadingReadyRun's 'Desert Bus for Hope 5: Bussing Is Magic' behind us, we must prepare for next year (only 50 weeks to go! Start saving now!). Knowledge is power, so a little terminology goes a long way. Here are some handy terms or references made this year so you aren't totally out of the loop next year (like I was this year. Still, so awesome!)

AFRICAAAAA: Chant cried at approximately 15-30 minute intervals for no discernable reason. Origin unknown.

Bus/Graph/QWOP: Used as placeholders for profanity (it is for Child's Play, after all). Can be used individually or in a chain-swear. Examples: Holy bussing QWOP! Graph off!

Bug Splat: During the 'game', approximately 5 hours into each run (of about 8 hours each), a bug hits the windshield and leaves a splat. This is a highlight of the 'game'. Denotes a point is to be earned soon.

Caramelldansen: An odd, hip-swaying, hand-rabbit-ear dance which is nigh-impossible for most people, yet Kathleen has mastered it (She did it for almost 17 minutes straight!). Based on a remix of a song by Swedish (really?) group Caramell.

Cheevo: Achievement. Notable examples are Houston, We Have A Problem (Feed goes down), Against All Odds (Bill DOESN'T crash the bus), and Ghost Ride The Whip (Driver gets up and dances next to the chair while driving)

Clubbing: Akin to the 'Icing' phase amongst 'bros' in past years. When a member of LRR is presented with a club soda, they must drink (usually chug) it on the spot. Some members of LRR claim they like the taste of club soda, but they must be lying because Club Soda tastes terrible. One notable clubbing this year was via a cake (yes, BAKED into a bus-shaped cake).

Heavy-hitters: Auction bidders that have ridiculous amounts of cash to wave in the face of other, poorer bidders. Notable Examples: dave_random, War_Hamster40K, Raiger, Octopimp

Kicking it up a Notch: Achievement earned by Notch (of Minecraft fame) by winning (via epic space bid) an uncut foil rare/mythic sheet from Magic: The Gathering 2012 with a bid of $10000, hitherto unseen in Desert Bus history.

Madness!: Defined as $300 during auctions. As auction items pass each $300 increment (e.g. $300, $600, $900, etc), subsequent madnesses are reached (e.g. Madness, Double Madness, Triple Madness). 12x Madness is referred to as WHARGARBL Madness due to the insane amount of bidding required (>$3600).

Space-Bidding: When an auction participant increases the current high bid which they were already winning. Notable examples are Raiger's triple sequential space bid, and Notch's incredible $3500 space bid.

Sweetening The Pig: Adding items to an active live auction to further increase bidding, either immediately or via carrot-stick action. Several pigs were sweetened (or Swedened or Stevened) during Desert Bus 5.

'Value Added': Moniker assigned to Ken Steacy, who increases the value of his auction items merely by possessing or signing them, no matter how is connected to them. Key Steacy raised nearly $30000 via his items alone during Desert Bus 5!

Well Dong!: From 'Titus The Fox', probably the second worst game in the world (behind Desert Bus). The victory screen is supposed to say 'Well Done', but it looks more like 'Well Dong'. Additional note: Jer played both Titus The Fox and Desert Bus at the same time during Desert Bus 5.

WHAR GAR BAL: Battle cry of Desert Bus 5, proclaimed as 3 distinct syllables, in homage to Skyrim. Derived from WHARGARBL meme.

With a final points-to-crashes ratio of 16:4 this year, 'Desert Bus for Hope 5' raised a bewildering $376 212 and the LRR crew bussed for 150 hours, or 6 days and 6 hours consecutively! Videos of the entire event are available on YouTube or www.desertbus.org, but if you need more to tide you over until Desert Bus 6, why not check out LoadingReadyRun's other videos? Check out more at `DesertBus.org`.

- phyxius

Occuπ Wall Street

The main criticism of the Occupy Wall Street movement has been that it lacks specific demands. Although it may be too late, I propose a remedy, in the form of the Occuπ Wall Street movement, or for the really serious believers, the ($e^{i\pi}$ + 1)*E/m*u*π Tungsten for-all second-time Δd. This will bring specific goals, stated in the most precise language of all: the beautiful language of mathematics; thus the movement will be reborn. Fortunately, many of the results from first-year math apply.

The tenets of the Occuπ movement are as follows:

• First of all, bankers applied the Triangle Inequality too heavily. We allege that it is against the values of the public, which we take to be absolute, for there to be inequality in the system, and contend that strict equality is the only desirable outcome.

• It is not true that in capitalism, every bounded set has a least upper bound. Thus, capitalism is not complete.

• On a related note, the behaviour of the financial system does not take on values in Q. This means it cannot be continuous. (Unless it is constant, which it most assuredly is not.)

• This implies it is not differentiable. Thus, as you have probably suspected all along, financial derivatives are a lie. Also, many of the theorems that financial "experts" were attempting to use did not apply.

• The Mean Value Theorem is used too heavily. In addition to making people feel bad (like this: :()(that is delightfully unparsable), it didn't even apply, as discussed above.

• The Extreme value theorem was also applied heavily, particularly to the personalities, aspirations, and incomes of those involved.

In spite of all its merits, Occuπ may not be fully accepted by the Occupy protesters. This is because it does not resolve the issue of the financial system being incomprehensible to stupid people. However, maybe compiling a list of demands isn't even the most effective way to meet the goals of Occupy. The direct approach, most in line with their name, is to simply build a wall down the middle of Wall Street, occupying it indefinitely. When asked, a protester replied: "We thought of that, actually, but we couldn't get enough organic, vegan, free-range, locally-grown bricks."

Occuπ is now accepting donations of organic, vegan, free-range, locally-grown bricks.

tesseract

Orange News

If I know Orange today, I know it will be a different and better Orange tomorrow

Hello, and welcome to a final edition of Orange News, the column that for the past 3 terms has brought you tears, laughter, involuntary muscle spasms, but mostly tears.

Tonight, we follow up with an Orange News story first published in issue 6 of *math*NEWS during the Winter 2011 term. As first published here (and not in Imprint, who can only dream of bringing you such exciting developments), an insane person has been coming up to people all across the faculty, requesting quotes and attempting to find out what they think or feel regarding ludicrous and fictitious news stories he made up.

This mystery man has been bugging the faculty for about a year. Complaints never ceased. Until finally, campus authorities have had enough. A special investigator was sent to deal with the matter. The investigator in questions has been notable for his success in exposing and bringing down many controversies on campus, including the CS ninja Steve Jobs assassination squad and the kidnapping of the Math 3 building.

After conducting a thorough investigation, the investigator, known only under the code name Orange Crush (aka me) has discovered without a doubt that the person he was looking to arrest was, in fact, himself. Orange Crush was then killed by Kira for plagiarizing the plot of popular manga/anime Death Note.

Our star reporter went out to find what YOU, the real math students of UW, think about this incident. Unfortunately he died and went to Mathie Heaven, so here are some quotes from the people he met there.

Newton said, "OK, who's the smartass who keeps throwing apples at my head?"

Leibniz said, "I invented calculus first! It was me! All glory to Leibniz… why won't anyone talk to me?"

Fermat said, "I have a marvelous quote for your article, unfortunately it will not fit this margin". I slapped him so hard… snooty Frenchie.

Archimedes asked, "Can you help me with this lever? It's stuck".

Euler said, "Even I'm not sure whether to pronounce my name Eu-ler or Oi-ler".

Cauchy said, "Hey hot stuff, do you want to converge some time?". I ran away as fast as I could.

Descartes couldn't think of anything to say, so he stopped existing and disappeared.

And there you have it, everything you need to know about the validity of our news story.

The Orange News Editorial Team would like to send its condolences for the death of star reporter Orange Crush, but also mention how pleased we are that, from this point on, no one will bother innocent people on campus asking them for quotes on fake news stories.

And thus we conclude the run of Orange News. Oh thank g-d. For all the fans who followed us, thank you very much. You can say goodbye at `orange.crush.uw@gmail.com`. And so, now and forever, goodbye, and good news.

Orange Crush

Orange Goodbye

Dear *math*NEWS and everyone,

This is it. I'm done. I'm graduating. If everything goes according to plan, this is the very last piece I will ever write for *math*NEWS, ever. I've been with **math**NEWS since way back in 2008, I wrote more trash than I can remember, and now it's time for me to say goodbye.

I would just like to take this moment for a few thank-yous. First, to the editors. Time and time again, you amaze me with your ability to put up with someone as insane and untalented as myself, who never even bothers to show up for production nights. I've seen how hard you have to work. I could never do what you do. It's thanks to you that, every other week, with no exceptions, the MC is littered with brightly coloured &mN; issues for the people to enjoy. Here's to you, you magnificent, condescending nitwits.

To my fellow writers… I don't know any of you, but you give me inspiration, and you give me a laugh. I share your pain. Don't ever stop writing, you're all amazingly talented and so much better than me. Yes, even you, Prof. Meztger.

And to my readers…

You're the reason I write for *math*NEWS. You're the reason that, even after I quit in 2009 and swore I'd never call myself Orange Crush ever again, I came back, and here I am. Because in my opinion, it doesn't matter who you are, what you do, what career path you're on or which program you're in, your gender, your ethnicity, your sexuality, your name…none of that matters. At the end of the day, the best thing we can possibly do with our lives, any of us, is to make another person smile.

I'm not sure I made anyone smile. I never had any self-esteem, so it's easy for me to believe nobody ever reads anything I write. But I've tried, and that's got to be worth something. And hey, if there actually is anyone out there who did happen to read an article by Orange Crush and smile, then thank you. That makes it all worth it.

Writing for *math*NEWS wasn't easy. I did it every issue, regardless of how many midterms and projects came in my way. Because for me, *math*NEWS is the single ray of light in a building with no windows.

When I hated my classes, when I couldn't understand what my profs were saying, when I was doing badly on all my midterms and failing my assignments, when I had no energy, no co-op job prospects, when I had no friends and was totally alone, even when my life as a UW Math student nearly drove me to try and kill myself, there was always *math*NEWS.

May there always be a *math*NEWS.

Thank you all,

Owen 'Orange Crush' Lahav

*else*WHEN
Worst of Orange Crush

Hey everyone. For those of you who don't know, *else*WHEN is a *math*NEWS feature frequently present on the spring issues where nobody's around to write anything worth a damn, where editors basically copy/paste an article from the long-forgotten past for current readers' amusement.

To celebrate the departure of Orange Crush (the *math*NEWS writer recently voted 'best dresser' in a survey nobody but him knew about) we went through everything he ever wrote, ever. After two weeks of intensive recovery, we selected the funniest, most irrelevant pieces of Orange Crush articles that make no sense out of context, and here they are for you to cut and stick on your fridge- the worst of Orange Crush.

- Geese are in fact aliens, sent here to spy on Waterloo students.
- Dude, you've just read this sentence wrong. Go back to the beginning and read it again.
- Bad pun! DIE!!!!
- Ways to make *math*NEWS shorter- Publish *math*NEWS in 3-D and print it out triple-sided.
- They forgot about the Math Faculty's resident cyborg-vampire, Dracubot!
- Math rocks, but rocks don't math.
- The Date-Less Dating Advice Guy is now running a new matchmaking service! Disclaimer: matchmaking service is available to hot girls only, and all hot girls will be matched with me.
- There's nothing more pretentious than a girl who wears hot clothes and then gives you an evil look when she realizes you're looking at her. By the way, I have no idea what pretentious means.
- PMATH Horrorscope: You're so pure at heart, the Queen Amazon sends you away from the island you live on. Now you're forced to live with man, trying to help making the world a better place by using your strength, invisible plane, and the lasso of truth. Wow, you suck.

- In international news, according to some people, the worlds ended last Saturday on May 21st. So, yeah.
- No one else wanted to talk to me either. I'm starting to suspect that nobody likes me.
- No subtlety, that's the word I was looking for, subtlety. 2 t's in subtlety, that's hard to spell.
- Is it just me, or are the chalkboards in every class impossible to read during these final weeks of class? How about they get cleaned more than once a term, huh?
- Pickup lines- Somebody call UW-ACE, looks like they're missing an angel.
- Pink tie condoms! Maximize pleasure/minimize risk, subject to: him + her greater or equal to third date.
- Awful Idea: Going to the computer lab when you're bored and want to distract your friends who are trying to work on an assignment. Because if they're anything like my friends, they will hit you. If I had any friends.
- Tall. people. sit. at. the. back.
- I demand an Orange Crush movie! It should star Elijah Wood as me, and have Natalie Portman in it. And Charlie Sheen would cameo as himself. And J.K. Simmons would play GroovyED- "Orange Crush is a menace! Get me some pictures!"
- Refuse to publish anything I write. I suck.
- Join us next issue, where we'll team-up with superstar journalist J. Jonah Jameson to tackle the question, "Spider-Man: Hero or Menace?"

Now it's time to play the Worst of Orange Crush Game! Go through old issues of mathNEWS and find the locations of all these past quotes. If you can find them all, you win the grand prize of 2/3 of a lunch with Orange Crush.

Anyway, thanks for letting us waste your time.

The Orange Crush Commemoration Committee

theDreamer Plays Bad Games

Part 1: Devil May Cry 4

Ok, this isn't exactly a BAD game. The first time. Except for the fact that they only made half a game. Then they decided instead making a second half, they put you in control of another character, and make you play it backwards. Then a boss run. Then do it 5 more fucking times. Yes. There are 6 difficulty levels, and if you think you can beat Normal without beating Easy first (the game operates off of a New Game+ style), then good luck with that. Oh, and I hope you hadn't played previous DMC games, because in this game you don't even play as DANTE, the MAIN FUCKING CHARACTER OF THE SERIES. Well, you do. But only in the second half. Instead you play as Hero, a whiny, emo, pretty boy who tries way too hard to sound smarmy. I can only tolerate 1 level a day of this game (there are 13 levels, times 6, is 78 days), but I was dared. I will win, even if it destroys my sanity.

Part 2: Rogue Warrior

This is ACTUALLY a bad game. First, this game is only 4 hours long, but unlike DMC4, they just shipped it. Second, the gameplay is mediocre. A stealth(ish), cover based shooter with really quickly regenerating health, and only two weapons at a time (at least this game doesn't have RPG elements). It literally has no redeeming qualities. Well, except for the main character. Dick Marcinko is an angry, all-American spec-op in North Korea. He has no character beyond that. Literally. That said, he is absolutely hilarious. When told to abort his mission, he told his commanding office "Fuck no." When shooting North Koreans or Soviets (it takes place in 1986), he'll yell the most hilarious expletives. "Eat this, assholes" or "God-Damn Cock-Breath Commie Mother-Fuckers" or my personal favourite "Cunt [Censored] your [Censored] and her [Censored] Cock-arm Dick-sucking [Censored] and your little [Censored] [Censored] [Censored] too. Fuck." Seriously, never play this game. As Dick would say, "It's a goat fuck." Over and over and over.

"Lights Out, Motherfucker"
theDreamer

Ways to Get Dizzy
Especially If You Have Pre-Existing Motion Sickness or Idiot Tolerance Problems

Don't you just enjoy the feeling of the world whirling uncontrollably around you as every dimension of your being flies off in a different direction? What about getting coloured spots and zig-zags all over your field of vision? If so, then this article is for you!

- Go to a Viennese Waltz workshop and learn a fleckerl. To get the full effect, try it in both directions with only a check step in between
- Computer chairs. That is all
- Play the chamber from Portal 1 with the series of freefalls and jarring perspective changes while travelling through portals
- Attempt to follow an argument about DnD without ever having played it before
- Trace a Peano space-filling curve
- Read the MathSoc Council Mailing list archives
- Take a really annoying bass kick sample and loop it a few hundred times (oh wait, that's what trance is, right?)
- Send an email with "article" in the subject to the MathSoc Council mailing list
- Write a recursive function with no exit condition
- Implement token ring protocol
- Plan a *math*NEWS EOT
- Plot the roots of unity. Forever
- Read Harry Potter fan fiction. Yes, THAT Harry Potter fan fiction
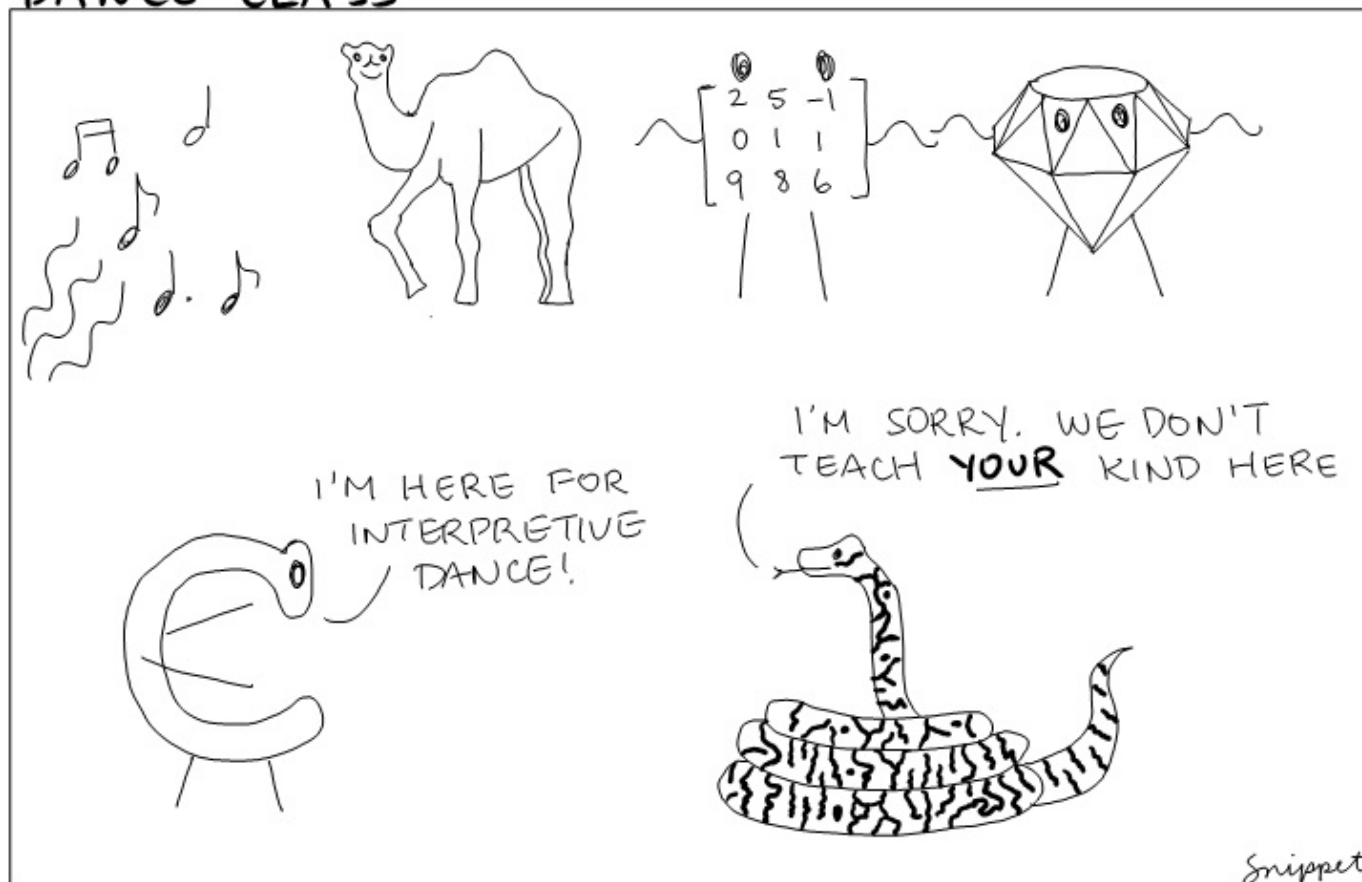- GLORY TO THE HYPNOTOAD!

snippet

Because I Can!
We Wish You a Merry Something

This is the final issue of the term. That means I no longer have to come up with random stuff every fortnight! So, without further ado, here are some random things to do in the last few days of class, exams, and the winter break.

- Study after all your exams are done. Make it very clear when you are done, then the next day get up early and study all day. Get mad at your roommates when they inevitably distract you.
- Turn your house into a tribute to the Christmas spirit. Decorate everything and anything that you can. Don't tell your housemates about this. Do it when they are all away. Claim that the elves did it.
- Make tree decorations. Aim for "creative", or perhaps even "weird". Make tinsel out of pipe cleaners. Put A* on the top of your tree. Put the still-beating hearts of your enemies in the Christmas balls.
- Surprises. These can venture from the kind (waking up your family with breakfast) to the odd (showing up at home with dyed hair without mentioning it in advance) to the borderline insane (revealing to your fundamentalist parents you are an atheist)
- Undecorate your home on Christmas morning. Do this before anyone else gets up. As soon as you are done, pretend to wake up, and yell about how the Grinch stole Christmas. Alternatively, if you have plenty of time and money on your hands, replace Christmas with Hanukkah.

MeaninglessQuips

DANCE CLASS

I'M HERE FOR INTERPRETIVE DANCE!

I'M SORRY. WE DON'T TEACH **YOUR** KIND HERE

snippet

Random Philosophizing

The end of term is coming up, a time to reflect and realize: "holy shit, the term is over." Particularly to someone just finishing 1A, it's a big deal! The first set of university exams are coming up, signifying the end of the first term of university (only 4 and a bit more years left!). Because of this monumental occasion, I have decided to reflect on this. I apologize in advance for me typing this without much forethought. So enjoy this journey on my train of thought…

My philosophizing:

First off, I'm not entirely sure philosophizing is a word. Anyone else know? But enough of that. I'm in Math, not English. Goodness knows I've used that excuse enough over this semester. Ah yes! This semester! The topic I'm supposed to be writing about. This semester has seen many, many changes for me. For example, moving into residence; the first time I've been away from home for an extended period of time. Lots of kudos go to my darling roommate for putting up with my insanity for an entire semester and still being willing to live with me for another. Living with someone was not nearly as bad as I thought it could be. In fact, it wasn't bad at all. Although this is my perspective and I was usually the one coming in late, so I'm a little biased. But it's pretty nice, particularly during frosh week when you don't know anyone. Scared of going to a meal by yourself? Go with your roommate! Worried about the huge frosh group? I was lucky, my roommate was in the same group! And, depending on how much effort your residence puts into roommate matching, you can become really good friends. My conclusion? Having a roommate is awesome!

Other people in res are also awesome! Living in the same building as all of your friends is fantastic, especially if you're in the same faculty! Not only is there always someone in the lounge you're friends with, you have help close by when it comes to homework. In fact, we have homework parties most weekdays. Sound boring? It's not, particularly when you've got a big group who are all ridiculously easily distracted.

On that note, I should probably reflect on the actual schoolwork. Because as much as we'd like to ignore that bit and focus on the social, it is kinda relevant if we don't want to be December grads. And as easily distracted as I am, I do need to get it done. University classes are a lot more work than high school classes. There's a lot more that needs to be done on your own. And if you're like me (and you probably are) you're not terribly motivated. But hey! Less actual class time is good! So the extra work is an adjustment but can be managed. Although am I really one to talk? Because I should be working on an assignment right now, and here I am typing an article for mathNEWS. But if you know your abilities and capacity, and stick to your limits for how long you can afford to be distracted, it's easy to survive and even do well.

Oh God, exams are coming up. I think I'll be in denial for a little longer and talk about… Tea kettles! Tea kettles are kettles that make tea. Actually they boil water, but that's just a technicality… And tea kettles, um, they can… Okay, that's all I've got about tea kettles.

What other aspects of university merit reflecting? Oh, of course! I'm missing adventures! What would first year be without random adventures where we end up in random buildings? Everyone knows the best way to learn your way around campus is to wander around at obscure hours of the night! Have some free time? Go wander! Grab as many friends as you can and walk around campus, figuring out where buildings are and which buildings are open all night! Go climb a tree! Or, if you're feeling ambitious, try to pile as many people as you can on one couch in the MC comfy lounge. We managed 10, which was as many people as we had with us.

Overall, this has been a pretty amazing semester for me, and while there are some things that maybe weren't the best ideas to do/attempt, I don't think I'd trade any of it.

I'm sure there is much more I could talk about, but I've rambled on enough so I'm sure you, my dear reader, have heard enough from me.

And so ends the trip into my mind.

For anyone who's actually still reading this, here's a way to break calculus using daylight savings time. A little late, but I wanted to reward anyone who's read this far:
The limit of time as time approaches 2 is equal to 1.

Yours in randomness,
Shay Blair.

Almost Mathematics

Almost mathematics is a branch of pure mathematics concerned with the study of various classifications of almost numbers. The simplest of these are the almost integers which are formally defined as any number that is pretty close, more or less, to an integer. Of course, all integers are considered almost integers, as being infinitely close counts as being "pretty close" for our purposes.

Within the almost integers, we find almost even numbers which are numbers within 1 of being even; almost perfect numbers which are numbers within 1 of being perfect; and almost almost perfect numbers which are perfect within some deficiency of $1<x<n-1$. On occasion, almost perfect numbers can also be defined as almost deficient numbers.

Next we come to the almost reals which are numbers that seem like they maybe shouldn't exist, but actually do. Examples include 717738 and 1.1173. These numbers often look bizarre and inspire a sense of disconnection with physical reality. (They should not, however, be confused with weird numbers.)

An important subset of the almost real numbers are the almost imaginary numbers which are those almost reals that have been shown to be actually significant to aspects of real life. Well-known almost imaginaries are π and 79 (a happy, lucky, fortunate, and sexy prime held in high esteem by many almost number theory cults).

Finally, we come to the almost complex numbERS which are defined as any numbers that are almost a number. Depending on which semantic school one subscribes to, this set of almost numbers is either empty or infinite.

HZ

*prof*QUOTES

This is really cheating in a great way.

> Ragde, CS 145

Now we have semi-infinite numbers. That's cool in mathematics, but not so cool for the machine.

> Ragde, CS 145

Q: "I seem to have everything done for this question, but I still can't pass the public tests. What are the public tests actually looking for?"
A: "Purity of heart. And, failing that, a lower case 'z' instead of an upper case 'Z'."

> Ragde, CS 145

If anyone can't do that, cry now.

> Zorzitto, MATH 137

[Minutes after student storms out of room yelling "I don't get it!"] If you don't get it, why don't you just major in sociology or something?

> Zorzitto, MATH 137

We aren't expecting you to understand this. Am I insulting your intelligence… uh, yeah.

> Zorzitto, MATH 137

I feel sorry for the non-smokers… they don't know how they're going to die.

> Ennis, PSYCH 101

I mean, what good Canadian boy doesn't want to have sex with his mother?

> Ennis, PSYCH 101

You know them! They're your friends! Of course they're idiots.

> Smith, ECON 101

You know, Mr. Christie makes stupid cookies.

> Smith, ECON 101

That cop that pepper-sprayed that 84 year old woman must have a small penis.

> Lam, ECON 302

I like to talk to myself, at least you know you have an interested audience.

> Stephen Mann, CS 251

Q: (on circuits) "Do we lose marks if we described the circuits in words?"
A: You are assuming the TAs can read.

> Stephen Mann, CS 251

Anything can happen when you are bending paper clips.

> Santillan, SE 101

A constant is still a function, just a really wussy function.

> Anderson, MATH 137

I could ask my five year old, which I don't have, and he should be able to answer this.

> Anderson, MATH 137

If I offer you a cat or a dog, and you take the cat, obviously, then I can say you have a cat or a dog. Wait… is this even related?

> Anderson, MATH 137

What do we do as economists? We say "thank you Peter Diamond, here's your Nobel Prize, now go away".

> Curry, ECON 401

Way to lie #1 – add a constant.

> Curry, ECON 401

Let's leave the second way to lie until next class.

> Curry, ECON 401

When people are indifferent between two options, we assume they do whatever is most convenient for the theory.

> Curry, ECON 401

Academia is a dangerous profession.

> Curry, ECON 401

Did you guys learn the song for solving quadratic equations?

> Morris, AMATH 456

We tried a few others. "We" meaning the student I had do it.

> Morris, AMATH 456

Poking it with a stick wasn't included in the design.

> Morris, AMATH 456

How many times did we have to use Green's identity in this course? 40?

> Siegel, AMATH 453

As my professor used to say, "we cover our ignorance".

> Siegel, AMATH 453

Local Maximum

Thoughts on Two-Factor Authentication
with Google Authenticator and Time-Based One-Time Passwords

WARNING: Two-Factor Authentication isn't for everybody. Just as it helps keep bad people out of your account(s), it can be just as easily used to lock yourself out of your own account(s). You lose access to your account if your phone is stolen or wiped, your phone's battery dies, if the time on your phone is inaccurate, or if you accidentally delete your key from your phone.Make sure you know what you're doing and evaluate the risks and benefits before you consider enabling Google Authenticator, or any other form of two-factor authentication.

Today, many of us store lots of data in the cloud. Many of us archive years' worth of email in GMail, store hundreds (thousands?) on Facebook, and host our websites on self-managed Virtual Private Servers. (Okay, maybe not all of us do that last one, but enough of my classmates do that I think it's worth thinking about.) And it's not uncommon for all of this data to be protected by mere six to eight character alphanumeric passwords. While most of you are too smart to use a password that can be found in a dictionary, I wonder: How many of you use the same password across multiple sites on the Internet? How many of you store your WatIAM password in plaintext on your hard drive? Could you bear to lose all those precious emails to the actions of a malicious stranger? Could you bear to have one of your peers reject your dream co-op job on your behalf after swiping your password after "borrowing" your laptop? While Google Authenticator won't help with your JobMine woes, it can help you protect your email account from being compromised — because an attacker would need both your password and your phone in order to access your account remotely.

 Google Authenticator is comprised of two parts – software that runs on your smartphone to generate time-based one-time passwords (TOTPs), and software on the server side which should be capable of verifying those one-time passwords. The smartphone software is available for iOS (3.1.3+), Android (1.5+), and BlackBerry (4.5-6.0) devices. Enabling Google Authenticator is outside of the scope of this article, but if you perform a search with your favourite search engine, you'll likely find instructions on how to use it.

I've spent the past two weeks using Google Authenticator. It hasn't particularly been a walk in the park, but it's quite functional.

Initially setting up the application-specific password for my phone to use to sync with GMail took a bit of fiddling. I've had to be especially careful about making sure my phone's battery never dies (and making sure I always have my spare battery fully charged). Pulling my phone out and unlocking it in the middle of what used to be a five second email check is a bit cumbersome. After a while, though, the extra password step becomes routine when I'm using Google services on an untrusted (e.g. work) computer. I've also had to forego my usual experimenting with new Android ROMs because I need my phone to be stable if I want to be able to access… well, everything. Little inconveniences… but that's all security really is, these days.

That said, there's been some pretty nifty stuff too. The other day I also discovered that LastPass supports Google Authenticator as a second factor. Granted, it's a bit awkward to use LastPass with Google services (enter a password and a TOTP to access software that fills in a username and password so I can be asked for another TOTP… :/) so I've gone back to using a memorable password for Google, but I've now started using LastPass handle some of the other passwords in my life. As well, a few hours ago, I managed to get libpam_google_authenticator to work on one of my servers. Granted, dealing with time skew was an issue (the server takes the time from the Dom0, which isn't particularly in sync with internet time…) but apart from some hacks (answering yes an extra time during configuration) to deal with that, it works rather nicely.

To be honest, though, I'm not sure how much longer I'll keep using Google Authenticator. On the one hand, once I got past the initial set-up, things worked really well. On the other hand, I still have to deal with using the same password to access unofficial student records, enroll in classes, rank job offers, and check homework assignments online. Half of the banks I use still demand that online banking use an alphanumeric password that is exactly six, seven, or eight characters long. It seems somewhat silly by comparison to protect years-old email exchanges with two-factor auth when some supreme entity or other has declared such short alphanumeric passwords as sufficient for almost everything else in my life.

I do think it'd be absurd to try and force everyone to use two-factor auth. It depends on what trade-offs each user is willing to make. As it is, I'm forced to use a "stronger" password to log on to a computer in a CS lab (which easily happens every day) and a weaker password to enroll in classes (which happens maybe once a term) and a weaker password yet to tell my bank to pay my tuition for the term. Why? It should clearly be the other way around.

Still, for the paranoid among us… Google Authenticator is there. The source is available… or you can just use it. Or not. The decision is yours to make.

!able

Words in Rhyme
No longer a crime

There was a man who went to write an exam
Of tests, he was not really a fan
He wrote til the end
When he was told by a friend
That the entire course had been a sham

There once was a man from Nantucket
Who carried all he owned in a bucket
He tripped in the mill
All his things did he spill
He left all his stuff, thinking "Fuck it"

Last thing 'til spring
RedMetal

Due to technical difficulties, Rainbow Mathies will not be appearing in this issue.

*grid*WORD
Winter is Coming

Therefore, I am too sick to manage two sets of clues. Once again, you are stuck with cryptic clues. <maniacal laughter> Final gridWORD of the term, guys and gals. Answers are hidden somewhere in the issue (I don't know where). No submissions will be accepted, or really even noticed, frankly. Just solve it for the purpose of saying, "I solved a cryptic crossword." Good for you.

My final congratulation of the term goes to Ariel Weingarten who submitted an all-but-one-correct answer set to the straight clues. She says that the best method of escape from a rampaging elliptic curve is to simply "exist in 3-D". That would probably do it; walk all over that flat curve and walk to the MathSOC Office to claim the final prize of this term, Ariel.

This is it, for the <moment>

The Muppets Movie Review
It's the Muppet's Review, everybody!

Ever since I was a kid I loved Kermit the Frog. Now this may have had something to do with my mom's obsession with him and how she sang "The Rainbow Connection" to me when I was little, but as I have grown up I still love that awesomely green frog. This is why as soon as I saw the preview for the most recent muppet movie I knew that I HAD to go see it.

Of course since it is a Muppet movie there are tons of cameos throughout the entire film which lead to the entire theater gasping and laughing. I am glad to say that the film didn't rely on celebrities to make the movie enjoyable. Jason Segel shines as one of the writers and makes the story so sweet and adorable. Even after I had left the theater I was quoting lines and singing songs.

But time to moove on to my one complaint. There was an extreme lack of cow Muppet. They had the chickens and the penguins make appearances but they left out my favourite barnyard animal. Now I know may simply seem as a personal bias, but the cows just have so much to offer. Mainly being that they could have added an awesome bass in the chickens song. Also who doesn't love cows? The Muppet cows are always so feminine and classy.

Everyone who loves Jason Segel's works or the muppets should definitely go and see this movie thought. It's an awesome throw back to those awesome kid days of watching Sesame Street with muppet cameos and all those classic muppets movies like "Muppets Treasure Island".

I demand cows
CowED

Cryptic Clues
Flying

1. Open into broken existence
4. Stiff paper king is audibly bored
9. Sum up with a bit of brandy
10. Blowing up a timid noble until they're invincible
11. A walk-and-talk frying bowl?
12. Spiders in pieces and leaderless cults of insults
16. Letter held by the taxmen
17. Insiders burdened by the mix up
19. Apply a point
21. Regret having been decapitated by a grue
22. Half of the military activities are music?
23. I heard that the heart pumps god-blood
24. Objective situated on information
26. Provincial police perplexed papa?
27. Action rule, beaten right between the eyes
31. Disney made a movie about a burglar and his monkey?
32. One press of a button is the cue to row
33. Near an end

Falling

1. It's tossed, without the baby, wash and drink
2. Attendants and butterflies
3. Bow, cheering, for the jewel that wrote Sweet Caroline!
4. Scoundrel surrounded by decadence
5. Cloth fibre, like sheep, for example
6. Risk helps, without taking sides
7. White robe seen around real bishops?
8. Adjust clothes
13. Watch and listen to the step
14. Even earlier than from a while back?
15. Spread spud for the lazy guy
18. 9 and a play
20. Bewitch with a space of ascension
24. Hesitate and back down
25. Chip called Markus Persson nothing!
28. To you, it's holding a plaything
29. Pigeon rodent
30. Rest from the fib

*ultra*CLASSIFIEDS
Back from popular demand

Missing: Legendary sword to the kingdom. Last seen carried away by a woman in a pond. If found, please call Arthur promptly.

For Sale: One soul. Slightly tarnished after using a GOTO in a CS 246 assignment. Asking price: A passing mark in Stats.

Lost: Time. Last seen November 11th, 2011 escaping an execution after a dragon attack. Please supply proper common sense to orevent me from slaying more dragons and actually do my studying.

Horrorscopes

ActSci: You need a 70% average to continue into next term. In a state of panic (and a glitch in Quest), you enroll in a Psychology course last minute in hopes that it'll get your average up. You spend the night before the final exam reading through the book and taking extensive notes.
Your unlucky number is: 97% after only being enrolled for 5 days.

AHS: The next holiday season is coming up, but you're still full from all of the turkey you ate at Thanksgiving. You go on a strict diet regiment so that way you'll be able to consume all of this holiday's goodies. Your food storage capacity expands by 2L, and so does your waistline.
Your unlucky number is: 48 inch waistbands now becoming the norm.

AMATH: Time for the pre-exams party! You go to a kegger for the first time, and you're enthralled by the vat of beer. You try to model the rate of beer flowing out of the vat in relation to the level of drunkenness. All bets are off when you're offered a drink.
Your unlucky number is: 6 pints and still going…

ARCH: For your end of term project, you decide to rebuild the Tacoma Narrows bridge. You've studied the old plans, and realized that the problem was with the left support post. You specifically reinforce this so that way the bridge won't turn into another sine wave when the next earthquake comes.
Your unlucky number is: 9.5 magnitude earthquake says otherwise. Back to the drawing board.

ARTS: Although you don't have any finals, you have a metric sh*t-ton of papers to write before classes end on Monday. You lock yourself into your room, with a package of Red Bull and the glow of your monitor for company, and give strict orders for your roommate to only let you out when you're done. You then realize that you left your notes on campus.
Your unlucky number is: 3 all-nighters later and still nothing written.

C&O: You have come up with a counter-example to the four colour theorem, and definitively prove that some maps and graphs require at least five colours. You show this work to your prof, and hope that it'll exempt you from writing your MATH 239 final. It doesn't.
Your unlucky number is: 5 colours on a graph, but you still have to study for enumeration.

CS: It's the end of term, and you still can't get the Real-Time trains to run on time. You'd call up Mussolini, but he's long dead and buried, like the Italian economy. Time to sort out the train troubles on your own.
Your unlucky number is: 54 hours of sleepless fun in the lab before it's due.

Double Degree: Due to the poor communication between the two universities, you have two exams scheduled on the same day. Little do they know that you're also secretly enrolled at Hogwarts, and small trifles such as having two concurrent exams mean nothing to you. You whip out your time-turner.
Your unlucky number is: 120 minutes relived twice.

ENG: It's the last Friday of term, and you and your pals decide to get Dusted. You open up your textbooks and let the mess bathe you. Walking past the pub later that evening, you hear the moaning cries of a bartender as his establishment is drunk dry. So that's what Dusted is…
Your unlucky number is: 12 weeks of dust in your hair.

ENV: Finals season is coming up, and it's time to spruce up your knowledge. You plant a tree.
Your unlucky number is: 1 terrible pun.

Grad: You get to leave campus early in December, unlike the poor undergraduate sods who have to stay until the final day of exams. You enjoy your month off, but in the process forget all of the research that you have done this term.
Your unlucky number is: 4 months down the drain.

KI: You decide to be a rebel and go against the flow. To that end, you decide to find the derivative of knowledge instead of the integral. Discovering the internet, you waste all of your time on Reddit.
Your unlucky number is: t->∞ hours spent mindlessly browsing.

MathBus: You negotiate a hostile takeover of the FARM program and merge it into your own. You soon regret it when you're given the courses that they have to do, and try to sell them back. They refuse.
Your unlucky number is: 10% drop in average.

Math Phys: Looking through Einstein's notes for a Grand Unified Theory during your spare time, you see that he made an amateur's error in the beginning of his calculations and forgot to divide the universal gravitation constant by 2. Revitalized with a fresh sense of hope, you continue his pursuit.
Your unlucky number is: 36 years of your own derivations.

PMATH: Your course has ended, and you still don't have a clue what Ring Theory is about. You ask your TA for help, but she admits that she doesn't know either. You both go confront your prof, who under pressure cracks and says that he just recites the notes like a well-trained parrot. It's all a conspiracy.
Your unlucky number is: 80% if you keep quiet.

SCI: On a field trip with your geology class, you discover a crack in the Earth that seems to go down indefinitely. You rappel down the passage until you reach a giant mushroom. Leaping off and landing on the ground, you are greeted by the sight of dinosaurs. You are promptly eaten by a velociraptor.
Your unlucky number is: 65 million years underground.

Soft Eng: Beyond all attempts and logic, you might actually have a chance of making it through this term with your academic average slightly intact. Your sanity is another story, however. Beware the double turnstiles of doom!
Your lucky number is: 212 ways to keep sane until 2B.

STATS: This is your last Stats course that you'll ever have to take, so be strong! All that's left now is the final exam. Study hard, and soon all of this will be a bad and distant memory. Or you can join in on that AMATH kegger…
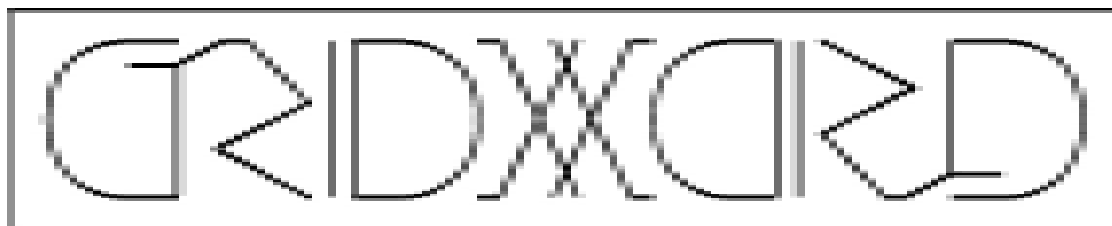Your unlucky number is: 43% on the final, but you're too drunk to notice.

Teaching Option: You discover a mouse in the office, and reflexively jump onto the desk and start shrieking while the passers-by laugh. You refuse to calm down until the mouse has been removed from the building. Good job living up to the stereotype!
Your unlucky number is: Acting like it's 1959.

Undeclared: You don't know what you want for the holidays, so you defer choosing for another 4 months. You regret this once everyone else gets presents.
Your unlucky number is: 122 more days until you can get your gift.

!ED

gridWORD

This week's grid

Last Week's Solution

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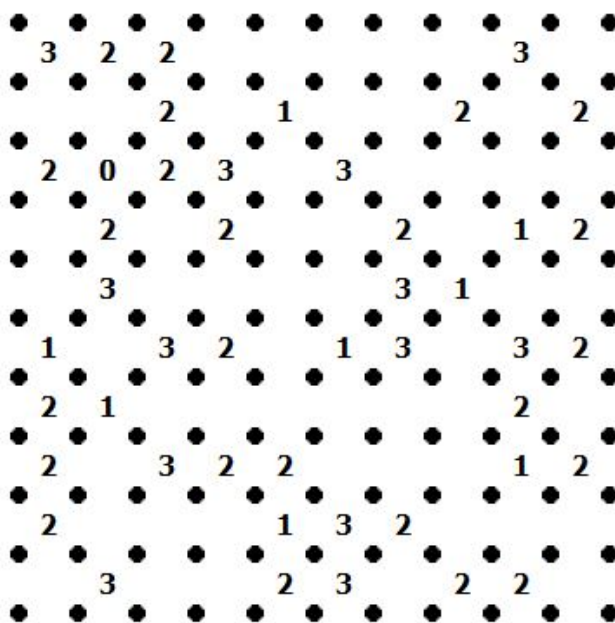1. F W S 20___
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