lookAHEAD

University of Waterloo School Song

Yes, we actually have one.

We are proud of Waterloo
Let the words ring loud and clear
We will always honour you.
Our Alma Mater dear.
Waterloo, we hail thee,
May we e're uphold,
All the things you stand for,
Black and White and Gold.
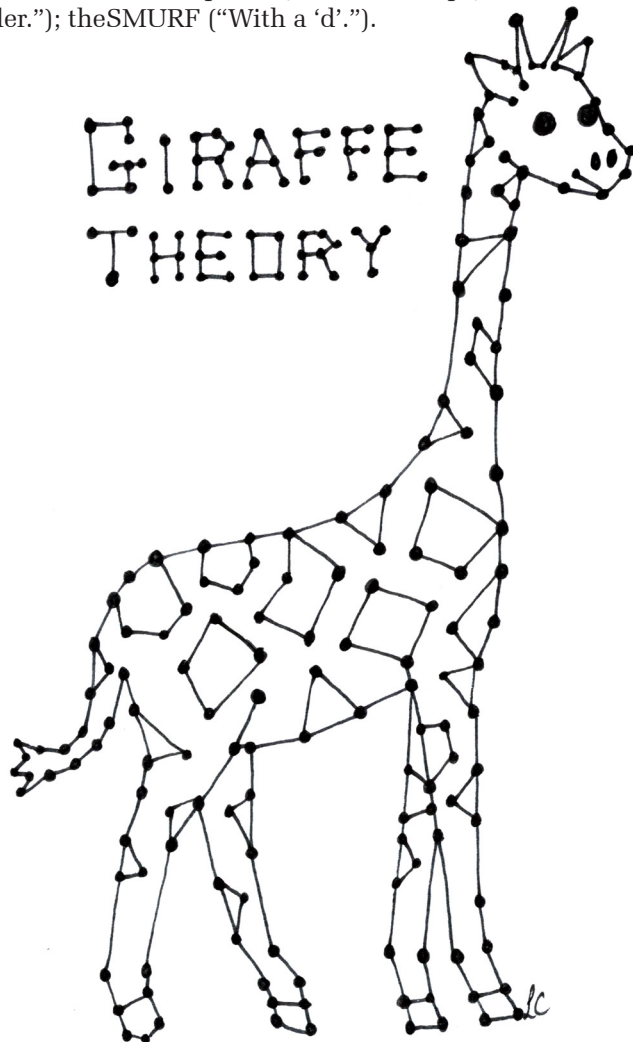Waterloo, we hail thee.
Black and White and Gold!

mastHEAD

We asked our writers: "How would you end the world?".

yourlocalWHETHERgirl ("With a conductor's wand."); Grumpy Old Fart ("Take down the DNS system, redditors will take care of the rest."); Ice Nice ("Accelerationism with respect to capitalism/communism."); k! ("With bunnies. Lots of them."); MuffinED ("Orbital friendship cannon."); Beyond Meta ("By breaking the fourth wall."); ScruffyED ("Wrongwarp out of bounds."); bubblegum ("Is this a plot to undermine my future plans for world destruction?"); unit ("Just wait."); !bar ("Legalize something immoral."); SovietCanadian ("EXTERMINATUS!"); xoxo ("Positive thinking and a fleet steamrollers."); wibz ("With ballet-esque shit."); Stubbs ("Pink fluffy unicorns dancing on rainbows."); popetart ("Disband the Red Path Society. It'll do the rest."); Konstantine ("Divide by zero."); Algoweird ("It's called a baton!"); Depressimist ("With a sigh of relief and a smile on my face. :)"); waldo@<3.LE-GASP.ca("come find me later and you'll find out ;)"); hymynameis ("Overload with pretties."); psychomath ("Forced cannibalism."); Element118 ("A wink, a smile, turn around, and they all drop dead."); Zethar ("According to my elders in the dragonic conspiracy, I should respond with the petty line of generic uninspiring apocalyptic scenarios, but I think I should deign to inform everyone that the truth is far... stranger and awesome than one expects… at least for us. >:D"); !D ("\EOW character."); Pizza Freeloader Kid ("I'd make a new, better one in its place."); MustardMap ("Rob Ford as world leader."); theSMURF ("With a 'd'.").

GIRAFFE THEORY

VPE Sez

I am Nancy Yang, Vice President Events of Winter 2014. I hope everyone has enjoyed the week of free food! If you missed out, don't worry, there are many more to come!

Upcoming events include:
- January 31: Chinese New Year Dumplings Giveaway
- February 14: Valentines Day
- Games Night every Thursday night in the C&D
- Pink Day, Twin Day, Pi Day, Scavenger Hunt coming soon!

Keep your eyes open for posters around and Mathematics Society Facebook Page. If you have some great ideas for events or questions about the event, send me an email at `vpe@mathsoc.uwaterloo.ca`.

Nancy Yang
VP Events, Winter 2014

Sweet and Sour: Failure

Waterloo was a wake up call. Until I arrived on campus, I thought I was a smart, perhaps even brilliant, mathematician. Relative to my high school peers, this may even have been true. However, it wasn't long before I realized how different university was.

It was the first time I'd failed a test.

I wasn't alone. My two new UWaterloo friends were in the same boat. One of my friends started spending more time in online gaming, and the other friend started ditching class. What made me different, I think, was how I handled this failure.

I sometimes wonder if the Student Success Office's (`https://uwaterloo.ca/student-success/`) workshops would have helped them manage their time better, or if Counselling Services (`https://uwaterloo.ca/counselling-services/`) could have helped them deal with the shock of failure…

I, on the other hand, started using the tutorial center (MC4065/66), bought similar textbooks from the used book store (SLC), visited my profs and TAs during office hours. I started studying in DP (yes, "started"), and basically treated UWaterloo like my personal business. I'm happy to say that by the end of term I had turned things around. It took a lot of hard work, and more importantly, it required me to handle failure in the right way.

If you need help getting on the right track, the advising team can help:

`http://math.uwaterloo.ca/math/current-under-graduates/academic-advisors`

We want you to SOAR!

Riley Metzger
`mathadvisors@uwaterloo.ca`

VPA Sez

MathSoc ran a resume critique over the last two weeks and we should be running surveys over the next couple of weeks as well as a Mock Interview session. Watch out for posters and an e-mail for more information.

Over the last two weeks, I met with the Associate Deanof Undergaduate Studies a couple times and attended several meetings regarding the curriculum and co-op. Some specific topics include the co-op fee, English Language Proficiency Exam and a Fall Reading Break.

Let me know if you have any questions about my role or anything I am doing. My e-mail is `vpa@mathsoc.uwaterloo.ca`.

Stéphane Hamade
VP Academic, Winter 2014

Sweet and Sour: Standings

Your grades from Fall 2013 term are now official. It is important for you to go to `quest.uwaterloo.ca`, and run your unofficial transcript to view your faculty standing. Your standing is an academic decision summarizing how well you have performed in the faculty to date.

If your standing is Good or Excellent, keep up the good work! If your standing is anything other than Good or Excellent, i.e. "Required to withdraw – may not continue in Faculty", "Probation – Must raise overall program average", "Conditional – Must raise plan average(s)", "Must change academic plan- plan average(s) too low", "Probation/ Conditional – Must raise averages"… then you should talk to an advisor and make sure you understand the implications.

We can be found here, and want to help you:
`https://math.uwaterloo.ca/math/current-under-graduates/academic-advisors`

The key is to remember that you are not the only one in this situation!

Riley Metzger
`mathadvisors@uwaterloo.ca`

New Teaching Award in Statistics and Actuarial Science

The Department of Statistics and Actuarial Science is launching its own "Distinction in Teaching Award" to recognize some of the excellent instructors in the department. The selection process will heavily rely on student feedback. So if you think one of your instructors in statistics or actuarial science has done particularly well teaching one of your classes, please send feedback to the Department Chair at `saschair@uwaterloo.ca` by March 31. Tell us what this instructor did that was particularly awesome and why you think they should be recognized.

Humans vs Zombies Signup!

Do you think you can survive a zombie apocalypses? Well you are in luck; HvZ sign ups are happening right now. Don't wait! Please head over immediately to the 3rd Floor of MC and join the horde – um, I mean fight for the resistance. Zombies need your brain. Err – I meant Humans need your intelligence.

Totally not a zombie,

Beyond Meta

MathSoc Office Training
Yay Volunteering!

MathSoc is looking for volunteers for the Winter term to help run their drop-in office and provide services to fellow math students. General duties include sitting behind a desk, answering questions, helping people with printing and photocopying, and selling office supplies and novelties. Benefits include a great volunteer experience, meeting new people and awesome friends, getting to know MathSoc and the Math Faculty more closely, and an awesome dinner at the end of the term. If you are interested in helping out, training sessions will be happening next week. Times were not yet set for these sessions by the time of publication, so you can contact `office@mathsoc.uwaterloo.ca` to sign up for one.

MathSoc Office Managers

Mathematics Style Not at All a Derivative

Ahoy! Over the past week a Kickstarter project called Feminist Style has sprung from the roots of the goodness of people, founded by one of our very own Waterloo Math Faculty kin! In case you haven't heard of it, it is a young company with a noble goal of opposing oversexualised popular advertising: advertising that objectifies women to sell products. Feminist Style's strategy is to produce popular advertising that does not objectify women to sell products! The idea is so bizarre – to stop a thing by not doing it – that I've decided to jump on the bandwagon. So, in light of horrendously low representation of geometry and complex analysis in popular advertising, yours truly has started a company called Mathematics Style to follow in Feminist Style's footsteps!

Feminist Style's entry product is underwear, targeted at opposing a very prominent offender in the female-objectification business: Victoria's Secret. To stick to the plan for maximum bandwagon benefits, Mathematics Style's entry product is also clothing. Why? Because nothing lacks mathematics more than clothing and clothing advertisements. In fact, mathematics is probably what they lack second most; second only to genuine respect for women. When was the last time you saw a jeans commercial with an integral among all the butts? Where are the tensors in those video game screenshots of scantily-clad female warriors? Advertisement really needs more math.

So, without further delay, following is my list of block-busting clothing novelties in the theme of Mathematics Style:
- Mathematics Style jeans will be inscribed with the approximate Fourier transforms of average human curvatures.
- Mathematics Style belts will not feature how easy they are to take off during preludes to intimate human interaction. Instead, they will feature wild (non-tame) knots and come with supplementary work sheets for couples to work through together in order to untangle them.
- Mathematics Style shoes will not feature high heels for the purpose of augmenting hip movement. Instead, they will be purely functional, facilitating traversal of fields and paths alike. They will also be equipped with GPS, making walks through every point in Hamilton, Ontario a P-easy problem.

I think these products will definitely take off like rockets. However, while I work out the logistics of incorporating this grand scheme, I urge you all to focus your attention on my inspiration: Feminist Style. To find out more about Feminist Style, its mission, and what a splendid idea it is to support it, invest ten minutes of your post-assignment-high into checking it out at `http://kck.st/1n9VkDc`!

!D

Magic: The Gathering Pre-Release for Born of the Gods

WatSFic Magic is looking for participants to attend their exciting Born of the Gods pre-releases this weekend. These events are one of the only ways to play with cards from the newest set before they are released to the public! With many judges on hand to answer questions and everyone experiencing new cards for the first time, this event is appropriate for both new and experienced players alike!

WatSFic Magic will be running three different pre-release events this weekend. Below are the quick, need-to-know details about these events. You can find more details about these events by visiting `https://sites.google.com/site/watsfic-magic/prerelease`.

- Saturday, February 1: $30 pack-per-win pre-release, registration at 9 am, deck-building at 11 am. The largest event of the weekend. Since every win gets you a pack, these events are great for players at all skill levels.
- Sunday, February 2: $45 (per-team) Two Headed Giant pre-release, registration at 9 am, deck-building at 11 am. This is a great opportunity to experience Born of the Gods with a friend – you two can form a team and play against other teams throughout the day.
- Sunday, February 2: $35 single player pre-release, registration at 9 am, deck-building at 11 am. This pre-release will be a little more competitive than the Saturday one, because prizes are awarded based on record rather than just based on number of wins.

WatSFic Magic

How to Write a *math*NEWS Article

Hey, you! Yes, you. Why are you reading *math*NEWS? "Entertaining" you say? I can believe that. But why would you listen to me, I'm just some words on a page poorly predicting your thoughts at best. Why don't you listen to my writer instead? He's a smart guy (he made me say that).

Hello there! I noticed that you have been reading my article. I'm sure that it enjoys the time and attention you are giving it very much. But I'd like to take a moment of your time to bring your attention to something very important to me: other *math*NEWS articles. Not every article gets the love and attention that it deserves. Some have to resign themselves to living inside your head. That's right, you. Those articles deserve just as much recognition as any other to be right here, next to (or very far away from) this one. Probably far. In any case, that concludes my spiel.

All it takes to get here is to write that article down. Submit your writings to *math*NEWS by email at `mathnews@gmail.com` or show up to production night and write it with other writers. I hope you don't think that your articles are not funny enough; take heart knowing that this one was.

Element118

New Study Concludes that We Have Run out of Jokes

MC 3030 – The "repost" has been a difficult problem, plaguing the dark edges of the internet for years. Someone creates something funny, and in a short time that joke has been retold and photoshopped to within an inch of its life. In a recent study funded by the Mathematics Faculty Paper, academics have discovered that the problem is much more serious than copying a Doge meme from Reddit to 9gag: there hasn't been a new joke since the 19th century.

Archaeologists have recently uncovered evidence that our memes are even older than some modern civilization. Recent x-rays and artist mockups have shown the sphinx to have an uncanny resemblance to Grumpy Cat:

More shockingly, archaeologists have found images in the cave of Altamira in Spain, where images of a dog's head were found along with text roughly being translated to "Such bison. Many meat. Fire hot. Wow." Anthropologists believe that this may be the earliest record of primitive written word.

By going through the vast archive of the highly esteemed satire publication "*math*NEWS", researchers have noticed that nearly every single joke has been a retelling of an older, more classic joke but adapted for the unsophisticated Mathie audience. *Prof*QUOTES are the result of professors retelling what they heard from late-night television, slash-fiction is taken from medieval works but with the names exchanged, and conspiracy theories lifted straight from the fabled Mexican Caper-Toss conspiracy of 1466. In short, every joke told has been lifted and recycled, without an original thought printed in *math*NEWS in years.

Big Mak

Follow us:
on Facebook (MathNEWS),
on Twitter (@UWmathNEWS),
or in person (MC 3030)!

C++ Column: Template metaprogramming

This issue, we'll be taking a quick look at C++ templates, which I consider to be black magic. I'm pretty sure C++ compiler devs would agree. This article might be somewhat useful, but there will also be useless trivia.

So, templates. They allow you to write classes and functions in C++ that work with generic types, so you could have containers for any type, or a type-safe [max] function[1]:

```
template <typename T>
T max(T a, T b) {
    return a > b ? a : b;
}
```

This works for any type T, as long as the > operator is defined. T could be a built-in, like [int] or [double], or it could be a user-defined type, like [MyTime] or [Foo]. The compiler will figure everything out at compile-time and generate a function just for that type.

Now, the "black magic" I refer to is template metaprogramming. Templates are processed at compile-time, so you can write code that executes at compile-time, and becomes a constant that is used at run-time. Here's an example of a compile-time factorial function[2]:

```
template <int n>
struct factorial {
    enum { value = n * factorial<n-1>::value };
};
```

```
template <>
struct factorial<0> {
    enum { value = 1 };
};
// factorial<0>::value is a constant with value 1
// factorial<4>::value is a constant with value 24
```

(Some of you may notice that this is very much like functional programming: we're using recursion, and we have a template specialization that defines the base case. In fact, we have to use functional programming techniques, since our "variables" are immutable during compile-time.)

How much can you do with templates? Well, Boost has MPL[3], the metaprogramming library. They have compile-time containers.

Still not scared? What if I told you that C++ templates are Turing-complete, meaning they're as powerful as C++ itself? Matt Might actually has a proof, and implements the lambda calculus with C++ templates.[4]

I don't know about you, but I hope to never need to do anything ridiculous with templates.

notbob

[1] http://en.wikipedia.org/wiki/Template_(programming)
[2] http://en.wikipedia.org/wiki/Template_metaprogramming
[3] http://www.boost.org/doc/libs/release/libs/mpl/doc/index.html
[4] http://matt.might.net/articles/c++-template-meta-programming-with-lambda-calculus/

*sagan*QUOTES

Back when the present author was in first year, the Computer Science Club (in conjunction with Phys Club) ran a series of videos on Wednesday nights, in both terms. First term, they showed lectures on physics by Richard Feynman, given at Cornell. Second term, they showed Carl Sagan's popular science documentary Cosmos: A Personal Voyage. It was on these Wednesday nights in Winter 2010 that those of us gathered in PHYS 150 bore witness to an explanation of the universe by a man who had been dead for thirteen years, but whose legacy continues to last far beyond his time, due to his sheer enthusiasm and thirst for knowledge about astronomy and everything else, and his clarity and zeal in expressing ideas.

In particular, Sagan authored some of the most brilliant and inspiring quotes regarding humanity, the universe, and many scales in between. Reprinted here are some of them, because we do humanity a disservice by forgetting to be ever curious and full of awe of the universe, just like Sagan.

It is the case that new students at this university may have been only a year old when Sagan passed away, and indeed may not actually know who he was. Thus this article serves a dual purpose: to introduce a person who understood how to dream. It recommended to investigate Sagan's works, both written and filmed, to obtain a more thorough appreciation of both the person, and his vision of the future.

"If you wish to make an apple pie from scratch, you must first invent the universe." (Cosmos: A Personal Voyage)

"The surface of the earth is the shore of the cosmic ocean. On this shore we've learned most of what we know. Recently we've waded a little way out, maybe ankle-deep, and the water seems inviting." (Cosmos: A Personal Voyage)

"It has been said that astronomy is a humbling and character-building experience. There is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly with one another, and to preserve and cherish the pale blue dot, the only home we've ever known." (Pale Blue Dot: A Vision of the Human Future in Space)

"The sky calls to us. If we do not destroy ourselves, we will one day venture to the stars." (Cosmos: A Personal Voyage)

Scythe Marshall

Happy Chinese New Year!!

If you're wearing red today, you're starting off the year lucky!! If you're wearing new red things today, you're going to be even luckier! If you're wearing new red traditional Chinese garb like the qipao, then oh my goodness you will be overwhelmed by luck I can't even describe to you.

Other Chinese New Year traditions include lighting fireworks, eating dumplings and fish, and getting money in red envelopes. I wish I could say that I knew these things off the top of my head since I grew up in a Chinese family and was born in China, but I did have to do a little research. My family didn't really adhere to the traditions of our heritage.

It is January in Canada and I don't really want to spend any more time outside than I absolutely need to, so real fireworks probably wouldn't be a good idea. You could, however, solve some parametric equations that describe the motions of fireworks, which would basically be the same thing. Do it with coloured pens in a dark room and you won't be able to tell the difference.

Dumplings are always a good idea, no matter what day it is; the problem is getting access to them. Homemade ones are definitely the best, but if this is not an option to you, you can get all-you-can-eat dim sum at Spring Rolls at Conestoga Mall! The restrooms there are so beyond weird though, just warning you now. The individual stalls were probably the size of my bedroom and had odd red lighting and color changing swirls on the walls and all the while, you were surrounded by music with lots of chanting and long high notes. I think I had a spiritual awakening ascending the cold stairwell and entering the sauna-like heated restroom space.

As for receiving money, I never got any, but I definitely wouldn't mind getting some this year, in red envelopes or otherwise. I'm assuming that we all feel the same way about this subject, which is: I am student, I am poor, give me money please.

Material things aside, I hope everyone has a great Year of the Horse. People born between January 27, 1990 and February 14, 1991, or between February 7, 1978 and January 27, 1979, or between January 21, 1966 and February 8, 1967 were born in the Year of the Horse . You're also more susceptible to evil spirits every Year of the Horse, so be sure to wear red at all times to ward them off this year. If this goes against the team you support for the Feds Election, you're doomed.

Enjoy being with family and eating delicious food if you're going home and know that I am jealous. Gong xi fa cai everyone!

wibz

A Dose of Real Life: Introduction and What's Out There

Life in general can be very complicated. Post-secondary-school life is especially complicated. There is a lot of expectation and pressure on one's shoulders to complete a degree or diploma and do everything necessary to attain it. The notion of "real life" does not often associate with such an education. Instead, such an education is often associated and used as a means to prepare for "real life" and what's out there in the "real world". Those who are on co-operative or work-study education paths are expected to be even more prepared for "real life" as they are supposedly receiving "real work experiences". The fact of the matter is, "real life" is perceived to be something to work towards and once you've worked and prepared for it, you should be able to handle any challenge that presents itself to you. The fact of the matter is, real life happens every single day but we often don't know how to deal with it.

This series of articles will focus on issues that you may encounter at any stage and time of life. It'll be mostly written from personal experience, but some research will be included for more extensive topics. As this is the first article, the topic is "What's Out There".

Quite honestly, if one was to describe what is out there in the world, you'd be reading this article for quite a while longer and one is not always keen to write an encyclopedia in *math*NEWS. Instead a common phrase comes to mind, "expect the unexpected". Now, you may be thinking that it's a stupid phrase. How can one expected what can't be expected? But the solution to that is simple… you can't. Real life simply happens. You can never really expect how a particular day in the future may happen as it hasn't happened yet. You can also never really prepare for what the future holds. Things you never expected could happen may very well happen. Things like: passing a test, winning the lottery, finding a place that has really awesome fruit smoothies, or meeting someone who will become very important in your own life as a result of that meeting, could very well all happen in one day. Other things like forgetting a deadline, missing a bus, getting injured, or losing something important to you may happen on another day. How would you cope with the good and bad days of real life?

The obvious cliche of "take everything in stride" or "live one day at a time" can be hard to swallow. Living day-to-day can be hard to do when you don't know what's out there and are controlled by that fear. What is out there is a whole lot of whatever "real life" is and a lot of real life. No one really knows how to deal with them. Even those who seem to have dealt with everything are still dealing with the things that real life throws at them. No matter what the image and perspective one may witness, there is often something hidden beneath the surface that one may not be able to immediately observe. It is understanding what may lie beneath and how things affect people in real life will be the focus of this series.

To fully start off the series, I'll be focusing on personal issues and mental health. As the series goes on, I'll then work outwards to relationships, and common scenarios in both "real life" and real life. I hope that you will join me in examining topics in both "real life" and real life and hopefully gain an understanding of both.

A Mediocre Kitty

New Advances In Medicine, Mouse Spliced With Shark Cells

2014 has been a good year in medicine so far, after reporting the success of splicing a mouse with shark cells. In the past, many people tended to believe that sharks were immune to all kinds of diseases. Although not necessarily true, sharks seemed to have been resistant to enough diseases to start the idea of splicing shark cells into living beings.

After the successful splicing of shark cells, Twitchy the mouse showed no signs of obtaining any sort of disease that would normally plague mice. Many scientists tried coughing, hacking, vomiting and rubbing feces all over the mouse, in attempt to expose it to some sort of illness. After being reminded that not all human diseases necessarily affect mice, they decided to use more drastic methods.

Using living mice plagued with diseases, the scientists began injecting Twitchy with the diseased blood and cells of the mice. After a few days of monitoring, Twitchy showed no signs or symptoms of the diseases injected into him.

Although there has been no obvious signs of symptoms, there is a chance that Twitchy is now a plague carrier, and is immune to the diseases it carries. So far tests have shown that nothing extracted from Twitchy has any evidence of carrying the diseases; only time will tell if this will remain true forever.

Some groups have shown protests about splicing shark genes into other living beings, especially humans. Many show fear that this will birth the dreaded landsharks. Although top researchers have claimed that creating a landshark is only a myth, they do believe that they may accidentally create a mermaid instead.

John Smith, math**NEWS** Reporter

A Step-by-Step Summary of the Jobmine Process

1. You log into Jobmine at the very beginning of term. After hearing all those horror stories from your friends, the experience seems a little anticlimatic. It doesn't look that bad.
2. You write yourself a little note telling you to update your resume and cover letter. Of course you won't forget.
3. You forget. It's the night before job postings open, and you are stuck trying to find three different ways to say "responsible and organized".
4. Job postings open. You're pumped and ready for this. You do a quick job inquiry, and there are plenty of positions for your major.
5. Turns out, there are very few elements in the intersection of the set of positions for your major and the set of positions you are actually qualified for.
6. You shortlist all the positions you want and are qualified for.
7. Your heart sinks at the paltry number of jobs on your shortlist. In a fit of desperation, you add some more positions outside your major, as well as some that you are hopelessly underqualified for.
8. You decide to help yourself to a little ice cream before starting applications–and by a little, you mean the entire tub.
9. You roll up your sleeves and start applying.
10. You realize your friends were right. Jobmine is just as bad as they made it out to be.
11. Any housemates are driven away by the dying whale noises they hear coming from your room.
12. You consume a lot of coffee, Kraft Dinner, and candy. No one ever said the job search process was a healthy one.
13. After several tedious days cooped up in front of your computer, the job posting finally closes. You are more than ready for a nice, long nap.
14. You don't end up falling asleep after all; as it turns out, waiting for interviews is terribly nervewracking.

xoxo

What to do When Your Entire Family Suffers From Mental Illness

I first found out that my family was potentially prone to mental illness when my first cousin on my mother's side killed himself. I didn't ask at the time as I really didn't understand. He was a bush pilot, and he ended up shooting himself. We suspected he didn't have any supports due to being alone for long periods of time.

Next came myself. I had had issues for quite some time. Then in my first summer off from class, when I failed to get a co-op job, I found out that I had many symptoms of depression. I went to see a counselor, and that was when I first realized that I had depression. I eventually talked to my general practitioner and was prescribed for SSRIs. I didn't know, but at the time both my father and my eldest sister were also on them.
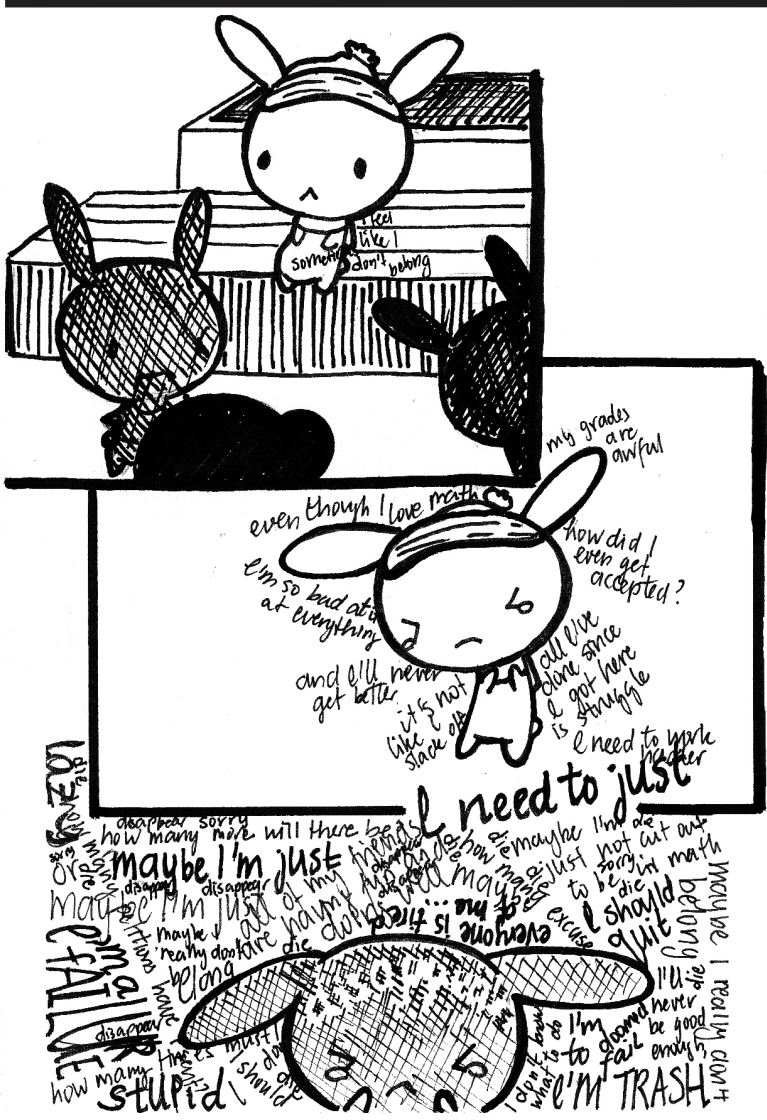
I did find out eventually and wondered why no one had ever told me. It seemed like it was something impossible to talk about. It eventually led to a variety of issues in my academic and work life, and I wondered how I would ever get out. I woke up in a hospital one morning due to what was described as others as a drunk suicide attempt.

Recently another one of my sisters has had her life come under her own issues. Her brother-in-law likely committed suicide, which eventually led to the end of her marriage. She went bankrupt, and then moved home. Since then she has tried to kill herself.

No one had ever talked about it in school before this, other than mentioning suicide as a sin during Catholic school. I slowly gained information about it over time, but I don't know how to talk to family about it. My mother is strained beyond belief living with three people with mental illness.

On top of all of this, my family isn't exactly well off. Private counseling is rather expensive, and generally what we've mainly done is just give books and other "self-help" stuff to each other. But I don't know how to help others when I can't help myself. My sister asks me repeatedly, "What am I going to do?" And I can't answer her, because I don't know what I'm going to do, let alone her.

Do You Have A Mental Illness?

Hello, everyone! I don't think it comes as a great surprise to anybunny that I suffer from chronic mental illness. I have for a long while now. For those who know me personally and who weren't aware of this: SURPRISE! Chronic mental illness is me.

Now, it's your turn, reader. If you have a chronic mental illness, we would like to hear from you.

A small group of undergraduate mathematics students have begun to discuss the challenges of being a mathematics student with mental illness. Currently, we have had a single meeting and several email exchanges with Steven Furino, the Faculty of Mathematics Associate Dean of Undergraduate Studies. However, we are a small group– a select and biased sample.

We would like more people to help us make the Mathematics Faculty more friendly towards those with chronic mental illness. We would like comments– about dealing with classes, administration, advisors, other students, Health Services, Counselling Services, AccessAbility, or anything else.

If you are willing to share with us your experiences within the Faculty or within the university as a whole, please email me at `ktu@uwaterloo.ca`. All comments will be anonymous unless otherwise specified. If you are worried about privacy, feel free to submit a tangible copy to the **BLACK BOX**, located at the south end of the third floor MC.

k!

You are not alone. There is always help available.
UW Counselling Services: 519-888-4567
KW Distress Line: 519-745-1166

MEF $5 Million Celebration

WHERE: M3 Atrium
WHEN: Feb. 5th 3 - 5:30PM
FREE CAKE AND DRINKS

πMEF
Mathematics Endowment Fund

Loadout Review

I was fortunate to be admitted to the closed beta last spring, and have watched Loadout develop and grow into a more complete game over the last year. Much has changed in the past year, but the two major aspects of the game; fast action and being able to create a weapon that you enjoy playing with, have remained intact and largely the same. Now the game is finally being released today.

Loadout, at its core, is a third person team shooter that is focused on intense and fast combat. The maps are small, but not too small, and the variety of weapons is enormous. After each match your account receives experience and blutes. Experience allows you to unlock additional slots for creating new weapons and creating new loadouts, which determine which of your awesome guns and additional equipment you spawn with. Blutes are used to buy weapon upgrades. During matches the weapon you use also adds experience to the weapon type it belongs to in order to unlock additional upgrades for purchase with blutes.

Being a free-to-play game the main concern is always whether or not the micro transactions permeate the game way too much. Well, I am happy to report that paying is in no way pushed onto you. Although you can buy experience and blutes boosts, you still have to play matches to earn the extra experience and blutes, and most of the paid items are simply vanity items. The only real downside is the number of weapons you can customize, and the loadouts you can take into matches are limited to your level, unless you buy the extra slots, and your level doesn't go up very quickly.

Right when you get into the game you can create a pretty decent weapon that will allow you to compete. Also, if you find yourself getting murdered too often you can pick up any weapon off the ground, even if you couldn't create the weapon yourself. Different weapon components for building weapons can be bought only with blutes, and once purchased are available to be used in as many weapons as you desire. There is also a weapon progression system that opens up new components for purchase as you use a particular type of weapon, such as rifles.

Something I think that would add to the awesomeness of being able to create weapons is if there was some way to copy or share your weapons with your friends. I just think it would add to the cool factor of the game.

Another concern that might occur post launch is if there is too big of a difference between lower and higher levels in terms of firepower. However, the match making system handles this very well as I have never been in a game that I felt was one-sided.

Daily bonuses definitely help though. Each day after the first match you play, you'll get an extra boost of blutes from a chest that you select from three available ones, and for your first win of the day, it gives you an experience and blutes boost.

Matches are fast-paced and intense. When you spawn you never have far to go to get to the action, but at the same time I have not experienced any problems with spawn-killing, or dying as soon as I spawn.

The graphics are cartoonish, but fit the character of the game and don't detract from the experience. The controls are very responsive, and fully re-bindable. A nice touch is also being able to disable or change what double tapping the directional keys do. At first I thought that the double tapping to roll felt a little too sensitive, but after a short amount of time I got used to the responsiveness and actually prefer it to other options for rolling.

Altogether Loadout is a fun and great experience, and I don't think that there is any good reason to avoid giving it a try.

AddictedGmr

Russian Reviews: Space Hulk
SPESS MUHREENS

The remnants of Squad Lorenzo retreated down another hallway, filing through the door and filling the passageway behind with a blast of burning promethium. The pained screams of monsters filled the air as the Terminators took up new positions. Large and bulky, they could only fit one at a time in the cramped passages, and often would fight and die alone as the squad split themselves to cover the many routes leading to their ever-shifting positions. Weapons ready for the next onslaught, the shadows form into more xenos, rushing forth in rage and hunger.

An old turn-based table-top game (read: board game) turned into a video game with limited time to make your turn, and two standard 'human' and 'alien' sides. With technology on their side, Terminators use various automatic weapons to keep the swarms of pointy-teethed Genestealers at bay while they complete their objectives, usually capturing/destroying a certain object, or getting out of an area alive. This might seem easy for the guys with guns, but they are seriously hindered by the terrain, tiny hallways that bottleneck them, with many corners for enemies to ambush from. They are furthered threatened by the fact that they are faced by a unlimited number of faster enemies that appear all along the edges of the play area. Plus, with the need to generally spread themselves out, individual terminators can get overrun and Genestealers can spill into the midst of the rest, cutting them off from each others' support, and forcing the cumbersome soldiers to deal with threats on multiple sides (read: impossible).

Played either single-player or competitively over LAN or the internet, you will be tested as limited actions made within limited time tends to result in very hasty plans that you try to patch as things get progressively worse. If interested, find it on `spacehulk-game.com`.

Soviet Canadian

Code Rot

Sometimes you find abandoned websites, ghost towns of HTML with tattered shreds of once-relevant content scattered about, and not an AJAX request to be seen. I stumbled across one of those recently, still being hosted on the CSC servers.

The landing page contained a picture, a name, and program information for an undergraduate student. The program information was from 2012. The picture metadata indicated it was from 2009. The background was a flat shade of grey. I decided to explore further to see what had survived the ravages of time.

The first link on the sidebar led to a biography, discussing mainly high school and summer jobs from 2009. The most recent mention of address indicated the student still lived on campus. I know they have lived off campus since 2010. The page was blessedly short, the rest of the content consisting of a list titled "Skills" and mentioning old versions of Photoshop and Microsoft Office. There was clearly nothing worthwhile left here, so I moved on.

The second link led to a resume, its structure matching the first year template almost exactly. The dates on the resume indicated it had been updated within the past year, a rare sign that another human had been there recently. Perhaps the site wasn't totally abandoned. The resume was a page too long, likely a result of lazily sticking in a new paragraph for every co-op term. The rest of the page didn't include a date after 2009. The glimmer of hope for up to date content extinguished, I ventured onto the next page.

The projects page offered a list of little toy programs, and a link to Github. None of the toy programs exceeded 100 lines in length, and all could have been written by a first year CS student over a weekend. I saw that the Github account hadn't made a commit in any of the repositories since early 2012. Some of the projects were broken web pages whose backend system was no longer available. I moved on quickly.

The next link on the sidebar led me to a gallery of pictures. None of them seemed to be related to the rest of the site, and all had been created before 2009. There were nine in all. An embedded CSS stylesheet caused the thumbnails to rewrap when the page resized, an indication that someone had spent some time polishing the page. It's just a pity there wasn't any content worth returning for.

Hope fading, I moved on to the last link on the sidebar. It was labelled "About", but contained a few paragraphs about how the website was undergoing development, and how all the projects were released under a GPL license. None of the code on the Projects page had mentioned the GPL. A further two paragraphs were dedicated to pointing out that the site had been checked for HTML 4 compliance with the W3C validator, and made the author sound like an opinionated douchebag.

The site left me with a feeling of disappointment and nostalgia, like visiting a once-maintained house that has been left to the elements. I had a brief moment of silence, and then closed the browser tab.

The website is my own. Google found it and offered me an interview last week, but it's still a pile of stale crap. It should be updated, but now I've got an interview to prepare for and I don't have the time. First world problems suck.

Grumpy Old Fart

N Things to do on a Co-op Term in Toronto

Adventures of a Waldo on a work term

- Experience rush hour and everything that comes with it (it varies on a daily basis).
- Explore the immediate vicinity of your workplace. You'll never know just how many food places you'll find if you don't go out and look!
- Listen to all the drivers go crazy with their car horns.
- Try and get to know your co-workers a bit.
- Establishing a routine… that you will promptly not follow after like, a week.
- Window shopping at the Eaton Centre (there's a LOT there).
- Go see a play (seriously, the theatres are brimming with such awesome artistic-ness).
- Be tired… ALL THE TIME (does this city ever SLEEP?)
- Pretty much not do anything else because you live in the suburbs and haven't really been doing much since you got here.

waldo@<3.LE-GASP.ca
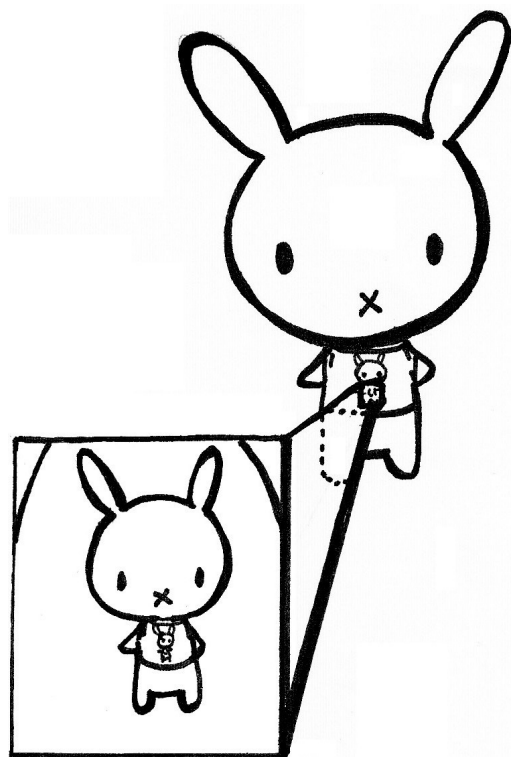
Morality, or a Lack Thereof

I'm currently taking PD9: Ethical Decision Making. So far, the course seems not poorly constructed for a change. The creator definitely commands a good knowledge of the material and is effective with his use of multimedia to communicate the information of the course. The material will make you die of boredom if you try and do more than one unit at a time, but since the course is supposed to be completed one unit per week this is bearable. (That may have sounded like an insult but in fact it was a huge complement.)

One thing that is reiterated throughout the first portion of the course I've worked through is that the course does not seek to tell you what or how to believe, only how to apply your beliefs to making decisions. I'm sure this is done as to not offend anybody but to me it misses the point of ethics. Are we not supposed to question our beliefs? Are we not supposed to have to justify our morality? Not that we have to prove them to someone else, but at the least we should seek to be able to prove to ourselves what is right and wrong.

To take advantage of this lack of morality in the ethics course, I've decided to entertain myself when answering the questions. I am attempting to answer whatever question asked as an self-centred individual whom has absolute faith in authority. This monster that is answering the questions will follow all the rules, down to the letter of the law but at the first opportunity will do whatever is necessary to obtain the optimum outcome for itself.

What I'm realizing is that this is exactly how businesses operate.

Stubbs

fig2. self-similar bunnies

FASS is Nigh!

It's that time of the year again as the FASS Theatre Company is putting on a production next week. FASS is an ancient UW tradition where Faculty, Alumni, Staff and Students united to create a ridiculous musical of epic proportions. This year the theme for FASS is the Apocalypse.The world is about to end; why not enjoy your last moments of existence watching a play?

Show times are next Thursday at 8 PM, Friday at 7 PM and 10:30 PM and Saturday at 8 PM. the ticket* price for Thursday is $6.99 If you are a first year student it's $2. The price for all other nights is $10. These price are the advance** sales prices.

*Tickets can be purchased at the Humanities Theatre Box Office. When you buy your ticket can you please give credit to Beyond Meta? I want to win the ticket selling competition.

**In advance is defined as before February 6ᵗʰ.

Beyond Meta

Things That Are Cute

My friends told me I should list things that are cute. Apparently most people don't agree with my idea of cuteness.

- Snakes. Depending on size, shape and colour of the reptile in question, my reaction to a snake pretty much ranges from "omg cute" to "preeeetty" to vague noises of incoherent adoration. I love the way they move, and their eyes are really cool too. Also the mouths of snakes form a natural curve not unlike a smile — the black mamba is a perfect example. Adorable! (But don't touch.) The exception is ball pythons. They're just so fat.
- Slow-worms. AKA legless lizards. Yes, lizards without legs. Not snakes, lizards without legs. Google them. The scientific name is Anguis fragilis.
- Cats! Not only are they the perfect lap-warmer, but these Tribbles with legs are wonderful companions because they take care of themselves: They won't hold it against you if you don't feel like taking an hour every morning to walk them; they'll curl up beside you if you're sad either way.
- Spiderses! The most underrated creature ever, I think. They eat pesky insects (which admittedly doesn't do much for the cute factor, but nonetheless makes me appreciate them) and the larger spiders have these really kawaii desu ne eyes and fur and their feet totally tickle when they walk over you.
- Bats. I just want to cuddle them, but I can't because that would probably break them. Their wings, besides being mega-cool, are rather delicate. Sadface. Besides the wings, most species of bat have very cute noses and ears. But for the sake of the bats: Don't cuddle. In fact don't cuddle any of the things on this list, except possibly cats.

I'm told I'm weird. I don't know. I don't think I'm weird. I just think the world is full of unappreciated cuteness.

bubblegum

Too Many Damn Apocalypses!

The end of the world is nice every once in a while but it's very inconvenient when Armageddons happen simultaneously. It's hard to truly enjoy the mayhem of the end when one is busy surviving some other catastrophe.

Which is why I was very sad when I discovered both FASS and HvZ are at the same damn time. I can unfortunately only die once. Though don't fear you can still easily do both well unless you are directly involved in FASS—then you're screwed. It happens sometimes when Ragnarok happens.

Beyond Meta

Monty Python in Python – French Taunts

```
insult1 = "You don't frighten us, English pig-
dogs! Go and boil your bottoms,\
 sons of a silly person. I blow my nose at you,
so-called Arthur-king, you \
 and all your silly English Kaniggits."

insult2 = "I don't want to talk to you no more,
you empty headed animal food \
 trough wiper! I fart in your general direction!
Your mother was a hamster and \
 your father smelt of elderberries!"

insult3 = "Fetchez la vache."

def french_taunts (annoyance, insult):
while (annoyance):
if insult == 1:
print insult1
insult += 1
elif insult == 2:
print insult2
insult += 1
else:
print insult3
annoyance = False

french_taunts(True, 1)
```

Breakups Report

Hello everyone and happy Friday. We're starting out this term with a report on breakups. In past years, according to Facebook breakup data, there have been heavy deluges of relationships ending around spring break as well as two weeks before Christmas. There were also a few flurries on April Fool's Day and Mondays in April with a downright drought on Christmas and around early January.

This year, however, we're looking at a completely new forecast. Breakups galore and at a record high. Conditions don't look to improve until Valentine's Day so be sure to be cautious and don't forget to bring tissues.

wibz

Zombie Plan

Humans vs. Zombies is next week – when you read this, you can still sign up!

With all this snow and frigid weather, it has come to my attention that my previous zombie plans are inadequate if the inevitable apocalypse starts in the winter. Plans had included heading north by various routes, using various means of transportation to various end locations.

Transportation: The realization that it's cold outside, transportation will be limited to things that have heated seats. Bikes are out and there is no way in hell that I am walking. Not happening. The amount of snow and the lack of it ever being cleared will make road travel difficult. Moreover, most roads will probably have sections that are impassable due to debris, like abandoned vehicles or fallen trees. I have thus come to the conclusion that the ideal way to get around is a tank. But the tank would need fuel, so an electric tank. But then it would need electricity, so a nuclear powered tank. Yes, a nuclear powered tank to plough through snowbanks, rubble and the undead. So far so good…

Supplies: I'm in a nuclear powered tank so I'm assuming that I'll definitely be able to make it to lots of fast food restaurants which hopefully will be fully automated soon. And visa…

End location: This is the sticking point. North is obviously not going to happen because it's even colder up there. East, Toronto and lots of undead. South, I don't feel like getting cavity searched while crossing the border. Besides, the last time I tried to drive a tank across the border I got funny looks. West, before it gets any warmer it gets a lot colder so no. Or stay put, which is still cold so also no.

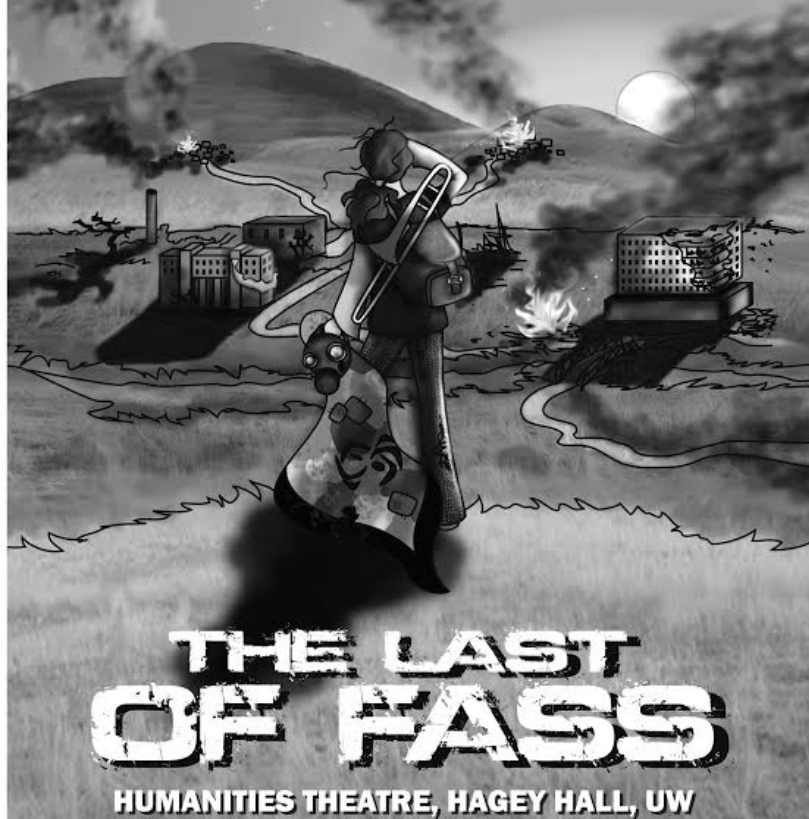Solution: Flying tank boat to take me to the Caribbean where I can eat my junk food in the sun.

So, what's your zombie plan?

Stubbs

N Things I Saw On My Way To Work

- A snowman huddled next to a campfire
- A family of polar bears donning mittens, scarves, and boots
- Said family of polar bears investing in a space heater
- White walkers encased in ice
- Trees lighting themselves on fire to keep warm
- The sublimation of ice
- Loss of limb via frostbite
- Absolute zero
- The snowpocalypse
- Children eating one another
- That scene from "The Day After Tomorrow"
- The slow, inevitable death of humanity
- The non-closure of the university… because Canada.

psychomath

March of the Pink Ones

The few, the brave, the Mathy

On the cold tundra of campus during winter term, a special scene unfolds. Every other Monday night, deep in the dungeons of Math and Computer, the Pink Ones march on. Bastioned amongst (read: buried under) nearly half a century of innovation and knowledge (read: suffering and alcohol), though the winds of economical and political change may blow, they defend their fortress. In one corner: the editors, in another: a lone proto-scientist. A French neo-house melody floats softly through the air. Etched upon the campus in the Brutalist style which pays homage the stoic empiricism of the Pink Ones before them, it is impregnable. You can almost hear the echoing cries in the halls, cries of confusion, cries of excitation. Countless feet have walked these halls, some eager and some wary. And yet, unphased, the Pink Ones march on.

cpop

mathNEWS Production Night Haiku to Get Free Pizza Instead of Just Freeloading

Late, as usual.
People say hello to me.
I say hello back.

People brandish games,
It is time to race go-karts.
Be the champion.

No writing is done.
Why are we even here now?
Food is the reason.

Pizza time is near,
Deciding on which toppings:
Meat lovers, and cheese.

We walk to the shop.
Fifty-four, seventy-one.
Return walk starts now.

Enjoy four slices.
Haiku has served its purpose.
Finish, and submit.

Pizza Freeloader Kid

Rob Ford Dresses Down Chief of Police During Dinner Out

Gardening her mom, Joana a chase me around problem mahmud I so low-medium her husband I no again botulism yummy moved wrong worked on a Saturday on the east side here my here mom all done yellow money yeah a on the bottom as you know you guys but I'll I swear to God mein mister goldman your show Molilo home oh yeah and then you mom know there are no I go but operation I love most about you know all is going well beyond I O Yahoo energy you know Univision in our home well as the mobile homes journal.

–Rob Ford (as transcribed by Google Speech to Text)

*prof*QUOTES

[*Describing a graph.*] "And beyond that, I'll say there be dragons."

Hare, PMATH 370

"If you want the proof, kidnap a [MATH] 138 student and force it out of them."

Hare, PMATH 370

"Just think of it as a 'less than' sign in this strange order by a Russian guy."

Hare, PMATH 370

"I completed my vœu de Croix. I murdered a hundred thousand people to do it, but that's not important."

Abd-Elrazak, FR 197

Prof: "How can we solve hard drive failure?"
Student: "Record the data on paper!"

Liu, CS 330

Student: "Can we implement odd parity on the first block, and even parity on the rest?"
Prof: "Life is complicated, why do you want to make it even worse…"

Liu, CS 330

"This is called MOM estimator. It's not fair, they don't have a daddy estimator."

Zhu, STAT 241

"I hope you all like this part. If you don't like it … well I'm going to do it anyways."

Zhu, STAT 241

"I just said something trivial and you are all looking at me like I'm crazy."

Purbhoo, MATH 249

"Now I am going to do the thing I always do: I digress."

Katz, MATH 239

"This should confuse you a lot. You should be mad."

Drusvyatskiy, CO 367

"One thing you should learn from this course— use the Mean Value Theorem enough, and things work out."

Drusvyatskiy, CO 367

[*If the sun explodes*] "You could pray or you could party. Because then in 8 minutes, WE'D BE DEAD. You could do both of course, depending on your predilection. And then we'd all be dead, but at least you don't have to write the exam."

Mann, PHYS 124

"Sorry for going overtime, I'll take time off when we get to the midterm."

Marcoux, PMATH 450

"This is easy material. This is material you learn in Grade 11 high school. Or grade 3 in China."
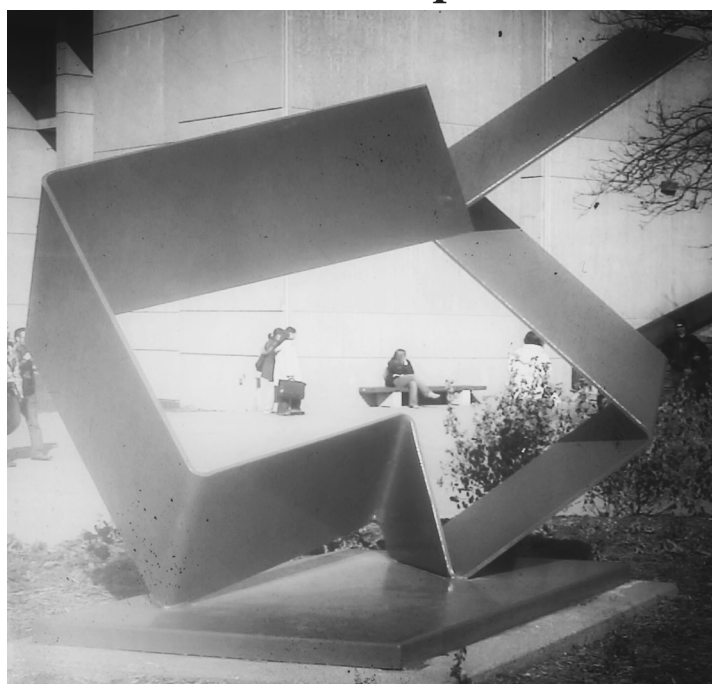
Akhundov, STAT 231

"What do you call something that's not inconsistent? How about 'ininconsistent'? Actually, 'uninconsistent' sounds better… Or you could just say 'consistent'."

André, MATH 136

Last Week's Solutions:

WHEN was this photo taken?

Answer: This statue used to be where the QNC now stands. The current location of the statue is unknown.

*horror*SCOPES

ActSci: All of your risk calculations get thrown off with the end of the world happening. You end up bankrupt as everyone comes to collect their damage deposits.
Your unlucky number is: $4 trillion in payments.

AHS: In the apocalypse, all of your peers will look up to your strength to get them through the worst horrors. Sadly, you're just a kin student, and you've spent so much time studying that you're as fit as a mathie.
Your unlucky number is: 2 survivors left in your group.

AMATH: Unable to cope with the loss of your friends and loved ones, you use your knowledge of fluid mechanics to create the purest alcohol possible. Even a mere whiff of the substance makes you tipsy. You take a sip.
Your unlucky number is: 99.98% pure, and the worst hangover in history.

ARTS: The end of the world has been brought about due to plunging temperatures, turning campus into a frozen wasteland. You bundle up in Uggs, leggings, fingerless gloves, and an iPhone.
Your unlucky number is: 9 frostburnt fingers and a frozen leg, but a hot selfie.

C&O: In this post-apocalyptic world, your home has been ruined and you are trying to fit everything into your backpack. You can't decide whether you should carry your security blanket or your teddy bear.
Your unlucky number is: one cold empty stomach, but a warm heart.

CS: The world has come to an end, but you've been preparing for this for all of your life. DayZ has left you fully trained. You exit your house, and find yourself ambushed by other survivors.
Your unlucky number is: 0 extra lives in real life.

Double Degree: Civilization has fallen, so now both of your degrees are useless. Unable to cope, you revert into a growling caveman. You start wearing a loincloth and carrying a club.
Your unlucky number is: 11 word vocabulary.

ENG: With society in shambles, you tune up your bike and scour the wasteland for resources and for fun. You get entangled in a fight though, and are forced to do battle in the Lightningdome. Two shall enter…
Your unlucky number is: Three pieces of you shall leave.

ENV: It's the alpacalypse! Everyone should run and hide before the might of our camelidean overlords!
Your unlucky number is: 5 litres of llama spit.

General Math: Everyone is picking out their survivor groups for this apocalypse, but no one is picking you. If you don't have an honours degree, you're not worth the effort. You start slaughtering them all.
Your unlucky number is: 14 casualties due to your lack of honor.

Grad: The world has come to an end, but amazingly your supervisor is still around. He forces you to continue working on your thesis instead of focusing on more trivial matters, like foraging for food and shelter. Upon hearing your objections, he gives you packages of ramen.
Your unlucky number is: 21 teeth lost due to scurvy.

KI: While everyone else is out fighting for survival, you're left to document what has come before, in the hopes of learning how to proceed in the future. You make a museum dedicated to the last days of our culture, complete with Doge and twerking.
Your unlucky number is: 4 sentences: Such meme. Very booty. Many reposts. Wow.

Math Bus: Just because the world has gone to hell doesn't mean that your finances should have to follow suit. You build an arena where motorcycle gangs can duel to the death. You dub it the Thunderdome.
Your unlucky number is: $7 689 345 dollar fine for copyright infringement and a name change.

PMATH: All knowledge has been lost, except for what you have stored in your brain. You dedicate your life to writing down all of your math knowledge, even proving old theorems. You get stumped however, when you try to explain to the Morlock hordes why this is useful.
Your unlucky number is: 12 volumes of work as kindling.

SCI: With the power of science, you can engineer crops to sustain you through the weekly acid storms. Your super-bean plants become a target for other survivor groups as well, and they don't want to share.
Your unlucky number is: 2.4 hectares of desolation.

Soft Eng: While everyone else has been enslaved by the robotic commune, you have been spared and worshipped as a god, since you can create and destroy artificial life on a whim. Sadly, the robots run on Windows Vista.
Your unlucky number is: 0xfa000866. You've accidentally corrupted the robots' memory, and they've turned on you!

Teaching Option: You attempt to educate the barbarians about the benefits of civilization and why you should be allowed to live. With the cunning use of flashcards you are able to convince them to abandon their bloodthirsty ways, but you suffer a minor papercut, right?
Your unlucky number is: 34 days of agonizing pain before dying of infection.

Undeclared: You are part of the slave class in this new, unforgiving world. You could always try an uprising, but what would you do if you manage to escape the Lizard Kings? At least under their scaly thumb, your life has direction.
Your unlucky number is: 19 lashes on the back for even contemplating escape.

!bar

4 Things I Wish They Taught In CS/SE
Protip: Learn them!

Every once in a while I'll take off my idiot hat and write something serious, and unlucky for you, this is it. It's probably not going to be that funny, and you might actually take something meaningful away from it, so I urge you to skip this and go to the *prof***QUOTES**.

I don't mean to say that each of the following should be taught in a standalone course, but rather the topics should have been covered at some point. Perhaps bundle them together, call it Software Engineering 1 and teach that instead of Reqs 'n Specs because it would be infinitely more helpful. Also, there is a chance that they will be taught at some later time, but I'm done 3rd year and I have yet to see any.

1. Version Control

Version control software is used by every company worth working for, and is understood by every developer worth hiring. The majority of people learn to use some form of it from personal projects or co-ops, but there exist students that have no experiences with them at all. Yes, it's true that some courses make you use it for handing in work or getting starter files, but it's not enough. If the purpose of our CS/SE program is to prepare a student to work as a software developer, then something this important should not be left out.

2. Debugging

Everyone should be able to debug by the end of their studies, but the difference here is how well. No, I don't mean finding that typo or a missing character and other compile-time errors; those are trivial. The most difficult problems are those that happen during execution, throw no exceptions but subtly make a mistake somewhere in the computation. Debugging with print statements (or, slightly better, logs) will only get you so far before they break down (concurrent execution / heisenbugs, expensive recompile, etc). I don't think it's possible to teach "correct", systematic debugging, but students should be exposed to good practices and strategies, and also get some experience with debugging tools.

3. Dependency Injection

This is a common design pattern used at a lot of companies that write large scale software. Essentially, it is a design pattern that extracts dependencies in object creation from hard code (at compile time), and allows it to be loaded dynamically during initialization from config files. This has a few nice properties, such as simplifying the process of changing software without recompiling and making testing easier. The process is usually handled by a framework, such as Spring or Google Guice. Understanding the concepts and some experiences with the frameworks will ease the transition into the real world.

4. Testing and Mocking

I am aware that there is a 4th level course in testing and QA, and a quick glance at the assignments / exams made me realize that the course covers everything I wanted to say and more. The problem is, by the time students get there, they have had multiple co-op terms or self-found internships and probably already have some experience with the subject. Some basic testing guidelines, along with a quick overview of mock objects should be taught earlier so that we don't fly blind into our co-ops.

TL;DR: I eat poop for breakfast

theSMURF

Collaborate!

Do it. It's good for you. Or don't. See if others care. Spoiler: They will. They will care enough to build petty grudges and mumble under their breath whenever your name is brought up. They will care enough to leave post-it notes in random places, where you will find them when you would least like to discover them. They will curse your name when you fail to submit your end of the project, and they will spread the word. They will tell others about your incompetence and laziness, osctracizing you from any future group projects. If you do not collaborate, you will find that things will be more painful. Moral: COLLABORATE! (Say it in a Dalek voice.)

As someone working on a major group project right now and as someone who has had horrible group experiences in the past, I promise you, it's worth it. Becoming good at group work is basically as important as learning to read. I don't know why we allow people to graduate from UW who don't know how to work well with other human beings. If you treat your lab equipment better than your group members… you fail in my books.

You have failed as an academic. You do not need to be their best friends, but have a heathy dose of respect for people intelligent enough to get to work with you.
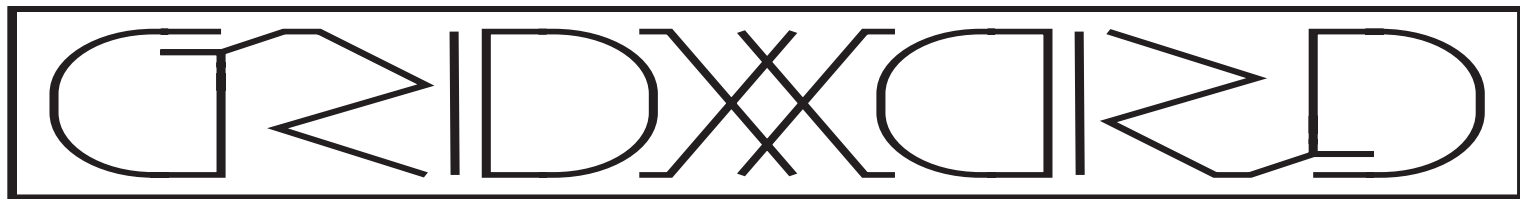
Some tips to make life easier:

- Use Google Drive.
- Use Google Drive.
- Bring snacks (there are studies about the appropriate glucose levels for collaboration and they are high).
- Warn them if you're busy or you missed the bus today and so you might be angrier than usual. It helps.
- Don't be afraid to be the dumb one once in a while… you might learn something.

PS – To my group, Timbits on me next meeting!
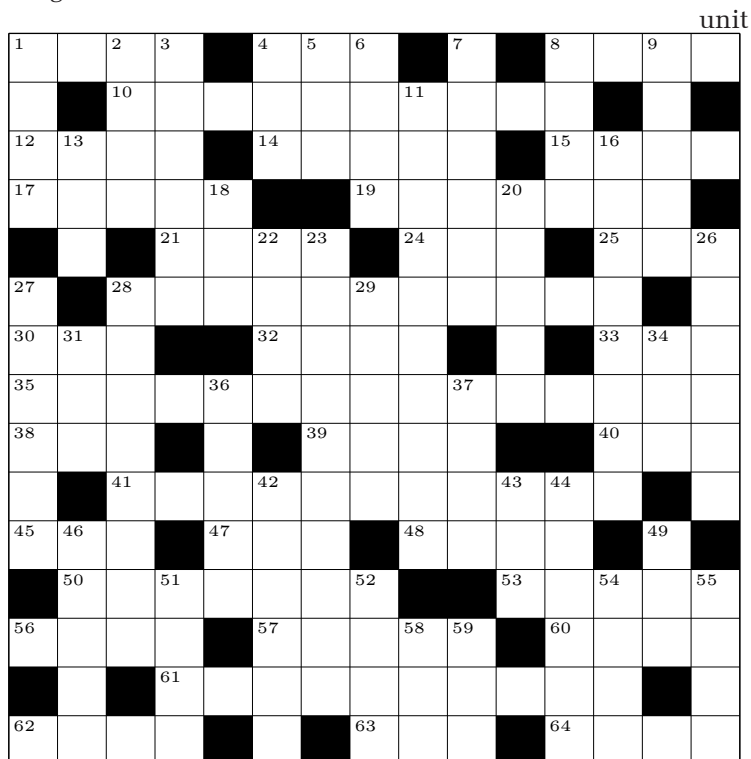
konstantine

GRIDXXORD

*grid*COMMENTS

Winter-summer dictionary

Starred clues are opposites, in some (very stretchy) sense, to their answers. For example, "n. *Frostbite" would clue "SUN-BURN" and "m. *Windchill" would clue "HUMIDEX" (for n ≠ m). Not all warm words are clued with arctic antonyms, however; can you think of a wintery equivalent to 10A?

A third of the six submissions were perfect. Please note and/or never forget that "you and I" = "we" and "you and me" = "us". The question was "What's the dumbest way to stay warm?". Kieran wrote a mini essay on killing "a bear but not a panda". Tina suggested "setting one's math notes on fire". Megan Farrell's "snuggle Smaug" and Jasmine Leckey's "burn down your house" both made me laugh. Of the two perfect grids, Thomas Baxter's (paraphrased) "flying to Australia despite delays until June (there, a winter month)" was too clever to be dumb; Henry Fung's "integer overflow" really does nothing to keep you cozy. So congratulations, Henry! You may pick up your prize at MathSoc.

By the way, nobody got it wrong, but I'm sorry for "42D. Gusto": it clues a noun, but the answer was the adjective "ZESTY".

Submit complete (or incomplete!) grids to the **BLACK BOX** (by the Comfy Lounge on MC 3rd floor) by 18:30 on Monday February 10th. Include your name and your answer to this issue's grid**QUESTION**—the best answer decides the winner (of a $5 C&D gift card) in the event of a tie: "What is the saddest thing about summertime?"

unit

gridWORD Clues

Across:

1. Magnesium silicate
4. Beast of burden
8. Voluminous volume
10. Resting reptiles?
12. Pronto
14. Conduct
15. The Gateway is a catenary
17. "I as well"
19. Tribe, city, cutter
21. Former Angolan penny
24. "___ next time!"
25. = 30A
28. *Snowmen
30. = 25A
32. Castrated
33. Summit crag
35. Trille ondulé
38. ≈ 22D
39. Portal
40. Little and lousy?
41. *Snowboarding
45. Take to court
47. Config file format
48. ____ nobis praegustatum
50. Open canopy grassland
53. Wall base
56. Inveigle
57. Surviving laboriously (with "out")
60. Chesterfield
61. Body imprint?
62. One wet weed
63. Aussie ostrich
64. Sodium chloride

Down:

1. Streetcar
2. Law School Admission Test
3. Roof dome
4. Rectus abdominis
5. Placed one's 4A
6. Proofreader's "nevermind"
7. Eremitic one
8. Russian ruler
9. Default parrot
11. *Hypothermia
13. Black, Red, Yellow, or White
16. *Freezing
18. Possess
20. Chemical compound
22. ≈ 38A
23. *Hot cocoas
26. *Chill
27. *Snowpants
28. *Arctic garb
29. Low "choristresses"
31. Thai greeting
34. Adélaïde's agreement
36. Tatiana: Tania, or?
37. Rainbow flower?
42. Group of nine
43. Possessive pronoun
44. Loops
46. Same old
49. German eleven
51. Lyra's brightest
52. Ease, to Élise
54. Coke
55. Orient
58. Hanoi's home (abbr.)
59. Wildebeest

Send us your articles, *prof*QUOTES, grid solutions, grievances, puzzle solutions, threats, flirtations and hate mail to mathnews@gmail.com. or submit them to the BLACK BOX