*look*AHEAD

PSA: JobMine Openings

Posting 1 opens tomorrow at 7AM and closes on Tuesday at midnight. Also JobMine closes every night at midnight because it's dumb.

Posting 2 opens next Friday at 7AM and closes Monday at midnight. Still closes at midnight. That's still dumb.

Good luck and happy job hunting!

Diminutive Rex

Amy Li (Vanilla), Elizabeth Liu (Red Bean), Katherine Tu (Green Tea), Jose-Miguel Velasco (Anthrax)

*mast*HEAD

With the Canadian election over and the American election on its way we understand that Canadians can be feeling left out. As we all know elections are jolly good fun.

If possible Canada should not be trumped by the United States and start a new election campaign for a new prime minister.

Speaking of trump, we actually decided to dedicate our question to Donald Trump of America.

We asked our writers, "What does Donald Trump mean when he says he'll make America great again?"

gingerbrED ("Have America covered in cheese"); ei ("You know that feel when you get in bed and take off your socks? That feel all the time"); foodcat (akaTubbs) ("He will make America into Frosted Flakes!"); ShayBlair ("Return it to its glorious roots: British"); s,t∈{2K,K∈Z}, 144 ("Annex the moon. Now the greatest nation is also the greatest nation by area!"); cowabunga ("Transform the populace into eagles"); a ("He plans on giving America the greatest WWE match ever when he and John Cena face off in the ring for the fate of the nation."); Dank ("make there be six USACO contests instead of four"); Hadrön ("Restarting the cold war to give manufacturing and the economy a boost"); Soviet Canadian ("he will redefine what 'great' means to match the current situation"); IceNine ("He has the bravery to bring back slavery."); Zethar ("He shall downgrade the US's rating from 'excellent'."); Theodore Bear ("To save America from the evil that is Ted Cruz."); HatofChocolate ("He actually meant to say 'Make my hair a crêpe again'"); Diminutive Rex ("He plans to put up four walls and a roof to put a roof over the head of every American."); Beyond Meta ("This assumes what Trump says means something"); waldo@<3.LE-GASP.ca ("He'll return to firing everyone and making somewhat terrible yet extravagant business decisions"); Pockets ("He is helping us make better friends"); Pizza Freeloader Kid ("I think he just REALLY misses the '50s. And the Space Race."); Depressimist ("A Fascist military REGIME that ends up killing us all."); Floorman ("Discount Big Macs for all!"); me ("America will win so much. So much take you will be bored of winning. America will win on trade again. Win on the immegration. Win against China. Win against Japan. The wall will be built and the mexicol will pay for it. will bomb the shit out of ISIS take out their family and keep the oil. he will make great deal with Iran, the American dream is dead, Trump will make is greater, better, safer and more beautify than every before. Male America great again."); Scythe Marshall("Pretend everything that happened after 2008 didn't exist");

SketchED ("Rename to American Nation of United States").

Article of the Issue

The Article of the Issue is Theoredore Bear's *N Things to do on your co-op term*! You win a gift card to Conestoga Mall. However, since your *n Things* was a pain in the rear to format, you have to wait to pick it up.

The Editors

VPO Sez

Hey doodle doodle,

Welcome back to classes, fellow mathies! It's been a busy start of term at MathSoc, and here are some quick summaries to fill you in:

- **WELCOME WEEK!** was this week, and there will be free food today (Friday) at 2 PM. In case you missed it, there was free food on Tuesday, a Novelties Sale on Wednesday, and a Clubs Day on Thursday.
- **BY-ELECTIONS!** are happening, and nominations opened on Monday and continue until Wednesday, January 20th. You can apply to be President, VPA, or student representative on council. There are still a lot of student rep seats available for everything except first-year reps and computer science, so please consider applying! Voting happens the 28th and 29th.
- **VOLUNTEER!** applications closed on Wednesday, and volunteers are being selected as you read. We may still have some positions available after this first round, so stay tuned.
- **CANDY!** should have been ordered by the time you read this, and perhaps has already been stocked!
- **OTHER RESTOCKS!** like Casio calculators and novelties, unfortunately, will have to wait until the…
- **BUDGET MEETING!!** It will be on January 20, and after this date, hopefully we will be able to move things along.
- **LOCKERS!** were completely booked within three hours of the opening of the booking system. Yikes! If you need any help opening your locker, drop by the MathSoc office, MC 3038, or email yours truly at `vpo@mathsoc.uwaterloo.ca`. Remember that no food is allowed in your lockers.

Thanks for reading!

Katherine Tu
Vice President, Operations

Teaching Awards

Hi mathies!

Do you know a superior teacher or teaching assistant? Here's your chance to nominate him or her for either the Distinguished Teacher Award (DTA) and/or the Amit and Meena Chakma Awards for Exceptional Teaching by a Student (AETS)!

Nominations for the DTA are due on Friday, February 5th, 2016
For further information, visit: `https://uwaterloo.ca/centre-for-teaching-excellence/awards/dta`

Nominations for the AETS are due on Friday, February 12, 2016
For further information, visit: `https://uwaterloo.ca/centre-for-teaching-excellence/chakma`

Maggie Bradley
Center for Teaching Excellence

CSC Sez

Hi, CSC denizens! It's a new term, and if you're reading this while it's hot, wet, and still slightly deformed from coming off the presses (ie. it's Friday the 15th), then CSC had their elections yesterday! Here are the results:

- **President:** ltrotsky
- **Vice-President:** Dante Hawth the Poet
- **Secretary:** d2trump (nobody else applied for secretary, except for this guy who applied to everything)
- **Treasurer:** r2mugabe (he came highly recommended)

And for non-elected positions:

- **Sysadmin:** the MC bat colony (they can get into the machine room any time they want, I'm told)
- **Librarian:** an orangutan
- **Office manager:** the orangutan's favorite sentient book (practically lives there)

Unfortunately, during the course of the meeting, the CRO mistakenly identified our librarian as a monkey. If anyone would like to be the new CRO or could find us a mop, please come to our office!

This promises to be an exciting term. If you would like to come by the office and see what kind of office a sentient book keeps, we're on MC 3rd floor next to MathSoc and the C&D!

Calum T. Dalek
Sentient Book Extraordinaire

((self-appointed) (pseudo-) interim) Games Sez

Games Nights are running again! For those unfamiliar with our Games Nights, we meet once a week in the Math C&D at 18:30 and go until the last person with a keys leaves, which is often well past midnight. There's no obligation to stay for the entire period; feel free to drop in and leave whenever you want. This term, it is likely we will be meeting on Thursdays, but that may be subject to change.

I also plan on doing some newbie games this term, where by "newbie game" I mean "game where the players have not played that particular game before". Some titles for consideration include: Arkham Horror, Battlestar Galactica, Dead of Winter, Mansions of Madness, Space Alert, Terra Mystica, and Twilight Struggle. Check the Facebook group (`https://www.facebook.com/groups/MathSocGamesNight/`) or the MathSoc Office (MC 3038) for more details.

Your (former) Games Director,
a crafty player

*math***NEWS** Sez: "Write More Sezzes"

Why You Should Vote "No" on the Academic Boycott of Israel Feds Referendum

Let me begin by stating that if you universally and/or support Israel in the Israeli-Palestinian conflict, this article is not intended for you. You are someone who will likely vote "No" no matter what in the upcoming referendum, which is calling for UWaterloo to support an academic boycott of Israel, with a specific listing of schools to not work with and suggesting all researched funded by Israel should not be used. This article is meant to convince those either on the fence or those planning on voting "Yes" that this is a incorrect decision.

First however, we need some background. ETHICAL COLLAB UW, as they are called on their website, posted this as the question that they petitioned to put to a referendum: Do you think the University of Waterloo should sever ties with the following institutions due to their complicity in violations of the human rights of Palestinians: University of Haifa, Hebrew University of Jerusalem, Technion – Israel Institute of Technology, Tel Aviv University, and the Weizmann Institute of Science?

There is a lot to unpack here; first the implication here is that this is an academic boycott of these schools in particular. Looking at the list, and comparing to a list of universities in Israel, this is the majority of schools. We could simply say that this is a list of the top rated Israeli universities. Why would people wish to impose this? The goal of such a boycott is to pressure what the proponents see as an apartheid government which oppresses and kills Palestinians, violating international human rights, and in particular, suggest that these institutes are complicit in such oppression.

There are examples of the research and/or work that they each institute has done on ETHICAL COLLAB's Research page, which sounds damning, but some are questionable, like the development of bulldozers. Caterpillar bulldozers are used everywhere, not just for destroying Palestinian homes.

My first argument concerns the idea of academic boycotts themselves. The effectiveness of the South African academic boycott was dwarfed by the economic sanctions placed upon them by the international community, and the ethical nature of a universal boycott was discussed by opponents of apartheid at the universities within South Africa itself. Plus. if anyone really wanted to work with SA academics they could easily do so through third party intermediaries.

Secondly, the UWaterloo administration will reject any such suggestion of boycott. They have formal relationships that cement international reputation, and to end them makes us look like a school that will not work with other ones. Most of the academic boycotts of South Africa were led by professors themselves, not students.

Third, as much as they say they are intending to do this for any country violating human rights, there is another school that could be on the list: namely, our research agreement with King Saud University. The House of Saud literally murdered someone for simply voicing opposition to them, and have a terrible human rights record towards women and foreigners and non-Sunnis. Atheists by the state of existing are labelled as terrorists, and freedom of speech does not exist. Why Israel first? We also have relations with South Korea, who have large amounts of totalitarian laws, and many, many Chinese research agreements. Who determines what is harsh enough for something to worth a boycott? Turkey is attacking Kurdish communities. The Americans still have Guantanamo and likely practice extraordinary rendition. Egypt still likely tortures people. Why Israel to start? Why not just boycott all academic institutions everywhere?! There is nowhere that is pure enough for such a thing.

Please vote "No". It looks terrible on us with regards to support for academic freedom and is inconsistent and ineffective.

Harrison Gross
BMath 2015

Hug Competitions

Have you ever felt a need to show your overflowing affections for your friends? Wanted to prove once and for all that you are a superior friend?

Well, you are in luck, for here at *math*NEWS we have discovered a proven and true method to show the full extent of your friendships: Hug Competitions.

Hug Competitions are to Friendship like Handshakes are to Manliness. How a hug competition works is both people try to give the most tightly embracing hug.

You can start hug competitions with anyone: your close friends, with random strangers who might someday become your close friends, or your arch-nemesis.

General tips for hug competitions:

• Try not to break people
• Don't be shy
• Enjoy
• There is no way to lose a hug competition as either way you end up with an awesome hug.

Beyond Meta

Hey clubs! Want your Sez in *math*NEWS? Submit them to us!

usaCOW is Love
usaCOW contest this weekend!

Did you do the Facebook HackerCup qualification round and want more? Did you forget to do it and want to make up for that? Did you not care about the HackerCup and are rolling your eyes at this uninspired introduction to my article?

Do you also love cows as much as algorithms? Then I have an announcement for you. The USACO[-1] is inviting you to a really cool[i] algorithmic coding competition!

There are currently four USACO contests a year, one every month from December to April. There used to be six a year, but right now, the USACO organizers are too busy for that. But when Trump gets elected, he will make America great again, which (I hope) includes getting the number of contests up to six!

The January contest starts on Friday the 15th and ends on Monday the 18th. During that time, you can start your own personal 4-hour-window, during which you can look at the problems, marvel about all the beautiful bovine references, write some programs, submit them, and hopefully get ALL the points.[0]

The competition is divided into four divisions: bronze, silver, gold, and, as the contest organizers were recently forced encouraged to add by the precious metals Illuminati, platinum. If you do well, you are promoted to the next division for the next contest. If you do *really* well, you get insta-promoted during the contest, so you can quit your 4-hour-window and start a new one. Note that if you are in bronze (as everybody starts in) and you start the contest on Sunday, this may totally fuck up your schedule.[1]

By the way, everything I just said may have been a lie. This is because as I am writing this, the USACO team hasn't released any information about this contest yet, so YOU have to look everything up on the USACO website, which is `usaco.org`.

If you're reading this on a Tuesday, you have missed the contest. Fortunately, there's still things you can do! Firstly, you can wait until the results show up on usaco.org, and then congratulate all of your friends[2]! Secondly, there's still a collection of training problems at `usaco.org/index.php?page=training`, which offers you "hundreds of hours" worth of pure fun! The problems range through all of computer science, from cryptcowgraphy to cowmbinatorics.[3]

Good luck, and may the cows be with you.

Dank

[-1] USA Computing Olympiad. This is the organization that selects the USA team for the International Olympiad in Informatics, similar to the CCC in Canada. They like cows because cows are just really awesome.
[i] I realize that the coolness of a programming competition might be subjective, but the problems are definitely wayyy more interesting than, say, ACM ICPC contests.
[0] The supported languages are C, C++[0.5], Java, Pascal, and Python.
[0.5] And C++11!
[1] At least the contest isn't in the middle of the exam season, as the December one was. Nonetheless, if you are writing an exam this weekend for some reason, try to avoid starting your 4-hour-window less than 4 hours before the exam in question.
[2] Who all have undoubtedly participated.
[3] Also, by some breathtaking HTML craftsmanship[420], the training pages not only have a cow in their logo, but also have cows watermarked into their page background!
[420] That is only beaten by McKinnon's fan page.

N Numbers Expressed As Dozens

- 6 = half dozen
- 7 = lucky dozen
- 8 = infinite dozen
- 10 = metric dozen
- 11 = unscrupulous baker's dozen
- 12 = imperial dozen
- 13 = baker's dozen
- 16 = lawyer's dozen
- 20 = serious dozen
- 24 = MacDozen. Supersized!
- 144 =maximum overdozen
- 1728 = Higgs' dozen (hypothesized)

Now dozin', dazed and dazzled by design of a dozen dizzyin' dozens…

cowabunga

N Things I Look Forward to About Coming to Waterloo Campus
Especially since Waldo is on co-op near it!

- Starbucks' Cake Pops (finally I have one of the best reasons to use all my remaining meal plan from first year!~)
- Seeing my friends who are on a school term at the moment, or who just live on campus (admittedly I miss living on campus right now)
- Being involved in all the extracurricular things I want to because I HAVE TIME!!! (THANK-YOU CO-OP!)
- All the special events that come around each term, because there's ALWAYS something going on…like the new FASS Theatre show!

waldo@<3.LE-GASP.ca

Hey readers! Want your *N Things* in *math*NEWS? Submit them to us!

Tales from the Real World: Software Testing

Hello oh wonderful *math**NEWS**ians! It is I, your most favouritest ex-ED coming back from the realm of The Employed. I am here to impart some age-old wisdom from my four months as an employed person. You hear that?! FOUR MONTHS, not a TERM. Whew, I'm getting the hang of this being out of school stuff. But the sensual *math**NEWS** is ever-alluring, especially when I'm on campus on Monday nights for FASS rehearsals in the MC and there's free pizza to be had.

To be honest, I feel like a hypocrite writing this article. When I was in school, I gave myself the unofficial title of Worst at Ze Codes Evar. Programming assignments always took me so, so long. I'd forget an edge case, or make a slight mistake that would cause the automated tests to fail, and debugging was always a nightmare. Now that I actually write code for a living, I'm painfully aware of how teh dumbs I was while I was learning. So here are a few of the things I've learned about testing your code that can maybe help your assignments be a little less painful?

Disclaimer: I am not a super-duper software-y person. My degree's in CM and the language I used most often in school was MATLAB. I code a lot in Python now, but I'm pretty sure these concepts are applicable to many different languages.

Test Plan

Developing a test plan isn't difficult and doesn't have to take a long time, but it will ensure that your code is robust and can handle whatever tests Marmoset (or whatever the devil it is that you students use these days) can throw at you. A good test plan should cover a variety of situations, including, but not limited to:

– When your shit is working: Is everything going according to plan? Is everything working just because you tested the number 1 and you have an if `blah==1` case, or will it with the full range of input that a function is designed to accept?

– When your shit is not working: What is your code supposed to do when something goes wrong? Does it crap out and die? Does it throw an error?

– Edge cases: This is when shit may or may not hit the fan. While you're working on your code, write down or remember all the edge cases that come to mind. Be sure to test for these, or that beautiful, beautiful code is just sitting there. Lonely. Untouched. Waiting for… ahem. Moving on.

Unit Tests

A unit test is an automated test that evaluates a single "unit" of work in a system. Most of the time, this unit ends up being a single function, and again, most of the time, a unit test involves feeding a function input (valid or invalid) in isolation and seeing how it behaves. You can use them to test the output of a function, that errors are being triggered appropriately, etc. These tests may not be useful for the programming assignments where you're writing only a couple functions or a small piece of code. In this case, it's probably faster to manually test each of your components. However, if you have a larger project, and especially for those courses that have assignments that build on each other (I'm looking at you Trains), you might want to consider unit tests. Writing a few early on will ensure that the code you write is still working as expected later when you try to do more complex things. I'm really one familiar with unit tests in Python, but I assume if you are coding in blah and you type "blah unit test" into a search engine, you'll get something useful out of it.

Docstrings

You (as well as every coworker/TA/partner for group work you will ever have) will love you for making sure these get written. A docstring is sort of like a comment, but instead of describing a specific line or so of code, it is used to describe a section of code like a function or a class. These are especially useful for functions. Consider this code:

```
def blah(a, b, c):
    return a + b + c
```

In certain languages like Python, where a, b and c can be pretty much anything, describing the input and output is extremely useful, especially when you go to call this function later on.

The Code Monkey formerly known as GingerbrED

N Reasons Why Winter is Great

Things for reminding yourself that winter term is great when you're walking to school in -30°C …. before windchill.

- Reading week is the longest in-term break
- Impromptu snowball fights (willing or otherwise)
- Building snowmen/snowforts/quincees
- It's considered socially acceptable to stay inside all day
- Traveling down hills at high speeds
- Dogsledding
- You can cuddle with your significant other (read: computer) for hours
- Snow days!
- Cat-napping in front of a fire
- Being allowed to grow a beard and look like a mountain man in public
- Hot drinks after being outside
- Doing totally rad parkour dives into snowbanks
- Less geese!
- Clear nights for stargazing
- No longer having to listen to people saying "Winter is Coming"
- Watching the Maple Leafs get decimated for yet another season
- Steam Winter Sale

Hadrön

How to Win Friends and Influence People

Have you ever struggled with convincing other people to follow your commands? Do you find that, no matter how logical your arguments or reasonable your requests are they just will not follow your orders? Well here's the solution[1]!

This guide will give you several foolproof[1] methods to win people over, or your money back![2] Are you ready? Let's go!

The first step is to acquire a target[3]. These people can be strangers, acquaintances, family, or friends. Make sure you have a goal in mind[3]. Insert yourself into the physical area of your targets. Ensure they will be able to hear everything you say, and ideally you should be able to touch them. Try not to injure them during this process.[1]

There are a few tactics you can use to accomplish your goal of influencing them[4],[5].

One is through carefully chosen phrasing.[2] Use the weapon of words to twist the truth and obfuscate your true purpose. This works best with friends, or anyone you know well enough to use knowledge and wits against them.[6]

Another way is to act like this is the most important thing in the world. Don't give them a chance to question what you're telling them. Phrases such as "there's no time, we have to do this now!", "come with me if you want to live!", and "Don't ask any questions, we don't have time!" work well.

My personal favourite is to give them instructions[4] and then yell "For science!" This will excuse/explain anything you have said or done, because it makes everything okay.[2] But remember! It's only science if you write it down, so after everything is done make sure you write it all down so it was science.[5]

Yours in manipulation,
Shay Blair.

[1] Mostly
[2] Blatant lies
[3] Or several
[4] Or simply perform an experiment/action on them without saying anything
[5] And get away with it
[6] Stalking is usually enough

Scheduling Still Sucks

Many of you may have noticed something about the scheduling of classes for this term: it is still terrible.

Problem: Classes are not laid out in a sane way that would allow for the maximum amount of students to get the classes they need. How did this happen?

It didn't used to be this way. To have a scheduling conflict before, two classes had to be in the same EXACT slot (unless you were taking labs in which case God help you). This was wonderful because having a conflict was less frequent than it is now, and often you would share the conflict with others…. which would mean that the registrar would actually MOVE a class. Example, I had Vector Calculus and Electromagnetism scheduled for the same time and so did everyone else, so E&M was moved so more than 8 people would take the class.

It used to be that classes were either:

- MWF for an hour starting on the half-hour.
- TTh for an hour and a half starting regularly from 8:30am onwards.
- Three hour night classes all the days of the week.
- Labs at all the times all the days.

A while ago a survey went out asking students what they hated about their schedules. The results were predictable:

- We hated classes on Mondays
- We hated classes on Fridays
- We hated morning classes
- We hated night classes
- We hated having big breaks
- We hated having no breaks

So the University took this survey under advisement and has continued to schedule all the classes late morning/early afternoon on TWTh. What could possible go wrong? -_- Now when we look at our schedules we have truly bizarre artefacts of the system. "You can't take that class because it conflicts with another for 20 minutes on Tuesday!" -_-

We don't really need breaks. We don't really need sleep. I don't really need long weekends. We need to be enrolled in the classes we need to graduate. The most frustrating thing that could happen to any of us is getting to the end of your degree and you graduate because of scheduling quirks between required classes.

The administration could show they care and fix this.

Stubbs

Hey klubs! Want your Kommandant Sez in *математическая*NEWS**? Then submit today! Or we come vacation tomorrow.**

How to be a Functional Human: Cleaning Up Gallium Spills

In the event that you find yourself having accidentally spilled gallium all over your kitchen, here are some helpful Dos & Don'ts for removing this pesky metallic element.

DO NOT:
- attempt to rub the gallium off with paper towels, or your hands, as this will instead spread a fine layer of silvery gallium dust all over your hands and the kitchen counter. If you find yourself in such a situation, you may want to frantically google search "is gallium toxic" and find out how bad it would be if you accidentally ate some.
- be surprised if you suddenly realise you have gallium all over your dishwasher, counter, floor, clothing, hair, and face when you thought you only dropped a little bit on the floor. Gallium finds a way. This is normal.
- get entranced by the shininess of gallium and try to purposely pour some on your phone case, pet rock, or other such entities. This will not work out as you planned. Your phone case will never be the same, and your pet rock will be mildly traumatized.
- have high expectations for advice when you google search "clean a kitchen gallium spill". All I managed to find was a reddit thread on spilling gallium on carpet. Apparently vacuums do not provide much aid in cleaning gallium off carpet.

DO:
- use a hairdryer to warm the gallium up to its melting point. The gallium will then form tiny beads which you can then skillfully nudge or blow into one larger bead and attempt to maneuver into your gallium container. The percent yield of this method is about 80%. I do not know what happens to the other 20%. For peace of mind, you may want to assume the other 20% was lost to The Void.
- use soap and warm water to get the gallium off your hands.
- snapchat your adventure with gallium. After all, what is life without short-lived documentation?

This concludes today's segment of "how to be a functional human". Today's segment was sponsored by FOOLISHNESS. Foolishness: live life stupidly, especially in other people's kitchens~!

ET

Good Ways to End an Argument

Most of us probably know at least one person who really likes to argue. If so, you are probably aware of how difficult it is to exit such a situation once you have foolishly allowed it to develop. The demon you once thought of as your friend will not permit you to leave, nor allow you a single moment of respite, until you have submitted your complete and utter defeat and bowed to their superior intellectual might.

For those of us who do not enjoy leaving every other conversation with such a person feeling the sting of defeat, I have thought up some alternative solutions. Employ these carefully, for with great power comes great responsibility (and a lot more time in your day):

- Find a good question and repeatedly ask this question to counter their every response. A favourite of mine is "why?", but others may work as well. "What?" tends to be a little too obtuse, as these people are usually too skeptical to believe you've suddenly gone deaf.
- Similar to the above, give them a sentence they can't refute. Like "fire!". Or "bear". If you can produce the literal item, this works even better than invoking its name.
- Right when the argument is about to get heated, say you agree with them and smile. If done convincingly, this will utterly confuse them. Best when followed by a short pause and a complete non sequitur, like "So I hear beetles are very high in protein".
- Employ the age-old tactic of shouting loudly and waving your hands. If it works on wild animals, it should work on people.
- Offer them a <name of alcoholic beverage they enjoy>. This should mellow them out for a few moments, during which you can deftly change the subject to something uncontroversial. If they are a heavyweight you might need to carry a few of these on you at all times.
- If all else fails, ~~hire~~ politely ask some ~~hitmen~~ friendly gentlemen to ~~cripple~~ detain your erstwhile best buddy while you make a quick getaway.

DISCLAIMER: These are by no means guaranteed to work. I reserve no responsibility for any ruined friendships or broken hearts/bones that may result from following this advice. If such events do occur, you are welcome to submit them to me for my own amusement.

cowabunga

A Sinister Discrimination

In our society, there is this group that is being discriminated against in a pervasive and systemic manner. This exclusion goes by unchecked, appearing in classrooms, language, and even common household objects.

Occasionally, some effort is given to try and accommodate this minority. The way this is handled is entirely gauche, forcing this group to the sideline. As a member of this minority, I often go by my life with a general sense of malaise that the world is simply not made for me.

There have been considerable improvement in the way this group is treated. We have stopped trying to make people conform. We no longer consider these people to be the devil. We still have a lot of room for improvement.

The way left-handed people are treated - it just isn't right.

Beyond Meta

Things I Learned From Reading *math***NEWS** v129i6

I've been away too long. Or… not long enough?

So, as all things do, the University of Waterloo has changed since I graduated… almost three years ago. Right. Makes sense. That said, I still have friends there, write for *math***NEWS**, and hear a bit about what happens there. Here are some things that I learned from reading the last issue of *math***NEWS** in the Fall 2015 term, which may or may not actually have anything to do with the university, etc.

1. There are fan pages for David McKinnon and Stephen New. What? I mean, I guess I shouldn't be surprised; they are fantastic instructors and even better people. Perhaps I shouldn't be surprised for the following additional reason: we in the Pure Math (, Applied Math, Combinatorics and Optimization) Club once figured we needed to change the desktop background for the office computer. What image should we choose? Well, let's just search "pure math" in Google Images. Nothing. Wait, there's a better idea! Let's turn Safe Search off. What did we find? A 1500-by-2100 pixel resolution portrait photo of Brian Forrest, as found on his personal webpage. We're pretty sure he walked past our office while that photo was tiled across the screen. Anyway, I guess I was just mildly amused that these sorts of things haven't changed too much.
2. Hard puzzles are hard. :(Not that I ever solved a *grid*-**WORD**, though…
3. l don't count (anymore?). I call bullshit on that, though, for the following two very good reasons: I do some enumeration, and 1,2,3,4,5,6,7…
4. Some people involved with *math***NEWS** have a strange definition of "glory"; pretty sure the cover caption should've read "more" and not "less". I don't think we would've made this mistake before.

Okay, so maybe this article was just an excuse to tell that story.

Scythe Marshall

Our Love For MC

Have you ever wondered why we all love MC? Since you're reading *math***NEWS**, it's safe to assume you belong to the math community—and if we all share something, it must be our love for MC, but how did it come to be?

I'm a frosh, and during Orientation this fall, the activities were split between MC, M3, DC and QNC. At first, I didn't think much of the MC building, and was rather impressed by the others. MC was this place with bad stairs and whose corners looked the same, while DC had two Tim Hortons, QNC was the most fancy futuristic building I'd ever seen, and M3 had an awesome huge pink tie. For the first two weeks, I believed that QNC and even M3 were superior to MC, and I would have rather had classes there then in this old stone building. But now, with no clear reason, MC feels like home. When I first came back after the winter break, the first building I went to was MC; its distinct smell was refreshing and stepping upon its rotten stairs filled me with joy. Now I realize how dead M3, DC, and all the other buildings are compared to it. Even the QNC, which I still believe is a marvelous piece of art, doesn't come close to how awesome MC is.

But how did this come to be? Maybe it's because the C&D is where all the math people meet and where we have weekly Games Nights. Maybe it's because of the Comfy. Maybe it's because MathSoc has an infinite supply of candy [No, we don't!—bunniED]. Maybe it's because all the cool clubs are there. Or maybe the love was passed down by seniors. Whatever the reason is, MC is a magical land where we all roam free and meet, and we all love this place.

This article has been nothing but a fangirling session over the most awesome building on campus, and it ain't even close to describing my love for MC.

(And guys, if you haven't heard yet, soon there will be a bridge from MC to SLC! REJOICE! AND ALL HAIL MC! ALL HAIL MC!)

Cupcake

Individuals Handle Disagreement in Civil Manner

This past monday two individuals came to realization that they had a difference of opinion on a non-trivial topic. Upon identifying this issue the two individuals proceeded to address the problem by discussion it in a civil and respectful manner. They took turns to listen and try to understand the other person's perspective.

When no solution was immediately obvious, they didn't try to force a resolution of the issue. They acknowledged that both their feeling were valid and didn't try to guilt trip the other person into making a decision.

Beyond Meta

N Things the Noises Made By The Weird Guy Who Sat Next To Me In Class Sounded Like

- Someone trying to deflate a balloon as slowly as possible.
- A shitty hand-me-down squeak toy.
- A bizarre constipated guinea pig.
- He just got punched in the balls and he's trying to suffer quietly.
- Someone passive-aggressively rubbing their fingertips on a latex balloon.
- ~~A human making normal human sounds.~~

Diminutive Rage

Let the Folks Downstairs Lend a Hand

Let's be honest, life can be rough sometimes. Sometimes you really need someone in your corner, but it's just you there all by yourself. But you don't have to be. When you really need a helping hand, ~~we're~~ there's someone there for you, just waiting for you to call ~~our~~ their name.

Demons[1]!

~~We~~ They get kind of a bad rap sometimes, but demon summoning is perfectly safe if you know what you're doing. ~~We've~~ They're super helpful! Need a bit of an edge for an important basketball match? Aazghrym'krwx'gaal'mrrq, Eternally Howling Corrupter of the Innocent would be happy to lend a hand[2]! Give him the name of, say, one of the opposing point guards, and he'll make sure they're off their game[3]. If you'd rather play fair, no worries, he'll just fill you up with vim and vigor[4] and let you do the rest.

Aazghrym'krwx'gaal'mrrq[5] isn't the only one chomping at the bit to give you what you need. ~~We've~~ They've got all sorts of lovely folk[1] waiting in the wings to help you succeed. Shalalavar, Her Heart as Dark as Sin Itself is an excellent chef if you're feeling peckish[6], Morgotharrivann, Unsurpassable Bastion of Unconscionable Heinousness can help you with your studies if your exams are looming[7], and Toby, The Unspeakable for your more morally dubious needs.

If you're worried about your new friend turning on you and devouring your soul[8], don't fret. It's surprisingly easy to control summoned demons. The magic circles you'll see people use in popular culture are entirely unnecessary[9]. Don't stress too much about keeping your diabolical contracts free of loopholes or alternate interpretations, ~~we'll~~ they'll give you the benefit of the doubt when that sort of thing comes up.

~~We've~~ They've got your best interests at heart[10].

Yours,
$s, t \in \{2k, k \in \mathbf{Z}\}$, 144

[1]From the infinite pits of the Abyss.
[2]A blood-soaked, twelve-clawed hand, on which each unholy digit forever writhes in diabolical ecstasy.
[3]As the screams of their tormented loved ones echo maddeningly within their pathetic mind.
[4]Agonizingly ripped from the souls of his collection of ever-suffering puppies.
[5]Eternally Howling Corrupter of the Innocent.
[6]For the flesh and blood of the pure and faultless.
[7]And you want your mind filled with blasphemous secrets that would drive the most righteous to commit unspeakable atrocities.
[8]And using your hollow shell of a body as a flesh puppet to write articles tricking mortals into bringing more of its fiendish kin into the mortal realm.
[9]And really quite rude.
[10]Those of them that have those, of course.

FREE PIZZA (AND YOUR ATTENTION, I HOPE)

Did you know Feds have referendums?

For those who are like me: apparently anyone can submit a petition to advocate Feds to do something, and if there are enough signatures in that petition, Feds is compelled to initiate a referendum.

And people actually vote in these things.

And here I am, hearing about this neat political function for the first time.

In hindsight, as I walked down SLC these past few years, I occasionally get approached by bubbly social justice salesmen with ulterior motives and fake smiles. They never really state their purpose directly, instead opting for that oh-so-charming "How was your day? Irrelevant! Anyways, wanna hear me passive aggressively accuse you of guilts you didn't know you had?" schtick that makes both of us uncomfortable and unwilling to continue the conversation.

What's worse, start a small conversation with them and you'll soon understand that they're really here to simply goad you to sell your signature. All semblances of humanity cease once you sign your name on that piece of paper and you both walk away — you a piece of candy in your mouth and them another name for their nefarious purpose. It's basically the political version of a no-strings-attached hookup, with all the benefits and none of the connection.

I gotta say, I'm simply not driven enough for this.

Yet I am here, in math**NEWS**, lured by the prospect of pizza, trying to shred all my random thoughts into little black bits and sacrificing them to the math gods. And so far I have to admit that trying to frame a conversation to an unknown reader is much more tiring than having a conversation with a real person. My mind is simply not made for journalistic satire. It's like walking along the mind's road with absolutely no destination.

Why am I doing this? I'm not even in math. It's so much easier to just sign your soul away. You even get free candy. Perhaps I should sign those random petitions after all. At least I'll have solace knowing that there is somewhere for me to be when the world ends.

Honestly, I don't know. But why do people sign petitions on the context of "nomalization sensationalism buzzword you're GUILTY! give me your political power plzzz"?

I suspect it's the free candy.

byeine

Submit your articles in the BLACK BOX outside the MC Comfy or email them to mathNEWS@gmail.com!

The Epics of Istamaknun [and Dodokuthir] (Part 1)

The dwarven civilization and its available resources are declining. Seven brave and adventurous dwarves head from the mountainhome into the outside savage land, for glory and the continued sustenance of the race.

After fifteen grueling days of travel across the haunted battle-torn landscape, narrowly avoiding death and disaster, the courageous dwarves arrive at the site of their new home. Christened Istamaknun, meaning Lighthawks in the dwarven tongue, the hopeful dwarves strike the earth, as work and toil makes for a light heart in the face of the declining civilization.

The summer comes and a haggard ragtag gang of stragglers join the burgeoning hamlet. Things are looking well; every dwarf has a full belly and a tankard of beer. Everything is good. Fall comes, and the mountainhome sends Istamaknun a supply caravan. News is grim; the home is in more decline.

As this grim news spreads across the hamlet, more tragedy strikes — the dreaded goblin werelizard Tolis Xakiodda comes to attack the innocent citizens of the hamlet. It caught the poor stoneworker Reg Atoloddom unaware while she was storing logs, grappling her and clawing her abdomen. The alarm was raised; the militia commander Ast Sikelenshtan rushes to Reg's aid, but alas, it was too late. Reg had bled out and Tolis raised its eyes, ready to strike against Ast. Raising her sword in anger, she cleaved the werelizard's arm right off before striking at its heart, before bringing the grave news to Reg's family.

A sad air dwells over the establishment in the wake of the death. The overlord orders the construction of a tomb and a sarcophagus to mourn the death of a valiant dwarf. As the tomb is constructed, Ast vows to protect the citizens of Lighthawks better, and strives to train harder to prevent such a tragedy from happening again.

Rumour has it that the nearby goblins are brewing a siege. Yet the reign of the overlord here is coming to an end, and he needs to move to the glorious fort of Dodokuthir in its second year. May the dwarves live long and prosper.

Zethar

Snake Apples: Cards Against Humanity, But Awesome

As someone just pointed out, the main failing of Cards Against Humanity is how quickly it gets boring. The shock value of "Incest", "Auschwitz", and "Dickfingers" wears off after the first few rounds, and then you realize you're rehashing the same old 'edgy' jokes because your friends group isn't cool enough to play Truth or Dare.

Snake Apples is a great party game for people who are too sober/boring to play Truth or Dare, but still want to have a good time shouting at each other. If you've ever played Apples to Apples or Snake Oil, it's a remix of the two games.

What you need: One (1) copy of Apples to Apples. Four (4) – Ten (10) people.

How to Play: Each person takes seven red cards. The 'chooser' takes one green card. They have to come up with their identity based on the adjective(s) on the card. For example, if it says 'sporty' you might be David Beckham… or OJ Simpson. If it says costly, you might be an expensive poodle, or you might be a Nigerian Prince.

Each other player then has to pair up two of their cards to create a product that they must convince the 'chooser' to buy. For example, for Donald Trump, you might want to sell him The Great Wall of China combined with Mexico, but it doesn't have to be that obvious. I once won by selling a spaghetti canteen to a habitual gambler. Whoever's product is chosen win gets a point, the chooser rotates by one, rinse and repeat until you're all hoarse and hate each other a little bit.

The strength of Snake Apples is that you can play it with children, grandparents, friends, strangers – it's only as weird as you make it, but it's exactly as weird as you make it. If you want to let me know how you liked it, write up a detailed account of your game, and burn it in your toaster until it is ashes. Alternatively, leave it in the suggestion box in the Math C&D. Somebody should get some use out of that thing.

Diminutive Rex

4D Friendship

From one perspective, people are just weird four-dimensional worms snaking through time. We extend from the day we're born until the day we die. It doesn't matter where you are on your four dimensional path through life; your past stretches behind you and your future lies ahead of you.

When you're in university, your path gets all tangled up with your friends'. Five years ago, you probably hadn't met any of the people you spend most of your time with. Twenty years ago you might not have even all started existing yet. And five or ten years from now, you probably won't all be as close as you are now.

But right now, your paths are all smooshed together. No matter where you go in the future, your fourth dimensional wormselves will still be back here, together. Just like how right now there are people out there that you're going to like a lot that you haven't met yet, no matter where you go in your future your friends are still going to have been there for you.

And I think that's pretty great.

Diminutive Rex

A Wrong Showing of How Each Number is Even

(Written in the Ten Hundred Most Used Words)

We are going to show that for each number 'k' that is two or bigger than two, 'k' is even, using only the ten hundred most used words. We will use the way that shows that if something works for one step of the way, it has to work for all the other steps of the way.

First we make the first case. Two is even, so that works. Then we come up with an idea for the repeating step. We can say that all the numbers bigger than two and less than 'k' are even. We must now show that 'k' is even.

We know that 'k' must be what you get when you add two numbers that are less than 'k'. Since these two numbers are less than 'k', they must both be even, and so 'k' must be even. That's the end!

But this can't be right, because three and seven are real. Where did we go wrong? Find out in the next *number*NEWS!

Little One Who Runs The Land

Honestly, Sometimes The Best Parts of Articles Are Their Titles

Diminutive Rex

Why Star Wars Episodes IV and VII are the Same Movie

Recently, while reflecting on the plot of *Star Wars: The Force Awakens*, I realized that it is in fact the same movie as *Star Wars: A New Hope*.

Obviously such a claim would have no substance without evidence, so I hereby present a condensed plot summary that describes both Episodes IV and VII [SPOILER ALERT]:

- Young protagonist's dreary existence on a desert world is interrupted by the discovery of a mysterious droid.
- Said droid contains information of critical importance to a group of freedom fighters
- Protagonist leaves desert planet on the Millennium Falcon to find the freedom fighters.
- Old man informs protagonist of the existence of the force.
- Bad guys blow up planet[s] with giant base.
- Evil guy in dark mask with red lightsaber kills old man.
- Freedom fighters destroy bad guys' giant base by attacking convenient weak point with space fighters.

I rest my case.

aPlayerofGames

Theorem: Why you should tell Professor Oak to go screw himself

Consider this: Professor Oak is a dick. Professor Oak is an irresponsible rich privileged white man who takes children from their families to sends them out into the world alone to do his research for him, findings which he then claims as his own! It's like being a graduate student, but without being paid or ending up with a Ph. D. Professor Oak occupies the top 1% of the Pokemon world, building his fortune atop a legacy of animal cruelty and enormous ethic violations. I guarantee no ethics board would allow a researcher to send out 10-year-old children into the world to fight animals amongst themselves and poach them off their habitats. This is clearly a part of his master plan orchestrating the systematic oppression of an entire species; experimenting on Pokemon, putting them in a confined space and moving them around from camp-to-camp; sound familiar?

To top it off, Professor (if you can even call him that, have you seen his credentials?) Oak gives you only one Pokemon, and not even one of the Charizards he keeps in his collection, but a shitty starter one. Well, I guess we can be thankful that he doesn't send us off with a Magikarp, but come on man, you don't really need all those Charizards. Maybe we could overlook all that if it was for the immense human-normativity that he promotes; "Are you a boy or a girl?" Excuse me, I'm a Pokemon! So the next time Professor Oak tries to get you to go on an adventure, you tell him to check his privilege.

eti

In defense of co-ops in Waterloo

I find myself in the somewhat odd position of being in Waterloo during Winter, but not taking classes on campus.

That's right, I'm one of those people you hear about in quiet notes of dread from the upper years, talking about how if you're working in Waterloo on anything past your second co-op term, you're just not going to make it.

And do you know what? They're horribly wrong. Companies in Waterloo are generally not horrible. It's not the shiny magicalness of working at a big name company in San Francisco, or working in a popular city like New York, but that's still fine.

It's not Hamilton.

HatOfChocolate

Follow us on Facebook (*math*NEWS), Twitter (*math*NEWS) or in person (MC 3030)!

Will school kick your ass this term?

Happy New Year, Mathies! And welcome to a brand new term. It's always great to have a fresh start. But I bet you're wondering whether or not this term is going to kick your ass. Are you going to fail all your courses and get kicked out? Are you going to breeze through this term and pass every exam with flying colours? Well look no further for answers. Take this quiz to find out if Winter 2016 will kick your ass or not.

1. Do you have any electives or "easy courses" this term?
   a) Heck yes, this term's gonna be hella easy and I'm psyched.
   b) I've got enough to balance out all the hard stuff.
   c) What's an elective?

2. How much time do you spend on social media (Facebook, Instagram, etc.)?
   a) There's no time for social media. School is my life 24/7.
   b) I spend some time on it, but school comes first.
   c) All day, every day.

3. How easily distracted are you?
   a) Ariana Grande's "Focus" is basically the theme song for my life.
   b) My focus is decent when it needs to be.
   c) I guess you could say I'm pretty easily OMG LOOK AT THAT OTHER ARTICLE.

4. Have you skipped any classes yet this term?
   a) This term? Bitch, please. I've never skipped a class in my life.
   b) Only if I had a legitimate reason.
   c) Wait, what? Classes already started??

5. You hear a sound. What is it?
   a) The wings of my grades, flapping as they soar higher and higher each term.
   b) My prof going on and on and on.
   c) The sound of my own crying as I think about how hard everything is.

6. Suppose you failed a course last term. How do you react?
   a) I have no clue; the concept of failure doesn't really apply to me.
   b) Make sure I work harder this term. Making mistakes is how you learn, after all.
   c) Accept my fate and start looking for a job at McDonald's. I've already failed enough courses that I'd be kicked out if I failed another one.

7. Do you have a good work ethic and good study habits?
   a) Good would be an understatement. I'm a freaking champion at that shit.
   b) It depends on the day.
   c) Hahahahahaha. Let's not talk about that.

8. What do you when you're overwhelmed with work?
   a) Make a prioritized to do list and a colour-coded study schedule, then power through it.
   b) Cry a little, then get to work.
   c) Binge-watch Netflix for 36 hours straight.

9. There are 6 feet of snow outside, but classes haven't been cancelled, because UW is hard-core. What do you do?
   a) Bundle up. I will walk, crawl, even tunnel through the snow to get to class if I have to.
   b) Fuck that. My safety's more important than school. I'll just make sure I check Learn later for notes.
   c) I didn't even notice the snow, because, honestly, I wasn't really planning on going to class anyway.

10. What is your spirit animal?
    a) A unicorn.
    b) A duck.
    c) A goldenhawk.

Results:

Mostly As: You got this. This term is probably not going to kick your ass. In fact, you're going to kick its ass. You're a champ and I'm kinda jealous of you. Consider toning it down so the rest of us don't feel so bad about ourselves in comparison.

Mostly Bs: It looks like you're doing alright. Ass-kicking will probably be minimal as long as you do your best.

Mostly Cs: This term is most likely going to kick your ass. A lot. I'd recommend you get your shit together real fast if you want to avoid failing everything.

TheUndecided

A Beautiful Haiku

And the good lord said
let there be pizza a a
And there was pizza

Christopher "Dante" Hawthorne tries his hand at haikus
And there was much rejoicing.

Submit your articles, *prof***QUOTES**, to `mathNEWS@gmail.com` or the **BLACK BOX** near the MC Comfy Lounge.

The Search for the Ancient Stone Pt. 1

The following passages were directly transcribed from the journals of Theodore Bear.

Day 7

I have finally found it, the clue I was looking for. It was hard, spending day and night in Paris, France, but I have my first lead on the Ancient Stone of Nioj. My adventures took me through the National Archives, to the sewers and catacombs that lie beneath the great city. In the process, I managed to also discover the secret of the French Revolution, which turned out to be [*Editor's Note: For the good of everyone, we have redacted the following paragraph. The revelations within would have negatively affected the sanity of all who read it.*]

Anyway, after fighting off swarms of rats beneath the Tomb of the Lost Innocent, I am now safely above ground, quite high above ground in fact, as I travel by plane to my new destination: Peru. There, I shall find the source of the Amazon River, so I may travel down it to discover the Ancient Stone.

I have sent in my preliminary report to the University of Waterloo's Department of Mysteries, located in Room 101. Deep inside, I still have that wonderful feeling of honour and gratitude I felt when they chose me to search for the Ancient Stone of Nioj. After the shocking truth I discovered beneath the stony streets of Paris itself, I feel like I needed to take a break, which is why I will stop writing now, so I am ready to face what challenges lie ahead once I reach South America.

Day 8

I have finally arrived in Lima. After clearing customs, I set to work right away in order to organize a party to travel down the Amazon with me. Right away, my efforts were hit with a setback. It seems that I was paired up with another Waterloo student, someone from Imprint doing a piece on the Amazon River. It seems that, because the university only had enough money to sponsor one Amazon expedition, we must work together in order to achieve our goals.

Anyway, I have talked with the locals, and I believe I found the perfect guide to take me to Joaquim Mendoza, the infamous drug kingpin of the South America. He is rumoured to guard the Ancient Stone, which can be found within his vast empire.

However, despite the danger Mendoza poses, I believe I can convince him using the skills I learned this time last year in Public Speaking to win him over to my side. The Department of Mysteries is a fairly prestigious body, and you are guaranteed a meeting with him if you are aware of the fact that he's actually a 2000 year-old Egyptian mummy.

Despite my reservations, brought on by having to work with Imprint, I feel confident about the coming days. Hopefully, I will be able to find the Ancient Stone quickly, and get back to Waterloo.

Day 11

As I write this, I am currently floating down along the Amazon River on a raft. We had long passed into Brazil. The buzzing of mosquitos fills my ears, along with the rushing of the water. The Amazon rainforest truly is a magnificent place. The waters are filled with fish, allowing us to cut back on food rations. The jungle that lines the river is home to all sorts of animals: the magnificent jaguar, parakeets, and howler monkeys (to be honest, the monkeys are quite annoying). The trees extend up into the sky, offering us shade in the early and late hours of the day. There is so much lush green here, along with the vibrant colours of the fauna within; it is the true beauty of nature that compels me forward on my search for the Ancient Stone of Nioj. The river rushes through like the lifeblood of area itself.

However, the land is not without danger. One of the men we hired to help with the expedition fell off our raft, and within seconds was devoured by the hungry piranhas that infested the river. The waters of the Amazon ran red with blood that day. The dangers will only become greater as we are forced to avoid the local tribesmen, and the Mendoza's army of Tibetan ninjas. Our local guide is good, apparently we'll be able to make Mendoza's compound by tomorrow. I only hope that we can all make it out alive.

Day 12

The day opened like the one before. We awoke from our beds on the shore, collected our things, and hopped on the raft. Around 9 AM, we crossed over into Mendoza's territory. I made sure to keep my eyes peeled, in case of an unexpected ninja attack. Little did I know of the horror that would confront us that day. There I was, sitting on the raft, scanning the shoreline, the threat of an impromptu conversion to Buddhism being my only worry (for that is the punishment of being captured by the Tibetan Ninjas). The sun was at its peak, shining its rays down on the river. The light made the water sparkle. It shone like the night sky.

That's when I heard the sound. It was a horrible screech, echoing my ears. I adjusted the brim of my hat, and looked up, trying to find the terrible creature that made that sound. The skies were clear though.

I looked around, and noticed that everyone on the raft was unnerved by the sound, just as I was. I was about to dismiss the sound as coming from a new type of howler monkey, and sat back down, when all broke loose.

A giant pair of wings swooped down, and the beast grabbed one of the men with talons, pulling him up into the sky. There were screams, as it tore him apart in midair. I heard our guide shout, "The shore. We must get to the shore." Nobody dared question him. Several of the men pulled out their rifles, and started trying to shoot the beast as it flew above. Their efforts were futile, and on the river, they found the same fate as their comrade.

When we reached the shore, there were only three of us left: myself, the guide, and the guy from Imprint. We ran through the jungle, our feet carrying us forward as fast as they could. The sounds of branches breaking in the canopy above us told us that the creature had followed us into the rainforest.

I heard a scream, as it rushed forward and grabbed the guide by his leg. Only now, seeing its sharp beak, and pointed head, did I realize my mistake. Of course, I thought, how could I have forgotten about Mendoza's pet "Il Monstro"? I was so focused on the threat of the Tibetan Ninjas, that I forgot about the pterodactyl that the drug lord had patrol his domain. Now, we were paying for that. We didn't stop to see happened to the guide, his screams told us all we needed to hear.

Then, by a stroke of luck, we found shelter underneath the crumbling stone of ancient Mayan ruins. Hiding from the pterodactyl, I tried making sense of the situation, of the Amazon managing to destroy one more expedition down its treacherous waters, before any cry from the monster cut my thoughts short. The beast, it seemed, wouldn't be letting Mayan ruins of all things keep it from its prey.

The guy from Imprint looked to me, fear in his eyes. The sounds we could hear told us that beast was moving forward, coming for us.

Then, it burst out of the jungle, and grabbed the guy from Imprint, and I could only watch, as it made him its next meal. It was incredibly gory and horrible, which is why I'm going to tell you all the details. First, it used its sharp beak to cut [*Editor's Note: Several editors threw up when we were forced to read this section. Not even someone from Imprint deserved that.*]

After it was finishing up with its latest meal, I realized something: this was probably the only time where someone from Imprint actually improved an article. I slowly stepped back as the beast raised its head, and stared right into me. It flew up into the air, and dived down towards me. Thinking it would be the last thing I did, I raised my fist into the air, and cried out in anger, my yell echoing through the empty jungle, "Mendoza".

Theodore Bear

и things to do in Waterloo on a co-op term

1. Send selfies to your friends in warm, dry, sunny climates with the caption "Wish I was there! :("

ii. Spend time on campus because you're too cheap to turn up the heat in your apartment

三. Spend time with your friends who went off stream 2 years ago and realise that you actually have very little in common anymore and weep quietly in a corner

Work on those side projects that employers are supposed to love. الأربعة

Look through the 20 CECA policies that you're supposed to follow, and see if you can find ways to break the spirit but not the law of said policies. שמח.

шесть. Go to *math*NEWS night and hang out with people you can promptly ignore after 3 hours of questioning your faith in humanity

septyni. Amuse yourself for minutes (MINUTES!) that Google Translate has a definition for 'seven'

ਅੱਠ. Laugh as you actually have free time in the evening for once!

dokuz. Scramble to finish your PD assignments 2 hours before they're due

💯. Wonder if the *math*NEWS editors & printer support Unicode emojis

HatOfChocolate

See how much fun you're missing by not going to our EOT?

N Things to do on Your Co-op Term

Hello readers of *math***NEWS**, it is I, Theodore Bear, finally back in Waterloo. If you happen to be a first-year, or somehow haven't heard of me before, despite the reputation I have here, I was the one who reveal all of Feds' conspiracies after they kicked Imprint out of their office in the summer. I also wrote the definitive exposé of Hawaiian Pizza, educating the whole campus of the evil it represents. Last semester, I was on something called a co-op term, you may have heard of it. Though I am a computer science student, I managed to secure work with the University of Waterloo Department of Mysteries, located in Room 101. They tasked me with finding the Ancient Stone of Nioj, and though I'm still a bit confused about its relation to computer science, my adventures were grand and they spanned the entire world. In fact, I have transcribed parts of my journals for you readers of *math***NEWS** to lay your eyes upon (Editor's Note: You readers can find it on…)

Anyway, during my search for the Ancient Stone of Nioj, I partook in several activities to spend my time during the work term. I feel like sharing these with you readers of *math***NEWS**, so you know about all the different things you can if you ever go on a co-op term.

- **Get to know new people**

Chances are that you'll end up working in a new city when you start you start your co-op term. That makes it the perfect time to get to know your new coworkers, and make some new friends that may last for longer than the four months you spend working.

During my search, I met several new people in several major cities all around the world. There was: Antoine, the scruffy orphan boy who saved my life several times while we searched to discover the Holy Augur in Bordeaux; Romeo Lautrec, without whom I would my never escaped Italy alive; Huang Chu, who allowed to successfully navigate the Japanese underworld, and protect the secret of the Last Symbol; and Rudislav Graznavic, who left me to die in the Russian Tundra (I'd tell him to go to hell, but I sent him there myself).

All the people I met and worked with now hold a special place in my memories. I would have never discovered the things with them, and the many others I met along the way.

- **Try new food**

Jumping off from the last point, your co-op term is a great time to try new things, which includes new food. I, on my co-op term, tried oil fried cockroaches in India, foot fungus from Prague, and penguin eggs, which I survived off of when I trapped in the frozen wastelands of Antarctica. We confined to tents in a horrible snowstorm. Days passed where I didn't whether or not I would survive to see the next one. The men who with me got hungry. Given the choice between consuming their fellow man, or the supply of Hawaiian Pizza an idiot decided to pack, they turned on each other. I escaped into the snow, and was adopted by a family of penguins, who kept me alive until I could be rescued. I do not know what happened to the rest of my party,

whether some survived or if they perished in the unforgiving downpour of snow.

It was brutal, having watch sane individuals their fellow man apart just to eat; just to survive.

Anyway, it's best if you try new food on co-op term. Who knows, you like what try. I personally now have a fondness for petrified goat moat, served in African mainland.

- **Write a book**

November this year was National Novel Writing Month, where young authors are challenged to write 50000 words in a month. While this event may not happen on your term, you still have the chance to put pen to paper, and write yourself a novel.

I spent most of my time recording my journals, creating a travelogue that detailed the perils I faced, and the adventures I had while searching for the Ancient Stone of Nioj. Without it, nobody would know the secret Yetis that guard Mount Kilimanjaro, or the secret cabal of Venetian Nazis that plan on controlling the milk trade.

I also ended up getting 50000 words written for a novel where the Nazis managed to prolong WWII after they discovered dragons. It was sometimes hard, writing a novel when trying to save the world, but it was doable for me, so it will likely be doable for you.

- **Meet up with old friends**

Since the course load for a co-op term is much less than a study term, it is a good time to catch up with old friends on your free time. I remember when I managed to catch up with an old friend while searching for the ancient stone.

His name was Bolzlov Rejvic, and he was commander of Vienna's police force. When I met him for lunch on that fateful day, I never knew what would happen. Trading gunfire with The Nationalists, a goth band who doubled as a group of terrorists, we reminisced about the good times we spent together. Later, after we had disarmed the nuclear missile, and saved the German city of Bielefeld, we parted on good terms. Reigniting the flame of friendship is wonderful thing to do.

- **Get involved in politics**

Last term, many people in this country got involved in politics when they voted in the Canadian General Election. The co-op term is great way to get involved, whether it means having enough time to stay up to date with current events, or get out and vote. I managed to get involve in politics when I uncovered a plot by the reigning Conservative Government to win the election by raising the dead and having them vote Conservative. Working the Canadian Resistance, I infiltrated Stephen Harper's secret base on the Moon, and managed to stop his evil plan.

I remember how he cried my out my name as he chased across the lunar surface on his space-jetpack. When I managed to impale Robo-Harper on the moon's Canadian flag and returned to this planet, I was awarded with the Medal of Thanks by our new Prime Minister, Justin Trudeau, who voted in fairly by the living people of Canada.

- **Learn new skills**

On my journey, I had to learn several new skills in order to survive. I learned things like C#, how to make shelter in the trees, Java, making a fire during a monsoon, and most importantly, how to read both Enochian and Esperanto to unlock the secrets of the past within the catacombs underneath the Burj Khalifa.

Co-op may force you to learn these skills, such as when I was forced to shoot to kill with a harpoon gun, or you could use what free time you have to gain skills that may not necessarily be required for your work, like when I discovered the cure for the common cold.

- **Do your job**

While there are many things you can do in your free time on the term, the thing you'll be mainly doing on your work term is, like the name suggests, working. Whether you are cooped up in a cubicle, typing on a computer, or getting dirty searching for clues at an archaeological dig site, you'll mainly be reporting to superiors, and doing what your employer hired you to do. Whether you are writing letters to the University of Waterloo Department of Mysteries, unsure of when, and sometimes if, they'll arrive, or just walking over to talk to them, it's best to keep them up to date on your progress. They pay you, and you can use that money that to do all sorts of things, some of which you can find above.

Well, that's my list of things I've done on my co-op term. I hope you have gained insight on the options you have for your future co-op term. All the stuff I did happened to be fairly ordinary, giving you the chance to do the same.

After all the time I spent away from here, I began to miss Waterloo, and its wonderful university, this one, not Laurier. Perhaps I'll add one more item to this list, though it may not apply to everyone.

- **Extra: Miss *math*NEWS production nights**

There's nothing like being in a room filled with people, typing away at your latest article, with the promise of Porkzilla (scientifically proven to be the best pizza ever).

I personally can't wait. It's been too long since I've last tasted your porcine goodness.

Theodore Bear

Oh, The People You'll Meet!

Now, people are shitty in various ways.
Some smell like a sewer.
Some cause transit delays.
Some will act vile if you don't agree –
You must be wrong if you're different from me!

Some talk too loud when they're riding the bus,
If you don't want to fight some will call you a wuss.
Some walk very slow three abreast in a hall,
And they won't be your friend if you're not tan and tall.
They argue with shop staff for undeserved perks.
They don't clean their bathrooms.
They cheat on their homework.

Somehow they get power that they don't deserve.
And, honestly? Some just plain get on your nerves.

The assholes are everywhere.
There is no escape.
It's trolling, not reason, that splits us from apes.
But if we listed them all, one thing would be true…
On our list of assholes…
One of them's YOU!

Diminutive Rex

N Reasons Why Winter Term is Best Term

Things for reminding yourself that winter term is best term when enjoying a snowball fight with friends.

- Great adventures of walking to school, at -30°C, into the wind, both ways
- Getting engaged in an impromptu snowball fight from the readers of the other, clearly inferior, *math*NEWS Winter list
- You can improve your anti-tan over the winter term by staying inside in front of a screen
- Enjoying the winter storm enveloping you while waiting for that delayed bus
- Peppermint flavoured everything!
- The season of shattered New Year's resolutions
- No distractions from the outdoors to keep you from your studies
- Relying on snow days to get extra time for that assignment
- It's easier to hunt and track your prey using tracks in fresh snow
- The geese that remain are particularly aggressive and patriotic, representing Canada spirit
- Cold nights for stargazing
- Going tobogganing on trays from the cafeteria
- Watching the Maple Leafs get decimated for yet another season
- Being able to cross streams without need for a bridge

Hadrön

*prof*QUOTES

"Speaking of killing some of you…"

Katz, CO 330

"If you prove whether P = NP, you will get on the front page of the Waterloo Regional Record."

Cook, CO 255

"If P = NP, that would be surprising in many ways. For example, the problem 'Is there a proof of the Poincaré conjecture that has less than 10000 lines?' is in NP, and therefore could be solved in polynomial time. This means that if you want to solve one of the Clay Prize problems, you should try P=NP."

Cook, CO 255

"3+4+5… Using WolframAlpha, you get… [*Thinks.*] 12."

West, MATH 237

"Or hire a grade nine co-op student. You don't have to pay the high school ones."

West, MATH 237

Bioinformatics

Bioinformatics is a combination of computer science and biology. This interdisciplinary field aims to address biological problems and questions using software tools and sequencing methods.

The primary challenge in the 1980s was to analyze the wealth of sequence data to understand this information in terms of protein structure, function, and evolution. Later on, bioinformatics continued to expand into structure databases, interaction maps, and the '-omics' family (genomics, proteomics, metabolomics, etc).

Some important components of bioinformatics are: analysis and interpretation of biological data, algorithm development for high throughput sequencing techniques, tool development, and information management of databases.

DictatED

How to Prepare for the Imminent Reptilian Takeover

In my efforts to discover new and important threats to the safety of math**NEWS** readers everywhere, I have found a very informative and useful new source: `whale.to`.

Now although whale.to alerted me to several dangers I had previously not considered, including Subliminal Mind Control, Allopathic Genocide, and The Vitamin C Conspiracy [!!], in this article I will focus on the most important threat: Reptilians.

Since Reptilians are the "source of all evil" and "trickster pseudo Gods" they are obviously a grave concern for all clear thinking students. Unfortunately, since they are already infiltrating our highest levels of government resistance is clearly futile.

The most important thing is to get on the good side of our new masters. Although they are shape shifters they can easily be identified by their rectangular pupils - if you encounter anyone with eyes like that make sure suck up to them as much as possible.

Since humans are Reptilians' primary food source the next critical safety measure is to make yourself as unappetizing as possible. I personally recommend taking regular doses of organic turpentine, which in addition to making you taste like paint thinner will conveniently cure any cancer you may have contracted from the reptilian's chemtrails.

The final option is to try to blend in: since Reptilians have six toes and a slightly green skin tone, some simple plastic surgery should be enough to allow you to blend in and mingle with our soon to be Reptilian overlords.

aPlayerofGames

Setting Priorities

Everyone on campus constantly has to decide how to spend their time. We are supposed to work hard at our academics, and focus on getting good grades. Somehow we are still supposed to make these some of the best years of our lives.

I have made a drastic decision, grades and happiness are pretty important to me so this term I am choosing to forsake sleep to make time for both. Not always of course but when I start feeling pressured I know which I am deciding to pass on. I am aware some people try to balance these in other ways but I feel like I have always given sleep too much priority, so I'm going to try it this way for once.

This will probably have downsides, if anyone feels like they have actually found the right formula please help keep everyone sane and share it.

Pockets

N Places For Nerds To Hang Out

Want to hang out with friends but find most hang-out places aren't nerdy enough? Yeah, me too. But fret not, my friend! For I have found places that are nerdy *and* encourage human interaction.

- **Boardgame Cafés**: You could always go to MathSoc boardgame nights, but if you want to be fancy and spend money, why not do it at a café? Most boardgame cafés charge an entrance fee, after which you can play boardgames to your heart's delight. There are usually some café-style foods and other snacks to buy as well. Snakes and Lattes (what a great name!) is a popular café in Toronto, and there are a few in the KW region as well.

- **Adventure Rooms**: Adventure Rooms, Escape Matrix, and places like it are super fun. You usually go with a team of people (if you don't have friends, you should find some so you can go to one of these!), and with your team are locked in a room that requires puzzles to escape. They remind me of puzzle contests, except they sometimes also require physical things like dexterity.

- **The Museum of Math**: You might need a road trip to get to this one, since it's in New York, but the Museum of Math is a very cute, child-friendly, and fun place to see a lot of neat math-related things. There is a small puzzle area and a lot of cool exhibits. If you can't make it to New York, the Science Centre in Toronto might be a good backup plan.

- **The Math and Computing Building**: This is basically Nerd Central. Located in Waterloo, Ontario, you can meet nerds here almost daily. Activities at the Math and Computing Building include: free food events, math and computer science lectures, people talking loudly and animatedly at each other in small rooms, and free stapling.

bunniED

Thoughts on Rogue-like Games.

I have played some amount of computer games in the past few years. Okay, okay, I might played too many games. Since I am a poor soul with a really bad computer, most of the games I played were online flash games, small rogue-like games, and small pirated games. However, I did watch lots of Lets Plays from streamers and Youtubers (no, not Pewdiepie!). I have been exposed to other types of game as well. This is my thoughts on rogue-likes.

The game that I had always wanted was a sandbox game like Minecraft, but ever since Notch sold his soul to Microsoft, I have turned to small indie gamess like, I don't know, Cubeworld? One huge category of indie games are rogue-like games.

Most rogue-like games begin with a fleshed-out quest or story. Then the games will get harder as every level or floor passed. The player can increase stats by picking up items, upgrades, and mutations . The player either finishes the game or they die and have to start all over again.

One mechanic to increase the replay value of a rogue-like is the random number generator. This allows the player to experience unique item pools and maps, and they often end up playing a completely different game each time. Sometimes the randomness will give player overpowered buffs that makes winning runs, but sometime it totally trolls the player. Thus RNG is often worshipped as the "RNGesus". Personally, I really like there being an element of unpredictability in a game. But even with RNG, a player can be better at the game by improving their mechanics and their meta-game playing.
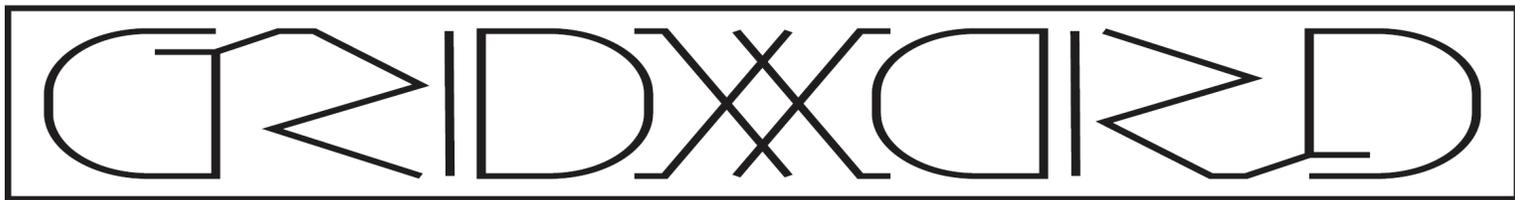
Another thing people often over looked is that rogue-like games are actually as diverse as many e-sports. Most of the player base are causals looking for fun. There are achievement hunters that spend hours or even days attempting to unlock every feature of the game. Therea are competitive players that practice the game.

There are many ways for a rogue-like to be competitive. The most common way is by doing streaks: to reach the maximum number of runs without losing. Another way is to speed run with certain random number generator seeds. My personal favourite rogue-like challenge are dailies, where every day the player will play with the same seed and have scores based on their speed, swag, and difficulty. I would really wish to play dailies, but I fucking hate Steam (the company with a monopoly over most OC games) and I am too cheap to buy legal copies. So basically I am out of luck. [*You don't say. —bunniED*]

So rogue-likes can be an interesting branch of gaming, even if it is not as big as larger titles or e-sports games. I would definitely recommend to people to check them out.

Alright, *math*NEWS, where is my free food?

me

GRIDXXORD

*grid*COMMENTS

Hey doodle doodle,

ConvolutED and bunniED have teamed up yet again to bring you some more *grid***WORD**s, now without the usual side of complaints! Just kidding. We're always going to complain. Always—until we're free of *grid***WORD**'s curse forever. Having said that, we're still looking for a new *grid***MASTER** or *puzzle***MASTER**, so if you're interested, shoot us an email at mathnews@gmail.com.
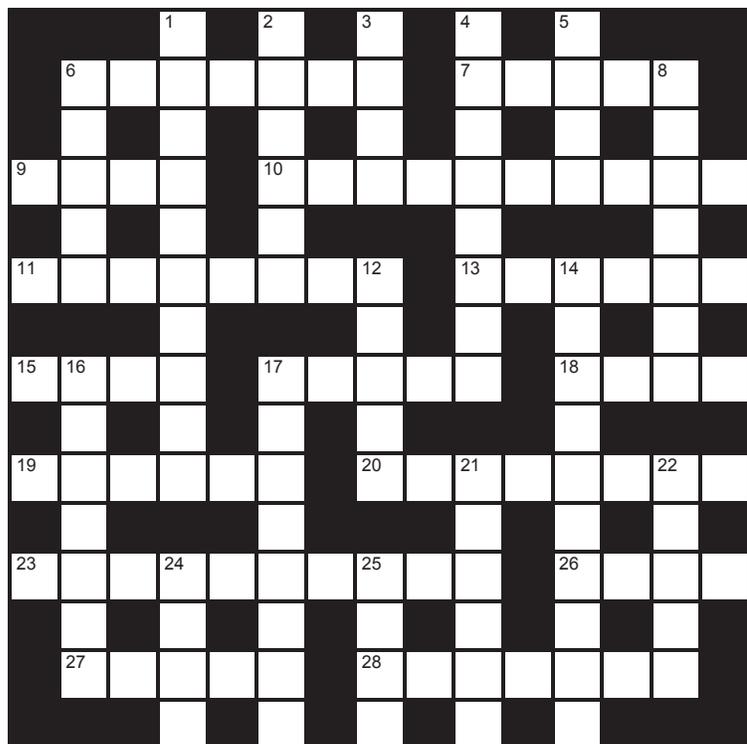
This semester, we'll be alternating between themed (usually math-themed) *grid***WORD**s and puzzles. If you have a cool idea for a theme, why not drop a note in the *math***NEWS BLACK BOX**?

In case of a tie, this week's *grid***QUESTION** is: is Tubbs a good kitty?

Love,
ConvolutED & bunniED

*grid*CLUES

Across
6. A topological manifold in two dimensions
7. Never Gonna Give You Up, Grumpy Cat, gal pals, and JOHN CENA, e.g.
9. The 'M' in 'KMGTPEZ'
10. He proved that there was no solution to the *Entscheidungsproblem*
15. Usually clickable in a GUI element
17. Element of a quotient group
18. Country, en français
19 Fisher (who doesn't necessarily need trigonometry for their job)
20. : or |
26. Item made of keratin or metal
27. *latus* _____, plural
28. Alternative to a series of payments

Down
1. Like rt(2), but not rt(2)$^{rt(2)}$
3. In lambda calculus, _____-reduction applies a function to an argument
4. von Neumann's zero
8. Cooperation
14. It's opposite of what's right?
17. The kind of number you can really count on?
21. What the second subscript indexes, for a matrix
22. Choice, union, or 4-Down, e.g.
24. Velocity's bus. specialty
25. Not in use, as a processor

This Issue's Grid:

He hungers for *grid*WORDS...