

## “HOW DO YOU FEND OFF THE HORRORS?”

In 44 BC, on March 15<sup>th</sup>, Julius Caesar was stabbed by his fellow Roman senators twenty-three times. Twenty-three feels excessive, but can you blame them? It was March. I don’t know what it is about March—some combination of DST system shock, the cumulative damage of too many late nights, too many deadlines, too many projects throughout the term, and the ultimate hell weeks of the term coming ever closer, that really makes you get it. I don’t know what Julius Caesar did—like **mathNEWS** writer cherry ♡, my Roman Empire is not in fact the Roman Empire—but I get it. Twenty-three is a very March number of times to stab Julius Caesar, y’know?

And yet, April is coming. The geese in the Laurel Creek have started their yearly ritual of 3 AM cacophonies, and soon, little goslings will be abundant just outside SLC. Birds have begun chirping on our morning walks into campus, and there’s even been a few days where you can go outside without a full winter jacket. The days are longer now, both because of the Earth’s gradual shift and because we quite simply Decided they should be. April 6<sup>th</sup>, the day after the last day of classes, is on the distant horizon, and one day soon, we’re about to wake up into it. I, for one, cannot wait.

For now, we have yet another issue of **mathNEWS** to hold you over until then. This issue features the incoming WUSA leadership team: Damian Mikhail and Remington Zhi! They were willing to tell us their favourite numbers, but the press have been shut out from knowing their favourite colours—we’ll be submitting FOI requests in short order. Further highlights include: the announcement of M9, SASMS galore, a new political strategy, analysis of regional variants of the dap analysis, mildly terrifying EV2 lore, poetry galore from familiar and new poets both, and deep-dives into the animation studios and Toyota cars our writers love.

We also have some exceptional story writing this issue. Shoutouts to childhood stargazing, inter-city wistfulness, metaphors on the waves, academic weaponry, Ennio’s strategic realignments, and, of course, our article of the issue. The artworks you produce continue to amaze.

April comes, my friends. We’re almost there.

Until then? MC awaits.

revivED  
Editor, **mathNEWS**

waterED  
Editor, **mathNEWS**

SNOWDOZER	Fend off?
TOMATOPOTATO	evasive naps
资深咸鱼	I don't. As is all problems in life, they can't catch up to me if I bike fast enough
USMAN!	I am the one who knocks
__INIT__	walk down spurline trail. obtain black coffee from cafe pyrus outpost. walk straight back to E2
YALEVOYLIAN	Making biscuits
AVAHHH	400mg caffeine and an unrealistic deadline
NIKE	hammer
WHOLE NUMBER HAVER	I am one with the geese 🦢
PEACELOVEMATH	Unsuccessfully...
LARS NOOTBAAR	I don't know about you guys, but the horrors have to fend off me.
MOLASSES	walk real far
AMIRDADP	By fending off The Horrors
別	Ignorance, most of the time. Unwarranted hope the rest of the time.
NOTINSE	with my smokin hot bod
ANDOIHI	Be one of them. Also Pepsi.
JOE	Watching The Big Bang Theory
THURSDAY	The Horrors wouldn't dare fuck with me. My mind is too twisted
AAQSR	I write C++. At this point, the Horrors usually run away screaming in fear.
NOT A N*RD	I roll to give them a smooch <3
APHF	free pizza at <b>mathNEWS</b> prod night
CLASSIFIED	with one matcha latte at a time ☕
REVIVED	lay on the floor of PHY 145. become one with the carpet.
DERAILED	\$10 GO Transit weekend day pass

## ARTICLE OF THE ISSUE

We were all touched by My Father Could Never Make Me Feel How Sex Was Able To Make Me Feel by baddie issues. We hope your baddie issues are resolved now. The next stage of personal growth would be to come and get your gift card at the office which you have rightly, but conditionally earned.

# As Quagmire would say, “That was an historic season.”

JUSTIN YOUNG, **mathNEWS** EDITOR FOR WINTER 2025  
ALONG WITH SARA NAYAR, ISABELA SOUZA, RIVER STANLEY, AND DAVID TERESI

# mathASKS 157.5

**FEATURING INCOMING WUSA PRESIDENT DAMIAN MIKHAIL AND VICE-PRESIDENT REMINGTON ZHI**

## **DOLLAR STORE PERSON: WHAT DO Y'ALL LIKE TO COOK?**

Damian: Anyone who's ever had the honour of having a taste of my cooking will know that I will promise a meal and then roll out five different side dishes instead. As a vegetarian myself, 90% of my meals involve some sort of cauliflower, beans, or tofu, usually not in the same dish since that would be criminal. I will stand by the fact that at the end of the meal everyone will be left with a full belly.

Rem: I do love a good stew. I got a crockpot in second year and now I just combine various root vegetables and proteins as strikes my fancy on weekends.

## **MOLASSES: WHAT ARE YOUR THOUGHTS ON THE ROLE OF ADULT FULL-TIME STAFF AT WUSA?**

We do not support child labour at WUSA, contrary to how the media may try to paint us. Any allegations otherwise are unfounded.

As for student vs non-student staff, I believe permanent/long-term full-time staff have an important part to play at WUSA. Not only do they facilitate the transfer of knowledge from one board to the next, a group with high turnover, but many jobs are just too intensive and require too much experience that a student would probably lack.

This being said, WUSA is a student union, and student unions are by and for the students. It is my belief that we need to be careful to ensure that at the end of the day, the voice of student voices are centered in decisions made by WUSA. When making hiring decisions, I think that should always be something taken into account, and should generally only hire non-students when a student alternative cannot be reasonably justified.

## **\_\_INIT\_\_: HOW DID YOU GET STARTED WITH ADVOCACY? WHAT ADVICE WOULD YOU GIVE TO OTHERS WHO WANT TO GET STARTED?**

Rem: I don't know, I think I've just always been willing to complain loudly about things that I thought were unfair? Climate activism was the first thing I got into, and I made friends there who cared about other things and got me to care about it too. It kinda snowballed into doing waaaay too many things at once, but I also think it's important to understand many different issues and understand how all forms of oppression are connected. The advice I would give is to join and build networks. For me, advocacy has to be built on caring about people, and that's what keeps me going. And also it's just way easier to convince myself to go to a protest or to speak to the regional council about Night Bus when I'm going with my friends! It's basically a chill hangout with extra activities, and we're going to the bar after. Advocacy can be pretty depressing sometimes, make friends and make it fun.

Damian: My path into advocacy was a slow and winding one, but I'm somewhat ashamed to admit the sparks which started me down this path were a mix of frustration and boredom. Frustration in the sense that when I first got started, it was not long after the COVID lockdown in 2022, so student activism in many ways was essentially dead. I was frustrated to see so many problems, problems that students around me seemed to understand, but no one working to deal with them. Boredom in the sense I remember vividly a sad day in the DC library, studying for a midterm, where I got so bored studying I decided I might as well do the advocacy work myself.

Eventually like with Rem, things snowballed. I often tell people that advocacy isn't something you choose, it's something you dip your toes in before realizing you're stepping into quicksand and you're sucked deeper and deeper in. Granted, unlike with quicksand, falling into it can actually be quite fun and enjoyable, so maybe like a water slide or something would've been a better analogy but idk I'm still workshopping it.

But seriously, the best advice I could give someone when getting involved with advocacy is to first focus on the social aspect. Join some groups who already involved in advocacy before going and starting your own, make some friends. Having a strong social group is important both for maintaining a fun experience that will actually have you and those around you coming back to do more, but also without a group, advocacy alone might as well just be an email, it holds very little weight. We are stronger when we work together to convey a unified message for change.

## **QUAAAAAAAAAAAAACK: WHAT'S YOUR FAVORITE BREED OF DOMESTIC DUCK? ALSO, IS THERE ANYTHING YOU CAN DO ABOUT ALL THE BROKEN AUTOMATIC DOOR OPENERS?**

Rem: I might just go with the cayuga duck. I think it's important to give students a way to report things that are not accessible on campus to Plant Ops, and for these avenues to be well-communicated to students. I think once that gets implemented it'd also be good to get data on how often students encounter these problems.

Damian: At risk of sounding basic, the mallard is genuinely one of the most beautiful beasts to ever grace this earth. Pretending otherwise would be a disgrace. Speaking of disgraces, a university should not have such basic accessibility issues as not having working automatic door openers. [What Rem said]

## **USMAN!: LIKE THE GUN?**

Rem: Like the gun! And also like the hair straightener and the typewriter sometimes (or the safe but it's the gun company making gun safes so it doesn't really count imo). And also like RapidEyeMovement!

**CLASSIFIED: WHAT DO YOU THINK A TYPICAL DAY AS WUSA PRESIDENT/VICE-PRESIDENT WILL BE LIKE?**

Rem: Probably a lot of meetings and emails, especially with people outside of WUSA/the University community as VP. From what I've heard, being VP involves quite a bit of travel too. Also, from my experience as MathSoc President, probably a lot of putting out fires as they come up.

Damian: The transition meetings and discussions with staff have only just begun, so having a full view of what the day-to-day will look like is hard to say for sure. But from what has been conveyed to me already, I'm looking forward to a non-stop stream of meetings with countless different committees and groups. I'm picturing being held up in a quiet office with a 4h/day beautiful view of my email account. There will be some fun too though, writing motions and reports that I think can best benefit students, and attending club and society events to talk with students about what issues they're experiencing.

**APHF: WHAT POLICIES WILL YOU ADOPT TO ENSURE mathNEWS GETS ITS WELL DESERVED WIKIPEDIA ARTICLES?**

Rem: You should check out my 156.6 article [Why mathNEWS doesn't have a Wikipedia article!](#) I do hope that Imprint and/or mathNEWS one day does enough student journalism to have a few notable secondary sources written about them, and I think mathNEWS is already in a good position to do that, if the writers more consistently write "real news." I think we do need to look at how to give Imprint more editorial independence, and the willingness to bark and bite at WUSA a little bit to get some hard-hitting articles.

**DICK CHUDNEY: FOR DAMIAN, WHAT IS YOUR FAVOURITE PALESTINIAN MEAL TO COOK?**

Damian: In almost all situations, when cooking an Arabic dish you have no clue which specific country it originated from. So I'm just gonna talk about one of my favourite Arabic dishes that my Palestinian grandmother made for me all the time, and taught me how to make to the best of her abilities. One of my favourite dishes is malfouf. Malfouf is just cabbage leaves stuffed with rice, lemon, spices, and whatever protein you can get your hands on. It's very similar to the stuffed vine leaves common at Greek restaurants except it's better.

I will be honest, though it tastes amazing and is fun to eat, cooking it, specifically stuffing the leaves is also hell. It's time consuming, difficult and by the end of the experience your fingers are slimy and pruny, but in a really fucked-up way it is kinda fun. My grandmother taught me to set up in front of the TV, prepare yourself for the long haul, and dissociate while making a salad bowl worth of the stuff in one sitting. To me, it's worth it and I enjoy the feeling of satisfaction when you're finished with your project, though I continue to be terrible at keeping the leaves packed tightly.

**CLASSIFIED: FOR REM, HOW DID YOU GET STARTED AS A WIKIPEDIA EDITOR? WHAT DO YOU LIKE THE MOST ABOUT IT?**

Rem: I mean in elementary school I kept hearing about how Wikipedia isn't a reliable source because anyone can edit it, and one day I just had a "realizing I have free will" moment where I realized that *I could edit Wikipedia too*. I'm mostly a copyeditor, and I find it easier to do than researching and writing things from scratch. The knowledge is already there, and anyone can see it, but by rewriting it I can make it much easier for a general audience to actually understand that information. And contributing to a huge collaborative project to share information openly definitely feels good too.

**CLASSIFIED: FOR DAMIAN, WHAT'S YOUR BEST ADVICE ON BEING AN EFFECTIVE AND CONFIDENT SPEAKER?**

Damian: Genuinely the best advice I could give when doing public speaking, especially in the area of advocacy, is to speak honestly and passionately. Honesty doesn't just mean without factual lies, but it also means that if you're trying to fire up a crowd, you cannot pretend you're speaking about an issue you care about, you have to genuinely resonate with the speech you're giving. People can tell when a speaker is up on stage regurgitating the talking points that's been handed to them, you can't get anyone invested that way (at least I can't).

If you can't get fired up over your own speech, how can you expect anyone else to?

**LARS NOOTBAAR: UNDER MY UNDERSTANDING THERE IS A STEEP LEARNING CURVE TO STUDENT GOVERNANCE AND MANY REFORMS MAY TAKE TIME, IF NOT OVER A YEAR TO BE IMPLEMENTED. WHAT IS ONE CHANGE THAT YOU PLAN TO IMPLEMENT IN WUSA WITHIN YOUR FIRST FOUR MONTHS?**

We'll try and be cautious about what we promise, though in our heads there's a lot we want to get done as quickly and effectively as we can to get WUSA in a state students can be proud of again. We'll talk about the issues we're quite confident we can get done in the next four months.

One thing we want to get started as soon as possible is improving the Bombshelter in SLC, reviving it to the active and vibrant student space it used to be. The first phase of renovations will hopefully be simple and fast, and we hope it can be done by the time new students come in September, but that is probably a bit unrealistic. We can work on larger and longer-term plans for a full reimagination of the space as students are enjoying the results of the first round of renovations.

Another issue we want to tackle quickly is that of revamping club funding. Currently, WUSA clubs only get \$75/term, which is less than at almost any other university in Ontario. We don't need to reinvent the wheel here: by simply looking at what's worked at other universities, we can hopefully bring student clubs the resources they need quickly and in time for their fall terms.

\_\_INIT\_\_: FAVOURITE NUMBER?

Rem: 2. I just think it's so simple but underappreciated.

Damian: The number 7. Idk why but it feels fast and I think that's cool. I don't know how to elaborate on that further but I feel like 7 could fuck me up in a race somehow.

## CSC FLASH!!!!

### THE M IN MARCH STANDS FOR EVENTS.

**SIGBOVIK:** The only computer science conference where your paper on "Different Sorting Methods Tested by Stalin" might win Best Paper... and Worst Paper simultaneously. However, this conference won't be accepting submissions for much longer! So if you wanted to submit a proof on why Stalin Sort is the best sort, your best bet is to submit right now.

**Christopher Batty**, an Associate Professor here at the University of Waterloo, gave a talk about computer graphics on **March 11 in DC 1302**. He is an expert in computer graphics and computational physics, so it was basically guaranteed to be a banger talk from an ultimate sigma. The food was all eaten up by all those gosh darn free loaders and the event went well.

**CSC Trivia** is back! It was held on **March 12 in QNC 1502**. Teams of friends tackled trivia questions for a chance to win some epic CSC prizes! Once again, the food disappeared quickly (god damn free loaders again), and this is likely the biggest event CSC will host this term. For those who missed it don't worry, you'll be Stalin sorted soon. And to those who were absolutely decimated by the trivia questions: it's okay. It's okay to fail. Just don't let it happen again.

**Hiring Notice:** Have you ever wanted to make a change in your school? Or do you just want to join a creed of alcoholics who run this club? Make sure to check out our club Instagram page: @uwcsclub to get the latest information on hiring. Be quick, as hiring may end sooner than you think! We're hiring for a variety of roles, from events coordinators to external affairs coordinators. Please apply—we are not as depressed as you may think.

**Club Merch and Pop:** We have CSC merch for sale! You can represent our very own Codey or the beloved Mr. Goose on your own apparel. Prices start at just under \$2, but if you want to be an ultra supporter (or if you're Jeff Bezos), you can pay up to \$35 for some high-quality fabric! Buy our merch. You know you want to. Come by our office MC 3036 to check out the catalogue.

**ML Reading Group** is still being held! If you want to learn more about Machine Learning, we are hosting weekly readings with DSC to uncover the deep secrets and complex algorithms behind the magic of AI and ML. We welcome all skill levels, including you first years :eyes:. So come on by on Wednesdays! BTW, there is also free food and drinks :grin:.

Finally, make sure to visit our **club office** at **MC 3036/3037** and say hi. We have near-perfect uptime during the day and somewhat tolerable uptime at night. The point is, if you come by, there's a high likelihood that CSC will be open. If you're

worried that we're closed, check out our club discord located on the footer of [cscclub.ca](https://cscclub.ca) to see if our office is currently open.

Our quote of the week in the office is: "ALRIGHT WHO THE F\*\*\* SIGNED UP FOR A P\*\*\*H\*B ACCOUNT ON THE EXEC EMAIL." — Iris Liao [CSC CRO]

*The geese return, a fearsome sight,  
Honking loud from morning to night.  
Campus quakes beneath their reign,  
Sidewalks lost to their disdain.*

*Waddle forth, with heads held high,  
Glaring as the students sigh.  
March has come, and so have they,  
Waterloo is theirs to stay.*

CSC FLASH OUT.

cscclub

## N HORRORS TO STUMBLE UPON WHILE EXPLORING CAMPUS

- Octo-staircase in PAS (floating people included)
- Periodic knocking sounds in the AL/ML/EVI tunnel
- DWE basement storage
- Asbestos
- PAS rooftop (for some reason, the ground is squishy)
- Any part of ESC under construction
- The SLC basement backrooms
- The taxidermy display in B1 and ESC
- The (live) bat in Hagey Hall
- The dull ringing of EIT at night
- The stench of the E2 labs
- A one-way door you swore would let you back a moment ago
- PAS
- The sounds of the depths

aaaaaaaaahhh!

# ARE YOU AN ENGINEER? YOU SHOULD REQUEST A REFUND OF YOUR ENGSOC FEES

[Editors' note: the views expressed by **mathNEWS** writers are their own discretion; they do not necessarily reflect those of **mathNEWS**.]

What does EngSoc do? It's a question I've been grappling with for my entire undergrad.

Walking past the EngSoc office makes me think about what happens in that room. Do those people go home? Do I get value from the fees I pay? Do engineers know what EngSoc does? The short answer: no. No one really knows what happens in EngSoc.

If I were to ask the average engineering student what EngSoc does, the first thing they'll say is "orientation": a service that EngSoc in fact, does not run. It's this disconnect from the actual student body that EngSoc continues to struggle with, and continues to ignore. No one knows what EngSoc does and what it does to help the student body.

Go to one of their councils this term. What you'll see is a group of students so white, you'll forget that a majority of the engineering student body are people of colour. You'll enter a room of entitled fourth years debating the ins and outs of "EngSoc policy" instead of actually fighting for students. You'll be confused as to why actual problems (cough nanos can't run for EngSoc Prez) are delegated to "committees" to be left to die.

You'll also see a trend. It's the same group of people running an organization that purportedly is representative of the engineering student body. EngSoc knows this though. They know that in the last presidential election, there was only one candidate who won the support of less than 10% of the engineering student body. It is in their best interest to not care: because that's how the clique keeps the power.

Go to their recent annual meeting, where emotions were high, and the society was unable to finish their agenda in nine hours.

It's fundamentally clear that if you're not a part of the clique that runs EngSoc, you're on your own.

Say you're an affiliate, like NSBE (National Society of Black Engineers) or EngiQueers and you're running an event. Your funding is tied to EngSoc. And yet, historically, you often get funded way below what you request.<sup>1</sup>

But say you're part of the toolbearers (oooohs and aahs) a "secret" organization defending the "sprit, honour, and valour" of the engineering community. You'll get a blank cheque of \$1300 to "get new costumes" and for "operations + activities."<sup>2</sup> What for? Unsure. But like. Engineering traditions am I right?

Oh yeah. There was a motion in the recent annual meeting to make the toolbearer thing more transparent. Will it get

passed? Oh hell no. The governing overlords would never let that happen. It would be “too detrimental to the engineering spirit.” Whatever that is.

And look. Don't underestimate the fact that there are so many hard-working engineers who join EngSoc and try to create a better student experience. So much so that they burn out and leave, wishing not even their worst enemies ever have to deal with the weird power trips, cringe "traditions," and just the toxicity of it all.

And if you're thinking "well this is a club," "who cares." You're right. At the end of the day it's just a club. But it's a club that takes a cut of your money and doesn't remember who they're beholden to. They're beholden to you: the engineering student, not some strange cringe-ass plumber gang that claims to protect our wrench from nerds at UofT.

Reader. If I were you. Fall 25, refund your Engsoc fees by shooting an email in the first two weeks of the term to [vpfinance.b@engsoc.uwaterloo.ca](mailto:vpfinance.b@engsoc.uwaterloo.ca). They're going up btw. You can get like four Shawarma Plus student specials with that money.

anonymous

Sources:

1. Winter 2023 budget: <https://docs.google.com/spreadsheets/d/1ZMaVura5qlmYPDb3LM8H8g2jMnJTAPhK/edit?gid=1836946070#gid=1836946070>
2. Winter 2025 budget: <https://docs.google.com/spreadsheets/d/1QqRn7hiWcsrNUmtiZQ-BqGJWFKDcbr6J/edit?gid=987781106#gid=987781106>

# N REASONS I SHOULD GET ACCEPTED INTO UWCS

- i grind leetcode in my free time ☹️☹️☹️
- i practically live in mc comfy by this point (truth)
- grinding euclid as we speak!!!!
- my friend referred me into the program 🍀🔥100!!
- i come from uw feeder school #1
- the alley is my lunch and noodles are my dinner
- it would be so so funny
- already sleep 2 hours per night
- no rizz
- literally today i got a shirt from mathsoc lol
- PLEASEPLEASEPLEASEPLEASEPLEASEPLEASEPLEASE  
LEASEPLEASEPLEASEPLEASEPLEASEPLEASEPLEASEPLEA  
SEPLEASEPLEASE

Future UWCS student (PLEASE)

# BINARY\_SEARCH

```
while ( todays_date ≤ end_of_term ) do {
    m = more of a hope than a concrete day in the future
    if ( you've got it all figured out by A[m] ) then return
        "you did so well,
        take a nap,
        take your time and eat breakfast tomorrow
        morning."
    else if ( suddenly it's A[m] )
        when you're staying up that night,
        pick a new day ≤ the end of term.
        as it breathes down your neck, tell yourself
        you'll have changed things by then.
    else
        it will be sooner than you think,
        a net decrease in days spent feeling heavy,
        so run it back again and pray:
        these things only happen with magic.
}
```

return home and wait

mobpsychofan

# MC-DC (AND MC-M3) BRIDGE FUNERAL

GONE TOO SOON RIP

I know we are all still heartbroken by the loss of our favourite campus bridge, and the MC-M3 one, so that's why I'm planning to hold a joint funeral for them on March 20<sup>th</sup> at 12pm. It will be located on the MC 3<sup>rd</sup> floor where the MC-DC bridge entrance was. If anyone has some unprocessed emotions or wants to pay respects, please join us. We can put up some posters, say a few words and share our favourite memories of the bridge(s). Feel free to bring candles (or Dollarama tea lights) and your loved ones. We should all band together during these trying times. They were taken from us too soon. Never forget.

insert pen name here

# SOMETHING I DID RECENTLY

I did this on a PMATH 950 assignment recently:

$$\text{vol}(K + L) \geq \frac{\frac{\frac{1}{a}}{\frac{1}{a} + \frac{1}{b}} \frac{\frac{1}{b}}{\frac{1}{a} + \frac{1}{b}}}{\left(\frac{\frac{1}{a}}{\frac{1}{a} + \frac{1}{b}}\right)^{\frac{na}{\frac{1}{a} + \frac{1}{b}}} \left(\frac{\frac{1}{b}}{\frac{1}{a} + \frac{1}{b}}\right)^{\frac{nb}{\frac{1}{a} + \frac{1}{b}}}}$$

easty

# UNIVERSITY OF WATERLOO ANNOUNCES M9 WILL "REACH HEAVEN ITSELF, GIFT US DIVINITY"



ARTIST'S RENDITION

Dick Smithers

# DON'T TAKE TRAINS

When I first told **mathNEWS** writer *Glec* that I intended to take the trains course, he, a past thorough enjoyer of the course, had the following advice: “Don’t take trains.”

Don’t take trains. Trains is the course CS 452: Real-Time Programming. It’s one of the “Big Three” CS courses—arguably, the biggest among them. The highest challenge of Waterloo CS. Each term, sixty students start the course; after the first week, half or less remain. Trains tasks students with two major goals.

1. Develop a microkernel from scratch, in a free-standing C environment. No libraries to help you.
2. Use your microkernel to develop a multi-process controller for a Märklin model train set, orchestrating five separate trains to operate in simultaneous motion.

Don’t take trains. Consider the microkernel. Starting from nothing, you must implement multi-process context switching, inter-process message passing, caching and efficiency measurements, a multi-process rock-paper-scissors game, interrupt handling, and asynchronous I/O. You’ll regularly have to sift through *fourteen thousand* pages of documentation to unblock your code, working through PDFs so big, every browser I tried failed to load them.

Don’t take trains. As of writing, this term’s victims have only just started the train controller. We’ll have to implement real-time train position tracking and estimation, multi-train convoys, and routing across several trains, all while avoiding inter-train collision. Did I mention the train sensors don’t tell you where the trains are?

Don’t take trains. If each of these was its own course, good luck. Together in one course? *Fucked*. Consider that if your train control code breaks spontaneously, the potential problem surface is *massive*. Maybe your code is wrong, or *maybe*, the memory locations storing your code are being overwritten. Maybe you’ve mistyped a single line of your context switching code, and somehow it worked well enough to slip through the past assignment successfully, only to spontaneously break later. Both of these are *real problems* encountered in the past week.

Don’t take trains. You don’t have the time. Assignment zero alone takes eighty hours minimum. You’re given one week. Every hour not spent in the lab is another hour up before the deadline, burning midnight oil in MC’s depths.

Don’t take trains.

Don’t take trains, because in that first week, you and thirty others will be in the lab until 2 AM every night, battling the Märklin train set in hopes to be set free. Huddled around the small wooden tables, you slowly get to know people. Each time someone finishes their project, quiet cheers resound. A0 is individually completed, but the whole room is your team.

Don’t take trains. The late nights don’t stop. Weekends, reading week, they’re all passed in MC 3018. You join MC’s late night crew. You and CSC play a game of who goes to bed last. They almost always win. Each night, you’re alone on the sidewalks, so each night, you walk home playing music into the open air.

Don’t take trains. Assignment 4 has you implement interrupt-driven I/O alongside a complete reimplement of the eighty-hour Assignment 0, all in approximately one week. You work every day since returning halfway through reading week, and the night before the deadline, you’re still there. It’s 10:30 PM, the deadline is 9 AM, and eighteen of thirty classmates are in MC 3018. And we’re thriving.

Don’t take trains. At 10 PM, your classmate is using his valuable time to debug others’ code. At midnight, you get Flock Stop’s strongest tea, a companion in the moonlight. At 12:30 AM, you have to solve only one more bug. At 1:00 AM, a friend leaves to work *anywhere* but the lab. At 3:00 AM, he bursts through the door to announce *I WANT TO DIE*. At 3:30 AM, you still only have to solve one more bug. It’s the seventh new bug. By 4:30 AM, only four people have left the lab for the night. Fourteen of thirty remain. The entire lab is increasingly styled in mid-hackathon dishevelment chic. You leave at 4:30 AM to get three hours of sleep before an 8:30 AM presentation. You return the next morning; at least ten people have pulled all-nighters. They have to present to the class at 10 AM.

Don’t take trains. At 11 AM, *befuddled* asks me: *Do you think you’ll regret this?*



The next night, on three hours of sleep, you take a bus—not a train—to London, Ontario. You check into a really sketchy AirBnB. And you run, shrouded in the midnight blanket, breathing winter air, to the downtown core. The Renaissance towers shine overhead, and the Thames runs below. You’re home.

You cross into London’s arena. Black eyeliner, spikes, leather, and frog hats fill the hallways and seats within. Three artists play. Winnetka Bowling League and Cavetown set the stage, with slow dances and sweet teeth.

Then Mother Mother, the main act, emerges. With black and red, electric guitars, laser lights, and artificial fog, Hell takes the crowd, and the cacaphony screams:

GODDAMN, I LOVE TOO HARD, I LOVE TOO HOT,  
MY LOVE’S A FIRE  
EVERYTHING I CLAIM TO LOVE’S GOING UP IN FLAMES  
AND I BURN ALIVE  
I GOTTA LAY BACK IN A STRAIGHT JACKET AFTER SEX  
AND STILL INSPIRED  
AND MY FRIENDS WILL ASK WHEN I FEEL RELAXED AND I SAY

WHEN I DIE (WHEN I DIE),  
I'LL LET GO (I'LL LET GO)  
BUT IN MY LIFE (IN MY LIFE),  
I'LL HOLD ON UNTIL THERE'S NOTHING LEFT TO HOLD

The walk back feels brighter.



Glec always said “don’t take trains.” He then followed up on that. “If you hear my warning, and decide to take trains anyways, then you should take trains.”

Don’t take trains. It’s Hell. But, maybe you’re Hell too. Maybe, just maybe, you have the determination to do it. Maybe, you’re willing to reject every warning. Maybe, you’re willing to run along the tracks at the oncoming train, daring it not to move.

This is the best course I have ever taken.

Don’t take trains.



molasses

## STARGAZING BACK AT ME

I can’t go in my childhood home anymore. But I remember laying on the worn carpeted floor there as a child, with pretzel posture, reading about space. I used to feel so much wonder. Younger me would read picture books about the solar system or sci-fi tales about murder mysteries on lunar stations. To him, the future was certain—of course people would be stargazing from up close.

If it were up to him, I would either be engineering spaceships or traveling in them. Back then, I would imagine myself as an adult sitting in that same living room, watching the first human walk on Mars with my parents. How vivid of a picture that would be. Then, I imagined I would hear news of astronauts visiting Neptune, or read about some mission to send people to the nearest star system within 50 years. All within the span of a single lifetime. I had so much hope for the scientific marvels that I would get to witness and partake in because I was born at the right time.

I turned 21 last month. It’s funny because when I was a kid, I of course knew I was going to age—but somehow, it was never conceivable that time would actually *get to this part*. My imagination could take me far out into space, but it could never take me vividly into the next year. I don’t live in my old house anymore and I’ll never get to live out that imaginary scene—I moved way out of the city into a rural area that has about as many humans as the ISS.

I still wonder if there’s some micro-organism out there in Europa’s ocean, or what it feels like for a human to float in front of Jupiter, with its sheer scale occupying your entire view and existence. Young me thought all of these things would have been answered by now.

Young me never got the chance to decide what he did when he grew up. I decided for him. I decided that we’re not going to build spaceships. We’re not going to be floating next to Jupiter, and we’re not going to see new stars. We’re gonna write *backend software*. And I think I like it. It answers the big questions that face me in this phase of life. Like how am I going to afford to live on my own? How can I make my parents proud? How can I use my brain to help society? It’s

an awesome and privileged outcome. It answers all of my questions. But it doesn’t answer any of his.

He’s asking if I’m going to go to space in this lifetime. He’s asking what the next miracle news from outer space is coming on the next time I look at the TV. He’s asking what *our part* in that is. I don’t know how to answer his questions. How would he react when I tell him that nobody has been to Mars and that we might never get to see that? I think he would cry. I know he would cry so much. I ask myself so often if him and I even walk alongside each other on the same path in life.

I turned 21 last month. It’s funny because when I was a kid, I never thought that I would finally *be at this part*. I wrote some code for a CS 349 assignment. I went to the climbing gym in Hamilton for the first time in many months. I smiled and waved for what felt like forever at my old friends streaming into the room. I was so happy to see them. As I left the building, I felt a strange but deep sense that I was doing the right things.

That night was very clear. I showed my best friend the stars when they drove me home. I excitedly pointed at binary star systems, clusters, and the faded light of the Milky Way. I nerded out so hard. When they went home, I sat out in the cold stargazing for another 20 minutes. I saw a new star that I never saw before. I imagined how long its light had to sprint before I understood it. I smiled very much on my birthday, because I realized that I do still feel so much wonder.

thursday

## TAKE TRAINS

Surely your arrival won’t be delayed by >1 hour, right?

(This message has been brought to you by VIA Rail.)

yalevoylian

# THOUGHTS ON EVERY TIM HORTONS ON CAMPUS

As of the day I am writing this, I have finally ordered something from every Tim Hortons on campus. I expect this to be a niche achievement which I doubt many people have accomplished (or care to do so) and therefore I have granted myself the unwarranted authority to disseminate my unsolicited judgements in compensation!

## SLC

This is definitely one of the Tim Hortons of all time. It's the only one on campus to serve real lunch, as long as you can wait 40 minutes. It's also one of few left in Canada that still serves ✨ Grilled Cheese ✨, which I used to main as a food source. Working here is probably the most difficult job on campus... like sure, you're stressed with midterms and looking for co-ops, but are you SLC Tims stressed? Despite what Reddit might say, I've only ever had my order messed up here a few times, including once when they forgot my donut but I came back twenty minutes later and they remembered me. Overall an iconic Waterloo institution; I rate it a surprised rodent video out of five.

## DC

An unrivaled power when it comes to breakfast wraps; wrapped 50% quicker with a 50% lower chance of food poisoning compared to SLC. I'd go as far as endow it honorary member status to DC Bytes (rip until M4 opens). There is no doubt the de facto Math Faculty Tims has been taking optimization courses. Unfortunately, everyone knows about this secondary location and I have seen the line take up more area than the kitchen square footage. Overall rating:  $\infty/\infty$

## SCH

The other breakfast-serving tims and DC's jealous sibling. So awkwardly positioned, squished between the exit and the W Store. Not a W. Lining up here feels weird, and there has been something off with my order every time I've been here. Needless to say, I may not miss it should SCH be demolished in a climate action plan. Only redeeming factor is that it has a small lunch menu? I give it an overall rating of grilled cheese out of bacon grilled cheese, of which it has neither.

## ML

The joy of skipping a line of 30 people in SLC to a line of zero in ML parallels theoretically touching the fur of mr. goose. You'll recognize the same one or two staff here after going a few times; very welcoming, great location by ML's Diner and the arts tunnels. I always go here if I have classes in the area and need a snack. Rating: apple fritter / berlin airlift.

## EC5

Designed only to serve the administration in EC5, you know it's quiet, friendly, and staffed by one person. I bet they know the names of every regular who comes in. Some older

branding is still in use at this location and there is an empty seating area that would be a great place to study if it didn't close at 3 PM. charming, mindful, demure, etc... I rate it an EC5 out of 3 PM.

## Whole Number Haver

unfortunately, with this being published, my streak of creating graphics-based articles for **mathNEWS** comes to an end. so much effort, so little time

## THE BEST MATH TALK I HAVE EVER ATTENDED

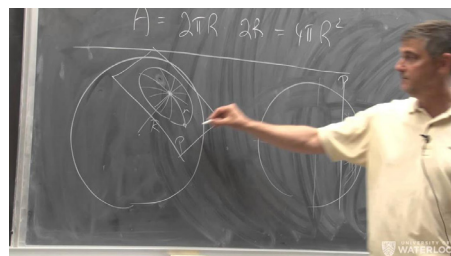
### A LEGENDARY START TO THE 24-HOUR SASMS.

This article exists solely because I wanted to have my appreciation for this talk on print.

At 1600 Friday March 7<sup>th</sup>, I was waiting in MC 1085 for the first talk of SASMS to start. I was expecting a usual math talk, ten minutes of definitions which I would not understand followed by twenty minutes worth of talk regard some results using those definitions which I would understand even less. Little did I know that this time was different.

About ten years ago, the Math Faculty recorded some teaching exemplars from lecturers in different departments and put them on YouTube. One of which was a talk given by Stephen New ("a beauty in mathematics") about spherical geometry. The whole lecture was just him drawing circles and some lines followed by some calculations using an insane amount of integrals. Upon watching *the video*<sup>1</sup> you will then realize that you can listen to not only twenty minutes but hours of snow drawing circles and taking integrals.

The first presenter of SASMS, Jeff, decided to put his hard work into memorizing every single detail of the the talk and re-present it exactly as snow had done a decade ago. It matched the original work second by second and it was the most delightful math talk I have attended. It felt almost as I had re-lived history as it was being written (or in this case recorded).



1. <https://www.youtube.com/watch?v=ZUhrQUB1mis>

# THE DAP AND ALL OF ITS REGIONAL VARIANTS

one of the greatest joys of university is being surrounded by thousands of people that are all approximately the same age as you and are all being simultaneously subjected to the horrific experience of attending the university of waterloo, but that could be from, like, anywhere. the guy sitting next to you in cs 137 could be from ottawa. your weird smelly roommate could be from edmonton. that girl behind you in the dc tim's line could be from (shudder) mississauga. the possibilities are endless!

with this massive melting pot comes endless possibilities to learn about different cultures! i could write reams and reams of articles on how frickin cool it is to learn about your friends and their traditions and their weird family traumas but instead i will talk about my favourite cultural phenomenon—the art of *giving dap*, or *dapping someone up*.

giving dap is a greeting that was first invented in the 1970s by african american soldiers fighting in the vietnam war. it typically involves some combination of handshaking, fistbumping, and hugging, and that's the beauty of it—*there are so many different ways to dap someone up*. for example:

- my albertan friends do a “slap and fist bump”—they slap their hands together, slide back all the way, and then fist bump. this one is my favourite because fist bumps rule.

- the most common one i've encountered is the “slap and grab”—they slap their hands together, slide back, and then clasp fingers. all the people i know who use this method are either from the greater toronto area or were taught by someone in the gta, so it might be a gta variant? regardless, a solid one.
- a modifier on this one is the “clasp and grab,” where they clasp their hands together (like the handshake emoji) and then pull back so they can clasp fingers.
- an excellent one is the hand clasp into one-armed hug, because i think everyone needs to be hugged (this is a psa to please hug your loved ones).
- my friend just taught me a dap that involves slapping, sliding back until you're only hanging on by the tips of your index fingers, and then *snapping with the rest of your fingers*. this one requires a lot of finger dexterity and i also don't really know where it's from. i think possibly oshawa or brampton.

i realize that the dap™ is something incredibly mundane and second-nature to a lot of people, but i think that it's very swag that there are so many subtle regional variations on what is basically just a friendly way to greet your homies. diversity is cool and we can learn lots from each other <3

ankles

## ENVIRONMENT 2 BUILDING LORE

I've been reading **mathNEWS** for long time now, and I have noticed a *Type of mathNEWS* article. Be it a map of the tunnels, the big room in MC that used to house super computers, a tour of the relics of the **mathNEWS** office, the MathSoc couch, or Fed Hall's previous student ownership, there is a **mathNEWS** article explaining the lore behind it. It feels as if there's a lore goldmine. However, I am not a math student, so I don't have the relevant connections to unearth any lore of my own. As articles continue to be published, the lore veins continue to be more and more exhausted.

However, recently, I have struck gold, and no math student can take it away from me... Environment 2 has a Hydrogen Sulfide gas problem (allegedly, according to trusted sources).

Supposedly when they built EV2, the sewage system was installed wrong. Some have said they hooked it up to too many labs, others say it was because the building had negative air pressure, but the end result was the same. The sewage becomes anoxic, releasing Hydrogen Sulfide gas, which is toxic, corrosive, and flammable (and theorized to be the cause of the Permian–Triassic extinction event, also known as the “great dying”). The release of this gas creates a rotten egg smell.

In order to solve this, a lab near the sewage pipe, that will go unnamed in this article, has to keep a sink running constantly in order to flush oxygenated water into the sewer. Also an open line to the sewage pipe is kept constantly open in the floor of the lab to provide oxygenated water as well.

How long has this been going on? Oh, just 10 years or so... Although it has been increasing in smell in the last year. Want to experience it for yourself? Go to the bottom floor of EV2 and take a whiff, you will very likely smell it.

Also, at 7 PM every night a loud alarm blares without fail. Why? No clue.

Lars Nootbaar

## HEY, DID YOU DRINK WATER TODAY?

please remember to take care of yourself <3

your friendly dehydrated neighbour

# WHAT I THINK HAPPENED DURING 24-HOUR SASMS

*OR HOW I LEARNED TO STOP WORRYING ABOUT MY TALK AND GET SICK WITH GOD'S MOST POWERFUL COLD INSTEAD*

Hour 1: Normal, actual math (boring)

Hour 2: Normal, actual math (boring)

Hour 3: Normal, actual math, Guelph student falls asleep and has to be escorted out

Hour 4: Normal, actual math (boring),

Hour 5: 70% of Guelph students have left, too boring

Hour 6: Normal, actual math (boring)

Hour 7: All Guelph students have now left. With them gone, and the funding obtained jointly from the UWaterloo and Guelph math societies obtained, work can now begin.

Hour 8: Trapdoor opened to MC 0<sup>th</sup> floor housing 10 year "Lion of The Final Night" project

Hour 9: Alpha and Beta reactors fully online

Hour 10: Gamma reactor fully online

Hour 11: Full power is needed and the region of Waterloo goes into blackout. Disinformation campaign activated to explain.

Hour 12: Cambodian government realizes what is going on due to information unveiled in Project Ibex and begins an invasion of MC

Hour 13: UW campus security, unbeknownst to what is going on on either side, assumes a violent third party is attacking campus, and activates newly built GoelBots to defend. They successfully block the infiltration of MC

Hour 14: The Cambodian government tries to explain the situation and begs Goel to allow them to stop the heinous crimes, but he does not understand

Hour 15: Normal, actual math (boring)

Hour 16: Talk on something stupid like matroids

Hour 17: The project is 75% complete. Power is scaled down and some areas of Waterloo are no longer in blackout

Hour 18: The IAEA has flagged MC for suspicious readings in the past 24 hours. Several watchdog investigators are sent. They mysteriously disappear.

Hour 19: Vivek Goel is informed of this and decides to investigate himself. Campus is locked down fully and GoelBots are sent to do a thorough investigation of all the grounds, MC especially.

Hour 20: The project is 95% done. Power scaled down almost entirely. Gamma reactor now shut down.

Hour 21: After a 2 hour, \$1 million search, 500 GoelGoons are not able to locate anything of interest, and give up. The UN is notified. If the readings continue, the US military may be called in.

Hour 22: Probably an AMath talk that has physics or something, ewwww

Hour 23: Alpha and Beta reactors shut down. UN has reported suspicious readings have ceased, and a larger investigation will not need to take place, but the area will be kept under watch for some time. Cambodia begs world governments to look at their evidence, but they do not appear to be interested due to other world events taking up their time.

Hour 24: A Family Guy video containing Stephen New has successfully been generated. This is the final talk of 24-hour SASMS. Everyone who watches it is subsequently shot, except for one obese man at the back of the room. His name? Peter Not Griffin.

epic\_waterman

## N INSPIRATIONAL QUOTES / THINGIES MY FRIENDS AND I HAVE SAID

- maps help us in times of need
- clap for the mountains everybody
- What is toilet rizz?
- Gonna meet elephants
- Acceptance is key
- You have to keep licking it
- Can we get something at 9/11 (they meant 7/11)
- All these foreign keys taking over our columns! (databases joke)
- If you're going to think, at least think a bit more
- Good people don't drive pickup trucks
- For someone who's talking about nothing he's talking a lot
- Thingy
- Isn't pizza a ketchup?
- me and the gang at CnD and the microwave is possessed
- maybe the **mathNEWS** article was the friends we made along the way

insert pen name here

# A MODEST PROPOSAL

## POLITICAL TRIGGER WARNINGS ABOUND

It is a despairing sight one is forced to endure, when you watch the news and are forced to gaze upon that most innate visage, watch as he says nonsense, cronies in tow, and tries to buy a country he thusly tries to alienate. And we, instead of doing literally anything else, are forced to dance his macabre tango, and flail as he waves tariffs around and twists our arm.

I think it is agreed by all parties, that this cannot stand; and that one way or another, someone must cave. And such a solution I do intend to provide, but fear not, wary citizen—for I believe my pitch to be akin to a two handed broadsword, and we may not only fend off the American threats, but we may also find positive contribution to our allies who forsaken us, and perhaps provide much needed economic stimulus and prevent the slides of the stocks.

While others choose to boycott, counter-tariff, or roast the goons ceaselessly on social media, I, instead, wish you may lend me your eyes, for this brief suggestion.

I'm assured by a very well-knowing communist that marijuana, be it smoked, eaten, or otherwise injected, is a feast for the human mind, an experience none can begin to parallel.

By my estimations, though we are outnumbered, our production of the plant must surely at least be equal against our Southern neighbors, who've puritanically shielded themselves against it, some states wholly, some partially; we have strong adoption and plenty of arable land. Land that may perhaps grow cheap wheat, potatoes, soy—we can transform into lush plantations surely to boost our GDP.

I also daresay it be necessary—having consulted with my inner nationalists, I find it hard to dispute a need to start subsidizing this production. After all, isn't it our patriotic duty, our right as Canadians, to burn accords, destroy alliances, alienate voters, and commit war crimes against literally everyone else who DARE stray into our self-serving path of wanton pleasure-seeking?

I have discussed this matter at length with others, and one great point they bring up is Mexico, who themselves have also pledged to the orange man to crack down on the patriation of so called "controlled" substances. To this end, we Canadians, ever the gentleman, can extend a cordial arm of alliance—for, if the enemy of our enemy be our friend, then surely, we must befriend the entire concept of Drugs itself, perhaps the only entity whom the Americans are losing a war to, save Vietnam—and together, we may ensure they lose perchance faster.

But I digress, and surely your eyes glaze over my ceaseless ramblings. But fear not, I have included some more rational points of consideration.

Firstly, we may find this endeavor simple to execute. We share the longest land border in the world, and once shipped slaves

out to the colonies; surely we can deliver goods back in at speeds even Hermes would be jealous of. Many of our most southern and their most northern mainland cities can be used for this purpose—and if it be too obvious, we may choose to also ship weed through Alaska just to f\*ck with them.

Twoly, such revenue to our country and government is inherently untariffable, for it leaves no legal trace; and any officer of the law, likely a youthful man seeking life's pleasures, would happy avert their eyes for a few grams of the coveted product.

Threely, we may use this to further ruin the politics of our Southern neighbour. If they get addled over conspiracies such as the coronavirus and Santa, a true conspiracy against them will leave the administration and their duals in a paranoia-infested manic state.

Fourly, we may further increase our lead in the trade war, supplementing Canadian lumber, electricity, oil, and hockey with lots and lots of rope.

Fively, the Americans may not suspect a thing. Brazen on solving the world's problem by tossing trillions into totally mandatory flashy defense spending, we may instantly neutralize their advantage, utilizing stealth and soft power to seep our influence like maple syrup onto fluffy pancakes. Who would suspect the Canadians do such a thing? Exactly.

But most importantly, it would be really funny, and it would humiliate the CIA, for this would be the greatest covert psyop known in history (I may well argue that as a mind-altering substance, one should thusly consider this operation so).

I would like to rest my case—this operation would be the strongest feat of Canadian nationalism since our involvement in the World Wars, and allow us to settle the most important question of who is the dom in our changing relationship. The time to act is now, and our acts must be swift.

Finally, unlike others, I would like to clear opinions of any potential conflicts of interest; I personally, having never used weed or any derivate product, asides as a non-pharmaceutical rope, have no personal stake, investment, or interest in any firm nor company whose production chains involve weed in any form.

badoiii

## CSC FLASH!

### CRAZY WE BACK

sigma sigma sigma

cclub

# sasmsQUOTES

## GUELPH STUDENTS

“ Why does the boot look good but the rainbow look bad?

“ As my boy hngngnngn has mentioned...

## PATRIK BUHRING: DESMOS SHENANIGANS 2: ELECTRIC BOOGALOO

“ *Speaker:* Question?  
*Student:* What the fuck?

## ALEX PAWELKO: DIFFERENTIAL GEOMETERS SUCK AT NAMING THINGS

“ This is actually the most common notation in the field and I'm not joking

“ We could call it the push-forward for... no reason

“ And we call it  $G$  for “inner product”

“ Differential geometry is over, rip bozo

“ We have  $G^2$  manifolds that occur exactly in dimension 7, and  $\text{Spin}(7)$  manifolds that occur exactly in dimension 8

“ If you do research in this field as I do, you might wonder “How do you remember all these names?” The answer is you don't.

## RIVER STANLEY: IS KARL MARX BISEXUAL? (PART 1)

“ You might want to get the Communist Manifesto but with the cover that goes with the colour scheme of this presentation.

“ This is a very good way to orient results: horizontally.

“ If we shorten the query to “Is Marx bisexual,” Obama's biography actually works!

“ *Student:* Is Karl Marx bisexual?  
*Speaker:* No, he's super homophobic.

“ *Student:* Can you come back to the first slide? You ask, “Is Karl Marx bisexual? Does this imply that you think Karl Marx is still alive?”

## SARA NAYAR: TEACHING YOU FRACTIONS

“ What is a fraction? It's a ratio of two integers. Thank you.

“ So we can kill all of those other ideals.

“ This presents a problem: we don't know how to multiply.

## DAVID TERESI: EVERY MAP OF HAMILTON IS WRONG

“ I still don't see York boulevard, so I'm preparing to jump into the lake.

“ If you grew up in a normal part of the world, the lake is south... That's just where it is.

“ And the thing about balls is that you cannot really put them on a plane.

“ As opposed to the most important part of the world, which is of course, Toronto.

“ Some people like to call these lambda and phi, I like to call them the word lat and the word lon because I hate Greek letters.

“ You may notice that Australia is gone, and that's because of an off by one error.

“ The thing about cylinders is that Lake Ontario isn't really a cylinder.

## GRACE FENG: MATHSOC COUNCIL MEETING SIMULATOR

“ Anthrax. Yippee!

“ *Student:* If the goal is just to kill stats club students, there are much easier ways to do it, like with a rock.

“ All those in favour of Anthrax?

“ Motion passes. You guys can budget for Anthrax.

“ *WUSA VP-elect:* Motion to amend the amendment to firing squad?

“ *PMC President:* I love that I got elected to be shot. I give the students 24 hour SASMS and...

## YI FAN SONG: MY FACTORIO ADDICTION

“ You can make stuff to make more stuff.

“ “Ratio”  $\times M$  times.

“ *Student:* Can you make a cake?  
*Speaker:* A cake? There's no cake. The cake is a lie.



**CHARLES QIU: ANALYTIC CHEMISTRY**

- “Hydrogen is a fraud and it deserves to be overruled.
- “We will now weigh the pros and cons of the Hindenburg.
- “Are you guys unsubscribed from lithium?
- “You really have been living under a rock, and that’s not my problem.
- “*Speaker:* You both live in the same rock?  
*Student:* No, we live in different rocks and they both are very big?
- “All they talk about is Beryllium.
- “What are the cons of nitrogen fertilizer bombs?
- “Do you support the Oklahoma bombing?
- “*Student:* Okay, so killing people is fine, but slavery isn’t?
- “Okay, number 7: fire!
- “*Speaker:* How good was the Oklahoma bombing?  
*Student:* A! A tier!
- “Cons of fire: this bird is going to come and rip your intestines, and this will happen everyday.
- “So, in the cons (of fire) we have bird and societal progress.
- “For number 8, we have the number 9.
- “The problem with 9 is that it is not as good as 10.
- “The number 9 is “b3.”
- “*Student:* I think that people who play b3 do not want to be like other girls, they want to be special.
- “It’s a yes or no question, “abstained” is not an answer.
- “*PMC President:* [*Speaks plautdiesch*] I asked your name?  
*Speaker:* I don’t care.
- “The problem with fun is that it is illegal. You can’t have fun anymore in this country.
- “You guys support bank robbery? That’s what I’m getting from that.
- “*Student:* Does a semihemidemi-quaver pay taxes?
- “Yeah, exactly, you live in Canada, why do you like the Canadian government?

“This goes back to my point that you shouldn’t be such a fan of Canadian government: they won’t let you beat people up.

“I think B tier is C tier at best.

**SARA NAYAR: HOLLOW KNIGHT SPEEDRUNNING AND THE TOPOLOGY RULE**

“[*Opens new set of slides*] I don’t know how to do images in beamer and don’t know how to do math in Google slides.

**REMINGTON ZHI: MATH WIKIPEDIA TEA**

- “I don’t remember what these are so we’ll just rediscover them together.
- “Now with the rise of AI someone goes, “You’re gonna be out of job,” and someone goes, “No.”
- “There’s a lot of weird stuff happening, someone put an interactive example here, it’s weird.
- “Also didn’t read this, it’s probably *spicy*.
- “I think someone was really really passionate about including a coin with Archimedes’ face on it—it’s over a page long of discussion.

**ISSN 0705-0410****UW'S BASTION OF ERUDITE THOUGHT SINCE 1973**

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- “ I also do this sometimes, most of the time people don't reply to me.
- “ Someone copied the whole article to ChatGPT and asked how it could be improved, it's funny.
- “ I have no idea why it's under this category.
- “ They created a page separate from the Talk page to argue about it.

#### YI FAN SONG: CLOSE YOUR EYES AND TRUST ME

- “ So, do you trust me?

#### CHARLES QIU: SUMMER BREAK ACTIVITIES

- “ Number 1. Killing or attempting to kill her majesty.
- “ If we take the wording literally, we have to dig up her majesty and kill her again.
- “ She's already dead; you're not going to get much of a reaction—and that's the fun part of killing.
- “ Quick poll—why do you like killing people?
- “ I'm not sure what exactly a cartridge magazine is, but I'm pretty sure it's something like a Nintendo Power.
- “ Do you think Laurier students are cannibals?

#### CONNOR BAETZ: THE ANCIENT WORLD AND PARABOLAS

- “ I'm going to be citing a text by Archimedes.
- “ Well, Euclid says...

#### RIVER STANLEY: IS KARL MARX BISEXUAL? (PART 2)

- “ I wrote this sentence three hours ago and I don't remember what it means.

#### BRYAN CHEN: WHERE DO YOUR NUMBERS COME FROM?

- “ Let's look at some numbers that are randomly generated. I just generated these... randomly.
- “ I think nonchalantness is definitely a good attribute to have as a drunkard.

*molasses*

## HEADACHE RECIPE

### INGREDIENTS

- 1 24-hour SASMS
- 1 shelf at shoulder height
- 1 dirty sock
- 1 region which observes daylight saving time
- At least 1 video game (ideally at least 3)
- Healthy dose of revenge bedtime procrastination
- 1 broken phone charger (optional)
- 1 alarm clock with a very annoying alarm sound
- 1 Monday morning 300-level lecture or higher, the earlier in the day the better (if you don't have a third year course, substituting any difficult course e.g. STAT 241, MATH 249, or even PHYS 122 can work fine)
- 1 upcoming midterm for the same course in the next week

### INSTRUCTIONS

1. Attend as much of the 24-hour SASMS as possible, then neglect to account for daylight saving time in the following night and lose a further hour of sleep.
2. Leave the sock on the floor below the shelf. Later in the day, when you go to do laundry, try to pick the sock up and hit your head on the corner of the shelf.
3. Realize that the phone charger doesn't work and panic trying to come up with a solution.
4. Use the video game(s) to procrastinate going to sleep. If you have a broken phone charger, you can use the time you wasted overthinking the phone charger scenario to justify staying up longer than you should have.
5. Use the alarm clock to set an alarm for early in the morning so that you can make your morning lecture. Again, if you have a broken phone charger, you can use that as a further reason to use the alarm clock instead of your phone's alarm. Remind yourself that you can't skip the lecture because of your upcoming midterm, so you're forced to wake up.
6. Wake up to the annoying alarm. Go to the lecture on 4 to 5 hours of sleep. You won't be able to follow along very well, but try your best anyway.
7. Congratulations, you have successfully created a headache!

*hyperlynx*

**This blackBOX was here all along, I swear.**

A mathNEWS EDITOR WITH NOTHING TO HIDE

# N GOOD YOUTUBE VIDEOS

## BADNESS 0 (APOSTROPHE'S VERSION) [SUCKERPINCH; 22:15]

If you enjoyed 24-hour SASMS, you might enjoy SIGBOVIK, the annual conference of unhinged computer science research hosted at Carnegie Mellon University. One regular presenter is a man named Tom 7, who conveniently records a YouTube presentation of his paper each year for all of our enjoyment.

I'd try to start describing *Badness 0*, the latest in this series, but these videos work so well because you have absolutely no idea where they're going until almost the end. You hit play, you sit through the tangents about video games and Donald Knuth's philosophy, and by the end you somehow become convinced that Tom 7 (whose full name is Dr. Tom Murphy VII) has come up with the actual only legitimate use case for large language models. Highly recommended.

**What to watch next:** *Harder Drive: Hard drives we didn't want or need* is a classic if you haven't seen it yet.

## WE VISITED EVERY DINER IN BOSTON (USING TRANSIT!) [MILES IN TRANSIT; 3:22:17]

I love Miles in Transit for the same reason I love stepping on crunchy leaves in the park. It's a channel dedicated to the purest form of entertainment, to doing stupid shit for the sake of doing stupid shit. Miles, the titular character, along with an assorted group of accomplices (the Miles Cinematic Universe, or MCU), spend each video embarking on some sort of pointless adventure, usually on some vehicle resembling a bus or train.

This one is exactly what it says on the tin: Miles and MCU co-member Jackson visit every diner in Boston, in the span of about three days, and attempt to order eggs and French toast at each one. They visit about thirty in total. If that sounds like a low number, that's because they're only considering the type of diner that was mass-produced in a factory in the early-to-mid 20<sup>th</sup> century to be purchased by an enterprising restaurateur and plopped down onto an empty lot to be "real diners." That's one of the core rules of Miles in Transit: a concept is not allowed to exist without someone being a huge nerd about it.

Like the other MCU, the characters in this MCU all have superpowers: Jackson happens to be an incredibly talented songwriter, and we occasionally get a break from the three-and-a-half-hour diner montage and travel vlog so that Jackson and Miles can break into song. Of course, there's also a theme song at the start of the video, and little musical jingles for every recurring segment. You start to catch on after a while. You wonder why they keep passively mentioning that the next bus they're getting on will be the 71, and, oh, it's because they're about to launch into a garage rock anthem about the 71. Makes sense.

There's something fundamentally inspiring to me about Miles in Transit. Nothing they do is for any practical reason and every creative decision feels like it was made purely out of the

video creators enjoying themselves and committing fully to every bit. You watch enough Miles in Transit and, next thing you know, you're spending an entire afternoon fulfilling some silly quest you thought would be mildly amusing even if only to yourself, creating a story you may or may not tell later, as if you're being watched in heaven by some god of doing stupid things, or Miles himself even though he isn't dead, or perhaps the space probes from 1776. Is this what religion is like?

**What to watch next:** There are so many to choose from. Try *The 19-Hour, 200-Mile Trip Through NJ on LOCAL BUSES!*, in which Miles traverses the state of New Jersey from bottom to top exclusively on buses that never go on highways, along with a third MCU member, Jeremy, carrying a comically large whiteboard to calculate New Jersey Transit's convoluted cash fares. Jeremy's superpower is chewing weirdly, according to a friend of mine who went to university with him.

## THE DUMBEST BOY ALIVE. PRETTY GOOD, EPISODE SIX. [JON BOIS; 18:13]

Jon Bois is one of my all-time favourite writers, to the point where I routinely sift through the archives of the sports blog he writes for to look for deep cuts. He has an incredible storytelling ability, and on top of that, practically invented a new documentary format that's inspired several proud copycats.

If you're not a huge sports fan, you may be disappointed to hear that the captivating stories Bois tells are usually about baseball or football players. Fortunately, this video ditches those in favour of what is arguably the world's oldest sport: arguing on the Internet. For eighteen minutes, Bois dramatically retells a 2008 interaction on a bodybuilding forum in which two men vehemently disagree over how many days are in a week. Do they ever figure it out? Watch the video to find out.

**What to watch next:** The first video of Bois's I ever watched was the two-part documentary *The Bob Emergency: a study of athletes named Bob*. I'm not a sports person, and I immediately loved it. I've shown it to several fellow non-sports-people who also loved it. Strongly recommended if you have an hour and a half to spare.

## WINTERS LOVE ② (COVER) [SIMONSTRASH; 3:33]

Would you like to watch four Swedish kids perform an Animal Collective song in the middle of a forest, surrounded by snow and trees, using two guitars, the lid of a garbage can, and a hat with bunny ears?

Yes. Of course you would. I'm pretty sure this is my favourite piece of media ever produced. Go watch it now.

**What to watch next:** You should not watch anything next. You should turn off your computer and run into the woods.

# DEATH GRIPS 2.0

## OR HOW I LEARNED TO STOP WORRYING AND DO A SEQUEL TO AN OBITUARY FOR ONE OF MY FAVOURITE MUSICAL PROJECTS

**Disclaimer:** This article discusses suicide as the subject matter of a song. This article is also best enjoyed after reading *Death Grips* is... Offline from issue 157.3. It's not compulsory but it helps a lot.

Those who visit the Wikipedia page for Death Grips' sophomore studio album, *No Love Deep Web*, will likely be shocked when they are greeted by drummer Zach Hill's manhood. Adorned with the album title, his erect flagstaff against a backdrop of shower tiles makes up the album's cover art. There are naturally alternate versions of the cover where Hill's pitched tent is covered by a black box, is pixelated, or the entire photo is replaced by one of vocalist Ride flipping off the world on the edge of a balcony, or his feet wearing socks that ask the reader to "SUCK MY DICK," but the one at release is nevertheless that of Hill's at-attention soldier in full HD for the world to see.

Hill's Woody Woodpecker is not the only unusual thing about the album's release strategy however. The primary release platform was BitTorrent, and the album was released on there for free<sup>1</sup> on October 23<sup>rd</sup> 2012. In fact, this seemed less a release and more the band leaking their own album. Which was in fact the case.

This served as a protest against the band's label at the time, Epic Records. After choosing to cancel the tour for *The Money Store*<sup>2</sup> in order to finish *No Love Deep Web* before year-end as promised, and an incredible ARG<sup>3</sup> to promote the album, the band was understandably irritated by Epic's refusal to release the album until "next year sometime." Staffing changes had left the group with no contacts at the label, and now they wanted out. So after finishing work on the album in the Chateau Marmont,<sup>4</sup> the band hit the button to release it along with supplementary materials.<sup>5</sup>

The album opens with *Come Up and Get Me*.

It is incredible.

Ride is yelling in desperation. The instrumental is intense, arguably minimalistic, and yet it manages to fuel an animalistic rage in you. It is a stressful listen. The 13 minute short film is incredible. I will not give you my interpretation of it. My read of it is not that uncommon or novel, but I more importantly wish for your experience of it to be untainted by others' takes.

The album contains no programmed drums. All parts are recorded by Zach Hill on an electronic or acoustic kit depending on the song, and there is no doubt in my mind that he is the greatest drummer alive for what he aims to achieve.<sup>6</sup>

As incredible as *No Love Deep Web* is, my favourite work of theirs is their double album, *The Powers That B.*<sup>7</sup> Disc 1 (note to editor, do not italicize, this is not a title) was released on June 8, 2014. Once again, the album was a bold departure from

the band's previous sounds. Ride's vocals likely reach their calmest here, though they are still far from calm. His lyrics are abstract, and to analyze them even superficially would double the length of this issue of **mathNEWS**, and I once again think it better for you to experience this album untainted. Thus, analysis of lyrical content is left as an exercise for the reader, though I will always welcome conversation about the band. Cryptic, dark, and thematically rich is where I'll leave it for now.

The album's instrumentation is heavy on electronic drums, synthesizers, and chopped up Björk vocal samples.

A simple inscription on the sleeve of the album recontextualizes all that you hear on the album, and reads "All instrumentation, including Björk's vocals (as found object), performed entirely on V-drums by Zach Hill."

I'm freaking the fuck out. I was not aware of this until looking up the album's release date for this article. In retrospect, it makes sense. The album is very clearly shaped by the way it was composed. It's hard to describe, yet when you listen you can hear it. I've been listening to the album on loop as I write this section, but I'm now specifically looping disc 1. It's incredible and I am in awe. Genuinely fucking incredible. I ask you to take a minimum of a 30 second break to appreciate this fact before moving on to the rest of this article.

Genuinely. Fucking. Incredible.

The second disc was leaked in full on March 19, 2015, followed by the full album release on March 31.<sup>8</sup> Departing from the sounds of the first disc, *Jenny Death* is best described as industrial noise rock and experimental hip-hop. This is of course a gross oversimplification but with Death Grips' sounds that's usually the case.

Quite possibly the band's greatest song, *On GP* is the penultimate track of the album. There are two accompanying videos. One of the band in an echo chamber, sitting mostly motionless, listening to the song. The other is of Sacramento based magician Russel Brown performing magic tricks. Interlocking rings, card tricks, and magical rope, all as he smokes. The band has never said what GP stood for, however, popular consensus is that it means General Principle.

The song is, simply put, about suicide.

"My second nature chant kill 'cause I can  
This body by my own hands  
My friends and family won't understand  
So I stay in the end; don't make none to me  
If it wasn't for them, I'd make that decision  
On GP"

The song stands out in Death Grips' discography not only due to its haunting instrumental, heavy subject matter, or Ride's emotional performance, but also due to the fact that it is the only song where Ride mentions his name, his real name, Stefan.

The song has never been performed in concert.

It's been a pleasure, Stefan, Zach, and Andy. Thank you for the music.

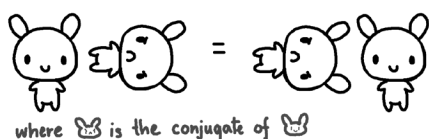
Dick Chudney

1. This is before the streaming era of course, and this was uncommon at the time. All their songs are available as file downloads on their website [thirdworlds.net](http://thirdworlds.net), which is uncommon even for today.
2. It's important to note that both *The Money Store* and *No Love Deep Web* came out in 2012. The year before had seen the release of *Exmilitary*, and none of the three projects sounded alike. Their output at this time was incredible in quantity and more importantly (and impressively), quality.
3. Recap: [bit.ly/NLDWARG](http://bit.ly/NLDWARG)
4. I'M IN JIMMY PAGE'S CASTLE
5. The *Come Up and Get Me* short film, also shot at the Chateau Marmont.
6. Not a typo.
7. I fucking love Björk. Her relationship with the band is so awesome and she's also just an incredible artist and human. Knowing that I share a planet with her is one of life's comforts.
8. In between the two discs, an instrumental album called *Fashion Week* was released. Each track was called Runway J, Runway E, and so on, spelling JENNY DEATH WHEN. The band was quite funny at times, like the Ride sleeping bag. (Google it.)

## WHAT IS YOUR FAVOURITE GEOMETRIC OBJECT?

Here are the favourite geometric objects of the people who went to SASMS:

Icosahedron, cube, scheme, Clifford torus, your mom, Mandelbrot Set, the loop space of a  $G_2$ -manifold, rhombus (2), torus (3), Menger cube, circle (2), sphere, greater stellated dodecahedron, Lake Ontario-based prism, Calabi-Yau threefolds, pretzel knot, seven-sided square [Editor's note: *this answer was not supposed to be a real shape ;-)*], parabola, sofa (from the moving sofa problem) (2), building in London that melts cars, triangle, tetrahedron (2), mucube, Möbius strip, five-pointed star, six-pointed star, the empty set (2), aperiodic monotile, Kleiner bottle, triangular prisms, nonagon, Steven New, egg, Weierstrass function, duck, hexagon.



mathgeek

## THE MYSTERY OF PMATH MICHAEL

PT. 2 OF THE EXPERT INVESTIGATIVE REPORTING OF YOURS TRULY

As was discussed in **mathNEWS** 157.3, an important figure in the university community is strangely absent. Friend to many, enemy to a select few, PMath Michael has not been seen now for months. Since the previous iteration of this article, more information on his situation has come to light.

Since publishing, an informant has come forward to me and agreed to be quoted as saying "Michael has been locked in the tower to continue work on *the website*." Cryptic messages such as this have been flooding my inbox lately, along with a few anonymous threats from anti-math persons. I have begun to fear for my personal safety.

Among these messages include a cryptic demand:

*"We demand merchandise from the Toronto indie rock band The Beaches, to be sent by Maggie Willet to an address to be disclosed shortly."*

The message was signed with a cryptic sigil that thankfully cannot be represented using any unicode symbols currently known to humankind. Even picturing it makes my skin crawl, and I suspect this to be sent by the shadowy anti-math coalition who took Michael in the first place.

Upon discussion with members of the university community, one member, Jackson "big man" De Vito stated:

*"He's probably hidden in the mountain making innumerable mushroom mugs to replace the ones he keeps losing."*

While this seems like the best outcome, I have a dark suspicion that this is not the case.

For the great people of the **mathNEWS** community I will continue my investigation as I feel I am nearing the source of his disappearance, and the chance to uncover the shadowy organization behind it.

cthulhu

## N WAYS TO BE DEPRESSED ON CO-OP

Yeah okay this isn't an N things article, you just got baited. This is more of a short rant on how I haven't been able to attend **mathNEWS** production night ONCE this term due to co-op depression. I miss you guys alas

aaqsr

# 24H SASMS

## FROM THE ONLY PERSON WHO ATTENDED EVERY TALK

I don't normally go to SASMS, but something within me feels the need to feed of the insanity that is almost 24h of straight math (and math adjacent) talks. Turns out I was the only one, though, since I was the only person who attended them all. As such, I feel the solemn duty to report on all of them, for your benefit. However, I also have optimisation homework I need to work on that's screwing me over and getting into my exact thoughts on all the talks would take too long so instead I'm writing haikus for all of them and giving additional commentary for all the rest.

(Let it be known that I am a haiku hater. But sometimes you just really need the time.)

### 16:00 FRIDAY

**Talk:** *Spherical Geometry*

**Speaker:** Jeff Luo

One can only ask  
who could ever write a talk  
just like Stephen New?

### 16:30 FRIDAY

**Talk:** *Hirzebruch Surfaces in Toric Varieties*

**Speaker:** Elizabeth Cai

It has been a while  
since I've felt as lost as this.  
But it sounds so cool.

### 17:00 FRIDAY

**Talk:** *WTF Is a PINN? A Brief Introduction to Physics Informed Neural Networks*

**Speaker:** Shalev Manor

Make the neural net  
match the model you have set,  
maybe then recurse ☹️

### 17:30 FRIDAY

**Talk:** *Fast & Simple Algorithms for Multicommodity Flow*

**Speaker:** Prof. Jochen Könemann

Amazon's research  
live and in the only talk  
that was from a prof.



### 18:00 FRIDAY

**Talk:** *Lie Algebras, Nuclear Chemistry, and Shelf-Stable Chocolate Milk*

**Speaker:** Kathryn Froese

Ok so this talk was actually a ruse for meal time from Tahini's. I got to try a whole bunch of wrap flavours, but surprisingly the halloumi and the falafel were the best in my opinion. The delegation from Guelph also arrived sometime within this stretch.

### 18:30 FRIDAY

**Talk:** *Russian Man Approximates Eigenvalues With This One Weird Trick, Mathematicians Hate Him!*

**Speaker:** Alex Pawelko

This was also a mealtime ruse talk, but luckily for us it was so in demand that we got the short version (apparently it was a real talk given 2 years ago). Honestly some really interesting and trippy stuff. Look up "Gershgorin circle theorem" for more information, it's actually so neat. Also supposedly an AMATH prof wanted to come see this talk. Unfortunately, it wasn't real.

Now we get into the Guelph section

### 19:00–20:30 FRIDAY

These presentations ran short so I'm lumping them all together.

**Talk:** *Leveraging Simple Molecular Representations to Pre-screen Drug Molecules*

**Speaker:** Lia Varghese

Let's look at some drugs!  
Try to find the ones that fit  
using simple strings.

**Talk:** *Travelling Waves of the Diffusive Streeter-Phelps Equations with Braun-Berthouex BOD Decay*

**Speaker:** Lexy Lawryshyn

River oxygen.  
Reminds me of my ENV class.  
What a weird DE.

**Talk:** *Fractal Image Compression*

**Speaker:** Robert De Castris

Make funny pictures.  
But fractals aren't effective,  
files are twice the size ☹️

**Talk:** *Generative Score-Based Models: Reverse Engineering Noise*

**Speaker:** Vinay Joshy

This was pretty cool.  
Everybody getting in  
on these neural nets.

Then we moved to MC Comfy after this talk.

#### 21:00 FRIDAY

**Talk:** *Desmos Shenanigans 2: Electric Boogaloo*

**Speaker:** Patrik Buhring

While I love Desmos,  
I had never known the stuff  
you could do with it.

#### 21:30 FRIDAY

**Talk:** *Categorical Limits and their Topological Cousins*

**Speaker:** Björgvin Aa

Getting some flashbacks  
to that course I took on this.  
I still don't get it.

#### 22:00 FRIDAY

**Talk:** *Differential Geometers Suck At Naming Things*

**Speaker:** Alex Pawelko

"How bad could it get?"  
I thought the linguists were bad.  
I was so naive. ☹️

I'd like to shoutout this talk as being a standout. Great stuff.  
Differential geometry is wack and I kind of have an intuition  
now as to what makes it so terrible.

#### 22:30 FRIDAY

**Talk:** *Simple and Strong Bounds for Maximum Matching*

**Speaker:** Mars Xiang

On algorithm  
efficiency. Featuring  
personal research 🐶

#### 23:00 FRIDAY

**Talk:** *Is Karl Marx Bisexual (Part I): Deconstructing Text-Based Document Retrieval Evaluation Methods*

**Speaker:** River Stanley

I did not expect  
such a serious subject  
from this title here.

Time for another standout mention. Aesthetics were on point,  
and the content was surprisingly engaging. It really makes  
you appreciate old internet search engines, before they had

massive amounts of data to fix this stuff with. Spoiler: Karl  
Marx was probably not bisexual.

#### 23:30 FRIDAY

**Talk:** *Teaching You Fractions*

**Speaker:** Sara Nayar

What could be more bland.  
Ratios of integers.  
Or so you would think. >:3

#### 24:00 FRIDAY

**Talk:** *R Sucks*

**Speaker:** Aliyah Knetsch

Uhhhhh, so this talk didn't happen. I forget what the  
situation was but instead there was just a blank space where  
this talk should be, so I'm gonna take this opportunity to  
talk about how weird it was to look behind myself at various  
points in the night and see at least 3 different people. It was  
really strange and really adds to the delirious vibes. Highly  
recommend.

Also this is where we transition to the silly talks.

#### 24:30 FRIDAY

**Talk:** *Every Map of Hamilton is Wrong*

**Speaker:** David Teresi

Just a single joke  
stretched into half an hour.  
Masterfully done.

#### 25:00 FRIDAY

**Talk:** *MathSoc Council Meeting Simulator: Sponsored by MathSoc*

**Speaker:** Grace Feng

The essence of it  
condensed in a single word:  
PANDEMONIUM!!!

"It was peak autistic humour." — BeyondMeta

Another standout tal. It was less of a talk and more of a collabor-  
ative effort with the audience, which will actually become  
something of a theme as the night (?) day (?) goes on. Absolute  
chaos on all sides but the energy was practically edible. I  
came out of that talk feeling both more prepared than ever to  
participate in a MathSoc council meeting alongside intense  
desire to never participate in a MathSoc council meeting.

I have been told it's normally a lot better than that, but wow  
does it look like a pain. Much respect to all the student  
politicians out there, you should talk to them sometimes. Yes,  
you, the reader of this article. Be nice to them and say hi. They  
work really hard for you.

**25:30 FRIDAY**

The last talk went overtime.

**26:00 FRIDAY**

**Talk:** *I Really Fucking Love Stalker 2*

**Speaker:** Alex Stan

“This game is so fun. /srs  
It is distinctly unfun. /srs  
I love all the bugs. /s”

**26:30 FRIDAY**

**Talk:** *My Factorio Addiction*

**Speaker:** Yi Fan Song

Abstract: “I show my  
factorio factory.”  
Certainly he did.

**27:00 FRIDAY**

**Talk:** *The Empty Talk*

**Speaker:** Liam Gardner

I had tried to rest  
in this empty stretch of time.  
But I couldn’t sleep. ☹️

**27:30 FRIDAY**

**Talk:** *Analytic Chemistry*

**Speaker:** Charles Qiu

I kept butting in  
‘cause this talk was comedy.  
Asbestos is great.

Another interlude, but I’m quite the extrovert and I generally don’t stay up late. So the question becomes, how did I manage to stay awake? The answer is that I shamelessly barged into other people’s talks with “audience participation” that wasn’t asked for. I think it turned out well, but I do feel slightly guilty to all the talks this happened for. Side note, if you see the stick figure in the tier list from this talk, that represents me.

**28:00 FRIDAY**

**Talk:** *Hollow Knight Speedrunning and the Topology Rule*

**Speaker:** Sara Nayar

Look at all the math  
that you need to reference to  
to explain a “path!”

**28:30 FRIDAY**

**Talk:** *Math Wikipedia Tea*

**Speaker:** Remington Zhi

So many debates  
most of them pointless but still  
people will be dumb www

**29:00 FRIDAY**

**Talk:** *Brazilian Memes 101*

**Speaker:** Isabela Souza

They have all the memes.  
All of them, trust me on that.  
So “🇧🇷 Come to Brazil”

**29:30 FRIDAY**

**Talk:** *Close Your Eyes and Trust me*

**Speaker:** Yi Fan Song

Really makes you feel  
zero knowledge proofs, with a  
live demonstration.

**30:00 FRIDAY**

**Talk:** *Summer Break Activities*

**Speaker:** Charles Qiu

With abuse of my  
tactical anti-talk rock.  
If you know you know.

**30:30 FRIDAY**

**Talk:** *The Math Behind Making a Pie*

**Speaker:** Elyn Huang

The sun was up by this point and this was actually another fake talk for a break. I had some cookies but I was starting to feel bad after not having had enough vegetables in a while. Also, as mentioned I don’t stay up often, so watching the sun rise after having stayed up is a feeling I’m not used to. Quite cool, if a bit worrying.

Also the day changes when the sun comes up. Screw you. I will use 30h clock forever.

**7:00 SATURDAY**

**Talk:** *The Ancient World and Parabolas*

**Speaker:** Connor Baetz

How to integrate  
without any calculus  
within half an hour.

**7:30 SATURDAY****Talk:** *Is Karl Marx Bisexual (Part II): Probabilistic Models in Search***Speaker:** River Stanley

“Karl Marx is alive’  
and ‘Karl Marx is gay’ are the  
only things we know.” :3

Once again, another standout talk. Search engines are harder  
than you’d think. Spoiler: Karl Marx was homophobic.

**8:00 SATURDAY****Talk:** *A Physicist’s Guide to Disrespecting Math***Speaker:** Abhipsha Sahu

I was in the bathroom for this talk and didn’t realize it had  
passed by. I’m sure it was great!

**8:30 SATURDAY****Talk:** *An Indonesian’s First Experience of Canada***Speaker:** Anthony Rafael Tan

He came from afar,  
he will recount to us his  
cultural exchange.

Shoutout to this talk for its wholesome vibes.

**9:00 SATURDAY****Talk:** *Leaving MC***Speaker:** Evan Girardin

Much like I felt on the day of, it’s getting late and I’m feeling a  
bit tired. This talk was one of the few that obviously wasn’t real  
(there was a previous one that was removed from the schedule  
due to people running early). This is where we moved to EV.

**9:30 SATURDAY****Talk:** *Single-Transferable Vote and How WUSA Does It Wrong***Speaker:** Remington Zhi

It is really hard  
to make good democracy.  
Macbooks make it worse.

It turns out local bylaws are a mess. Yet more reason I don’t  
ever want to participate in an actual MathSoc council meeting.  
Everything is so much more complicated than it seems.

Quick interlude, but I was talking a lot with Alex (he did the  
differential geometry talk) and wow is student politics, as well  
as politics in general, fascinating. (That’s arguably not a good  
thing.) If you have the time to talk to either Alex, Remington,  
or any of the other people who are currently in student  
politics I highly recommend it. And hopefully some of you are

inspired, unlike me, to get involved yourself. Make their lives  
easier and make your fellow students’ lives better!

**10:00 SATURDAY****Talk:** *Chebyshev Sets in Hilbert Spaces***Speaker:** Liam Benoit

Finite dimensions  
are nicer to work inside.  
Closed and convex set.

**10:30 SATURDAY****Talk:** *The Math I Actually Use at StatCan***Speaker:** Sophie Twardus

Almost an hour  
of real life experience.  
I wish I heard more.

That’s right we have another standout talk. I really liked this  
one because it was another unique perspective, but this time  
one I’m extra heavily invested in. How StatCan works is really  
neat and hearing all about non-academic work that’s still  
mostly math is something I’ve been dying for. Also Sophie  
is amazing as a presenter, which makes sense given the  
background in improv. Incredible talk all around.

**11:00–12:00 SATURDAY****Talk:** *5D Programming with Multi-versal Time Travel (aka. Losing  
our minds with ““practical”” multithreading)***Speaker:** Awab Qureshi**Talk:** *PMATH 351 in 30 Minutes***Speaker:** Christian Choi**Talk:** *Proof of Compactness Using Ultraproducts***Speaker:** Noah Nazareth

None of these talks happened. I think some of them were fake  
and meant for lunch. But at least Awab’s talk was supposed  
to be real and then just ... didn’t happen. Sometimes life just  
screws you over. But that means I get to talk to people more!

**12:30 SATURDAY****Talk:** *Where do your numbers come from?***Speaker:** Bryan Chen

A quick guide to most  
pseudo-random number schemes  
in Reimu cosplay.

# mathNEWS

**13:00 SATURDAY****Talk:** *Applications of Graph Theory to Register Allocation***Speaker:** Sasha Novikov

How to use your slots  
if you are a compiler.  
Decided with graphs.

**13:30 SATURDAY****Talk:** *Cheese Paradox and Multivariable Calculus***Speaker:** Edmond

More cheese is more holes.  
More holes is less cheese; Therefore  
more cheese is less cheese.

Another personal shoutout. I really liked this talk. Something about it drilling into the foundations of multivariable calculus with an intuitive example was really satisfying. Also it makes me take back what I said earlier in the night about derivatives just being fractions. I ate my words. They taste like cheese.

**14:00 SATURDAY****Talk:** *The Hadwiger-Nelson Problem***Speaker:** Kavin Satheeskumar

Can you colour graphs  
that are infinite in size  
with at most  $n$  shades?

**14:30 SATURDAY****Talk:** *the Choquet Boundary + Motivation***Speaker:** Easty Guo

Something about bounds.  
Quadratic bounds on both sides.  
Then you get your  $f$ .

**15:00 SATURDAY****Talk:** *Girl Math***Speaker:** Alina Hu

How to count your cash,  
how to pick your outfit, and  
pink pink pink pink pink!

**15:30 SATURDAY****Talk:** *Using Math to Jump for the Beef***Speaker:** Christian

Minecraft and parkour  
fuse to make a lot of math.  
Perfect for us nerds.

As mentioned previously I tended to engage with a lot of the talks later on, and this is very much no exception. I was asking so much stuff and referencing so much stuff. It was really fun. This talk also went on long enough for the event to have counted for a full 24h. And I quite enjoyed it.



Overall I love the 24h SASMS. It's the perfect opportunity to learn a bunch of cool math all in one place, have a good laugh, and have fun geeking out about your favourite topics. I'd like to thank everyone who presented a talk (including the people who planned to but couldn't), as well as the exec team of PMAMCOC for organising the event.

Also talk to your student reps at MathSoc and WUSA. They deserve some love.

別

## N REVIEWS OF CONCLAVE (2024) THAT HOPEFULLY CONVINCING YOU TO SEE IT

- "Divas in long dresses gossiping with each other trying to snatch a win... this is basically RuPaul's Drag Race"
- "As a former Catholic and current bitch, I absolutely loved this, obviously."
- "I'm seeing a lot of enjoyably quippy Letterboxd reviews saying that this is a funny movie about priests gossiping, and that isn't *untrue*—but it also neglects to mention that it's a very earnest and profoundly soul-stirring picture about the tension of faith, the desperate search for certainty, and the true purpose of the church in the world."
- "The Real Housewives of Vatican City"

normalparameters

## N QUOTES FROM CONCLAVE (2024) THAT HOPEFULLY CONVINCING YOU TO SEE IT

- "Although we sisters are supposed to be invisible, God has nevertheless given us eyes and ears." [*sassy curtsy, exit*]

normalparameters

# AN ODE TO TALKING TO STRANGERS ON AIRPLANES

## OR A MUSING, OR ARGUABLY AN AUTOBIOGRAPHICAL BALLAD

I think there is something  
About talking to strangers on airplanes  
Maybe it's about being 10,000 meters up in the air  
Knowing that if anything failed, we'd plummet to our fiery  
deaths  
(I avoid mentioning that to strangers who are nervous fliers)

I am new to travelling alone  
Under the watchful eye of my parents  
I left the travellers next to me unbothered  
Too tired, I'm sure, for a precocious child's questions  
Too tired, after travel, to be curious about me

Travelling alone has me separated from my life in a strange  
way  
There is no proof that I am anything  
But who I am in that moment  
10,000 meters in the air  
Cut from existing connections, attached to new ones  
But only for a few hours

I sat next to a girl my age  
Both awarded privacy from our parents  
She was travelling for faith, a journey I'd read only in  
textbooks  
But 10,000 meters in the air, she was real  
And so was I, a curious stranger who knew something unusual

And so we were both curious  
And I shared who I was in that moment and she shared herself  
And it struck me that her life was mine  
Had I prioritized what my parents wanted me to  
Accomplished but alone  
I asked her if this is what she wanted  
Emboldened though her parents were only a few meters away  
(Instead of 10,000)  
She had no reason to answer a stranger honestly

I took another trip  
Telling almost nobody where I was  
I felt very alone (and hungry)  
The plane was delayed for three hours  
(maintenance is annoying but so is dying)  
I felt connected to the one who complained as bitterly as I did  
As we shared a bag of jellybeans

He had worked odd jobs in places I'd never been,  
Met people who I'd be unlikely to understand  
Now he was visiting an estranged father  
He asked me about mine  
I said I wish we were closer  
(I did not have enough time to explain why)

As I got older my parents were willing to sit without me  
When we travelled together  
(no longer afraid their child would yammer in stranger's ears)  
I met a man who worked on the road  
An immigrant who had worked long hours in his youth

He left office life long ago  
But gave me advice and heartfelt wisdom  
Life lessons he'd learned along the way  
I don't think he talked to many students before  
But I guess 10,000 meters in the air was his best chance for  
meeting one

I am ashamed to admit I forget much of his advice  
But what I remember most is his name—Raad  
In English much like my parents,'  
He said his name sounded too much like radish  
Nobody had ever told him it was rad  
(He thanked me for telling him)

I met a pair of travellers going somewhere tropical  
They had given up their early lives  
And it had paid off  
They talked to me about jobs, stocks, credit cards  
And I realized how grown I was  
(a younger me did not yammer to strangers about stocks)  
We settled to a comfortable silence when stocks began to bore  
me  
(perhaps I am still a child)

Conversation struck again while I drew  
They peered at my sketches  
Quizzically, the way adults are with children's art  
I asked for their opinions  
They told me to stop worrying if it looked real enough

I drew with her, when the turbulence got bad  
(and did not mention the possibility of fiery deaths)  
She spun me stories of a mechanical heart  
That I brought to colour on the page  
While talking about her new teaching position  
I told her she would be great

There is mystery and novelty  
About talking to strangers on airplanes  
A mysterious me that only exists between takeoff and landing  
And an ephemeral them

Like a dream I forget much when I get off (wake up)  
But I cling to what I remember  
Shaped again, I'm sure, by a memory that fails me  
But by a feeling that does not



# MOVING OUT AND MOVING ON

It's something almost every Waterloo student should be familiar with. Because we all moved to university, didn't we? The first few weeks of freshman year, for most, are marked with feelings of homesickness undercut with the excitement of all the new experiences, while learning to navigate living on one's own for the first time; meal planning, regulating sleep schedules, laundry, generally being responsible and dealing with one's own problems.

Not for me. Due to a mix of lack of funds and parental pressure, I spent my first year at Waterloo commuting from a nearby city. I spent over two hours a day sitting on the bus, waking up at the crack of dawn to make it in time for my 8:30 classes and dashing to the bus stop the moment the lecture was over. I couldn't join extracurriculars or attend office hours, and it made socializing difficult as well. I brought a packed lunch to save money and ate in the lecture hall with my headphones in. University was just a continuation of high school, for me, and in my mind, that was just how it had to be, because I, as a person, hadn't changed.

But as my co-op rolled around, I secured the unique opportunity to go work for four months in a niche that I'm very passionate about on the other side of the world. This was a difficult but ultimately inarguable matter for my parents, whose urge to keep me close was undercut only by the desire to see me succeed in my career. So off I went to live alone for the first time, in a country I'll leave unnamed to make it at least a bit harder to identify me.

My flight involved a ten-hour layover in the middle, and in the anxiety of travelling alone or missing my connecting flight, I didn't sleep for about fifty hours straight. The night I landed in early January was also the night one of the largest snowstorms in recent memory hit the city, and I was left dragging my suitcase with all my worldly possessions behind me in the dark through waist-high snow, using Google Maps to try to find my building while I got lost on the unplowed paths.

Eventually, I made it to my room, which was blessedly warm but lacked any mattress. This was surprising to me, but is apparently standard in these dorms to avoid bedbugs. It was past two in the morning, and no stores where I could buy a mattress or groceries – as I had no food with me and had last eaten a sandwich on the plane hours ago – would open until seven. I made a nest of my clothes on the floor and went to sleep.

When timezones made it acceptable to call my parents, I would greet them with as much enthusiasm as I could muster. They required that I call them at least once a day so they would know I was still alive, and I sent them pictures of all my meals and answered their inquiries with general answers you would give to a cashier. I was doing well, work was busy but interesting, my roommates were quiet and mostly kept to themselves, the weather was milder than in Toronto. I never told them how much difficulty I had finding my room that

first night, or that I slept on the floor, or how sleep-deprived, or jetlagged, or hungry I was. Because they would only worry, and I didn't need that, for them to think I was incapable.

Because other people did it, so why couldn't I? I often envied the independence of my classmates in first year, eighteen-years-old but so bright-eyed and self-sufficient, managing their own affairs. Able to take weekend or road trips with friends at a moment's notice, ordering parts for personal projects and crossing borders for conferences and hackathons. Rarely talking to or of their parents; not requiring their permission for so much as making an Amazon order. Meanwhile, I never skipped a single lecture or tutorial, because I couldn't stand the judgement of my parents, who didn't understand the difference in connotation of "bunking" between high school and university.

As much bitterness as that paragraph may seem imbued with, I am not bitter or resentful towards my parents. They've never done anything to make me so, and I would never say our relationship is strained. But they were always there, almost overbearingly so, and now that they weren't, now that they weren't a constant physical and mental presence, I didn't see any use or need to speak to them. It was jarring to think that my parents had never been anything but a source of food and money, a roof over my head. I knew they missed me because they told me as much, but I was never able to make the reciprocating words sound like I meant them.

What does it mean to miss someone? The way others described the feeling made it seem like a physical pain, an ailment, that could only be alleviated by the presence of that person or thing they were missing. Leading up to my departure, I anticipated this previously unknown emotion with trepidation, as I had never spent a single night away from more than one of my parents before. But I felt nothing. Days went by, then weeks, then months, and I waited for it to hit, to no avail. I even put myself in intentionally melancholic situations, such as walking along a bridge at night while listening to Lana Del Rey, in the hopes of coaxing out some kind of sentiment. But nothing; no homesickness or longing, not for my parents, my friends, my room, even some kind of comfort food that wasn't sold in this country. It was as though I could be dropped in the middle of the Arctic Circle and it would have no effect on my emotional state.

I suppose, rather than having a delayed emotional response, I was distancing myself from my parents on purpose in pursuit of something else: pure independence. Everyday I had the agency to choose when to wake up, where to go, how to spend my time, without considering how it would be perceived or judged. In my parents' absence, I discovered parts of myself that were capable of being extroverted, of being confident enough to navigate unfamiliar streets, of talking to strangers on the bus and at cafés. I became more decisive, more assertive. I had the autonomy to go to the grocery store to pick up ingredients for new recipes I wanted to try without feeling bad about using food or cutlery that didn't belong to me, and

if things went wrong, I was able to shrug it off without having someone there telling me exactly what my mistake had been and how to prevent it in the future. And this liberation wasn't anxiety-inducing, or painful, or guilty like I had thought it would be in the months leading up to my departure, lying in my childhood bedroom. Just freeing.

I've decided this coming term when I return to Canada, I'll live in an apartment with strangers, in Waterloo. I'll join some clubs and try to make some friends. And I'll visit my mom every other weekend.

forty-seven

## NOTE TO INCOMING 1<sup>ST</sup> YEARS

i was gonna write a MATH 137, MATH 135 course review but soon realized that no one who's reading this hasn't taken them yet so i guess here it goes.

**MATH 137:** one of the most taunting courses for me... it takes a lot of time and please don't be like me and forget to colour in the multiple choices and T/F questions for the final....

**MATH 135:** it's alright, the highest grade i got for 1A, 100% recommend it for anyone remotely interested in math. yes, there's a part that requires you to be a human calculator, but the reasoning/logic part of the course is really well-structured. to me it's challenging enough to motivate my brain but not intimidating at the same time. final saved my ass.

**CS 115:** recursion, recursion, recursion. IMO hardest part of the course is to come up with test cases. CS135's content is much more interesting. take 115 and sit in your CS friend's 135 and relax. your brain will absorb interesting info on its own.... (but seriously, consider this option! high grades + interesting content. hands down best option.)

**COMMST 223:** public speaking at 8:30. no comment.

**MTHEL 131:** for anyone taking after W25, plz be grateful. also no comment....

first year has def been a ride but i ended up really appreciating everything. the devastating moments when i thought getting a 60 on an assignment is the end of my academic career, feeling lonely feels like a chronic disease, bitter-sweet moments between roommates, awkwardness of an introverted person trying to make friends, cooking for the first time, getting a fire alarm at 11:50pm on a -20°C night with gusty wind. everything feels like a fairy tale now that i think about it...

marshmallow

## HELP ME MAKE THE DEFINITIVE 2010S PLAYLIST

Do you have strong opinions on 2010s pop? Would you like to help determine the Official Definitive Most Iconic Songs of the 2010s? Please fill out the survey below! The results will be collected and analyzed by our expert team of stats majors, and the set of fifteen songs determined to be The Most Iconic Songs Of The 2010s will be published next issue.



<https://forms.gle/12tCzppiofCJZdXQ7>

Thanks for the help, music fans!

Dick Smithers

## DO YOU WANT TO GO TO GUELPH ON THE WEEKENDS?

Too bad! You can't do that because the GO bus Route 17 doesn't run on weekends. You have to spend \$50 on a Lyft to get there instead. But don't worry! I have messaged GO and told them our woes. If I get a response I'll put it here. I will die on this hill.

nike

I have been informed that you could technically take the 25 and then the 29 but that is simply too much work for reasons I won't disclose. justice for transit takers

## DO YOU WANT TO GO TO ST. THOMAS ON THE WEEKENDS?

no.

mol

# profQUOTES

**AMATH 475: EDUARDO MARTIN MARTINEZ**

“ For Ed Witten, everything is trivial.

**BU 423: DIEGO AMAYA**

“ This is a mathematical trick. *[Points at one equation]* You have a bird, *[points at second equation derived from first equation]* and you have a rabbit. If you don't define pi like this, you can't get the rabbit.

**CO 487: SAM JACQUES**

“ *[Of the addition operation on elliptic curves]*: Take my word for it, it's associative.

“ *[Sees student reading profQUOTES]* Am I on there? *[Skims through profQUOTES]* You guys didn't quote me?

**CS 146: BRAD LUSHMAN**

“ *[After Python takes 8 seconds to run a program while C, Haskell, and Racket all took < 1 second]* So the moral of the story is don't play with snakes.

**CS 350: BERNARD WONG**

“ I shouldn't say this in a classroom... cheating buys efficiency... cheating sometimes buys efficiency.

“ Professor: How do you get out of this gridlock of cars?  
Student: Act crazy and make other cars move away from you.  
Professor: Yes! FEAR!

“ Let's not care about discrimination, it matters very little. If you're picky about my syntax now, I'll be picky about your syntax on the midterm.

“ If you had a million dollars of VC money, you would happily hand that money to Sun Microsystems and get yourself an E10K.

“ Speaking of Sun E10K servers. The CSCF can use some of those. I shouldn't have said that.

“ Please don't put that in **mathNEWS**.

“ I actually interned at Sun Microsystems, they were a good company. At least until they died.

“ If I clicked on a website and it didn't load, I wouldn't bookmark it to check it out the day after. I would just say, that website is crap.

“ Student: Can you copy paste that story about the dotcom bubble and replace Sun Microsystems with Nvidia?  
Professor: No comment.

“ ATI used to hire many Waterloo co-op students to write GPU drivers. ATI was bought by AMD and AMD has a reputation for not having very good drivers.

**CS 341: ARMIN JAMSHIDPEY**

“ One time I had  $2^x = 8$  on the board, and I asked a student what is x? He said he didn't know. I said, “What about  $x = 3$ ?” He said, “Why?” I said, “What.”

“ I AM LEAVING YOU! You do not know Donald Knuth...

**CS 343: PETER BUHR**

“ When the race is over, why not just shoot the horses?

“ This is like going into a bar and someone asks you, “Are you done with the CS 343 assignment?” And you're like, “Oh yeah, it's done” and you say to yourself, “I've started.”

**CS 365: ERIC BLAIS**

“ A sword is kinda useless for computation.

**CS 452: MARTIN KARSTEN**

“ Morning demo slots are preferred because after them, you can go home and sleep.

**CS 888: SHLOMI STEINBERG**

“ Once again I am left wondering what they taught you in undergrad.

**CS 492: RICHARD TREFLER**

“ Interesting, thank you. *[Repeated  $n \geq 10$  times]*

**ERB110 (QUT): JESSICA TROFIMOV**

“ And eventually, Australia is going to be in the Northern hemisphere. *[Entire class gasps and a few people gag]*

**MATH0073 (UCL): ED SEGAL**

“ Imagine you're some hopeless algebraist. You've never seen a square, but you really like D4 and want to understand it

**MATH 138: ROBERT GARBARY**

“ Not literally as in literally the best sandwich ever posted to TikTok, but literally in the correct way...

**MATH 146: SPIRO KARGIANNIS**

“ Now let's talk about annihilators. I know it sounds very violent but I didn't pick the name.

**MATH 148: FAISAL AL-FAISAL**

“ It has a limit because it has one.

**MATH 235: IAN PAYNE**

“ [Doing the Gram-Schmidt Procedure] Aww, this is gonna make it suck.

**MATH 235: JERRY WANG**

“ Professor: [Explaining change of basis formula on Discord] (how to 🍑) = (take off your pants) THEN (🍑) THEN (pull up your pants)

Student: What about wipe tho?

Professor: Exercise.

**MATH 249: JIM GEELEN**

“ Let me use the exact same diagram so Ray can type it up.

**MUSIC 246: SIMON WOOD**

“ I’m so tired of the Americans.

“ In three years and ten months Donald Trump will be gone.

“ When did Doug Ford become Batman?

“ Hitler did a great job driving intellectuals out of Europe.

“ Stop rustling or I’ll hurt you.

“ What the fuck man?

“ Evil baddie.

**PMATH 330: CHRIS SCHULZ**

“ Maybe every colour’s favourite colour is itself.  
Elvis is dead. Let’s just be clear on that: Elvis is dead!

“ [While a student is slowly rubbing their hands] I can’t tell if you’re raising a hand or not... No? You’re just doing a palm reading on yourself?

**PMATH 333: MATT KENNEDY**

“ In fact, we have a new topology course on that! It’s taught by Blake Madill, but it’s a good course.

**PMATH 348: YU-RU LIU**

“ [After writing the statement of the fundamental theorem of Galois theory] Now, I’m not religious in any way, but this is one of the theorems that make me feel closer to... [gestures up]

**PMATH351: KEVIN HARE**

“ This is a very slick, non-intuitive, slightly circular proof.

**PMATH 352: MICHAEL RUBINSTEIN**

“ So you dodge the bullet like this bends forward and then like this bends backward. Like you’re in the matrix or something

**PMATH 365: JASON BELL**

“ Student (on Discord): for example 9.11,  $(\cos \theta, \sin \theta, \theta)$  is not in the tangent space, is this an error in the example  
Professor: Oops, this is literally my 9.11, I guess.

“ Let’s have a fun!... did I say that? “Let’s have a fun?”

“ Legos, they suck... let’s imagine we have a better toy, called “triangles.”

“ In New York people hold their pizza like this [demonstrates with paper] because they know that Gaussian curvature is intrinsic.

“ All you need is a flashlight and a gun to see that these two objects are homeomorphic.

“ [On Discord] Oh wow. America’s favourite furry is back in the studio. Let’s check this out.

“ I don’t like how convex you are (I’m mad).

“ Imagine you have a head that is detachable.

“ If you don’t like someone, you stop time, punch them in the face, then run away.

“ We’re learning a beautiful theorem in mathematics, you see, and not a lot of people know that. You walk on the street and say, “Hey, I learned a beautiful theorem today” and they say, “There’s no such thing in mathematics,” and THAT is when you freeze time and punch them in the face.

**PMATH 445: FAISAL AL-FAISAL**

“ [Zorn’s lemma] should be in the vitamins you take.

**PMATH 990: ALEXANDRU NICA:**

“ As the great Dr. Seuss said, “Most people stop at b, but not me!” We will have a lecture 7C.



# SURFING

In literary studies, we're often taught to assess a novel by its underlying symbolism, not the quality of its prose or intrigue of its story. George Orwell isn't a good author because he's fun to read, he's good because he writes important metaphors for important problems.

I've always felt this was a disingenuous approach to reading. Why can't I just enjoy the book for what it is, instead of constantly trying to dig deeper into a hidden message? I prefer good characters over good metaphors, but I'm told I have it backwards.



Yesterday was my first time surfing, and I didn't really know what I was getting myself into. I mean, I'd been told it was a tricky sport, but I imagined if I just watched what other people were doing and played it safe, I'd surely come out unscathed.

On the recommendation of a local, I picked up my clunky rental surfboard and started across the sand to the so-called "easy section" of the shore. Looking out, it didn't seem that bad. A lot of people were on the water already, taking full advantage of the low winds and peaceful waves.

So I started paddling out, and before I knew it, I was ready to try catching a wave. Unfortunately, every time I saw a wave coming, I couldn't turn around fast enough to catch it. I was forced to start looking beyond the nearest wave if I wanted a real shot at riding one.

I began craning my neck to see if there were any good waves out in the distance, but in doing so, I was distracted from the essential fact that the shore was sliding away. The winds were slow, but slow is a heck of a lot more than nothing. Unbeknownst to me, I had already been blown right into the professional section, known to the locals as *The Sharks*.

## DYING

I was in over my head; or, soon to be. The waves were north of two meters in height, arriving within seconds of each other. My elementary technique was quickly overwhelmed by such powerful force; as the first wave crashed over me, it sucked me deep under the water. By the time I could resurface, the next one broke, smacking me back under. And then another. And another. And another.

I fought this ocean for hours, trading bites of kelp with gulps of frigid seawater, constantly emerging thinking I could best the waves this time. At long last, however, I had tumbled back to shallow waters, where a new battleground awaited. This time, the army was a hundred meters of barnacles and clam shells. I had to swim beside my surfboard so it could float above the rocks, but the waves were still pushing. They kept shoving the board over me, dragging my knees and toes along the indifferent little clams.

With legs dripping red, I eventually made it to shore, where my wrecked body collapsed on the warm sand, trying to catch a breath. I must've been a real sight, because some dudes with mullets passing by asked me if I was alright. They also let me know I had been attempting to surf on the professional-rated waters. How reassuring.

I picked up my rental board and started a dejected trek back to the easy section. As I walked, I got to thinking how the heck this happened. It didn't seem like it was purely because of my beginner status, it was more that I failed to recognize the wind's slow, persistent nudging. Had I known how subtle the drift would be, I would've known I should paddle against it.

## TRYING

I took a deep breath, and started out to the water once again.

Confident the waves here wouldn't kill me, I began to adopt the attitude of a battle-scarred veteran, looking at the incoming waves with steely eyes. During the calm, I practiced rotating my board quickly, so I would be ready to catch the first proper wave heading my way. It wasn't long before a big swell locked eyes with me, closing in fast.

I spun myself around, and started paddling frantically towards the shore as it grew into a foam-crested wall. It hit hard, jerking my board enough to test my grip, but it was over in an instant, and I was left with barely a taste of real surfing. Sliding slowly down the backside of the wave, I was left to ponder what just happened.

As I paddled back out, each incoming wave poured salt mockingly down my throat. I couldn't catch any of them, because I'd let myself be pushed too far to the shore by the first one. By the time I made it back to where I was, the wind had settled down and the water was flat.

It was nearly five o'clock already, and I was sitting in a lull with nothing to show for but gashed legs and a kelp-filled esophagus. If I was going to properly surf today, I needed to figure something out. I wasn't being blown out of the easy section anymore, and I had learned to not rush into the first good wave I saw. Patience—while knowing my limits—was the new plan.

The reflection paid off, and soon I was on another wave, thrust toward the shore.



I've never experienced anything like surfing before. It's just you and your surfboard, grabbing the ocean by its reins, teaching it to carve the water wherever you please as the crisp summer air rushes by. Yet it's not you that catches the wave, it's the wave that catches you, holding your board so steady you start to wonder, "Maybe I could stand?"

And then it's over, and the sunset on the water reminds you it's time to head home.



Being taught that deep symbolism was the purpose of writing meant I thought myself a bad writer. I didn't see symbols all around me the same way I was told great writers do. In fact, I didn't even look for symbols at all—I just took my world in as it came to me, and tried my hardest to make sense of it.

Yesterday that changed. For the first time in my life, I saw my experience as a metaphor.

The journey to mastering the waves is the same journey we are all living out each day. The quest to tame the raw, unforgiving power of the ocean; it's the perfect analogy for the twenty-two years I've spent on this wacky, wonderful planet.

And I suppose that's it. That's what our teachers were trying to teach us to see, all along.

no pun indented

## MY ROMAN EMPIRES

**ROMAN EMPIRE — SLANG EXPRESSION FOR SOMETHING THAT SOMEONE CONSTANTLY THINKS ABOUT (STOLEN FROM URBAN DICTIONARY)**

- rory gilmore dropping out of yale
- rory gilmore being the other woman in her relationship with logan huntzberger
- eng cnd patties always being burnt while math cnd has consistently cooked patties that are not burnt
- rory gilmore's downfall
- following rory gilmore's downfall
- gouging someones eyes out
- iron warrior being the saddest student newspaper with only 4 pages in their first issue this term
- the "mask on mask off" miguel o'hara question
- ao3
- "the stars on the staircase" fanfic by MissMeasured on ao3
- the waterlooworks restructure
- falling behind all of the other friends you grew up with
- the "what if"s
- my 4 journals ive started since university
- standing in the mirror for hours on end
- growing up in purity culture and taught to fear guys
- internalized misogyny from women older than me
- high school boys
- love
- "guess i made the right decision haha"

cherry ♡

## I FELL IN LOVE WITH AN ECE GIRL

i fell for an ECE girl,  
oh, I have committed a sin.  
we're supposed to clash, not blend,  
but I can't resist her spark, nor pretend.

her logic gates map to my deductions,  
truth tables show tautology, no unsatisfiability.  
she Fourier transforms my steady rhythms,  
and we harmonize, signals strong.

she wields her Laplace with steady hands,  
transforms circuits, voltage in flow.  
while I prove convergence by induction,  
step by step, our love grows slow.

in C++ she builds her dreams,  
i map love with functions defined.  
our control system locks, feedback perfect,  
a feedback loop, our hearts aligned.

her resistor heart keeps currents steady,  
while I compute each proof, complete.  
no divergence, no loss in signal...  
two domains fused, forever aligned.

host

## EPISODE 71: BÉZOUT'S LEMMA

Mathsoc Cartoons presents Episode 71 of the MathSoc Cartoons series: MATH 135 — Bézout's Lemma!

Want to see the next comic BEFORE it's released and provide feedback to help us out? Sign up to be a reviewer at <https://forms.gle/hFYr1R7z4tisim3aA>!

Want to see the next comic when it's released? Follow @mathsoccartoons on Instagram and Facebook!

As always, feedback, suggestions, and fan art can be left on the MathSoc Cartoons channel in the MathSoc Discord server or sent to [cartoons@mathsoc.uwaterloo.ca](mailto:cartoons@mathsoc.uwaterloo.ca).

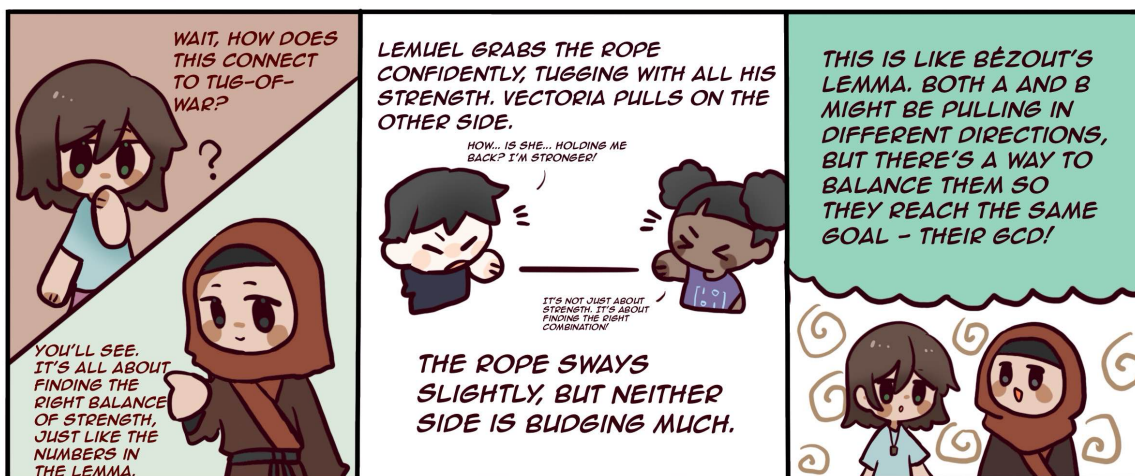
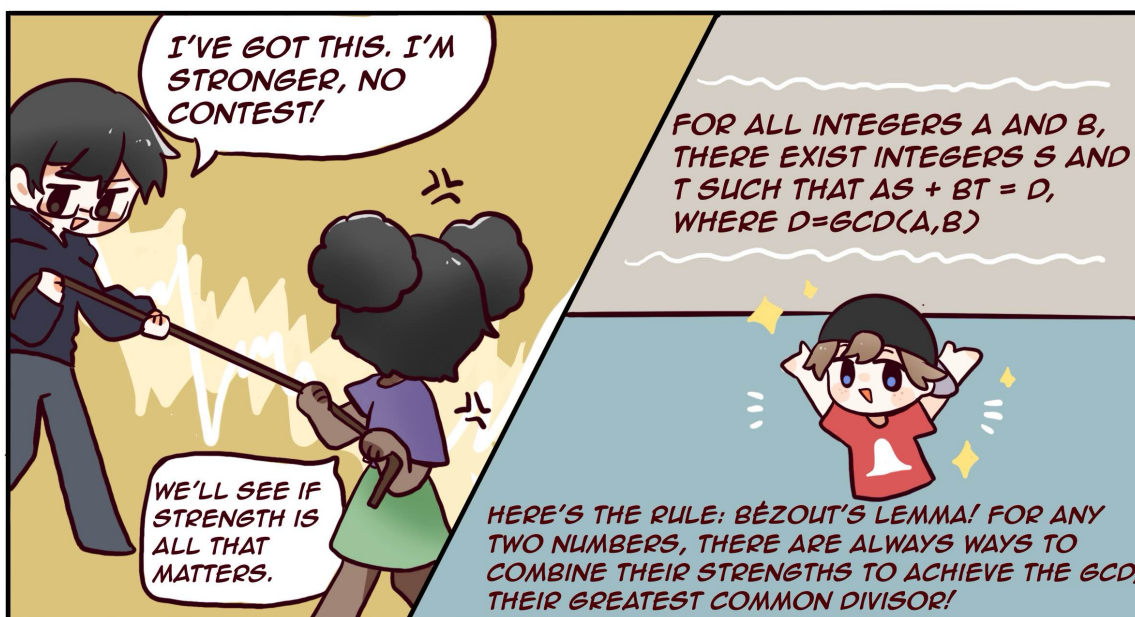
MathSoc Cartoons



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# MATH 135: BÉZOUT'S LEMMA

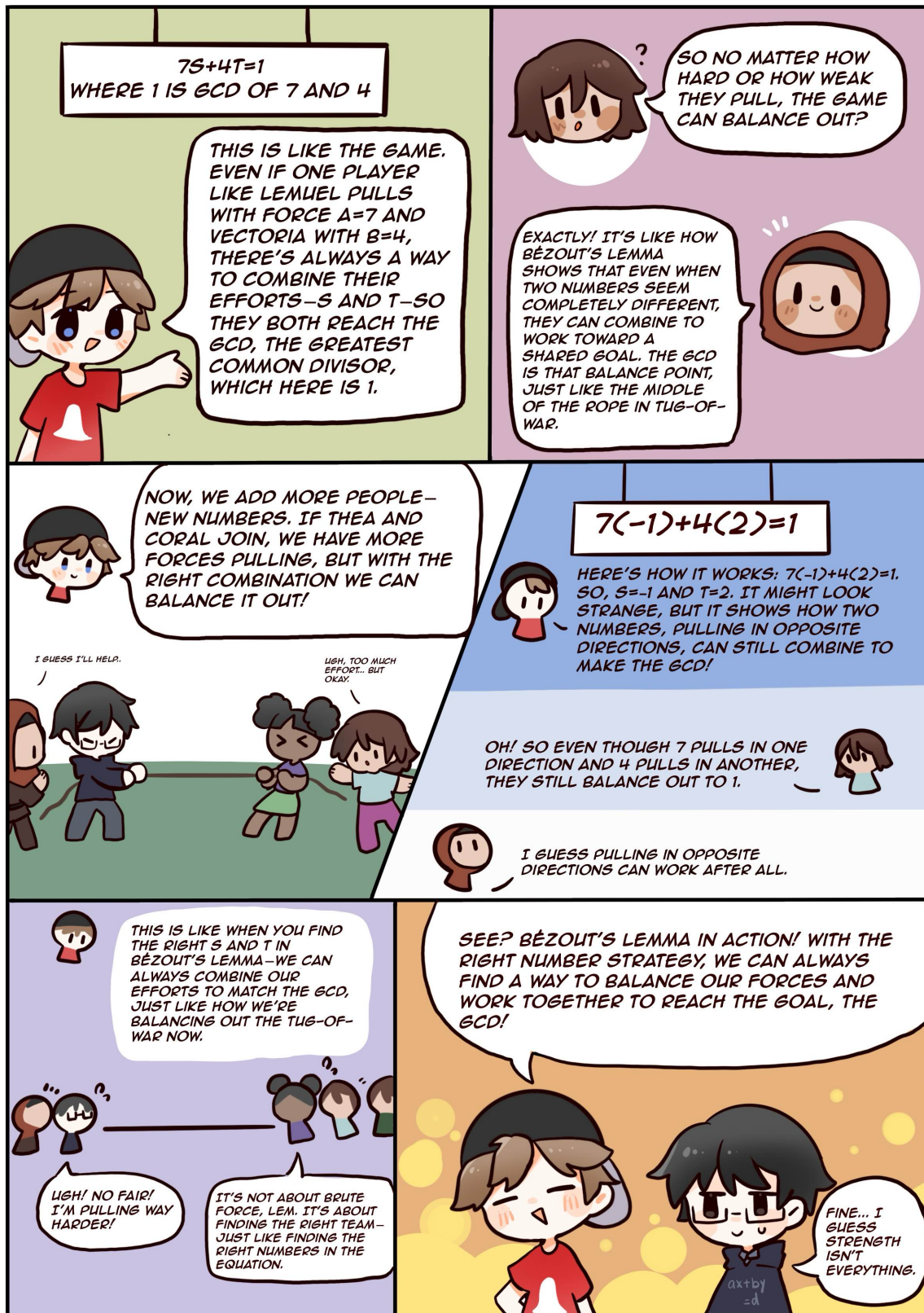
STORY BY ZUNAIRAH, ART BY LINDSEY LI



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# MATH 135: BÉZOUT'S LEMMA

STORY BY ZUNAIRAH, ART BY LINDSEY LI



# I LOVE FLYING BARK PRODUCTIONS!!!

## MY FAVOURITE ANIMATION STUDIO

Something that I've noticed from being a fan of many animated shows but existing only loosely in their spheres, is how I seem to hear a lot about animation studios in regards to anime than I do about studios in western animation. Western animation definitely has famous creators, Alex Hirsch and Dan Povenmire are two that come immediately to mind, and the rise of indie animation has brought studios like GLITCH into the limelight, but I don't consider those quite the same thing. Nor do I consider corporations like Disney, Nickelodeon, or Cartoon Network the same as actual studios like Ufotable, Madhouse, or Trigger that are still brought up often in the discussion of their medium. All this is to say, I have stumbled upon an animation studio called Flying Bark productions, that has animated two western cartoons in particular that I absolutely *adore*, their work is just so fantastic and I want to show them some love.

Before I get into the two shows that absolutely sold me on this studio, I want to talk about a few other things Flying Bark has done that I like. They made Marvel's *What If...?* which has a super neat cell-shaded style that works quite well for its variety of settings, they made Netflix's *Glitch Techs* which is a fun videogame-stylized adventure, they made a sweet little short film called *My Jumper It Roars*, and they made LEGO's *Monkie Kid* which I haven't seen but will definitely check out, it looks awesome. There's a fun little reel of some stuff they've done.<sup>1</sup> If you like any of these, you should check out the others, and you should especially check out the two I'm about to talk about.

Alright ok, the whole reason I'm writing about these guys is because they made two of my favourite shows ever. *Rise of The Teenage Mutant Ninja Turtles*, and *Moon Girl and Devil Dinosaur*. If you've seen either of them through then you already know how great they are, and I could go on about why but today I want to talk about the animation in particular, as I'm sure that's the studio's biggest contribution. I'm not an animation expert, just a fan, but it does not take much to see how well-done these shows are. The style that both of them have is so unique and suits their identities so perfectly. They absolutely burst with colour, the stylized character designs of *Rise* contrast so perfectly with their darkened cityscapes, while *Moon Girl's* entire world always feels just as vibrant as everything that inhabits it. They both feel like they carry so much energy perfect for their action-comedy tones, and the movements of the characters always feel so fun and alive. A signature move across both of these shows is to have a still character slide into frame and then suddenly burst into fluid motion, it's very funny and makes the animation feel so unique.

Another thing both of these shows are great at and that really draws me towards them is their fight scenes, though for different reasons. *Rise* is filled with so much fun and creative choreography that keeps growing in scale as the show goes on. They do a lot of fun stuff with camera movement that is often Trigger-reminiscent, as well as a lot of interaction with

the environment. If you've ever seen the climax of the movie on youtube you'll get how cool it is, and just know that there's plenty more of that, in the season finales especially but also all throughout the show. *Moon Girl* takes a different approach, featuring action scenes with both a unique song and a unique animation theme *every single episode*. The songs are usually originals, but there have been a few pre-existing songs from artists like Childish Gambino, Charli XCX, and Bill Withers. These scenes are often the highlights of what are already really great episodes, and usually the action synchs up with the music in a way that's so satisfying. Other western animated shows have definitely done song-per-episode before, but in my opinion this one does it the best, the way they're implemented just feels so seamless yet special and some of them are such bops that get stuck in my head for quite a while after watching. Both of these shows express themselves through their animation in such creative ways that make them so unique compared to anything else, in some cases even to each other. The fact that Flying Bark productions animated both of these incredible shows is so cool to me, and I love them for it.

There's something else about both of these shows that feels quite similar to each other, and I'm not sure if it's the studio that's to thank for that but looking at their other works, I wonder if it might be. One of the big things that might actually be a staple in most(?) Flying Bark shows is the lack of romantic plotlines.<sup>2</sup> I feel like that shouldn't be so noticeable, but looking at almost every other western animated show or even media in general, it kind of is. Romance is everywhere in media, and while lots of it is good, much of it is not well-written or necessary. It is kind of a relief to have two really great cartoons that don't bother themselves with it. Especially when some previous iterations of *TMNT* have tried to ship various turtles with April which tends to feel a bit off,<sup>3</sup> I'm glad in *Rise* she's just a great friend and also awesome. These shows both also do not do bad with queer rep imo, *Rise* oozes with pride in ways that people better-equipped than me have dissected,<sup>4</sup> and *Moon Girl* actually had a really great episode about a trans girl that got removed from air and streaming by Disney,<sup>5</sup> but there's a few other queer characters throughout. Overall these shows are great and I love them and I love Flying Bark, please go watch them right now!

Doublewhip

1. <https://www.flyingbark.com.au/work/flying-bark-showreel>
2. Uhh *Moon Girl* had a romantic plotline in like three episodes of season two :( but I think compared to anything else my point still stands.
3. Newest *TMNT* thing *Mutant Mayhem* does this, and the 2012 show before *Rise* did too.
4. <https://www.youtube.com/watch?v=TRwywvcSzDs>
5. Absolute tragedy, but you can still watch it here [https://archive.org/details/the-gatekeeper\\_202411](https://archive.org/details/the-gatekeeper_202411)

# MY FATHER COULD NEVER MAKE ME FEEL HOW SEX WAS ABLE TO MAKE ME FEEL

*IT'S NO SECRET THAT HAVING SEX CAN HELP WITH SELF-ESTEEM AND CONFIDENCE.*

My father, bless his heart, has always told me he was proud of me. These weren't hollow words either, I could tell he meant it. His face, his body language, his firm embrace painted a man, a father, fulfilled. I can't pretend to know what exactly he felt, but to be a parent and feel (at least almost) total trust and confidence that your child will be just fine, it must hit a note.

He wasn't very present in my life. Not that he went out for milk or anything, but circumstances were what they were and so that's how it was. Many years he was elsewhere, and a lot of our relationship was over a landline. When I was much younger I remember the delight I would feel knowing he would visit. Bouncing between the timepieces in my home, hoping that each time I looked it would be minutes closer to when he was supposed to arrive.

Pancakes in the morning, watching some shitty movie while he fell asleep. The magic of the parent-child relationship is that a kid doesn't know a damn thing. He's your hero simply because he is, there is no objective measure of character or emotional intelligence or accomplishments in life. Likewise, you don't need to earn the unconditional love of your parents.

Then you grow up, and friends become important and there are phases and puberty and whatever else. I thought that was that and I went to college in some shithole town. What I didn't realize was that that growth and development doesn't just magically stop after your balls drop and you leave home.

Unconditional love is great, I'm sure I need it and I'm sure I've also taken it for granted. Yet the ego starves for a love that is earned. To feel needed and desired by someone who didn't lend you their genes. The love I saw here, the love I needed to grow and reach the next stage of my life cycle came in the form of 345 job application rejections.

It was over before it started, the brain was hijacked and the self-worth that our culture dictated we derive from our accomplishments was all I thought there was. I was competing for love among those who were much more worthy of it. The parent that I needed approval from, had favourite sons and daughters who I was nothing like. Children who had worked much harder and much longer for this kind of love; some for their whole lives.

To chase love in a race is misery. Thankfully, this kind of "love" was not what I needed. There is absolutely value in self-actualization, it is fulfilling to set goals and climb mountains. But love is not this.

Feeling giddy at the thought of her on her way, knowing she feels the same. Checking the time on your phone between every chain of thought. Napping and waking up excited because you're minutes closer to her arrival.

Watching her come up the steps, running to each other like magnets. Entangled like velcro. Rays of gold from the last dusk light illuminating her features. Hot. Sweat. Panting breath. A delicious climb of mutual give and take. Each stroke of the brush is animated by instinct; painting a canvas more beautiful than anything deliberate. That perfect moment when all periphery is lost, the world is naught, and everything is her eyes. Joy in the creases of that smile you hope to remember forever.

In this embrace I found what I needed. To be needed and to need, so desperately, at once.

baddie issues

## MATH JOKES RETURNS

Dearest gentle reader,

Math jokes are back.

1. What shape is usually waiting for you inside a Starbucks?
2. How does a mathematician plow fields?
3. What were the students doing when writing the CS 240 midterm?
4. How do you say that the math teacher was ranting about unrelated stuff?
5. What's a swimmer's favorite kind of operation?
6. Why did Brad say half the numbers were weird?

7. How do you make seven divisible by 2?
8. Have you heard the one about the statistician?

hami

- Answers:
1. A line
  2. With a pro-tractor
  3. Triage-ing
  4. The teacher kept going off on a tangent.
  5. Dive-ision
  6. He said they were odd.
  7. Remove the S
  8. Probably

# DUNNING, KRUGER, EDDY, JOE

Eddy pushed through the crowded MC hallway. Just minutes earlier the Academic Forecast had been taped up to the door of the Math Undergrad Office, and everyone in the Fall offering of STAT 231 was scrambling to see their fate.

“Hello Prospective STAT 231 students,” the forecast read. “Below are the Academic Precognitives’ enrollment status recommendations. To ensure that the term runs smoothly, we strongly encourage you to proceed as advised and we would like to remind you that the Academic Precognitives have never been wrong.”

Eddy skimmed the long list.

...  
 Qualley, G. — Recommended for Completion  
 Quentin, P. — Recommended for Completion  
 Ramsey, I. — Recommended for Completion  
 Rasmus, N. — Recommended for Completion  
 Reid, J. — Strongly Recommended for Completion  
 Rex, E. — Strongly Recommended for Withdrawal  
 ...

Eddy Rex, for his entire life, had been an academic weapon. Course after course, exam after exam, he had effortlessly sailed through with flying colours. Professors blushed at the very thought of having him in their class.

He cursed silently to himself. Strongly Recommended for Withdrawal? The words hurt to read, they only gave that to the bottom one percent. And what was that right above his name? How had Joe Reid—someone who wrote his exams in crayon, someone known for failing SPCOM—how had Jag-off Joe managed to get Strongly Recommended for Completion?

What a horrendous start to the term.



“Welcome to STAT 231, I am Professor Gould. Now, this course isn’t exactly for the weak, but since you’ve all been Recommended for Completion, we won’t have any issues.”

Eddy sat in the front row, notebook open, pen held at the ready. No matter how much he had pleaded with the academic advisors, they wouldn’t change the precognitives’ recommendation.

“The precognitives are incredibly robust,” Eddy was told. “They have never been wrong—not once. It allows us to stop failures before they even happen. We know it’s tough to hear, but it will be better for everyone if you just withdraw from the course. Maybe next term your fortune will improve?”

Eddy had walked out of that office more determined than ever. The system was never challenged, nobody stayed in classes when Recommended for Withdrawal. Eddy was different. Eddy would prove them wrong.

“Now,” Professor Gould said gesturing to her slides, “if we have this value and this significance threshold, should we reject the null hypothesis? Yes, you, red sweater.”

Eddy turned. Several rows back, hand raised lazily, was Joe.

“We should always give the null hypothesis a chance.”

Eddy cringed at the confidence with which he spoke.

“Not exactly,” the professor replied. “While maybe that’s interesting philosophically, philosophy is outside the realm of undergraduate statistics.”

The class laughed. Eddy stared daggers at Joe, dissecting his every microexpression. How self-satisfied and complacent he was, lounging back, knowing he would pass.



“That’s all the time we have for our lecture today,” Professor Gould said, beginning to erase the blackboard. “Next week we’ll start on maximum likelihood estimation. Oh, and I have the graded midterms, come up and grab yours on your way out—at your own risk.” She smiled.

Eddy rushed up to the front. He had felt confident writing the test. When he got his paper back, he was happy to see his efforts had paid off—a big red 100 stared back at him.

Out of the corner of his eye he noticed Joe looking over his own returned midterm. He couldn’t help but preen a little further. After all, it was natural to be curious about the only Strongly Recommended student in the class.

19.

“Is that your grade or your age?” he scoffed.

Joe laughed it off. “Who needs the midterm? At least I’m gonna pass the class.”



“And that’s it for properties of  $t$ -distribution. Only one module to go. Before you all leave, I have an announcement regarding the final exam. I have decided to make it take-home.”

There was a brief swell of optimism felt through the room before Professor Gould raised her hands, quelling it. She smiled, “There were just too many funky distributions to squeeze into one two hour in-person exam.”

Over the groans, Eddy saw Joe. For the first time he looked somewhat nervous. As the other students filtered out, Joe met Eddy’s eye.

"How's the course going for you?" Eddy said, walking over. "You seem less confident these days."

"What if they're wrong. What if I'm the one exception and they're wrong. I have no idea what I'm doing, like, what even is a  $p$ -value?"

For the first time Eddy felt a wave of sympathy for Joe. Throughout this entire term, throughout every study session, every tutorial, and every office hour, Eddy had been keenly growing aware of one thing—that the precogs were not to be trusted.

"I can lend you my notes."



Joe's eyes watered from the strain. His hand was cramped, his shoulders and neck were sore. For hours he had been writing this cursed final. Writing might have been an exaggeration, he was barely able to string two equations together.

Eddy's notes were extensive, sure, but to Joe they might as well have been Greek. He couldn't even understand half the symbols on them.

The notes would not be enough—conventional methods would not be enough. Joe brimmed with regret and shame—how easy it would have been to just study regularly, to just put in the effort. It was too late now. There was a point of no return in every class, when a critical mass of material accumulated so large that it could not be understood within the remaining weeks.

Joe had blown past it in the first month.

He needed another approach. With nothing left to lose, he would do whatever it took.



The hallway leading up to the exam dropbox was ill-lit, but nothing could dampen Eddy's relief at having finished this hellish final. He needed only a 30 to pass the course, and he was certain he had gotten quite a bit higher. He wasn't sure how his passing would affect the system that had been built around the precogs or how the university establishment would change. All he knew was that it would.

His footsteps echoed in the empty hall as he approached the dropbox. It made sense no one else was here yet—Eddy had finished the exam twelve hours early.

"I figured you'd be punctual," Joe said, stepping out from a side hallway. "I was waiting for you."

"Nice, so you're also early?" Eddy asked, "Were the notes helpful?"

"The notes sure were substantial, but I just need a bit more help. Do you mind if we compare answers? Can I see what you got?"

"Oh," Eddy stammered, "I don't think that's allowed. The exam was supposed to be individual work."

"I really need this, Eddy," Joe's voice was shaking, his eyes shifted. Eddy was just now beginning to realize how bloodshot they were. "I can't fail this class. I can not be the first person to let down the precogs."

"There's still time, Joe. It's not due until—"

Joe's eyes went cold. "Don't make me do this. Give me your notes."



The grade sheet was posted, as usual, one week after the exam. Joe pushed his way to the front.

...  
Qualley, G.—77  
Quentin, P.—81  
Ramsey, I.—65  
Rasmus, N.—76  
Reid, J.—50  
Rex, E.—DNW  
...

Attached at the bottom was one additional paragraph.

"We regret to report a minor printing error in this term's STAT 231 Academic Forecast. The recommendations for Reid, J. and Rex, E. were erroneously swapped. With that said, however, we would like to extend our most sincere congratulations to Joe Reid for beating odds previously thought insurmountable and becoming the first student to pass a class despite being Recommended for Withdrawal!"

aphf & peacelovemath

## I DESERVE AN ANTI-COFFEE

I think we as a society need a fast-acting caffeine neutralizer, and quite frankly, I don't know why it doesn't exist yet. Like everyone else, I drink coffee every morning to fuel me through my day, and I deserve *more*. I should be able to caffeinate midday without sacrificing my sleep, and I don't think that's too much to ask for. We've been drinking coffee for hundreds of years. Hurry up, scientists.

avahhh

# TALK-ING ABOUT HOZIER

## A LYRICAL ANALYSIS DONE BY A NORMAL INDIVIDUAL

For anyone that knows me in real life, this article should come as no surprise. I've been obsessed with Hozier since I was 13 when I discovered his music through sad Instagram edits. I'll praise him, his incredible song writing skills, and the good work he's done supporting many marginalized groups the second I'm given the chance. One of my favourite songs of his is *Talk* on his 2019 album *Wasteland, Baby!*, so I've chosen to dissect these lyrics for your reading pleasure. As a disclaimer: this lyrical analysis is based purely on my own interpretation and how the song spoke to me in particular, and shouldn't be treated as the "correct" interpretation. The beauty of music and art generally is what you make of it!

### VERSE 1

We're immediately thrown into some allusion to the Greek myth of Orpheus and Eurydice. Our clearly enamoured narrator compares themselves to many of the facets of the classic myth; they insist that they, as a person, and their love would be unwavering, strong, forgiving, and loudly passionate for a lover. I'm sure I'm not reaching if I claim that they're saying what we all wanna hear from a partner: an expression of pure unfiltered devotion that borders on obsession. The narrator clearly thinks these qualities are attractive in a partner, as they call the listener to just "imagine" how truly amazing it would be to be "loved by [them]."

Notice how they don't say anything about what they would receive in this relationship, it is all about what they can give to a partner. I believe this is purposeful as they're trying to make the subject of their affections focus solely on how they would benefit from a relationship with the narrator, rather than remind them of how the reality of any romantic relationship is way more give-and-take than just take. To me, it seems our narrator is building themselves up both as a person and a lover using flowery poetic language to appear more worthy of their romantic interests affections, or rather, their body (more on this later).

### CHORUS

These inferences drawn from the first verse are plainly put to words in the chorus. The narrator themselves says they "try to talk refined" in order to convince the potential partner to have a relationship with them. I use "relationship" vaguely because, as was hinted earlier, I don't think it's a romantic coupling they're looking for. Instead, the narrator appears to seek a purely sexual relationship as they fully admit that they have fantasized about what they would do to this potential partner. Now, whether this line is taken as "envisioning romantic scenarios" or "imagining sexy scenarios (like the ones you think of to go to sleep)" is entirely based on your own perspective, but I believe it to be the latter.

Not only that, but they also admit to using the poetic language from the previous verse as a way to conceal their true intentions. Using this romantic diction as a way to make

them appear less of just a horny shallow individual and more of a pure romantic who can't help but to put their thoughts to poetry. It's like when someone claims to be an avid reader of classic literature, but in reality all they read is smutty fan fiction (and not the good kind).

### VERSE 2

Similar to the first verse, most of this section focuses on the narrator trying to convince their love interest of how amazing of a lover they'd be. What differs in this verse is that their facade begins to slip as they hint towards how great their sexual prowess is; no longer are they going on about their romantic qualities, but rather their... bedroom skills wink face. In my opinion, this sort of "slip up" in the narrators persuasion is such an interesting detail. It truly shows how these kinds of people who use fancy talk into manipulating others perception of them are always going to eventually falter; the cracks in the mask they've created will start to become more and more noticeable over time. Also similar to its predecessor, this verse concludes in our narrator calling their lover to imagine how amazing it would be to just experience their sensational loving. Saying it once? Sure, that's fine. Saying it twice? Come on now, get that ego in check and come join us back on Earth.

The song once again goes into its chorus to conclude. Now, why do I find this song so interesting? Why is it one of my favourites from Hozier's entire discography? For one, the references to the myth of Orpheus and Eurydice made my Hadestown-loving brain very happy. Secondly, and more significantly, I notice that the song itself actually tricks listeners in the same way I think our narrator tries to trick their love interest. When I had listened to this song the first few times, I thought it was just a beautiful love song that had a little bit of sexiness to it. But, as I actually listened to the lyrics and thought about them a little bit, I realized I fell into the exact trap that the narrator sets; I was persuaded that this song must be a love song through its poetic metaphor and diction. Once I found this out, I couldn't contain how cool I thought it was and it really piqued my interest into lyrically analyzing more of my favourite songs.



I hope you enjoyed this analysis of Hozier's *Talk*. If you've found anything I've said here to be relatable or interesting at all, you should definitely go give it a listen (and while you're at it listen to his latest studio album *Unreal Unearth*, I kid you not when I say it's truly an *unreal* listening experience (hehe)).

wicked



# IN LOVING MEMORY

The portraits had to go. This was a new era for Ennio's and Monica wanted a fresh look for the venerable restaurant. Gone were the patriarchs who had watched over the dining room for generations. In their place was a portrait of her late husband, Anthony, smiling beneath an inscription, "In loving memory."

"It's a new day," she told the staff, who stood uncomfortably in their uniforms. The people who had served Anthony's father, and his father before him, looked at each other but said nothing. "We'll do things my way from now on," Monica concluded.



Six months before, Anthony stood at the kitchen table with the financial statements laid out before him. "We're drowning, Mon."

Monica massaged his shoulders. "Your father's ways worked in his time, but—"

"Dad would rather have this business go bust than change the menu," Anthony said. "The protection money, the backroom deals... it's killing us."

"Then let it die," Monica told him, "and we'll build it better." Anthony looked at her with hope in his eyes, "You always were the visionary."



The health inspector came unannounced on a Friday night. Monica smiled at him, "Mr. Vitale, I've been expecting you."

The kitchen staff watched them go into a private booth. Twenty minutes later, they left with a signed inspection form and a package tucked under his arm.

"The city just approved our patio expansion," Monica beamed, snapping her fingers at the kitchen staff. "Back to work. We have customers waiting."



"You want to do what?!" Anthony asked three months before his death, incredulous.

"Just a little side business, Anthony. Not some backroom gambling like in the old days, but a more profitable venture with your cousin Sal."

"We've been able to keep this place mostly afloat during the pandemic without any extracurricular activities."

Monica took his hands in hers. "But we're still sinking. Times have changed. We need to adjust."

"My father would roll in his grave."

"You need to forget the old way of doing things," she said. "I want our children to be proud of our accomplishments."



The rival restaurant across the street closed its doors weeks after Monica took charge. She bought the property the following day.

"Expansion," she explained to her flummoxed manager. "We need more room for private events."

When the local paper ran a feature on Ennio's, it credited Monica's "innovative approach and commitment to tradition." The photo showed her standing under Anthony's portrait, with an enigmatic smile. No one questioned how she had turned things around so quickly.



Two weeks before his demise, Anthony had confronted her in their bedroom, waving a ledger. "What is this? These numbers don't make sense!"

"I made some investments," Monica replied, taking the book from his hands.

"With what money? We were barely staying afloat!"

"I have resources you don't know about."

His face had fallen. "What have you done, Monica?"

"What you couldn't," she'd shot back with a stern expression.



On the anniversary of Anthony's death, Monica closed the restaurant for a private memorial. She raised a glass of his favorite wine beneath his portrait.

"To new beginnings," she toasted to the empty room.

Later, alone in her office, she opened the safe behind his photograph and added another stack of cash to the growing pile, besides the fentanyl, which she arranged for deliveries to Sal.

The brakes on Anthony's car hadn't failed by accident, after all. And in this business, as she'd learned from his family, sometimes sacrifices had to be made.

Monica touched the frame lovingly. "The Ennios always did what it took to survive," she whispered. "You just didn't have the stomach for it, my love."

# REVIEW OF EVERY BOARD GAME USING HEXAGON GRID

## PT. 1

I saw Hexagon Grid is categorized as a core mechanics for board games on BoardGameGeek. Although I don't like rating things with just a number, it might well worth a try based on how hexy those games are. There might be a pt. 2 but it is not guaranteed.

### CATAN

An introductory game to broaden the horizon in the board game world. Easy to learn but may be too harsh on new players due to dice-rolling and the trading mechanic. Literally unplayable when one rolls 7 and starts a 3-hour negotiation on where to put the robber. **Rating:** 1 (Adjacency)

### TERRAFORMING MARS

A very thematic game that teaches players how to terraform Mars by nuclear-bombing the surface to raise temperature, for example. In the grim darkness of the far future, there is only capitalism. Players may collectively halt on terraforming mars as it is not the best choice to get VP/Fortune/Income. **Rating:** 3 (Adjacency/Tiling/Pattern)

### THE CASTLES OF BURGUNDY

A complex tile-placement game where you build your own princedom in medieval times. Players take turns taking hexagon tiles from a shared pool and later place them on their castle board. Choice matters as tiles put on the board first can affect what tiles can be placed next. Managing the uncertainty of dice-rolling is also important. **Rating:** 2 (Adjacency/Tiling)

### GLOOMHAVEN

The most famous legacy board game and tactical RPG game. Combat is the main drive, so minmax your character to achieve synergy and to challenge higher difficulties. Setup time is too long, so I would recommend playing Baldur's Gate 3 instead if electricity is not a scarcity. **Rating:** 5 (Adjacency/Rotation/Tiling/Pattern/Movement)

### TERRA MYSTICA

A fantasy civilization game where luck doesn't matter. How you score victory points in every round is foreseeable. Each civilization/race has its own super power and its preferred habitat, and civilizations can thrive together by building towns next to each other. Putting yourself in other players' shoes will be critical when planning ahead your future turns. **Rating:** 3 (Adjacency/Tiling/Pattern)

### ECLIPSE: NEW DAWN FOR THE GALAXY

A civilization game with space exploration and diplomacy. To explore new territories to grow economy, to climb up technology tree, or to prepare for a fight, the choice is yours.

With many factions and uncertainties, the players need to make wise decisions and embrace their consequences.

**Rating:** 4 (Adjacency/Tiling/Movement/Group Favorite Award)

### HIVE

A very niche two-player abstract game. Portable in size, it is easy to learn but deeply competitive. Like chess, every piece of your insect has a unique form of movement. With many ways to maneuver around and add new chess pieces to the board, there are millions of board states for the game to evolve onto. **Rating:** 5 (Adjacency/Rotation/Tiling/Movement/Personal Favorite Award)

eralogos

## THIS WEEK'S EMOTIONAL FORECAST

### EXPECT CONSTANT ANXIETY WITH OCCASIONAL BOUTS OF ANGER

This is looking to be a stressful week. We are forecasting a daily average of 6<sup>1</sup> for anxiety with highs of 9 and lows of 4. There may be the occasional bouts of tightness of chest. Sleep quality may be impacted.

We do not recommend scrolling the news at 2 am, it will not help. There may be a sudden burst of anger with a possibility of angry tears. While intense these moments will pass quickly.

As a consequence of this pervasive background anxiety you should expect an increased tendency to over-explain and sharp self-doubt whenever you have to make any decisions. Taking on an organizational role where you have to make a lot of decisions is probably inadvisable.

To weather these emotions we recommend keeping a Canada Goose plushie nearby to use as a grounding tool when the constant internal tension you feel starts extending externally into the extremities.

Next week's Emotional Forecast is looking much better. Remember to breathe and you will get through this.

Beyond Meta

1. Anxiety is being measured here out of 10. It is a logarithmic scale where each up of the scale comes with increasing certainty that everything will go wrong if you are looking at the current geopolitical situation. Everything going wrong is an accurate summary of current events.

# THE WORLD'S MOST MISUNDERSTOOD CAR

## PEOPLE ARE STUPID

The Toyota GR Corolla came out in 2022 to immense hype from car enthusiasts all over the world. Unlike other, well established hot hatches,<sup>1</sup> like the Subaru WRX STi, Mazdaspeed 3, and Honda Civic Type R, the GR Corolla came powered with a 1.6L turbocharged 3-cylinder engine. Despite the lack of a cylinder, the car is able to produce 300 horsepower, 295 pound-feet of torque and hit 0–100 km/h in just 4.9 seconds—a feat for a car with such a small engine and lower power figures than other performance cars on the market. Despite these impressive numbers, speed was never the main goal. Akio Toyoda—chairman and then-CEO of Toyota Motor Corporation, car enthusiast and race car driver—meticulously crafted a team of Toyota Gazoo Racing (GR) engineers to make a fun, practical, and affordable performance compact for Canada and the U.S., as the countries don't get the smaller GR Yaris.<sup>2</sup> The car is meant to be as fun to drive as it is practical, with a hatchback platform based off of the current E210 Toyota Corolla, five seats and four doors, all-wheel drive, and relatively good fuel economy. While the car is impressive at straight line speed, it was meant for dirt roads, curvy tracks, or snowy mountains—while still being a loyal Costco run workhorse.

I became obsessed with this car after it came out, and I still am. It's the perfect blend of fun, practicality, reliability, and driver engagement at a price tag that isn't dreaming too big. It's fast enough to feel beans in your gut<sup>3</sup> without being a death machine. It's a car that is as attainable as it is worth working hard to save up for—a reasonable dream. Most car enthusiasts agree with this sentiment, but there is also a lot of criticism in the car world. Reviewers and critics incessantly complain about the GR Corolla's size, especially compared to its current competitors: the Honda Civic Type R and the Volkswagen Golf R, two larger hot hatches with similar performance numbers. According to them, the back seats are unusable, and the front seats uncomfortable at best. The cargo space? Non-existent. Interior? cheap, uninviting, and cramped. Despite these comments, the same people praise the car for its fun dynamics and incredible driver engagement, and the car has strong sales and loyal fans. Caught in a trance of stupidity, I almost wrote the car off as impractical junk because YouTubers I don't even watch or care about had such conflicting views on the vehicle.

Thankfully, I bought tickets to the 2025 Canadian International AutoShow this year. I went to every brand's exhibit. After sitting in a lot of disappointing and cheaply built cars, being harassed by an Infiniti salesman who was butthurt that I like Corollas, and test driving some (actually pretty solid) EVs, I finally reached tranquility: Toyota/Lexus. No salespeople, and tons of reliable, well-built cars. I talked to so many representatives who shared the same love of cars and the Toyota/Lexus brands that I did, cherishing their stories. I sat in my dream cars and tested them out as best as I could. And, most importantly, I learned that most car reviewers and critics know *nothing* about cars. Obviously, Toyota brought the GR Corolla to such an event, and I spent a good hour with the car.

I set the seats to my preferred setting and confirmed that there is **plenty** of space for the average person, in the front **and the back**. I opened the hatch and found that, while the trunk is smaller than some cars, there is more than enough space for suitcases, Costco runs, and whatever else you throw at it—and that's with the seats up! I sat in the cockpit and felt the well-built interior, which was inviting without overdoing it. A cabin that makes you feel at home but encourages you to focus on the open road ahead of you.

And, after talking to other fans, curious parents, awestruck children, and critics, I learned a lesson that we've been told since birth: not to listen to what others think, not to rely on another's research, not to take facts and numbers at face value, but to actually go see things for yourself. No matter how credible a source may be, taking their words and data at face value will always be the most foolish thing you can do. I think we all know this at heart, but don't heed to it in the real world. We relax our free-thinking because we've been taught a lot about research and citing credible sources in school, but we forget that we've also been taught to see things for ourselves and confirm the things that we see and hear. In a way, academia has made us lazy, and we have begun mimicking nonsensical jargon that our friends, books, videos, journals, and the media tell us because we've built walls of trust with those things. When we're given opportunities to do our own research and come up with our own conclusions, we should.

I also learned that cars really have become too big. Seriously.

Usman!

1. "Hot hatch" is a term referring to high-performance versions of regular, hatchback cars on the market.
2. The Toyota GR Yaris is powered by the same engine, and is a World Rally Championship legend, with consecutive wins and records for the last 7 years and counting.
3. Shamelessly stole this phrase from the best, most knowledgeable and hard-working car reviewer I know, Sarah-N-Tuned on YouTube. I absolutely love her videos and encourage watching them if you wish to get into cars.

## MY FIRSTHAND IMPRESSION OF BALATRO AS SOMEONE WHO'S NEVER PLAYED IT

### COURTESY OF ABSTRACTED

It's basically cookie clicker but with cards.

yalevoylian

# MASH (BUT IT'S THE SHITTY WATERLOO EDITION)

How to play: choose yourself a number! Now go down the lists of everything that many times, and cross away each item you land on until each category has one left. Voila. That is your prophecy, and since it is likely you are already deep into your academic journey, at some point you muffed up and went off track.

Has anyone published this before? Not that I know of but I am too lazy to check :D

## WHAT IS YOUR FACULTY?

- ☐ Arts
- ☐ Engineering
- ☐ Environment
- ☐ Applied Health Sciences
- ☐ Math
- ☐ Science



## WHERE IS YOUR RESIDENCE?

- ☐ VI
- ☐ ICON
- ☐ Your parents' basement
- ☐ REV :(

## WHAT IS YOUR ACADEMIC STANDING?

- ☐ Excellent
- ☐ Good
- ☐ Satisfactory
- ☐ Poor



## DID YOU GET A CO OP?

- ☐ yes
- ☐ no

## YOU SPEND ALL YOUR TIME HERE

- ☐ DC
- ☐ The accounting lounge in Hagey Hall people forget about
- ☐ MC comfy
- ☐ DC again
- ☐ SLC
- ☐ DP

## WHAT CLUB DID YOU JOIN?

- ☐ Boba club!
- ☐ The anime band club
- ☐ Intramurals
- ☐ The rizz club
- ☐ No club. Sad



## HOW DID YOU GRADUATE?

- ☐ As all the way
- ☐ Cs get degrees
- ☐ You did not graduate :(
- ☐ You went to grad school!!



## YOUR GOOSE RAPPORT?

- ☐ They look at you when you look at them. All is calm
- ☐ they all charge you at once
- ☐ you are one among them

## YOUR SALARY

- ☐ Millions upon millions
- ☐ A decent six figures
- ☐ Humble 65k
- ☐ classified
- ☐ you are jobless ^\_>^



nike

# HOW TO COMB YOUR HAIRY BALLS

If you're reading this article, it's likely that you, someone you love, or someone you hate has, had, or will have hairy balls. According to PMATH 365—Differential Geometry, the balls in question can be modeled as a connected, compact, orientable surface  $S \subseteq \mathbb{R}^3$ . Additionally, a combing of the hair on your balls can be represented as a continuous, non-vanishing (i.e. never 0), vector field  $X : S \rightarrow \mathbb{R}^3$ .

By covering your balls with triangles and placing electrons and protons all over,<sup>1</sup> one can show that the existence of such a combing implies that the *Euler characteristic* of your balls,  $\chi(S)$ , is necessarily 0. Unfortunately for us, this means that  $S$  is in fact a torus, which is likely not an accurate model for your balls.

Alas, my dear reader, in your pursuit to comb hairy balls, you have been cat-fished into learning about Differential Geometry. The inability to comb the hair on a ball is known as the *Hairy Ball Theorem*, and is just one of many interesting theorems showcased in PMATH 365 #notsponsored. Perhaps more interesting is the number of excuses Jason Bell can find to bring a doughnut to class, which makes me quite hungry.

NotInSE

1. Try this at home!

# BELGARIAD: A MODERN RE-READ

## THE BOOKS THAT HELPED DEFINE MY CHILDHOOD, ADOLESCENCE, AND YOUNG ADULthood

*The Belgariad*, and its sequel series, *The Mallorean*, are two five-book fantasy epic series written by David and Leigh Eddings, published from 1982–1991. I was raised with these ten (actually thirteen) books and have read them many times throughout my life. The most recent was this term, and before that in 2020. These books were wildly popular upon release, but in current years I find common fans rare. To that end, allow my musings to act as both commentary, but also a recommendation to pick them up in whatever second-hand book store they appear and give them a read yourself.

*The Belgariad* is quintessential epic fantasy. It has a young male hero with mysterious heritage, an elderly wizard mentor, pantheons of gods, maps filled with cultures and races, as well as a powerful magical artifact who's theft kicks off the adventure. Preparing for my re-read, I expected its typical nature to bore me, but I could not have been further from the truth. This book manages to do almost everything just right, in a way that leaves a reader perfectly satisfied and entertained.

That being said, the book isn't perfect. When I re-read it almost five years ago, I noticed signs of aging. The setting is a typically fantasy, and with that comes certain cultural side effects. Firstly, there are approximately 13 races of people, one for each kingdom. Once you've met one character of that race, you've met them all. Unique personality other than a couple of adjectives is usually reserved for the core group. I saw this as a fault; how could they generalize an entire group of people into something like "loves money," "practical and simple," or "noble and knightly?" This especially bothered me in the four "antagonist races." Entire groups of people were lumped into "the enemy" by their birth. If a man was a Murgo, no matter his station, then he must be an enemy. This, of course, enabled their guilt-free, even gleeful, slaughtering.

The past few weeks I've had a change of heart. The generalization of populations is an unreasonably effective tool. If you want to introduce a character, simply stating they're a "Drasnian" or "Arend" tells you 90% of everything you need to know. In novels with hundreds of characters, this saves an awful amount of time. It also gives a very distinctive world, and in a book based around travel and journey, nothing shows distance travelled than encountering entirely unique cultures and peoples. There's even an in-world explanation. Upon the creation of the world, each of the seven gods choose peoples to be theirs, and he lived among them for generations. Obviously most people of a race would be alike, they were made in the image of a single person!

The main cast is unique, delightful, entertaining, and although a little stereotypical, they're worth the time afforded. Even among the "enemy races" there are friendly and developed characters, proving the racial generalization is an average, not a rule that offended my younger self. But races weren't the only topic that showed its age.

Being a fantasy world set in the faux-medieval times, there is heavy gender roles. Most of the men are warriors who yearn to bash each others' heads in with swords and axes, spend their free time drinking ale, and making sly comments. The women are delegated mothering, cooking, and nagging the men over their endless vices. All but two of the kingdoms are ruled by Kings, most of whom's Queens are hardly relevant other than having a baby or worrying about their husbands.

Upon this re-read, not as much has changed. There are some stark exceptions, such as Queen Porenn of Drasnia who's indispensable for information and clever ideas, or Vella, a knife wielding Nadrak who, despite her blatant sexualization and the fact that she's sold and bought like property, is a wonderfully strong and independent character, unafraid of the opinions of men and a great example of a woman considered an equal, or better, than her male counterparts.

Overall, there are signs of age, but especially in *The Belgariad*, there are only a handful of single sentences that wouldn't pass in today's standards. Even among the sexist overtones, the book is self-aware, and does put in effort to show the effects of discrimination, even providing commentary of the mistreatment of women in typical fantasy stories. For example, one of the main characters, Polgara the Sorceress, who overcomes the gender restraints forced upon her, and establishes herself as an authority no man would dare cross. Yet, she spends an unreasonable amount of time doing domestic chores, or acting "hysterically."

For books that meant so much to me, it pains me to dwell on its faults, but if I were to talk about all that I loved about them, then I would need a five book series myself. For a fantasy lover, these books are a treat. They're good for all ages, and have such an amazing world and feel to them that sucks me in even to this day. As soon as I pick them up, I can't put them down. I owe so much of my literary preference and even some of my writing style to David Eddings and his novels. For that, I will always be thankful. Without them, I never would have gone into creative writing, playing Dungeons and Dragons, or exploring other fantasy worlds. I will always love these books, no matter how the times change.

Aspiro

**mathNEWS is the  
best thing that's ever  
happened to me.**

A \$100% SINCERE mathNEWS EDITOR

# KIM CAMPBELL AND THE BIGGEST L IN CANADIAN HISTORY

So, if you can believe it, I've been thinking a lot about Canadian politics lately. We've got a shiny new Prime Minister (for at least a few weeks), we're going through a national breakup with the US, and Doug Ford is finally using his supervillain powers for good. There's a lot going on that you could call historic.

It's gotten me thinking about some other honorary Canadian Heritage Moments in our political history, which inevitably got me thinking about Kim Campbell, Canada's first female Prime Minister for all of 153 days, who was the catalyst for the most staggering electoral defeat in all of Western political history.



Picture this: you're a Canadian Prime Minister who's been in power for nearly a decade. While you were once swept into power in a popular electoral landslide, in the last several years your reputation has taken hit after hit with controversies and scandals. Some of these come from global crises you need to respond to, but many more of them are entirely self-inflicted wounds.

Attempts to change core elements of Canadian society to be more inclusive of certain groups are met with uproar. Western Canada, in particular, is upset about deficit spending and higher taxes. Over a long enough time, enough people hate you for enough reasons that it's clear that if you attempt to run in the imminent election, you'll be defeated in a landslide as decisive as the one that brought you into power.

I'm sure you know exactly who this describes: Brian Mulroney, Prime Minister of the Progressive Conservative Party from 1984 to 1993.

The comedic pratfalls of the Mulroney administration are too varied to get into here, but they involved several elaborate, failed attempts to give Quebec a higher constitutional status, as well as managing to both raise taxes and increase the deficit, successfully pissing off everyone.

The upshot is that by 1993, it was clear the Progressive Conservative Party (PCs) were totally cooked. By most measures, he was the least popular Canadian Prime Minister ever up to that point. And what can you expect a politician to do when things get difficult?

That's right, run away from the situation and pass the baton to literally anyone else!



Kim Campbell was an up-and-coming star of the PC Party, serving several roles in the Mulroney cabinet. When Mulroney announced he was stepping aside and that the PCs would

elect a new leader to run in the next election, she became the leading contender very quickly.

The challenges facing Campbell were immense. Anger at the Mulroney government had fermented and formed two new regional political parties which threatened to upset the balance of the existing parties and squeeze the PCs out all together. Quebec had the Bloc Quebecois, a new, explicitly Quebec nationalist party for people who felt like Mulroney's constitutional failures meant that staying in Canada was a lost cause. If you were a Western Canadian upset that Mulroney had even tried to do this, there was the all-new right-wing Reform Party.

Of course, it's not like Campbell had nothing going for her at all. In a time when the PCs were viewed as old and stale, just the fact that she was a relatively young woman brought some immediate energy and novelty back into the party (much like how the Liberal Party changed its image when Justin Trudeau became leader in 2013). There was also, of course, much excitement around the fact that she would be Canada's first female Prime Minister, a genuinely huge historical moment which was unfortunately undercut by... everything that came after.



It became clear pretty quickly that Campbell was not necessarily prepared for what running a national campaign would be like. While she enjoyed a brief surge in excitement in the polls when she officially assumed the job of party leader and Prime Minister, a consensus soon formed that she was somewhat out of her depth.

The party seemed unprepared for just how intense the competition with the Liberals, Bloc, and Reform would be,<sup>1</sup> and they never had any serious plan to win back their previous coalition, or failing that, convince Liberals to back a failed government they hated.

Emblematic of Campbell's failures to create or control the narrative was the notorious Face Ad, in which the PCs appeared to be mocking Liberal leader Jean Chretien's facial deformity and implying it meant he was intellectually incapable of being Prime Minister. This is and was a horrifically shitty thing to even imply, and it says a lot about the Campbell campaign (and her PR sensibilities) that she thought this was acceptable.



The PCs were always going to lose the 1993 election. Between Mulroney's failures and the emergence of the new parties, it was probably inevitable, even if Campbell ran a perfect campaign.

But, oh man, did she not run a perfect campaign.

In 1988, the PCs under Mulroney won 43% of the vote and 169 seats in Parliament. In 1993, the PCs under Campbell won 16% of the vote, and... *two seats. Exactly two seats.*<sup>2</sup>

It's hard to overstate how seismic the results of this were. The PCs, a party that had existed since Confederation, functionally ceased to exist overnight. Reform became the default right-of-center party in Canada, totally supplanting the PCs.<sup>3</sup> Thanks to vote-splitting<sup>4</sup> between the PCs and Reform, the Liberals swept to a massive landslide victory, and would govern the country for the next 13 years uninterrupted in the face of newly scattered opposition. The ascension of the Bloc led directly to the 1995 Quebec independence referendum, which only resulted in a vote against secession by less than one percent of the population. In many ways, the modern Canadian political landscape was forged in 1993, as Campbell killed the PCs and the political order shuffled around to fill that power gap.

The moral of the story? No matter how badly Trudeau might have done if he had run in the election, it could always have been worse.

Dick Smithers

1. People always seem to forget that the Liberal Party are extremely good at winning elections, just because they're so bad at everything else.
2. If you're wondering, Campbell didn't even win her own seat in Vancouver, which basically never happens to a party leader.
3. Eventually, after years of anemic results and sick of cannibalising their own vote, Reform agreed to absorb the PCs and merge into the modern-day Conservative Party of Canada. This party would be

led by Stephen Harper, who you can learn more about on the cover of **mathNEWS** 129.6.

4. Vote-splitting is a phenomenon in First-Past-The-Post systems where having two ideologically similar parties makes it less likely any of them will gain power. Imagine that you have two right-wing parties with 30% of the vote each, and one left-wing party with 40% of the vote. Even though 60% of voters prefer right-wing ideology, the seat is awarded to the single party with the highest number of votes, so the left-wing party would get it. This is what was happening in Western Canada.

## N THINGS I LEARNED FROM SCROLLING 4CHAN (NOT RACIST)

- The planet we reside on is not Earth it is Bozrah (the real Earth is 75,000 light years away for some reason)
- What used to be 10.00 seconds is now 15.00 seconds (trust — I read it from someone who knows how to count to 10 seconds ACCURATELY)
- No one has ever met a person who makes chips, so aliens must be making chips
- There was a secret 10-year mission to an alien planet 40 light-years away
- Came across someone that said they got 100% on an IQ test
- There are 11 alien races and 9 of them are evil (unclear which one makes the chips)

bojackpenguin

## CAN I WRITE A SICK mathNEWS ARTICLE ON TUESDAY MORNING (THAT I HAD NOT WRITTEN EARLIER DUE TO A HECTIC PAST FEW DAYS (BUT ALSO HONESTLY POOR TIME MANAGEMENT)) BEFORE WORK STARTS AND MY DISTRACTION BLOCKER KICKS IN SO THAT I CAN FULFILL MY GOAL OF WRITING AN ARTICLE FOR EVERY mathNEWS ISSUE OF 2025?

Not really, but at least I wrote one hell of a title.

the government's only spy



# PIE PIE PIE

## gridCOMMENT 157.5

this might be my easiest **gridWORD** yet. however, it's also one of my favourite ones so far, i think i really picked up the ball on this one. if you're picking this **gridWORD** up in person at mc on friday, don't forget to stop by the 3<sup>rd</sup> floor hallway @ 1:59 pm to grab some pie to enjoy with this **gridWORD**!! and if you get stuck, there's a handy pi recitation event @ 3:14 pm in mc comfy, aptly :))

enough yibber yabbering. last time, i asked you guys how you would differentiate between you and your evil clone, and you all said:

- Partly Cloudy: *my evil clone would love tomato soup (I hate tomato soup)*
- nike: *my evil clone and i would simply become friends. no need to know who's who*
- grasstoucher69: *my evil clone likes Hi Yogurt, I don't*
- rijrya: *my evil clone would cheer for T1 and work for a hedge fund in Chicago*

- terminally sane: *my evil clone would enjoy music history*
- Lars Nootbaar, aphf, peacelovemath, yummyPi: *our evil clones would be evil but we'd be good. It'd be easy to tell*

all great answers! personally, my evil clone would cheer for T1 and work for an actuarial and consulting firm in chicago. with that being said, terminally sane, it is only fitting that someone who enjoys music history would be terminally insane (?). please pick up your prize at mc 3030 :3 the **gridQUESTION** for this issue is: "what is your favourite/most impressive thing that you have memorized?" please email your answer, pseudonym, and the completed **gridWORD** to [mathnews@gmail.com](mailto:mathnews@gmail.com) by 6 pm on march 24 for a chance to win a PRIZE

have a wonderful weekend everyone

spaghettihalers

### ACROSS

1. SpongeBob drop cap word
4. Come from \_\_\_\_
8. Staff leader
12. Scorch
13. th digit of a mathematical constant\*
14. Falcon's home
16. "Major" animal
17. "Metamorphoses" poet
18. Having chutzpah
19. Quagmire
20. th digit of a mathematical constant\*
21. Hall-of-Famer Mel
23. Get it
24. Stinky
26. Grief
28. Banned pesticide
30. \_\_\_\_-Cat (winter vehicle)
32. nd digit of a mathematical constant\*
36. Rubs out
39. Cry on a roller coaster
41. Ski lift
42. Feathery wrap
43. "I've never been to \_\_\_\_ javer"
45. "\_\_\_\_ time"
46. Loopholes
48. \_\_\_\_ State
49. Discreet attention getter
50. Gaelic tongue
51. \_\_\_\_-Z
52. Lode load
54. th digit of a mathematical constant\*

56. Illegal firing
60. Not quite right
63. Capt.'s guess
65. COVID-19 vaccine producer's stock
67. Murdered Midianite king, maybe
68. Nickels and dimes
70. City on the Tiber
72. Balanced
73. Comforter
74. Heath
75. \_\_\_\_ mortals
76. Increases RPM
77. With 44-Down, Japanese artist and activist
78. Waterloo's prov.

### DOWN

1. st digit of a mathematical constant\*
2. Lacks, in brief
3. Chapter in history
4. Auth. unknown
5. th digit of a mathematical constant\*
6. Singer DiFranco
7. Start over
8. Second most common dialect in Chn.
9. Stan who created Spider-Man
10. Messes up
11. th digit of a mathematical constant\*
12. Bag
15. Seer
20. Roulette bet
22. nd digit of a mathematical constant\*
25. Tags
27. Newt
29. th digit of a mathematical constant\*
30. th digit of a mathematical constant\*
31. Night light
33. Nile bird
34. Brewery equipment
35. Once, once upon a time
36. Reed section member
37. th digit of a mathematical constant\*
38. Saturated substances
40. Desire
44. See 77-Across
47. Congeal
49. A pop
51. Understood
53. Did a marathon
55. Bridge positions
57. th digit of a mathematical constant\*
58. Blatant
59. th digit of a mathematical constant\*
60. Anal, casually
61. st digit of a mathematical constant\*
62. nd digit of a mathematical constant\*
64. Major employer
65. One way to run
66. th digit of a mathematical constant\*
69. Ariz. neighbor
71. Hugs, symbolically
72. Punk variant

Drop your **gridWORD** solutions off at MC 3030. And yes, we do award points for creativity.

A PERPETUALLY BORED mathNEWS EDITOR

	1	2	3		4	5	6	7		8	9	10	11	
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	76					77					78			

**Want to write for mathNEWS? Come to the next production night! New writers are always welcome!**

**Check the lookAHEAD for the next date!**

lookAHEAD

SUN MAR 16	MON MAR 17	TUE MAR 18	WED MAR 19	THU MAR 20	FRI MAR 21	SAT MAR 22
derailED Celebrates End of Capstone Project Day	Drop/Add period begins St. Patrick's Day	Awkward Moments Day CSC Prof Talk Topic: Control Theory	Add period begins (open enrolment) Socratica Symposium PMath Prof Talk 4:30 PM, MC 4021		Drop with WD ends Co-op cycle 3 match results available	Drop with WF begins March Open House
SUN MAR 23	MON MAR 24	TUE MAR 25	WED MAR 26	THU MAR 27	FRI MAR 28	SAT MAR 29
	mathNEWS 157.6 production night 6:30 PM, PHY 145	Wednesday		Joanna Nova Appreciation Day	mathNEWS 157.6 released 2π – 3 Day	Last day of March in an alternate universe where March has 29 days

MINION



Joe

LAST ISSUE'S  
gridSOLUTION

1	N	2	F	3	T	4	S			5	E	6	L	7	F		8	E	9	M	10	E	11	R	12	G	13	E				
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64	L		I		M		P		E		T					65	N		O		T				66	A		R		E		A
67	A		S		S		E		S		S					68	T		E		E				69	S		E		R		B

[On a symbol written on the board] That is a sign that I made up. I have been watching too many Korean dramas and those are two swords. I don't know how to show contradiction.

PROF. LILA KARI