



“WHAT’S YOUR LAST-MINUTE VALENTINE’S DATE?”

Hello **mathNEWS** writers! I have not written one of these in five issues now... It'll be Valentine's Day when you're reading this, I hope you're able to spend the day with friends and family and pets who you love. Me personally, I'll be spending the morning with an 8:30 AM exam, and the evening with PD 11 Work Term Report, my beloved 🐶.

After that though, reading week! One thing Winter has over Spring term (I know Spring can't have one because of course logistics but how nice would it be?) I'm currently nursing a terminal Balatro addiction while trying to wrap my head around a paper of Smoktunowicz for my research. In terms of Balatro, these things have anti-synergy. I hope your reading week is as productive as I'm pretending mine will be. Well, I'm sure I'll make some progress.

I'm so excited to be back on study next term though; despite the lack of reading week, I think Spring is the nicest term to be here. I miss warmth and sunlight and long days and going outside!! I'm also taking courses I'm pretty excited for, I've basically hyperfocused on algebra my last n terms, so I'm finally taking PMATH 351/352 (Real and Complex Analysis respectively). Also my first CO course, 342 (Intro to Graph Theory). MATH 249 with Professor Pechenik was such a cool course, I've picked up a CO major. Matroids my beloved. Also trying out a creative writing course, ENGL 335, mostly because of **mathNEWS** actually 🍷.

I'm only taking one course this term which is nice; PMATH 348: Fields and Galois Theory. It's pretty cool, I'm enjoying all the stuff about field extensions and splitting fields. I'm most looking forward to the Galois theory though; the theorems I've seen about field-fixing automorphisms seem really neat.

Besides the course, I'm also on my first work term, as an ISA. Very nice job, highly recommend. Getting to setup marking scripts, run office hours, and all that stuff is pretty cool, and it's flexible too. All of this is outweighed by PD 11. Awful course. Surely it's not legal for them to make us do this? It must constitute cruel and unusual punishment.

Anyways, we have another banger issue for you, including articles about cupcake similes, very serious and informational maps of campus, and lots of Valentine's themed articles :).

abstractED
Editor, **mathNEWS**

revivED
Editor, **mathNEWS**

Thank you Rose 🙌🙌

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

LARS NOOTBAAR	My first-minute date plan is an amoeba tea party, my last-minute date night plan is.....
IGNIS_	the tunnels of uw
资深咸鱼 (SEASONED SLACKER)	NOT buy flowers (they are a rip off around these times)
ANTSFILE	Eat until food coma
ANDOIII	If applicable grocery shopping
USMAN!	Auto show!!!!!!!!!!!!!!
YALEVOYLIAN	Listening to romantic music (Louis Moreau Gottschalk)
NIKE	mel's vegan milkshakes and then a trip to see my cat, Hammer <3
MOLASSES	maybe a concert! will i buy tickets by the time this issue comes out? we will see!!
NOT A N*RD	Reading the Valentine's day erotica in mathNEWS <3
JOE	Forcefully kiss my crush (consensually)
AVAHHH	bob
—INIT—	I can't tell if it's a job interview or not. It's definitely not a date.
DICK SMITHERS	Shotgun Wedding (I'll find a wife on the way to the chapel)
APHF	Commit some apiculture
NO PUN INDENTED	Birthday party lol
DICK CHUDNEY	I wrote an article on Death Grips, not getting a date
DOLLAR STORE PERSON	Writing MC/DC/M3 bridge smut?
CLASSIFIED	Star Wars movie marathon! 🗑
DERAILED	Watching the classic Bill Wurtz short film <i>a Play featuring an iphone power block and a mechanical pencil</i>
REVIVED	Taking a Fedbus followed by a car ride to the romance capital of Canada: St. Thomas, Ontario

ARTICLE OF THE ISSUE

Everyone always asks “what is your program like,” but no one ever asks “how does your program taste?” That changes today. Congratulations to [statsandthecity](#) for winning Article of the Issue with [My Degree as a Cupcake](#). Come by MC 3030 for your prize (no milk attached).

mathASKS 157.3

FEATURING mathNEWS EDITOR REVIVED

__INIT__ : WHAT'S YOUR FAVOURITE SMALL TOWN YOU'VE BEEN TO?

There're too many to choose from! Is it a cop-out to choose Kilworth, Ontario? It's really a suburb, barely a town at all. There's a plaza on the main road they call the Five Corners Plaza, but a year after naming it, the five-cornered intersection was replaced with a roundabout; the Five Corners sign is the only sign it was ever there. At the end of the town's main road, there's a hill you can stumble down into a secluded woodlot of the west shore of the Thames River. It's bordered tightly; I think I'm most fascinated by the ability to walk from Mississauga to Toronto because for so long, all I knew was a place where a two-hour walk meant hitting the invisible wall marking the edge of the map, be it cornfield, highway, or water.

It was home for a long time. My parents have since moved, so I doubt I'll be seeing it again for a while. Despite that, it remains the (0,0) of my world. All roads leading to Rome first spawn from the Five Corners.

If that's a cop-out answer, there's also this land I hear they once called Gespe'g.

NIKE: WHAT IS YOUR FAVOURITE AND LEAST FAVOURITE GRT BUS ROUTE AND WHY?

Almost nothing good has ever happened to me after taking the 302. 90% of the time I'm taking the 302, it's to get to Sportsworld Station to catch an intercity bus to London. What's Sportsworld? Who knows, it's been dead for twenty years, but the station remains, an empty husk of former glory. It's concrete and tumbleweed, cracked asphalt where heart fears to tread. Too many hours I've spent staring at the water tower and distant Moose Winooski's, wishing to be literally anywhere else at all preferably my bus where is my bus where is my bus is it in west virginia please where are you please help it's been so long please i just want to see my family again please.

I'd say the 302 hasn't done anything to deserve this, but it has. It stops at Sportsworld Station. You know what doesn't stop at Sportsworld Station? Route 5. Perfect bus.

LARS NOOTBAAR: WHERE IS THE TUBE DAHL? I'VE BEEN SEARCHING FOR YEARS ONLY TO FIND TUBE BEEF BARLEY INSTEAD.

i eated it 😊

Check Vincenzo's? They always have a stand of the Mitchell's Soup tubes—every once in a while, I'll get lucky and find tube dahl there. Of course, I then also buy them for myself, which might be contributing to why you can't find any.

CLASSIFIED: WHAT IS YOUR FAVOURITE WORD?

Aphelion. It's the point at which a celestial body is furthest from its star. More importantly though, the word sounds lovely.

TERMINAL: CAN YOU TELL US YOUR SIDE OF THE MISPRINTING STORY?

mathNEWS production is an incredibly tightly-scheduled process. Each week, however, it gets done. Last term, we had more errors slip through than we'd like, so we implemented a set of process improvements to fix them. Among these is check copies—the printer prints one copy of the next mathNEWS issue, scans it, and sends it to us for approval.

We generally look over these for massive blank pages; a fairly common printing error. We weren't looking for slightly too many spaces per paragraph. It's difficult to catch. When the check copy came through, we approved it.

The next day, we get the copies delivered, and they're full of missing glyphs. Nine hundred copies. About a hundred thousand misprinted characters. What to do with this massive quality problem? Two seemingly-opposing points of view emerged on our editor team. On one hand, these issues are unpublishable, and display a lack of care from the mathNEWS team; hence, a full, several-hundred-dollar reprint is necessary. On the other, that's way too much money to spend on a marginal quality improvement; we should just release as-is.

We're at an impasse. We can't release the copies, but we can't replace them either. It's then that inspiration strikes: what if we just try to fill in *all of them*? It's a completely insane idea, but consider: it shows that clearly we're aware of the error, and further, costs significantly less than a full reprint. Both perspectives are satisfied. A few days later, there's an assembly line of thirty writers in CnD, working late into the night.

__INIT__ : WHAT'S A GOOD LOW-COMMITMENT VIDEO GAME? (I HAVE ABOUT 30 MINUTES OF VIDEO GAME ENERGY PER WEEK, MAX)

I feel like most singleplayer games are pretty good at being low-commitment. There's really not that much difference between beating Cyberpunk 2077 in four weeks or four months; playing 30 minutes here and there is equally valid! Any game that you enjoy hopping into, playing for a little while with minimal accomplishment, and picking up again the next week would do.

I guess any particularly story-heavy game or strategy game probably isn't great for this style. Action-adventure games though? I find Warframe is pretty good for this—there's something very “shut my brain off” about its gameplay loop that goes really well with the thirty minutes before bed.

DICK SMITHERS: HOW DO I GET INTO WARFRAME?

I think the game does a good job of ensnaring you once you try to get better at it. The first sections of the game are pretty trivial to blast through with your starter items; it's only once you start to find enemies too hard for your starter loadout that the game's systems start to open up. How do you want to get stronger? Better weapons? A new character? Each one of those will require new farms, and each one of those farms will be easier with better equipment. But to get that better equipment, there's more missions to go on, requiring other better equipment, and the cycle repeats ad infinitum. Get to the part where the game gets harder, and the challenge of making your character get harder faster might just pull you in.

DOLLAR STORE PERSON: OOO WHAT HAVE YOU BEEN BAKING RECENTLY AND WHAT DO YOU LIKE TO BAKE?

I mostly bake cookies and bread! By bread, I mean to say, "this was supposed to be bread, but the second rise failed again and therefore it is now yet another baguette."

Cookies, on the other hand, are so wonderful to make. If I don't have homemade cookies at home, something is seriously wrong with my schedule or mental well-being, likely both. There's so many good recipes—matcha white chocolate, butterscotch peanut butter oatmeal, coconut butterscotch, brune pinner, molasses, and green tea squares just to name a few reliable go-tos.

One of my favourites is my grandmother's shortbread. My family convinced her to share her secret recipe with me, and every year since, I've been working towards matching her quality. The first year was a disaster—in a recipe of flour, sugar, butter, we somehow used the wrong variant of every one. Since then, I've slowly refined the exact combination of kneading time, baking time, and thickness to meet her standards. I think I finally have it.

My grandmother injured herself this year, and couldn't sustain the physical force required to knead shortbread dough. Before I returned to Waterloo from the holidays, I made her a batch. She'll spend no Christmas without shortbread, if I can have anything to say about it.

APHF: THIS BOX THAT SAYS CARBON MONOXIDE WAS BEEPING SO MUCH IT MADE ME LIGHT-HEADED SO I UNPLUGGED IT, BUT NOW MY ROOMMATE IS MAD AT ME. AITA?

What the hell? That's incredibly dangerous. Carbon monoxide is an incredibly poisonous gas that can quickly become lethal in your home. You need to find your roommate right now and demand an apology. No one should be storing a box of carbon monoxide in the home, much less a beeping one. It's really very inconsiderate. Hope your headache improves! NTA.

YALEVOYLIAN: WHAT SHOULD I BAKE?

Date squares! They're really super easy if you have a cookie tray and a pot to boil the dates in, and they taste beyond incredible.

USMAN!: FAVOURITE LONG WALK ROUTE?

A few years ago I walked from Union to Yorkdale Mall. Strongly recommend! If you take the right route, it brings you through the University of Toronto, up the Casa Loma hill to one of the best views of the city, then out through a series of cute suburbs almost all the way to Yorkdale Mall. Once there, it's an easy subway ride all the way back along Line 1.

If you're familiar with Toronto, maybe it wouldn't have the same appeal. I think growing up distinctly in Not Toronto has made me find every street of it just a little bit magical. The sheer number of writers who have expressed similar things in **mathNEWS** articles means there *has* to be something indescribably different about it.

Also, there's a LEGO store at Yorkdale Mall, which I think makes the journey worth it.

DOLLAR STORE PERSON: AS A FELLOW LONG-DISTANCE PROMENADER, WHY DO YOU ENJOY TAKING UNREASONABLY LONG WALKS?

If I say it's a religion-free prayer, do you understand what I mean?

There's an irreplicable quiet in long walks. A meditation. There's nothing you can do, nothing you can say, you're simply committed to spending the next n minutes or hours lifting one foot, then the other. No thoughts necessary; the opportunity to reflect in any capacity on that which you've done and must do is enough. The opportunity to see the sun's reflection in the towers, the squirrel's wake in the trees. Time slows in an intimately necessary way.

And at its end? You arrive somewhere unpromised. Transit, cars, navigation systems, these things all promise that you'll get to the destination. But walking? That's between you and fate. Each time you take a long walk, there's a chance you'll go woefully off-course and fail entirely your destination, but you don't. You never do.

It's, somehow, an exercise in faith. No religion required.

LOVE

It's always struck me as odd how there's a supremely acknowledged form of love. I appreciate romance as much as the next person, but what about the others? The love of a friend. The love of a friend who once was. The love of a community, of a place. The love of neat things. The love of something you made, and someone loving it. Why do we confine love to such rigid barriers?

I hope that wherever I am, in whatever situation at whatever time, I have lots of love in my life. Happy Valentine's Day.

THE GOLDEN PROMISE

editorTHOUGHTS 157.3

Almost a year ago now, I got to be the face of **mathNEWS** on live TV. I didn't really expect to be on TV; I met a reporter for an interview near the erroring vending machine, but only when he pulled out the camera did I realize I was about to be `git commit` into the next broadcast. When they begin your interview for TV, they start with a lowball question. A kindergarten question. Yet for some in periods of change, a rather hard one.

Please say your name, then spell it.



$t = 0$. Thursday evening. East Campus 1. Game Dev Club. *Not a N*rd* was giving an elaborate presentation on the topic of *Undertale*. I tried my best to focus, but on my laptop screen, I had the **mathNEWS** Discord server open, where we were, just a little bit, losing our minds. At 5 PM, *Dick Smithers* began sending us pictures of the CTV nightly broadcast. CTV opened with a preview of the night's stories; my interview there for all to see. Below it, the full name I gave.

$t = 1$. CTV posted the news segment online. We watched; a **mathNEWS** screenshot has been broadcasted to thousands of televisions throughout the region. Editors past and present gathered in the general chat, *labyrinth* messaged "YOU'RE FAMOUS," and I could see that for a moment, in a tiny corner of the world, it might be briefly true. It saw its jet engine streaking across the sky, while I waited on the ground for the subsequent roar to overcome my ears in three, two...

Notification from Messenger. Parents Chat. Mom.

$t = 2$. *Not a N*rd's* *Undertale* presentation concluded, and the roar had silenced. It was gone. Over a year of uncertainty, resolved in East Campus 1. We went to Mel's after, and almost no one there knew. No one said anything. Only walking home later with *tomatopotato* did we coincidentally pass *god* ~~peED~~, who called from afar that he's heard I'm "famous now." It's the first time the ramifications becomes real.



$t = 17$. Friday morning. The impact is still limited; sure, family members in KW saw the segment, but it hadn't escaped KW. It's fine. We're fine.

$t = 20$. **mathNEWS** hits The Guardian.

$t = 25$. The story circulated. One-by-one, publications repeated the story. One-by-one, my five letters bounced around the world. I'd kicked a rock off the mountaintop, and every passing hour, more snow joined the avalanche.

My partner at the time and I met in Toronto after work, and journeyed through the city of light. The weathered signs of Chinatown passed us by, one thousand colours in one

thousand shadows. Neon signs hang above, shopfronts cram for space. We dodge into a restaurant, and talk about the unveiled secret; yet for twenty minutes of conversation, they didn't realize what secret had been unveiled. They didn't realize this was how my world found out.

In a Chinatown restaurant, someone for the first time fully understood. We left the restaurant into streets of slush, together listening to the timebomb's ticks.

$t = 26$. We reached the Art Gallery of Ontario, its warm wooden walls like the familiar kitchen after a long journey home. People milled about, gentle music called from an evening concert deeper within. It was serenity. Comfort. For just a few hours, home.

Just as peace was resettling, it happened again.

Notification from Messenger. Extended Family Group Chat. Grandma.

In that oaken front foyer, possibilities collapsed.



Please say your name, then spell it.

It's a kindergarten question. And yet, for too many years, a hard one. Was it the *they* thing? More and more, I wonder if it was simple desire to set myself apart. To be a child no longer. To definitively say that from this point onwards, I am only my own. No gods. No masters. Only me.

A while ago, I changed my answer.

mathNEWS was one of the first places I did. It was among the first true places. MathSoc was another. I made myself a promise then: in every new space, I would go forward with my new answer. Slowly, I changed my world, and slowly, I've become stronger for it.

Please say your name, then spell it. I knew it would reach home. I knew my uncle's mother-in-law would be watching the CTV broadcast, I knew she would call him over, and he would contact my parents, and the ruse would be up. But that promise, that *golden promise*. It could not be broken.

Five letters. Each one, cannonfire, ringing out a nail in a coffin of the alternative.



I visited friends the next night, almost all of them **mathNEWS** writers past and present. They all had followed the story, but no one knew that I'd done it under what was, to my family, a new name. When I told people that part later, most would ask "are you okay?" "how are you doing?" "holy *shit*, are you okay??"

But I'd seen the messages.

*Your uncle let us know you were on the news and we found the article!
Good for you 😊. You did it!*

Saw your news clip on the news just now. Well done. Love.

The secret to best all secrets, and in the end, it really wasn't much of anything.

That night? I came back to Waterloo, and the world had changed. There were worlds in which it had changed for the worst. But this one?

In this one the die had been cast, and we came out on the other side, bursting to the seams not with loss, but incredulous laughter.

Thank you, **mathNEWS**, for helping me to keep the promise.

revivED

KNOWLEDGE IS A HUNDREDTH OF THE BATTLE

You know that feeling after you send your friend a great meme, and they respond "I saw that one already," as if it can't be funny a second time? They don't even pretend to laugh to keep the peace. They've just accepted that since they know the joke, it can't be funny.

We do this a lot. The most frequent criticism of modern art seems to be "I, a mere peasant, could paint that." Notice that it can only be a criticism insofar as it implies that the criticizer knows how—or has the skills to—create the artwork. Similarly, when you view a sculpture that's so realistic the marble is nearly alive, you wonder how someone could have ever carved it. Awe is often synonymous with not knowing how something came about.

When we look at external works, we seem to prefer not understanding where it comes from. Makes sense. So what happens when we start looking inwards?

SOLVING OUR OWN PROBLEMS

There's this old saying, "the knowledge of a problem is half the battle." It exposes the idea that if you don't know you've got a problem, you can't solve it. Which is true. But we often bring to our own problems the same perspective we do to modern art.

If I understand a problem, then it must not be a very hard problem to solve.

If you didn't know about it before, it must not have been that worthwhile of a problem all along. And now that you've solved "half" of it without any effort, you might as well sit back, relax, and watch the other half to solve itself too. You can see where I'm going with this. "A little knowledge is a dangerous thing," because, just like with modern art, we're tricked into believing our problems are easy to solve.

ACTUALLY SOLVING OUR OWN PROBLEMS

Hiding behind the "I'm working on solving that problem" feels safe, but a day of hiding can turn into a decade pretty quick, with just a touch of complacency. One problem that's always stuck with me has been that I'll take on way too many

commitments, in the hopes that in attempting to accomplish them all, I'll at least accomplish more than I otherwise would. Problem is, I barely have the time to finish any of them, and at a low standard at that.

As a kid, I'd try to read so many books and draw so many pictures that not a single one would ever be finished. It's now been fifteen years, and I can't finish shit.

I encourage you to think about a problem like that in your own life, that somehow keeps following you, despite you being fully aware of it.

no pun indented

N THINGS I LIKE TO SAY (NOT CRINGE)

- I'm crashing out
- womp womp
- mom lore
- real
- it's giving
- no cap
- fr fam
- that's crazy
- lowkey, highkey
- I can't do this
- I'm crashing out part 2
- I'm cooked
- I'm cooking
- lowkey ate that
- it's joever for me
- cool
- ok
- blud
- let's goo
- locked in/locked out
- yapping

insert pen name here

NO ONE TAKES NOTES LIKE I DO

AND I THINK THAT'S KIND OF WEIRD

In lectures, I take notes with a Huion drawing tablet, like the kind one might use forosu! It doesn't have a screen on it; when I write using the tablet I look up at my laptop screen. If the desk space is small I put the tablet on top of my laptop keyboard to save space. I've most often used OneNote, but after a while of being dissatisfied by it (Microsoft apps being mid as usual), I decided to try out Xournal++ and I'm currently trialing that to see how it goes.

In the past few years, I have seen a lot of note-taking methods, but not a single person takes notes like I do. That's a little surprising to me. Personally, this method does everything I need it to. I can make diagrams and write words and equations all on a single file and it's all accessible from my computer, which is where I'm writing up all my assignments and doing all my studying anyway. And no other method I've seen has the flexibility I need.

The most common note-taking method I've seen is to either use a touchscreen laptop or a separate tablet (e.g. an iPad) with a digital pen. I don't own such a device, and it would have been a significant investment, so that option wasn't available to me.

I've also seen a variety of paper note-taking methods. I used to use pencil on lined paper which I transferred to a binder after lectures. In my opinion this might be the worst possible note-taking method. The pencil wears out quickly which means some lines you write will hardly be legible if you don't sharpen often. Also, I always felt like I had to confine myself to the lines, which made my writing feel cramped. Using blank paper and an erasable pen solves these issues, but I also don't like having to deal with organizing actual paper. Lastly, the

fundamental problem with paper is that it's hard to edit after the fact if you want to make big changes to your notes, move things around, or add diagrams and other such things.

The natural solution, of course, is to use some kind of text editor, maybe with a typesetting language; and in CS and math courses, LaTeX or Typst is king, no doubt. I know certain people that would highly endorse supplementing your skill in your chosen language with Vim keybinds and shorthand. One person I met in first year had two custom ortholinear keyboard modules, one for each hand, for which he created a custom layout to maximize his efficiency. It was really impressive but I don't think I could get myself to learn all that just to take notes. (Though I did learn a new layout on my regular keyboard, so maybe?) The big drawback to this is diagrams. Good luck doing anything more complex than equations, tables, and text. It's probably possible, but I doubt it's worth it.

So for me at least, the natural conclusion was the drawing tablet method. Now, would I recommend it? Probably not to most people, because there's a bit of a learning curve and I think it's only my specific combination of courses that makes it viable. For instance, in most CS courses, I'm told, you can get away with pure LaTeX even if your typing speed isn't that fast. In any case, I often end up sleeping in and arriving at class late, in which case the easiest method is just the trivial method: don't even bother, just take pictures of the board.

hyperlynx

I don't recommend sleeping in, though. Because I've been doing that so much, I'm completely fucked for my midterms, send help...

WHAT ARE THE BEST AND WORST PLACES TO GET FOOD ON CAMPUS?

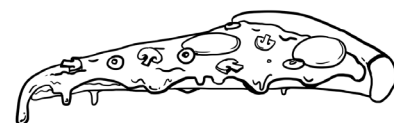
WORST:

- MC—Math CnD (2)
- SLC—Flock Stop (2)
- DC—Tim Hortons (2)
- SLC—Shawarma Hub (2)
- PHY
- SLC—Pizza Pizza
- REV
- HLTH—Rolltation
- HLTH—Starbucks
- SLC—Subway
- SLC—Tim Hortons
- SLC—Teriyaki Experience

BEST:

- MC—Math CnD (6)
- EV3—Ev3rgreen Cafe (2)
- EV3—ESS Coffee Shop (2)
- SLC—Shawarma Hub (2)
- STC—Starbucks (2)
- SLC—Subway (2)
- SCH—Second floor cafeteria
- SLC—Smash Bites

mathgeek



COOK AT HOME FOR VALENTINE'S DAY INSTEAD

FLOWERS ARE TEMPORARY, FOOD IN TUMMY IS FOREVER

If things haven't changed since I last checked, people's Valentine's Day plan usually involves ~~erasing into a pillow about their singleness~~ inviting their love interest out to supper. In either case, I'm here to make a case that actually, consider cooking at home instead if possible, since it should work out more favorably compared to eating out.

Of course, this assumes that

1. your living situation includes a kitchen and a reasonably private space for a date,
2. your date is comfortable with accepting an invitation to come to your home and have supper (or for you to go to their place and cook for them), and,
3. you possess reasonable cooking skills ~~and wouldn't almost burn down the kitchen trying to cook a meal kit like one of my unnamed friends.~~

If any of the above don't apply, you would obviously be better off eating out instead, but might as well keep reading to take notes for the future. If it works for you, and your date accepts the invitation, then you are able to enjoy the following advantages:

1. It helps advance the relationship by showing your care and dedication. If you have enough levels in cooking to pull it off, you can even ask in advance about personal preference and tailor to it (ingredient likes/dislikes, level of seasoning, etc.) to also make a display of your skill. In contrast, restaurants are cooking to appeal to the widest audience (unless you go to some *really* fancy place, in which case you probably don't need to worry about what I'm saying about dating). I recall something about the mechanism here being related to some pathway between stomach and heart. Anyways.
2. Assuming the dinner goes well, you don't even need to try inviting your date to your place anymore, since you are already there. You can simply carry on with the rest of your date night activities. Bring out your dessert of choice and put on a movie or something. Or whatever else.
3. Cost. Everything's expensive now, and eating out for two at a normal restaurant with entree and dessert can easily run you \$100+ now. Home cooking costs you at most half as much, or you can get fancy ingredients for the same cost.

For those that would like to give it a try but don't have ideas and/or confidence (in your cooking skills, you are pretty cooked if you aren't confident enough to talk to your crush), here's an easy steak dinner recipe:

1. Generously cut off thick end of asparagus, wash clean and pat dry, lay on baking tray in a single layer, drizzle with plenty of oil, salt and pepper, then toss into oven preheated to 220°C (425°F) and bake for 10 minutes.
2. Cook N pieces of steak to desired doneness (preferably using butter), where $N \geq 2$. Let N be large number if either participant is particularly ravenous. Higher heat = more raw steak, lower heat = more well done steak. Refer to my *Home Cooking. 101: The Basics* tips #9 and 10 from **mathNEWS** 156.2 for detailed explanation. Use thermostat instead if you have one and don't like my vibe-based, totally reliable methodology. Then season with salt and pepper. (If you want to be extra, optionally add N other herbs, such as rosemary, thyme, basil, etc. and spoon hot oil over them to increase flavor. Just salt and pepper would still be very good if you cooked the steak correctly.)
3. That's it. Serve steak and asparagus on a plate with desired drinks, bread, whatever other sides you prefer. Light some candles if you want.

For those of you who want to have plans but can't for any reason, nothing stops you from treating yourself anyways. You deserve nice things. Or you can take the opportunity to be entrepreneurial and sell flowers for rip-off prices, but it's probably too late if you are a non-editor reading this as this comes out on Valentine's Day. And our editors will have better things to do than commerce on Valentine's Day, right? Right?

资深咸鱼 (Seasoned Slacker)

WILL I FAIL MY MIDTERM IN 18 MINUTES?

Only thyme will tell.

normalparameters

Of course, by the thyme this gets published, thyme will have told. But let's just pretend thyme doesn't work like that so you can wish me luck now. How kind of you

Isso não é um filler.

A "SURREALISTA" blackBOX

mathNEWS

MY DEGREE AS A CUPCAKE

As a fourth-year student who has also eaten a lot of cupcakes, I realized there are many similarities between cupcakes and mathematics degrees. Here, I summarize all of this:

The Wrapper: A fundamental piece of the cupcake; without it, a cupcake is not a cupcake. But also, you don't eat it and you immediately throw it out. These are courses that you have to take, and there is good reason to take them, but you don't want to take them. You end up being right because you don't like them, but you also use them all the time.

Wrapper Courses: MATH 137, MATH 138, MATH 237, (you can tell I am not a fan of calculus) AMATH 242, STAT 332, HLTH 101

The Cake: Some may argue this is the main part of the cupcake, and while they are right, the cake needs all the other parts to truly be a cupcake. These are courses that are the substance of a degree; they are fundamentally important and good. In hindsight, they are not exceptional, nor are they exciting, but also, you would have nothing without them.

Cake Courses: STAT 230, ENGL 378, STAT 337, STAT 431

The Icing: In my opinion, the best part of a cupcake. This is the sweet part, the fun part, the part you look forward to. These are courses you were excited about, and it turned out you had every right to be excited for them, they were the highlights you had hoped for.

Icing Courses: MATH 135, MATH 136, MATH 235, STAT 330, STAT 331, STAT 333

The Sprinkles: Some people may argue that a cupcake doesn't need sprinkles. I would say they are wrong, but I am willing to leave it up for debate. I think when you bite into a cupcake, you realize that a certain flair would be missing if it didn't have sprinkles, so while you might have thought they were unnecessary, it turns out they were great. These are courses that you took reluctantly, but they turned out to be exceptional.

Sprinkle Courses: STAT 241, PMATH 347, PMATH 370

The Maraschino Cherry: You look at your cupcake and wonder what is missing. A cherry on top of course! You were wrong. You didn't need a cherry. These courses are what happens when you think something is missing and try to take something fun and easy. Turns out it is not easy and not as fun as you thought it would be.

Cherry Courses: ENGL 108P, PSCI 150

The Glass of Milk: Some people believe that you need to have a glass of milk with a cupcake. So then you get out a glass, pour the milk. You eat the cupcake then realize you don't want the milk. But you already poured it and now you have to drink it. It turns out, you hate milk. These are courses you signed up

for, convinced yourself they would be fun and great and then you actually dreaded every moment of them. In hindsight, you didn't need to do that to yourself.

Milk Courses: STAT 433, BIOL 239

statsandthecity

N REASONS WHY WINTER IS OBJECTIVELY THE WORST SEASON

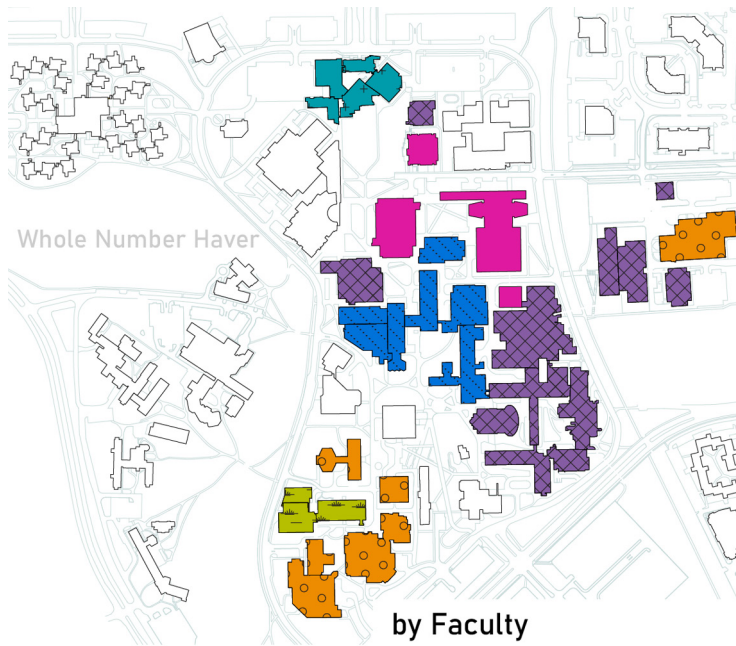
FROM YOUR LOCAL WINTER HATER

- Dry—dry air, dry skin, dry eyes. The moisture leaves your body as fast as it enters.
- Runny nose—daring to step out into the cold without a face covering leaves me sniffing and searching for tissues.
- Wear a face covering and have committed the sin of wearing glasses? Have fun seeing nothing through the fog.
- Want fresh air? A thing that is important for your health? All windows are sealed to keep the cold out.
- Just go outside in the cold? Do you? Everyone who is outside in the winter is just going from one heated place to the next. Barely anyone just sits outside to enjoy the weather because it is largely unpleasant.
- Having to wear multiple layers of bulky clothes and accessories. Wearing normal clothes but want to step outside for a bit? Screw you, go put on 3 layers.
- Exercising outdoors sucks. I would go on runs when it's warm but you can't really do that in winter clothes and boots. You can just say, "wear lighter clothes, you'll warm up," but it's still gonna be extremely unpleasant. God forbid it's windy.
- Shovelling snow, need I say more?
- Snow is nice for like 5 mins, while you're staring at it from indoors, then you got to walk through it.
- Slipping on ice or having to walk slowly enough to avoid slipping.
- Everywhere is wet, always.
- After it's snowed, the entrance of any building is a disgusting quagmire. Even after paths have been cleared, most floors are still caked in a dried mixture of mud and salt.
- At the time of writing, I am learning that in the summer, **mathNEWS** would sometimes do production nights outside!? Like a lovely picnic!?? Wake up winter sheeple, understand what Niflheim has robbed of you!

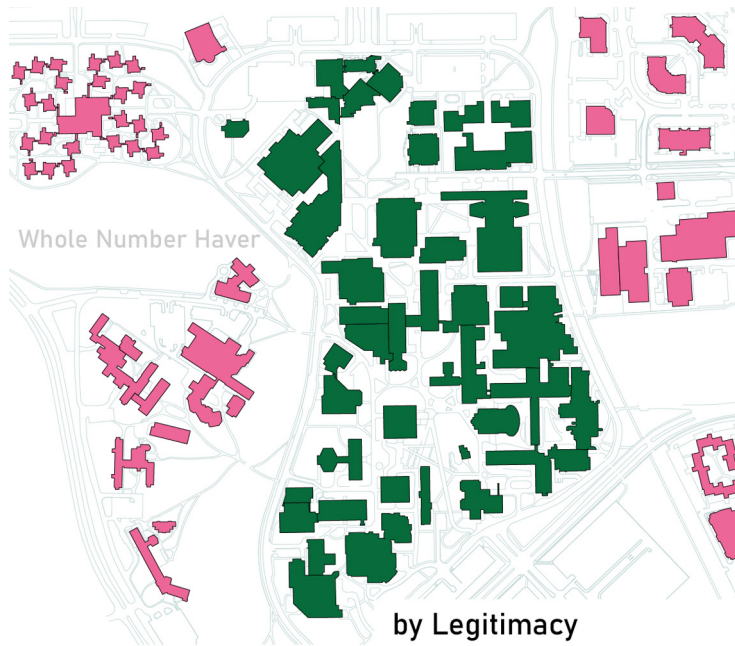
tomatopotato

8 WAYS TO DIVIDE CAMPUS

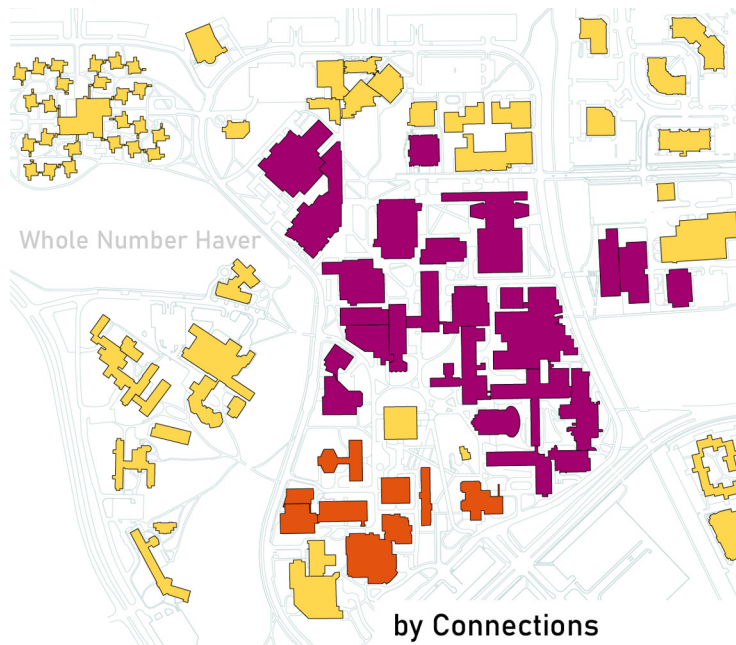
INSPIRED BY YANKO TSVETKOV'S ATLAS OF PREJUDICE



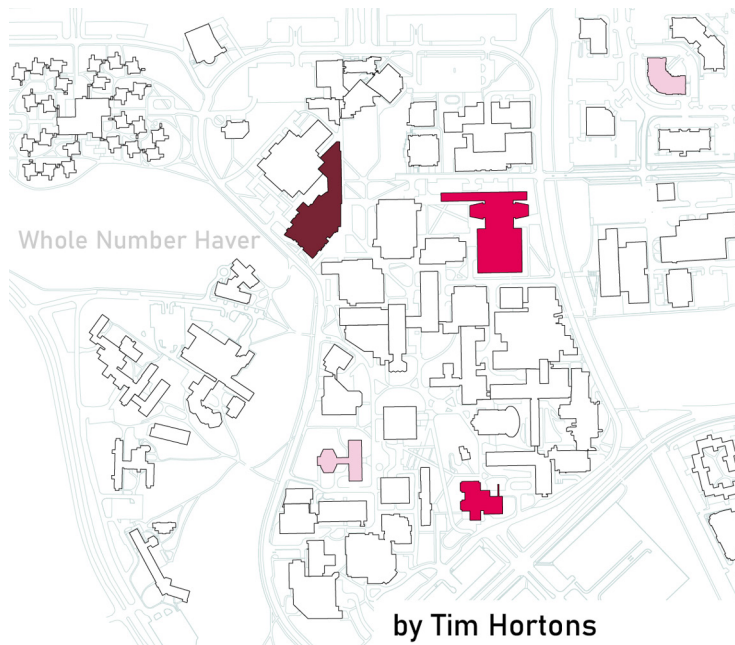
- Arts
- Health
- Engineering
- Mathematics
- Environment
- Science



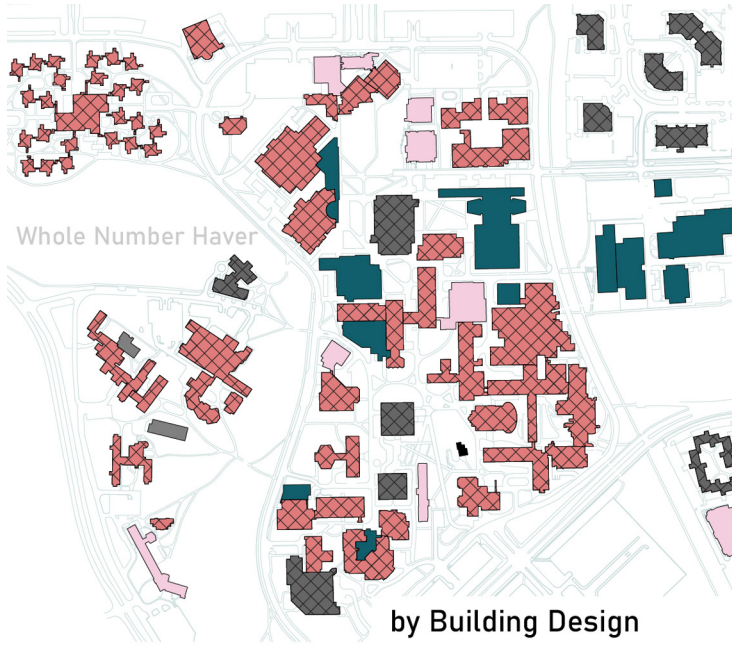
- Real Campus
- Fake Impostor Campus



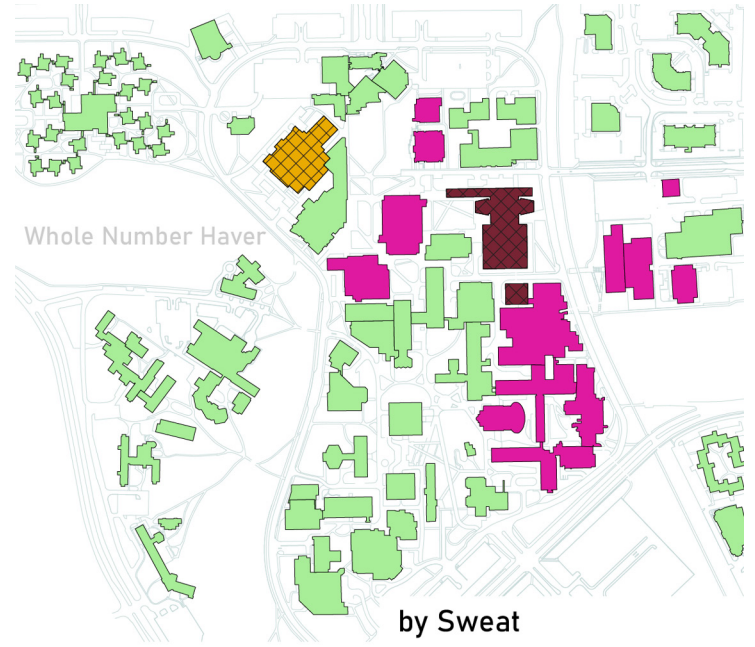
- Main Campus Tunnels
- Arts Tunnels
- Not Accessible by Public Tunnels



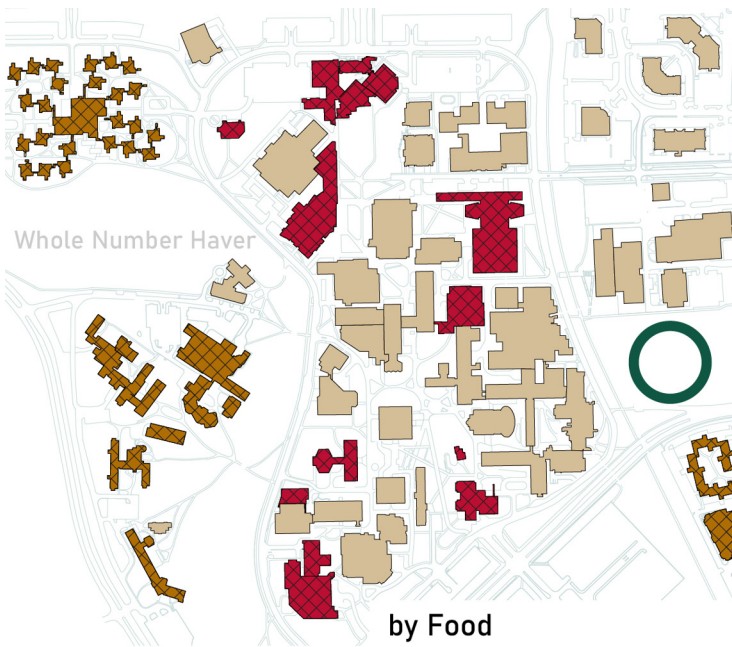
- Lunch Tim Hortons
- Breakfast Tim Hortons
- Coffee Tim Hortons



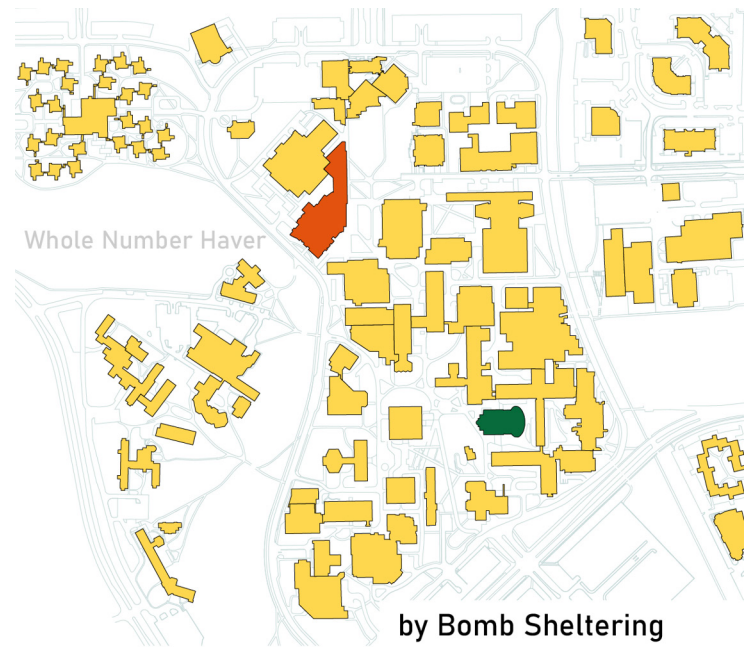
- Brick Hell
- Brick & Glass Hell
- Concrete Hell
- Metal & Glass Hell
- Wood??



- Literally Sweaty
- Figuratively Sweaty
- BOTH
- Safe for now



- Bowel Cleansing
- Starvation
- Wallet Cleansing
- Salvation



- Once had the Bombshelter
- Doubles as a bomb shelter
- Ongoing bombing of exams



Whole Number Haver

as always, see online for optimal colour-viewing experience :)

MUCH ADO ABOUT EVERYTHING

[Scene: a class-room of Waterloo]



Enter Benedick and Beatrice together, and other students at random.

Beatrice. How now, Benedick! To escape from that hallway fleet I am in want of a peaceable cove. Sea-sick am I from the crashing waves; I need but a dock at the end of my great ship's line!

Benedick. I was in the fleet myself, and I am come to thy berth. Be sure, I come not for thee; to board thy ship would be a treason to my flag.

Beatrice. Rather I to sink with my ship than to be boarded by thee. Shoot thy ordnance and break mine hull, a better fate indeed than to suffer thy paper bullets and comparisons broken on me.

Benedick. Art thou such a curst sea-thing? A noble captain of a noble ship invites ruin to her own? And a terrible wit too; peradventure thou art better a siren. Others long to draw close to thy carol of courtship, yet wise I remain. Or a ravenous creature, a Scylla who, damn'd by shrewder seamen, shoves them into Charybdis's gaping maw. Thy wits are nothing for one with a cunning for such devilish creations.

Beatrice. Nay, I shall take leave of my sea-legs an you were a sailor, and take up a lodge in a warren. How I should long for a home to my own, free of pestering creatures of the deep.

Enter Leonato, a professor.

Leonato. Good morrow, students.

Benedick. Good morrow, my lord.

Leonato. 'Tis surely good morrow, as Saint Valentine is approach'd, but your company show it not. An they be a choked lot, late returned to our coil this good morrow, Phoebus streaks across the firmament, Cupid readies his bolts, and still none rise; need I render upon thee a guerdon for thy burdens? In need of meed? Hope not I. Yet bachelors I ignore: naught but their images before me. I beg thee, speak! Heritors of Diophantus, heed my words!

Beatrice. [Aside, to Benedick] Heritors of Diophantus? I am not claw'd by Leonato's tartly project. Here couchèd next to you, let me drift once more, borne by the waves of sleep's soft lull.

Benedick. I bid you, my lady, if not speak, then lend him your ear, or at least fashion such a wakeful carriage as to make curtsy.

Leonato. Good morrow, good morrow, cry me good mercy! He were an honourable man, that Benedick. Otherwise, let this be a dumb show and me its fool.

Benedick. My lord, we apologize. By your Grace's pardon, an we were such noble heritors, prithee, learn us.

Leonato. And may you all have the sufferance to survive this task anew. Recall, friends, to yesterweek's techniques of proof. Counter-position, counter-diction, implication, quanti'cation; all for versimilarity, none for you to shun, but yet one more still undiscovered: that of induction. I fain reveal to you a conceit of great estimation, an argument to infinity, this authority will resolve. Lo, it is but simple to set forth the first step, much like the fool who doth fall in love, with naught but the surety of the start upon which to build. As some doth claim to not love, so let us assume the truth holds for k , though the heart may not yet fully grasp it. 'Tis but the groundwork to proceed. As surely as the world must be peopled, so too must our argument follow from k to $k + 1$, for no step may fail in this march toward ever. Thus, with joy, we proclaim the truth that hath been approvèd: for all n , it holds as steadfast as love itself, unbroken and unyielding.

Beatrice. [To Benedick] My ship of slumber is but an accident of hourly proof, yet by mine eye do I see? I do, I do! A dear understanding indeed! [To Leonato] If I be bold with you, my lord, spot I a precedent portending the conclusion, a *modus ponens*?

Leonato. Ah, you apprehend shrewdly, my lady! It is. [Aside] Another witness to take use of learnings mine. At last! Verily, good morrow! [To all] Marry, 'tis an instance to the lovely infinite. Assumptions to conclusions and conclusions to assumptions, insinuations without end: induction counterpoises on a fair and ceaseless march. Presently, clap's into it! Let us show with a logician's tender hand that the festival two to the n outpaceth n squared's measly climb, if only n exceedeth four. The truth yields at five, for mark! The greater power shall hold firm, overcoming like the yearning heart. But stand not here till further warrant—we gently embrace the endless, for if $2^k > k^2$, can $2^{k+1} > (k + 1)^2$ possibly hold? Yea, say I! By doting hands we temper our found and our sought, and like star-cross'd lovers reveal our truth implied. It holds! By our art, it holds! As the power of k grows without end, its square lags behind: our case is sealed by induction's grace. Our doubts are ended; devoted reason rules o'er. Assumptions, as foretold, were all shadows, dissolved into air: and, like the baseless fabric of conjecture, the complexity, the uncertainty, the mystery, shall leave not a question on this amorous travail. Pray you, ask what you wilt. [Await with no response] Thus mine class is ended. Recall you a test of wits a fortnight hence! Prithee, take it upon yourself. 'Tis a patient remedy, lest you adopt a patient canker. Let it not ambush you in the fields of ignorance! Away!

Exeunt. Manent Benedick and Beatrice.

Benedick. Another test! Beshrew my rotted chance! My reck'nings shall come due too soon.

Beatrice. I beg thee, trouble me not. My learnings ride even on the waves of my repose.

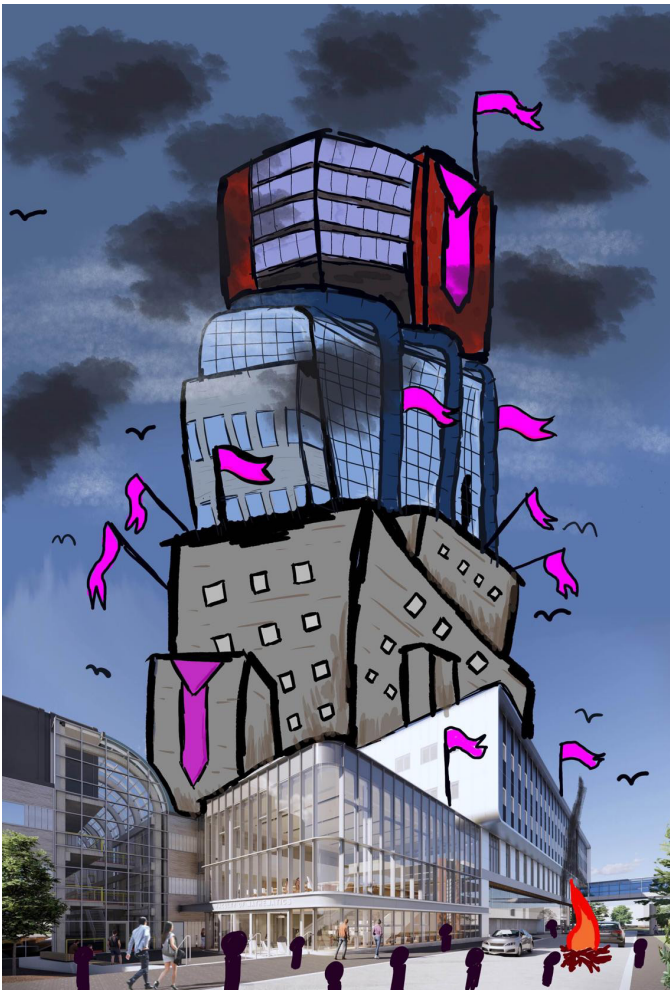
Benedick. These waves are but death's counterfeit. Accept of me this distill'd carduus benedictus for thy slumber-sickness.

Beatrice. Benedictus? You have some moral in this "benedictus?" So would I not ever thou should do me, lest I should prove the mother of fools now and every day tomorrow.

Exeunt ambo.

verdanik

UNIVERSITY OF WATERLOO ANNOUNCES M7, AN ALL-NEW MATH BUILDING TO BE CONSTRUCTED ATOP M6

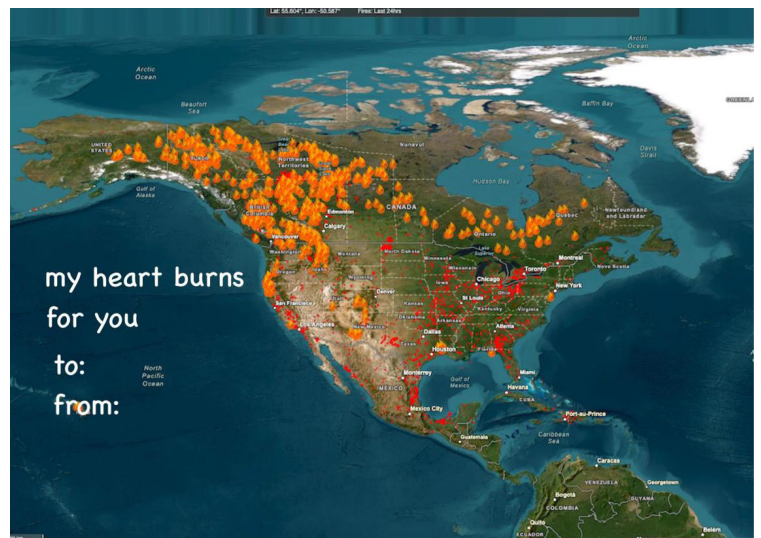


Dick Smithers

BE MINE

in lieu of an article this week I have tirelessly created many geography-coded valentine's memes for an event and I feel inclined to share with you all, so that waterloo students at least get a valentine from someone </3. if you actually do have a valentine, deface this paper and cut these out of your issue of **mathNEWS** and give it to that special someone!! they will drop dead immediately after seeing these.

[Editor's Note: nike's Valentine's memes can be found throughout the issue! ♡]



(i am not responsible if you get declined over these)

nike

MY FAVORITE GAMES FROM THE UW WINTER 2025 GAME JAM

The UW Game Jam just wrapped up! Over 72 hours, twenty-nine teams camped out in QNC, ate a ton of Pizza Nova, and each made a whole-ass game from scratch. This jam happens once a term, and in my personal opinion, this was the best one yet. The theme this term was “Cool Down,” and we got tons of creative interpretations of the theme. (For people who have never done a game jam before, it’s a lot like a hackathon, only way cooler because you’re making games.)

One thing that bums me out, though, is that almost no one outside of the game jam gets the chance to see these games. From the outside, it’s hard to tell which ones you’ll like, and when faced with a selection screen of 29 games, it can be pretty overwhelming.

So, to try and fix this, I wanted to highlight a few of my favorite games from the jam this term. If anything sounds interesting, go check it out! Leave a nice comment! Make someone’s day!



ARACHNOID: This is a 3D game (!) in the Unreal Engine (!!) with an original score (!!!), which are all really impressive to have done in 72 hours. You play as a military spider-robot undergoing a training course. Every action generates heat, and you need to strategically take breaks to cool down. Action games are really hard to give good feeling in a game jam, but this team really nailed it—plus the audio design is killer.

BANDWIDTH: A game about the downtrodden IT worker finally having enough and putting an end to the terrible requests he gets once and for all. An action game where you need to make sure you cool down and don’t get too justifiably angry all at once. Includes the best “game over” screen of the jam by far, as well as the most... topical final boss.

CHERNOBYL 2: It’s... exactly what you think it would be. A job simulator where you work at the unfortunately named “Chernobyl 2” nuclear power plant. You have various tasks you need to complete, while making sure you’re constantly cooling down the reactor, lest you find yourself in the middle of a nuclear explosion. Bonus points for a Simon Says-style game where you match the lights to button presses, but the buttons and lights aren’t in the same order. It tripped me up every time. Well done.

CHILL DRILL: In my opinion, the best jam games have late-2000s Flash game energy, and this is a great example of that. It’s a fast paced action platformer where you’re constantly moving down, and need to reposition yourself in order to make sure you fall into the cool ice rather than the stone, which damages you. A really clever addition is the ability to insta-drop, like in Tetris, which gives you the option to trade control for speed. Reminds me a lot of Downwell.

CUBED!: This is a simple-seeming puzzle game where you need to draw a line to allow a cube of ice to make it to a glass so it can cool down the water. Personally, understanding how much of a pain in the ass it is to draw arbitrary polygons on the screen in Godot, I’m very impressed it works at all. Plus, the scrap paper cutout artstyle is super unique.

FIREFIGHT: The great thing about a jam game is that it can be incredibly simple and still a great time, since most people only play it for a few minutes. This game involves just moving and clicking the mouse on trees to cool them down as a raging blaze threatens to burn the forest down. Prepare to have some sore forearms.

HEATSTROKE HUSTLE: This group has participated in jams before, and I’m always impressed by the sheer level of polish they bring to a 72 hour project. Case in point: this may be the most adorably animated game of the jam. An overworked drink stand employee needs to bring color-coded drinks to people in a crowd so they can cool down and not die of heat stroke. Smash players beware: random tripping is included.

SNOWBALLISTIC: A really cute 2D platformer with a neat idea: you can either try to navigate through the existing level, or make your own limited number of temporary platforms, or cool down enemies into frozen blocks you can hop on. I didn’t realize the platforms were temporary until I had used them all. Oops! Really great character pixel art, too!

WRATH OF DAEDELUS: Okay, recommending this one is cheating, because I made it, but I also think it’s pretty good! It’s an action game where you play as Icarus, defending yourself against Daedelus’ creations who have turned rogue. The twist is, your one attack generates heat, and if you let it build too high, your wings will melt and you’ll die. To stop this from happening, you need to use your freeze attack to slow down enemies (and cool yourself down).



If you’d like to see the rest of these games, check out the jam page for the UW Game Jam on itch.io:



Also, if you're inspired by this to start making games yourself, you might want to check out the UW Game Dev Club, who put this whole thing together. They do weekly meetings on Thursdays and Saturdays with showcases, workshops, and more. Plus, you can see all the submissions from previous game jams, and you'll find out about next term's game jam as soon as it starts! They're @uwgamedev on Instagram, and you can find the Discord server on the UW Discord student hub.

Good luck, have fun, stay cool!

Dick Smithers

BREAKING NEWS: mathNEWS DECISION DESK PROJECTS WINNER OF WUSA PRESIDENTIAL RACE

With 97.8% of polling stations reporting, the **mathNEWS** decision desk can now officially call the WUSA presidential race for... Nick Pfeifle???



Goose Blitzer

MC 3018

A HAIKU

time left: 2 AM

presentation: 9 AM

mistake made: choo choo

AM I TOO PREDICTABLE?

WHY YES I WAS TOO AMBITIOUS AND TRIED TO WRITE SOMETHING I DON'T HAVE TIME FOR

So when I threatened the writers with writing the absolute raunchiest dirtiest spiciest whatever fanfiction, they apparently immediately knew I'd back out on that pretty quick. And then my roommate predicted that despite crowd-sourcing all my ideas for the best fanfiction of all time, I would not have time to do the idea justice. So. Hello, it is me. The most predictable person on the planet.

The best fanfiction ever comes out next issue I swear I swear.



Not a N*rd

ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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profQUOTES

ACTSC 372: BEN FENG

- “ Every Chinese New Year from now on, you will remember the Lagrangian Multiplier.
- “ [After being asked two questions and forgetting where he was twice] Okay, now two people owe me dinner because where was I again?

AMATH/PMATH 331: HENRY SHUM

- “ If you don't remember this theorem on a test, you probably deserve to do poorly.

AMATH 373: JOSEPH EMERSON

- “ [Solving the time-independent Schrödinger Equation] ...and this term's gonna explode.

AMATH 475: EDUARDO MARTIN MARTINEZ

- “ This is one of the few times I'm gonna tell you to trust me bro.
- “ You would hate me. Maybe not *hate* me, but have negative emotions towards me.
- “ Don't worry if you don't know how to do it, it's gonna be on your assignment.

CO 487: SAMUEL JACQUES

- “ If I'm going to trust a website, I'm not sure why I would trust “Thermomix Recipe World Forum” over haveibeenpwned.com, but even then...

CS 146: BRAD LUSHMAN

- “ I have some good news; you are getting not 1 not 2 not 3 but 4 new questions. I know it is more good news than you can handle!
- “ Don't worry about why everyone in my life has 5 digit extension numbers. I swear I know people outside of work.
- “ [On the board] $x++$
If you do this... you deserve everything that happens to you.
- “ There are varying opinions on this; there is a right one and a wrong one.
- “ I guess left-hand projector took the day off.
- “ In this course, we're not pitting C or Racket against each other. We're all on team racket here.

- “ I fully expect in this course that when I say that something is good news they don't believe me.

- “ Several days ago I had someone in my office hours who had a segmentation fault, which is honestly kind of impressive. Without pointers and without arrays it's somewhat difficult to have a segmentation fault.

CS 146: LEON ZHANG

- “ Instead of fixing this bug, we should be celebrating this as a feature that our code can look into the future!
- “ The assignment instructions will tell you exactly how to solve the problem. Unfortunately you will not understand the instructions until after you've finished the assignment.

CS 240E (TUTORIAL): HENRI KENNEDY

- “ They're called scapegoat trees because you blame them. You take them, and burn them at the stake, then rebuild them.

CS 341: MARK PETRICK

- “ The proofs are not C&O type proofs, they're CS oriented.

CS 343: PETER BUHR

- “ This is why people get out the drop forms for this course. Debugging.

CS 350: BERNARD WONG

- “ If you lose all the data on your computer, that's not my fault.

CS 365: ERIC BLAIS

- “ Now let's talk about the easiest way I know to win a million dollars.
- “ I like saying “sigma.”
- “ Let's do Boolean circuits, or as I like to call them, legos for computer scientists.
- “ Has anyone played the Steam game Turing Complete? Is it any good?
- “ Who has the exact answer? [Student: $\binom{n}{\lfloor n/2 \rfloor} + 1$.] Too exact for me, it's $\binom{n}{n/2}$.

CS 452: MARTIN KARSTEN

- “ You have a choice: Do I try to understand this better? Or am I happy and do I move on with my life?

“ There should be a relatively clear path visible—it doesn't mean that right or left is a cliff right away.

“ Crypto! [...] Work on the pyramid scheme and burn up the planet at the same time.

“ A screensaver—at least then you're burning up the planet for some entertainment.

“ Half of my Piazza questions I answer from Chicopee.

“ You're not just here for the grades, you're here to earn my respect.

CS 488: GLADIMIR BARANOSKI

“ My course notes on the website have been peer-reviewed by myself.

ECE 250: PATRICK HUANG

“ If you don't know one is less than two, you can't do anything.

MATH0082 (UCL): STEVE BAIGENT

“ I'm assuming you all know the rock-paper-scissors game. Such as from the *Squid Game*, season 2.

“ Now I'm going to do some baaaaad things that make no sense to anyone but still somehow work.

“ Ooh, I can probably put an integral sign here and get away with it.

MATH0108 (UCL): ANDREI YAFAEV

“ Student: But how do we show that these are the only maximal ideals?
Professor: Nope! [...] Actually, do this as an exercise. Totally elementary.

MATH 138: ROBERT GARBARY

“ $\frac{1}{2-p-1}$, which in some parts of the world is known as $\frac{1}{1-p}$

“ There are some things that if you write down on the quiz, it makes you look so bad that it makes me look bad.

“ [On projector screen] Folder: bribes I have received. Bytes: 0.

“ I will be giving out my PayPal information just before the midterm.

MATH 146: MATTHEW SATRIANO

“ Rumours of the midterm being on February 10th are greatly exaggerated.

“ I need a minute to decide if we're going to do the baby version or the grown-up version of the theorem.

“ Buffalo is a verb, so I can tell you to go buffalo somebody.

“ The thing about a blackboard is that there's ton of chalk lying around; the problem with a whiteboard is that people keep stealing all the markers.

“ I'm an algebraic geometer so we make commutative diagrams all over the place. Differential geometers make fun of us, but we make fun of them because they choose bases.

“ This is the kind of thing that you'd write in the privacy of your own home.

MATH 146: SPIRO KARGIANNIS

“ Mathematicians do this thing where we think A, say B, really meant C, but it should've been D.

“ Sometimes, it's good to make your life difficult.

MATH 148: FAISAL AL-FAISAL

“ I will accept [integration by] divine recognition on the exam.

STAT 341: REZA RAMEZAN

“ [After iPad screensharing stops working for the fourth time] Steve Jobs, you're lucky that you're not around...

roses are red
violets are blue
I love you more
than the 202

to:
from:



MATH 247: NICO SPRONK

- “ Being late for work is excellent cardio.
- “ I guess that’s a bit redundant. But just like poultry—it’s sometimes better to overcook than undercook.
- “ I am just going to urge you to convince yourself. *[Writes “CONVINCE YOURSELF” on the board]* Like a Nigerian prince looking for your money.
- “ I need to find a Trump joke on that—help me find a Trump joke... *[Doing a Trump voice impression]* “Look at this, any reasonable person could see this, this is a DEI problem”—OK there we go, found it.

MATH 249: JIM GEELAN

- “ BOOM!
- “ My favourite colour is 3.
- “ The Romans didn’t have 0, and look at where that got them.

MUSIC 246: SIMON WOOD

- “ If you’re so desperate that you have to stick notes inside a fucking water bottle you have bigger problems to worry about.
- “ People don’t care about quality, they are quite willing to listen to shit.
- “ One of those, we hate them.
- “ Little too much sexy time for me, I blush easy.
- “ I have a specific music taste. I like everything that is good, if I don’t like it you shouldn’t either.
- “ I sound like a terribly old white guy at this point.
- “ This is a lot of yabbling.
- “ Vaudeville was dying faster than my hope in the age of Donald Trump.
- “ The United States of X.
- “ Hitler did a great job driving intellectuals out of Europe.
- “ Stop rustling or I’ll hurt you.

PMATH 333: MATTHEW KENNEDY

- “ 2 is the first prime number, I’m not making that up.
- “ Weierstrass, very influential person in analysis. Bolzano, no idea who that is.

PMATH 351: KEVIN HARE

- “ Continuous functions map closed sets to closed sets. I encourage you to prove this for yourself, because it’s good practice.

PMATH 352: MICHAEL RUBENSTIEN

- “ ...and then I humpty-dumpty it back together.

PMATH 365: JASON BELL

- “ I learned all this stuff in the ’90s, back when grunge was popular. It’s like the seven stages of going through something really hard.

PMATH 445: FAISAL AL-FAISAL

- “ And now, χU . *[Students laugh]* What did I say?

PMATH 965: SPIRO KARIGIANNIS

- “ It’s called the mean curvature because it’s an average, not because it’s angry.

STAT 231: HENAN XU

- “ Murders are perfect for Poisson!
- “ Elderly women are minority groups—I mean weak groups—
- “ I know that, because I am the god.

STAT 241: YINGLI QIN

- “ You cannot calculate the MLE in your dream. You dream about having complete data, but you don’t. So you have to do it in reality.
- “ Wikipedia is sometimes helpful, sometimes not.
- “ i doesn’t have to be perfect. Nobody is perfect... except me.

STAT 241: YINGLI QIN**STAT 330: YEYING ZHU**

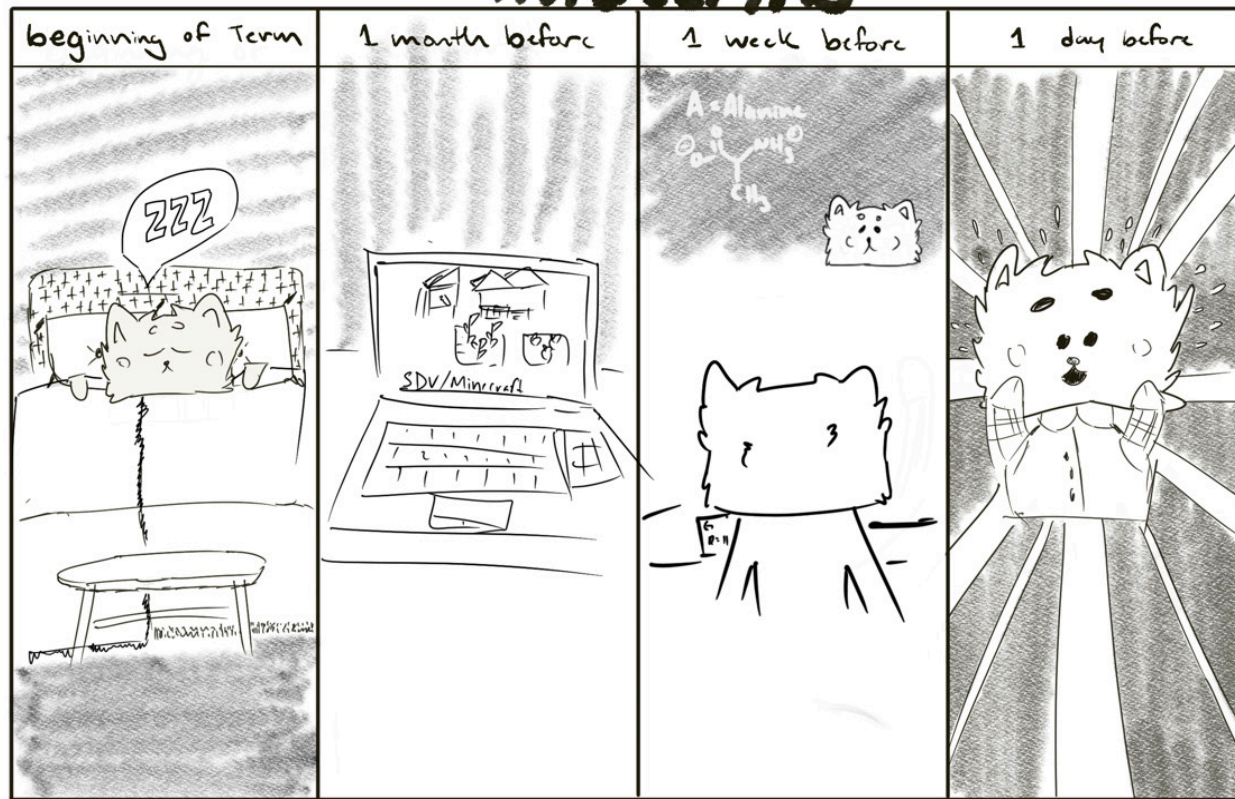
- “ So, more definitions. Sorry about that...
- “ Professor: What is $P(X \leq Y)$?
Student: $\frac{1}{2}$?
Professor: No. *[Ten minutes later]* ...oh, it is $\frac{1}{2}$.

STAT 333: JEFFREY NEGREA

- “ If you were thinking to yourself, “Man, conditional expectation is really weird and I wish it was more like my abstract linear algebra classes,” then this one’s for you.

FUCKED UP LIL' FURRY THING

Midterms



LMAO, THEY DIDN'T STUDY
SHOUT OUT TO EVGENIY PANZHINSKIY, MY BIOCHEM PROF

Ignis_

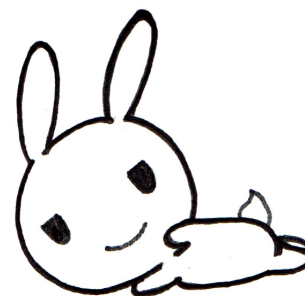
BAD PICKUP LINES, VOL. 1

- Are you a linear transformation? Because you map onto my heart.
- As I approach you, our limits converge.
- Can I be the delta for all of your epsilons?
- We should choose a basis so that we can become an isomorphism together.
- Are you a modulo ring because I think we're in the same equivalence class!
- For sake of contradiction, assume that you love me...
- How do I love thee? Let me count the ways; define the ways that I love you as set S , the measure of S is infinite.
- Define set S as the union of you and me...
- What is the probability of you choose me?
- Are you a Riemann Sum? Because I'd like to know your area!
- Are you a graph? Because I'd like to traverse you!
- Is our cross product zero? Because I think we're on the same line here!
- What's your sine?

- Are you an algebraic geometer? Because the diagram of you and me commutes to the diagram of me and you!
- Baby, my love for you is well-defined. It is also linear and a bijection. Wait, sorry, I think I might have accidentally proven the Rank-Nullity theorem.

Antigone of Toronto

mathNEWS is not responsible for the consequences if you should decide to use these.



NEW MAP

A MUSIC VIDEO?

There's a hole in your heart, begging for adventure...

You've heard the dreamy, French-accented lyrics countless times before. That drum fill has been the theme to many a change in scenery in your life—once, it meant venturing to a far-away robotics tournament; many years later, moving to a new city for university; now, watching the little baggage truck pull away from the plane as you wait for the trans-Atlantic flight to take off.

Occasionally over the past six years, you'd imagined putting this song on as you take off to California, or Beijing, or Vancouver, or wherever the co-op program would decide to take you. But the years of COVID and the following tech crash had pushed that vision further and further out of reach. The moment the song was waiting for never came.

You feel the wheels lift off the ground.

Is this that moment?

Play yourself a new track, set traps for the future...

Choosing a window seat was a good idea. The train emerges from the tunnel just in time for you to catch a glimpse of the sunset over the mess of track infrastructure.

You rest your head on the glass and watch the residents of Parc des Expositions mingle on the platform. It starts to settle in where you've landed. The group of teenagers that just boarded are chatting loudly; you understand about every tenth word. You open Duolingo on your phone, then close it out of self-consciousness. What are you, a tourist?

You came here because it didn't feel right to be where you started anymore. It's been over a year since you graduated, the first time in your life where there wasn't a clear direction on where to go next, and you've been practically stunned ever since, frozen in place, taking a return offer at a Waterloo-based former co-op not because you particularly wanted to, but because it felt like the closest thing there was to a default option, to not having to choose.

Every day, you would pass groups of students on the sidewalk, walking to a campus that you had to remind yourself wasn't yours anymore. They reminded you of the things you'd missed from those years, and of the things you wished you'd done. The atmosphere had made it hard to convince yourself that there was any more to life than that narrow set of missed experiences.

The train you're on is refreshingly unfamiliar. You look back at the kids, who are now jousting with baguettes, as far as you can tell.

On your own... can you do it?

Châtelet–Les Halles is a mess of narrow underground corridors with every wall tiled in a different shade of white and every pole littered with signage and symbols. You do your best to follow the yellow circles toward the train that makes up the final leg of your journey, dragging your reluctant suitcase along with you.

A yellow circle pointing behind you notifies you that you've taken a wrong turn. You're about to turn around when you notice a familiar figure out of the corner of your eye. *Shit. That's them.*

You turn away, keep walking, head down the next hallway you see. It takes you to the platform of line 14, and they're not there, and so you nonchalantly continue following the signs toward where you're supposed to be going. You turn a corner and see them again, several steps in front of you, heading straight for line 1 just like you are.

It's too late to turn back now. You follow them up the steps, and a train is there, and you consider not getting on, but then they'd see you on the platform, just standing there for some reason, and in a few moments you find yourself standing a few steps away from them in the crowded metro car, their back still turned to you, as the train pulls away.

The figure turns around, pushing past you and your suitcase, and steps out at Louvre Rivoli. It's not them. Also, you got on the wrong train. It's going the wrong way.

The unknown... can you face it?

You're at Tuileries now. You can't bring yourself to get off the train and turn around. Why *are* you here? It's because of them, isn't it?

You're in the city they would always talk about, nonchalantly, without much intent behind it, but with a hint of hopefulness. It didn't occur to you to ask where it was coming from.

The unknown of post-graduation had always felt more comforting knowing they'd be around: in your head, you'd be living in the Toronto area, navigating adult life together. But then came the job offer out of nowhere they just couldn't miss, the stories of dreams they couldn't ignore, the plane ticket booked for the next day. In an instant, they were gone.

Is this why you're here? Did you really have any desire to come here before that moment a year ago? It's not like, at this point, you could just run into them on the train, walk back into their

arms, go back to what you used to be. You don't even want that at this point.

What are you doing here?



With your soul... now you see it.

The train screeches to a halt. You linger for a few moments, but your French is good enough for you to understand that this is the last stop and that the announcer would like you to leave.

A glimpse of the night sky at the top of the long staircase draws you up, welcoming you into the first breath of cool outdoor air you've felt in several hours. You stumble off the escalator, narrowly avoiding tripping over a photographer's tripod.

In front of you is a massive square.

There's no other way of describing it. It towers what must be a hundred metres above you: two walls, a floor, and a ceiling. A square. The walls are thick enough to host offices with windows looking in. The entire thing is tiled in a shimmering white, and a long set of stairs at the bottom beckons you up into its heart. You've been sitting for hours, slept poorly on the plane, and are still dragging a heavy suitcase around — yet, you somehow have enough energy to heave it up the grand staircase. You reach the top, set your suitcase down, and take a seat on top of it.

The view is... alright. You're not particularly high up, and all there is to see is a concrete plaza extending into the distance, flanked by high-rise office buildings. An expanse of empty space, dotted with small French creatures bisecting it in various angles, disappearing into holes in the ground, eating what you can only imagine are special French late-night pastries.

For a moment, you stop wondering why you're here. Do you need a reason? Does it matter if it's because of someone else? Hasn't everything you've ever done at least been influenced by an effect someone else had on you?

You're here now. Maybe someone placed a spark in your head that ended up sending you here; maybe that had happened last year, or even before that. Whatever the reason, you came here, and you found a really big square. You like the really big square.

The landscape... is infinite.

__init__

$$\begin{bmatrix} m & a \\ t & h \end{bmatrix} \begin{bmatrix} N & E \\ W & S \end{bmatrix} = \begin{bmatrix} mN + aW & mE + aS \\ tN + hW & tE + hS \end{bmatrix}$$

A DIVINE IMAGE CUT FROM CHEESE

On December 3rd, 2019, I woke up on a day just like any other. I descended the stairs, hungry for a fulfilling breakfast to fuel a long day of my rigorous academic schedule. I wanted a bagel, but had no cream cheese. But no worry, I had just the solution. I cut a piece of *Balderson 2 Year Aged Cheddar* that my parents has purchased from Costco. Suddenly, from this cut appeared a divine image, an image that changed the trajectory of my life.

This cheese looked exactly like the province of British Columbia.



I am so blessed to be given this gift. It needed to be shared with the world before it fell further into the depths of my camera roll.

Lars Nootbaar

COSTCO

MathSoc BFF event lowkey giving fr fam. They cooked with their snack selection. I don't need to go grocery shopping. They got the fancy sparking water from Costco, the Swiss chocolate from Costco, the Hello Panda cookies, two bite brownies, hi-chews, snack size chips, Oasis smoothies. They went on a Costco run before this event and I support it, I just like Costco for real.

insert pen name here

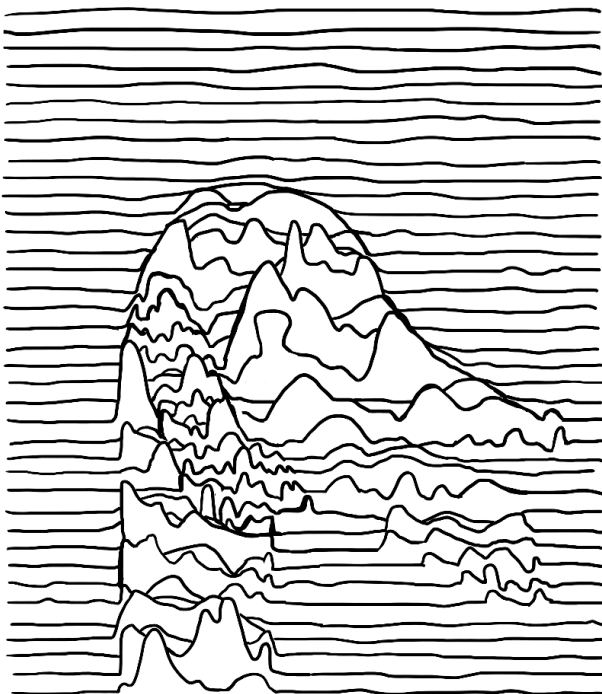
DEATH GRIPS IS OFFLINE

OR HOW I LEARNED TO STOP WORRYING AND WRITE AN OBITUARY FOR ONE OF MY FAVOURITE MUSICAL PROJECTS

A few days ago, fans of Death Grips got what is likely to be the most official statement about the band's future, in the form of a leaked DM posted by a guy who did a flyer for one of the members' other projects. "yeah, it's over," writes producer Andy Morin in the DM. The kid who leaked it likely didn't do it out of malice, and I will not be talking about him.

The name Death Grips will, no doubt, be familiar to the more seasoned persons among you, who are either really excited or rolling their eyes so far back into their skull that they can see into their mother's wombs.

Known for their eclectic, harsh, and industrial rock hip hop sound (if I were to explore every sound they actually experimented with I'd likely fill up this whole issue); Ride's harsher-still vocals; Zach Hill's breakneck yet precise drumming; Andy Morin's production reminiscent of a bad acid trip; and a fanbase so pissy, annoying, and childish that I feel ashamed for ever being part of it; Death Grips was one of the most singularly unique artistic projects of the last decade. They released their debut mixtape, *Exmilitary*, in 2011, online, for free, likely due to the heavy sampling on the project. The tape very prominently features a particular drum line sample — the Blue Devils' iconic Ditty — combined with sometimes minimalist¹ and sometimes maximalist² synth and drums, other samples (including David Bowie,³ Pink Floyd,⁴ reggae,⁵ and classic rock⁶), and the genuinely-fucking-scary vocals that warn of something you don't really understand for a couple listens. This will be by far the most experimental thing many among you will ever have listened to yet, as it was for me and many fans. Though, knowing the target demographic of this publication, maybe not.



©

Death Grips was also a stepping stone for many people, the first truly weird and unconventional band they'd ever listened to, and the first step down into the basement of underground music. I owe a lot to them, both as a music enthusiast and artist. One of my first ever songs was a tribute to them. Many still are. A rite of passage for a very specific kind of musician is making a Death Grips mashup. It's how I found them.⁷ I've made several.

The members kept a low profile: there exists only one video I can recall of the MC, Ride (Stefan Burnett), actually speaking. In it he names his inspirations: "Jimi Hendrix, of course. There are others." However, the band (successfully) avoided emulating anyone other than themselves. They were also strict adherents to the Lynchian school of letting the work speak for itself.

They were, however, very down to Earth. Famously, they were once approached by a fan at dinner, who they ended up hanging out with for the rest of the night. They went to a Beyonce concert together, took a picture with her, and let the fan come up with and record a guitar part for a song.⁸ It likely helped that this fan was literally Batman himself, Robert Pattinson. (Genuinely, look this up, the picture with Beyonce is amazing.) Even to non A-list actor fans, though they weren't always comfortable with pictures, they were always very kind, approachable, and appreciated the love. This was in stark contrast to their stage presence.

The average Death Grips concert lasted about an hour. It included no stage banter, breaks, costume changes, or even a single moment of silence. Seamlessly transitioning between songs, there was never a moment where Zach Hill's arms and legs were not in movement. For the drumming enthusiasts among you, I suggest you look up footage of Zach Hill drumming, and keep in mind he did NOT use a double pedal. How Ride still has vocal cords is a mystery to me, though his body tattoos, lyricism, and the force with which he is able to push stage jumpers suggest that a deal with the devil isn't very unlikely. By the end of the hour, even Andy Morin, on keyboard and laptop, would be drenched in sweat. The cherry on top: a mosh pit so violent many came home bruised. Anyone who went cherished it forever. I never got the chance to experience it. I likely never will.

One of the reasons for that is, giving the Rick and Morty fanbase a run for their money, Death Grips fans are famously some of the worst people to ever use the internet. Though I am also part of this at times (see my **mastHEAD** answer), the memeification and shitposting of the band is one of the most egregious examples of the extent of the irony poisoning today's society suffers from. While it is harmless to show up to a concert in a propeller hat with a lollipop, the refusal of so-called fans to seriously engage with the art, and instead reducing it to a corny joke of "haha look at the scary man yell," was no doubt discouraging to the band. Though I never would

have pelted the band with glow sticks like happened at their penultimate show, I very much am guilty of, not a refusal, but a fear of publicly engaging sincerely with a project like this. In fact, I scrapped another behemoth of an article, an interview with Zalinki who made what is in my opinion the best album of 2024,⁹ after it was pointed out to me that it was so poisoned with irony that one might think I held a grudge against the man. This over-reliance on irony is indicative of a troubling trend, one that I've been trying to write about for the past couple issues after beginning to recognize it in myself. This is not that article. This is an obituary.

Death Grips are survived by countless haters, even more countless fans, an incredible discography, the other projects of Zach, Stefan, and Andy, the great Björk, Tyler, the Creator, Zalinki, David Bowie's Blackstar, Kasabian's 48:13, and me.

Dick Chudney

1. See: Guillotine
2. also Guillotine
3. Culture Shock
4. I Want It I Need It (Death Heated)Beware
5. Beware
6. Spread Eagle Cross the Block
7. Thank you, Zalinki
8. Birds
9. When Death Was Mine

A GUIDE TO CLASSIFYING PDES

One of the most ubiquitous tools in applied mathematics is the PDE. PDE stands for Particularly Disheartening Equation. They can be used to model various phenomena, such as heat flow, waves, and your declining mental state. In this article, we will discuss how to classify a few different types of second order linear PDEs with constant coefficients. Consider the following equation:

$$a \frac{\partial^2 u}{\partial x^2} + 2c \frac{\partial^2 u}{\partial x \partial y} + b \frac{\partial^2 u}{\partial y^2} + d \frac{\partial u}{\partial x} + e \frac{\partial u}{\partial y} + fu + g = 0$$

There are three situations that can occur. We will first consider when $c^2 - ab = 0$. This type of PDE is called problematic. The problem arises when you try to solve it.

Next is when $c^2 - ab < 0$. This type of PDE is called evil. It will kill your family without hesitation.

Finally, we consider when $c^2 - ab > 0$. This type of PDE is called hyperbolic. Without hyperbole, this type of PDE is perfect for capturing the extreme downward curvature of your mental health.

numberonerubinstefan

SUDOKU 4

PUZZLES

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

Sudoku 4

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

Sudoku 3 Solved

A BROKEN SUDOKU

to everyone that was bored in the last two weeks and did the last Sudoku (Sudoku 3), i am so sorry, i'm 25% sure i opened the puzzle to two possible solutions, and that is a bad thing, i made a mistake going from paper to LaTeX. i added my new solution here, but like there might be another, I'm still new at this. sorry

Ignis

Rice is uncountable.

PROF. BARBARA SCHMENK

A REVIEW OF MY EXPERIENCE WITH C++20 MODULES

COULD BE BETTER, COULD BE WORSE.

Recently I've had the (dis)pleasure of managing a codebase using C++20 modules, and with it the responsibility of actually setting up an environment to support them.

Some of you, dear readers, may ask, why even bother with using modules, when compiler support for them is so limited and language servers and linters have even less support? Why bother when the header-implementation system we know and begrudgingly, or more appropriately have been forced to tolerate, has been tried and tested?

To that I say, “no clue, lol.” I wanted to try a project with modules, and part of it arose from promises of increased compilation speeds, greater control over what symbols are accessible in other translation units, etc., though I suppose what drew me the most was the idea that we would finally do away with the damned preprocessor which is the unfortunate burden C++ inherited from its immediate ancestor.

Getting things to actually work has been nothing short of a Herculean labour—the only language server that apparently supports parsing C++ modules is clangd (not even Visual Studio or VSC seem to support it), and much to my surprise clangd does not simply “work out of the box”—at no point did anyone tell me, that I was apparently supposed to create a file called `config.yaml` in the directory `~/config/clangd`, to indicate that I wish to use an edition of C++ that isn't literally older than me, nor was I told that the only way for the language to parse modules was that a file named `compile_commands.json` had to be created in the project directory by a build system, all of which also assumed that you passed the flag `--experimental-modules-support` to the language server on startup...

Then it brings me to how long it took me to figure out how to get CMake, quite possibly the most putrid build system to ever meet the light of day, yet somehow managed to become the most ubiquitous of all. CMake documentation is quite possibly the worst there is out there, and there is really no way to learn it—you simply have to meet some wizard out there who is willing to write it for you, which is precisely what I did. That is, until I discovered the next best thing there is—enter XMake.

XMake may just have to be the best build system for C++ out there—even better than Meson or anything else that's been offered. XMake is just written using Lua, and has such a simple syntax to specify targets and source file locations with. In terms of ease of use, it can probably even be on par with Rust's cargo, which just works. Not to mention how nice a frontend it provides, much better than GNU Make which just spits out a wall of ugly unreadable text at you.

Now onto the actual modules. C++23 standard library modules don't work yet—neither Clang nor GCC seem to have great support for them even yet, so unfortunately I've been continuing to only `#include` these rather than `import` them

as I would like. On that note, can I point out how ludicrous it is that the C++ committee thought it would be a good idea to provide only a SINGLE module to import the standard library with? I know some people are going to mention the fact that importing a large module makes no difference from importing a smaller subset especially considering the `std` module is provided precompiled anyway, but that isn't the point, it's that it pollutes the `std::` namespace with a bunch of symbols that you don't need. Though I suppose even that's a moot point anyway if you'd want tooling to automatically add `import` statements to the top of your code for you anyway...

Well, anyway, my actual translation units have been all written using modules, and I suppose actually being in the process of using them feels a lot more liberating than the traditional header/implementation format—I'm actually free to conglomerate the entire source into a single translation unit. There may have been a compelling reason to divide the interface from the implementation back when it meant that you'd only have to `#include` declarations and not actual code, but with the introduction of modules, there really isn't any reason to do this and I will be among one of many who no longer do this—I encourage you to do the same.

Something most people will point out is that C++ modules are distinct from the way Rust crates which you call with `use` and Java packages which you call with `import`, work—in fact, in those languages symbols from all namespaces are accessible so long as you fully qualify them—no actual binary or code is linked to the file during compilation, unlike the way `import` works in C++. I'd prefer if C++ took this approach, though I suppose I haven't done enough research to conclude why Rust can do it and C++ does not.

My only gripe is that I haven't been able to find a way to import external modules into my codebase, even with `vcpkg`. I've been spending time trying to get `boost.regex` to work, simply because `<regex>` is notoriously bad—though to no avail. It's also disappointing, though I cannot say unexpected, that few projects have adopted modules. I suppose it will be one of those things that will take time.

Overall, would I recommend modules? Yeah, I would. Perhaps this article didn't go too much into educational detail about the intricacies of C++ modules, but I hope you at least found it intriguing that someone out there tried them out and had something to say. And who knows? Maybe one day you'll find yourself having to migrate a code base to modules at work.

Toyosatomimi no Miko



The logo for mathNEWS, with 'math' in a lowercase, rounded font and 'NEWS' in a larger, bold, uppercase font with a slight shadow effect.

MYSTERY OF PMATH MICHAEL

INVESTIGATIVE REPORTING BY THE BEST OF THE BEST

There exists a legend among us. A legend many have seen, but very few as of late. There are whispers on campus that he has been taken. By who, to where, nobody can say. I plan to unravel this mystery, and find the whereabouts of this legendary man.

A frequent visitor to many social spaces on campus, PMath Michael is well known to many. He can frequently be found in PMC, FemPhys, or Chem Club, performing black magic (proofs) and chatting about his most recent endeavors. However, in recent weeks he has been strangely absent. With no word despite attempts to contact him, a suspicious atmosphere has descended onto our once safe campus.

A man like Michael, while quite loved, has many enemies. There are people who wish to see the downfall of math as a program, and he could be singled out as a figurehead by these people and punished accordingly. In addition to his controversial program choice, it has become increasingly clear in recent months that Michael might be Fr**ch, and this could also be an understandable source of aggression towards him.

As part of my investigation, I asked some other **mathNEWS** reporters about their thoughts on the situation:

“Taken and shanked north of Birmingham.”

NOTALEX

“I heard he decided to go somewhere second worst only to France idk why.”

KATSQUIDS

“I know who did this, but I’m not at liberty to say. They’ll get me next if I do.”

TRIPPYCAMPER

Based on the facts and front-line reporting, I can only determine that Michael was in fact taken. In the next iteration of **mathNEWS**, I will attempt to bring forth some possibilities as to who, or *what* may have kidnapped this beloved member of our community. Hold your loved ones close, as you never know if these mysterious anti-math figures might pick you next.

ct hulhu

Don't think critically.

PROF. DANIEL CAO

FREAK UR SHIT RESPONSIBLY

Emotional maturity doesn't mean that you never get so heated that you lose your cool. It's not about having a magic wall that is impenetrable to every upsetting circumstance. Even if you try to be the sexy strong silent type, something will get through: you will be running on no sleep, you will be forced to attend an EARTH 122 lecture in-person, your ex will shit through your sunroof, you will witness poor election outcomes etc. Sometimes with stuff going on you're primed to revert to reptile and snap at somebody.

The key is to jump on doing the right thing as soon as you regain sentience. There is no shame in the fight or flight hiccup—you can own the mistake and do your best to make it right.

One thing you can try is to practice apologizing. Literally. Make up some fake as hell circumstance where you did something regrettable impulsively and then verbalize your apology.

Admitting you fucked up is hard. It doesn't *feel* proud. Proud feels like always showing strength and conviction. That doesn't change that apologizing when you've hurt somebody is usually the right thing to do.

uemre

CUTE VALENTINE'S DAY DATE IDEA

CAN ALSO BE DONE IN A BIG GROUP IF YOU'RE PARTIAL TO THAT

What if we peed
in one of the
trough sinks
together 🤪



to:
from:

the government's only spy

GOOGLE PIXEL BUDS PRO 2 LONG TERM REVIEW

AFTER 4 MONTHS: HOW DOES IT HOLD UP?

It's been four months since Google unveiled the Pixel Buds 2 Pro, their newest flagship wireless earbuds. After extended daily use, their comfort, battery life, and sound quality, they have had ample time to shine and show weakness. Let's take a look the product and see how it is now.

DESIGN



The Google Pixel Buds Pro 2 look gorgeous. The sleek egg-shaped white case has a distinctive hand feel that makes it stand out from its competitors. The lid doesn't require much force, but there is enough for it to be reassuring, and it closes with a satisfying *clack*. The buds are simple in design, but looks unique and great. The G logo is a nice touch, and it is a tactile indicator of the touchpad. In the months that I've used it, the case has held up remarkably well. I can see no signs of scratches or scuff marks. The buds have also had no noticeable wear and tear.

The device comes in four colours: Porcelain (white), Hazel (black), Wintergreen (green), and Peony (pink). The case itself is always white, and the colour is only applied to the outer touch panel of the buds.

All of the legal information is cleverly hidden on the inner roof of the case, leaving the outside looking premium. The device charges via the USB-C port at the bottom or wireless charging. Charging is notified through a hidden LED at the front. The back only has a button to reset the pairing on the device.

The case also has a speaker in the bottom which notifies you when the buds are placed in the case properly, as well as being used to find it when lost. It's a small thing that makes a lot of sense to include, and has saved me a lot of panic quite a few times in these past months.

As for protection, the case is rated for IPX4 and the buds have an IP54 rating. This is in line with other earbuds and is solid dust and water protection.

CONNECTIVITY

The Pixel Buds 2 Pro supported Bluetooth 5.4 at launch and recently gained Bluetooth LE audio support. I experienced some issues with the buds accidentally disconnecting, but I haven't had any issues since the last firmware update.

Both Google Fast Pair and Microsoft Swift Pair are supported for faster connection. On Android devices this also includes pairing to other devices signed into the same Google account. You can also pair them to iOS devices, though you will lose some functionality. A nice features is that the buds can connect to two devices and automatically switch. I used this a lot while swapping from my Android phone and tablet.

FIT AND CONTROLS

The Pixel Buds have rubber eartips and an outer fin. The default ear tips fit well for me, but they come with others in the box. The fins slot in near the bottom, which is the opposite of other earbuds. I found this design to be more comfortable, and I never experienced any ear fatigue.

They also sit a lot looser than other buds. When I first put them on they felt like they were constantly about to fall off. They are actually quite secure and can be used while at the gym. Its something I got used to and actually is quite comfortable.

Audio is controlled via a large touchpad on the face of the buds, through taps or swipes. Single tap to play/pause, double/triple to go forward/back. Swiping on the touchpad controls volume, and there is a programmable touch and hold action. I have my left earbud set to launch Gemini and the right earbud to control ANC/transparency mode.

SOUND

The buds support the common SBC and AAC codecs, but lacks support for higher bitrate LDAC and aptX codecs. It is disappointing considering the price, and that similarly positioned earbuds like the AirPods Pro and Samsung Galaxy Buds do support higher bitrate codecs. I've loved the sound from these buds though. The 11mm drivers deliver good bass, the audio is clear and rich, and the spatial audio is wonderful. It has great battery life, and I've only once ran out after using it 6 straight hours with transparency mode on and playing music.

Active Noise Cancellation (ANC) paired with the noise isolation works as well as expected, blocking out quite a lot of outside sound. While it wont block out a busy road, it will get 80% there. It is much better than other earbuds that I've tested, and offers a much more immersive experience. One thing I have noticed for me is that enabling ANC makes me ears feel like they have a lot of pressure. I'm not sure why this happens, I assume due to the seal and the lack of outside sound, but it made it very uncomfortable for me when I first started using it.

A standout feature here is the Transparency mode. With multiple outward-facing mics and the Tensor AI chip, it feels almost like magic. Aside from the buds themselves, there's virtually no drop in audio quality compared to not wearing

them. Sound remains crisp, with precise directionality. For example, I can effortlessly pinpoint cars or voices around me. Unlike ANC mode, it also eliminates any ear pressure, making it my default choice. More than once, I've left the buds in even after stopping my music, simply because it was so convincing. The buds can also stop the music and enable transparency mode when you talk to someone, which is a feature I've used a lot. It is consistent and resumes quickly after I am done.

FINAL VERDICT: 8/10

Four months in, and Google's flagship earbuds have kept their appeal. Google's offering still remains an easily recommendable product despite new competition on the horizon. But the Buds Pro 2 have not done much to really wow me. Future Pixel Buds should focus on improving audio quality, such as supporting higher bitrate codecs, and adding more colour to the device. Overall, I highly recommend the Google Pixel Buds 2 Pro.

antsFile

N ARTICLES MOBPSYCHOFAN SHOULD WRITE

WRITTEN WITH MOBPSYCHOFAN'S PERMISSION

- Why I'm Woke
- Who I Would Kill With the Death Note
- A Comprehensive List of Every Good Band
- Mob Psycho meets Shigeo Kageyama (AU fanfic)
- Hollow Knight is a lonely game
- Videogames I want to make but probably won't
- Five visual novels you should play and why
- Kazuichi Soda's Shocking Discovery (fanfic) (part one)
- Daily Affirmations Save me. Save me Daily Affirmations.
- How to bury light, a step-by-step guide
- An earnest attempt at completing Danganronpa V3: Killing Harmony

Doublewhip

I FORGOT TO WRITE AN ARTICLE

Obligatory gen alpha skibidi vocabulary parody of popular song.

Usman!

WHY I'M WOKE

AN N REASONS ARTICLE I AM BEING FORCED TO WRITE AT GUNPOINT BY DOUBLEWHIP

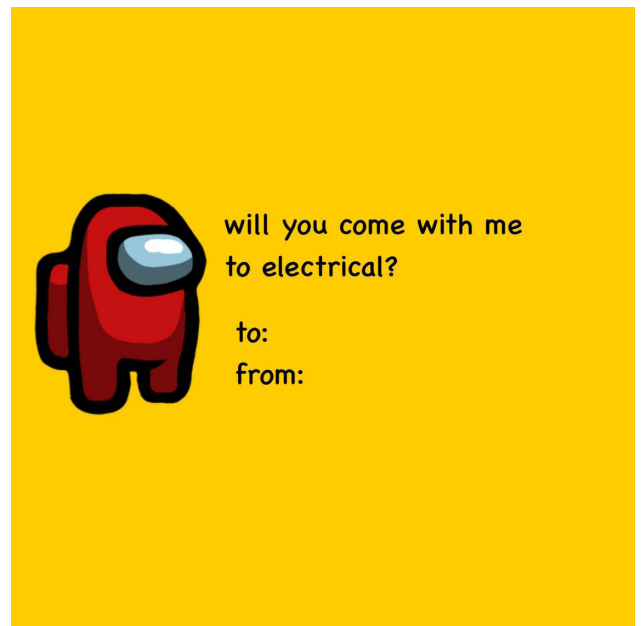
1. I was a Dream SMP fan in 2020
2. I was in a Dream SMP fan Discord server in 2020
3. I ate lunch in EV3 every day in 1B (those who know)
4. My transgender communist bisexual mentally ill atheist Punjabi girlfriend is vegan
5. I'm majoring in CS (transgender)
6. I'm minoring in Fine Arts
7. I'm a Mob Psycho fan
8. I'm a lesbian
9. I was vaccinated as a child
10. When I go home I take the GO bus instead of driving my massive chadly diesel powered patriotic American FORD POWERHOUSE truck
11. I drink tap water without filtering it and the chemicals the government puts in the water (Fluoride) have entered my brain
12. The aforementioned transgender communist bisexual mentally ill atheist Punjabi vegan girlfriend forced me to play Disco Elysium
13. I'm autistic (I promise this is unrelated to being vaccinated as a child)
14. Wokes have more fun 🤪

mobpsychofan

PUMA

yeah uh
i puma pants
they call me puma man

manganese



N THINGS TO LOVE DURING VALENTINE'S DAY

THE WRONG ANSWERS

- Yourself
- Partners, if any
- Fresh Laundry
- Nothing at all. It beckons you to its radiant embrace, join it as its Hawking radiation glows a pale ember amongst the dark hallows of this most estranged universe
- Family
- Friends
- Water that tastes correct
- The desolation of a big city, where one is doomed to forever be but a traveler, a lone wanderer on the long streets, cloak brushed by the drafts of bypassing streetcars and trains
- Banang
- The economy
- Snom
- The luxuries of modern society, something we failed to have for most of society and something we continue to fail to provide for a shocking number of people for some reason wait why
- A functional medical system
- Alcohol
- Trains (in general)
- The embers and ash of a nation aflame, its mind warped to dismantle itself for kindling, a plague from within stripping itself to timbers and kindling to burn, and to boil the seas and everyone along with it
- The asexuals (as friends)
- Chocolates
- The concept of Valentine's Day
- The gentle snowdrifts of a winter passing over, gently blowing in the wind, flakes accumulating and their faint symmetric hexagonal patterns emblazoned on black coats before slowly fading into water and dust
- The boykisser (reverent be his image)
- EthosLab's Nex Spirit, Taxes
- B'nnnnnnnang!
- The "thrill" of a war teetering to happen, the romanticization of men at arms, acting out brave feats of conquest, nobly bathing the ground and rivers in pools of bloodshed
- The CS trains course (if you're a masochist?)
- Sam and Max, Freelance Husbands
- The furies (??)
- Being able to have genuine, human social interaction, in person or through words typed on a screen and printed for all to see, certainly not present in this article, at least
- Yourself (the other way)

DON'T MISS YOUR DATE WITH ELECTIONS ONTARIO

VOTING DAY IS FEBRUARY 27

Are you feeling sad and lonely this Valentine's day? Wish that you could feel important and needed? Well, Ontario needs your help.

We are currently living through bonkers time. With so many news stories happening, it would be easy to forget that **Ontario is having an election on Thursday, February 27th, 2025.**

If you need to vote by mail, the deadline for applying is 6 pm on Thursday, February 21st. Elections Ontario must receive your ballot by 6 pm on February 27th to be counted. You can find all information about voting at www.elections.on.ca.

I would hope that seeing the chaos Trump has wrought in the U.S. would make it clear that who is in power matters. Last provincial election, only 44% of the population voted. This was the lowest-ever turnout for an Ontarian election. 18% of Ontarians were responsible for electing Doug Ford to a majority.

If you care at all about health care, education, civil rights, municipalities, civil and criminal law, immigration, or agriculture, you should remember that these are all provincial jurisdictions. And if you are not happy with how any of these topics have been managed recently, please kick Doug Ford out. Don't settle for our current premier. You can do better and you deserve better.

Just because Doug Ford is better than Trump or Danielle Smith does not mean he is not an absolutely terrible premier who is currently selling out Ontarians to his rich buddies. If the state of the world is stressing you out, remember to do your part in making it better and get rid of Doug Ford. Find yourself a premier that cares. None of the options are perfect but they will at least try to improve things.

Don't forget you have a date with Ontario. Bring a friend, bring all your friends. You really can't show Ontario too much love.

Eager Beaver Wants You to Actively Participate in Democracy

UNTITLED

I did not realize until I found a hole in my heart in the shape of you.

N ARTICLES ABSTRACTED SHOULD WRITE

WRITTEN WITH ABSTRACTED'S PERMISSION

- Math if it wasn't awesome
- Cold: A poem
- Kim Kitsuragi meets Death (AU fanfic)
- N days that are my Birthday
- Every Movie I Watched as a Child
- My (least) Favourite Videogame
- Top Ten Foods
- Why you should (NEVER) kill yourself (I'm hopepilled now)
- The Benefits of Eating Gravel
- Introduction to Type Theory
- An Earnest Attempt at Learning Sheaves

Doublewhip

MY BOYFRIEND STUDIES MATH

My boyfriend studies math,
He's always talking about class,

When he brings up rings,
I think he's buying me new things,

But while I'm expecting brand new jewellery,
He starts going on about group theory,

When I tell him about my problems,
And ask him for solutions,

He asks "What are the variables?,"
And suggests that I try substitution,

I tell him: "Relationships are complex,
But together, you and I can make it through,"

He replies: "Are we using the principal branch,
And could you please define w ?"

I get frustrated with him sometimes,
I fear I'm acting irrational,

But he tells me "Do not worry,
Our love is whole, not fractional."

closeted atheist



VEGETABLE TALES

Once upon a time, in _____(1, place), there was a _____(2, colour that is not orange) pumpkin named _____(3, name). The other pumpkins teased her for being different.

"Why are you so (2) and _____(adjective, derogatory)?" they asked. "You don't look like a real pumpkin!"

(3) felt sad and decided to embark on a _____(adjective) adventure. She meets a(n) _____(adjective) _____(vegetable) named _____(4, name), who had _____(5, adjective) vines.

"You're special because of your differences," said _____(4). "My (5) vines help me to _____(verb) a(n) _____(noun)!"

Next, (1) met a(n) _____(adjective) _____(vegetable) named _____(6, name), who had _____(adjective) stems and questionable intentions.

"You should _____(verb, questionable action) yourself," she said. "You are so (1)!"

Feeling more _____(emotion), she sought out the infamous Ugly _____(7, fruit) Fruit Monster that is rumoured to be the most _____(adjective) in all of (0). When the Ugly (7) Fruit Monster spotted her, she _____(verb) _____(adverb).

"Stoppp! This isn't really youuuu!!!" shouted (3). "You are _____(adjective) just the way you are!"

Ugly (3) Fruit Monster burst into tears. She was so inspired by how (3) carried her (2) colour with such _____(feeling).

"oki doke!! fee fi fo fum let's cause a tantrum<3" replied (7) Fruit Monster!!!

And just like that, they started plotting their revenge on all the _____(adjective, derogatory) produce that had ever done them dirty.

...to be continued

creative carrot & troubled turnip



Computational
complexity is cool, but
it's not gonna stop me.

PROF. OLIVER PECHENIK

fassQUOTES

THEY GAVE ME A FREE TICKET SO NOW I WILL PROMOTE THEM

For anyone not aware, FASS (Faculty, Alumni, Students, and Staff) is an amateur theater company based at the university. They've been around since 1962, making them five years older than the Faculty of Mathematics!

Every year they put on a production or two, and they're always a lot of fun, so I thought I'd record some of my favourite lines from the show I attended last Friday:

- "I don't trust the government's beverages, I only drink my own 180% proof absinthe."
- "What are you, some kind of flat earther?" "You believe in the earth?"
- "What's **mathNEWS**?"
- "My next article is called 'Best washrooms to process your post-midterm shawarma in.'"
- "**mathNEWS** can have their two and a half free tickets." (I am fully expecting a half ticket next time, Nick)
- "Would you like to see a toilet say 'gyatt?'"
- "Zenson is so old, they were around when the Dead Sea was just sick."
- "You're definitely millennial, beta."
- "My spouses are into Shrekplay."
- "[*Holding a cardboard cutout of his face*] I, Justin Trudeau, Prime Minister of Canada, endorse Milton Zenson for President of FASS." [*Editor's note: We later learned that this role was supposed to be played by Dorothy McCabe, mayor of Waterloo, but she got sick :()*]
- "The Region of Waterloo should secede from Canada, join the US as the 51st state, and declare war on Guelph to liberate the geese."
- "I'd institute a 100% tariff on uncs."
- "I've calculated the reciprocal eigenvalues of the vote counts—adding some reflexive symplectic diffeomorphisms, I can guarantee that the winner of the election will be one of the candidates."

For a more substantial review, you should read [Top N Toilets in MC to Throw up in After Watching FASS](#).

yalevoylian

TOP N TOILETS IN MC TO THROW UP IN AFTER WATCHING FASS

Back when I was a young **mathNEWS** writer, I would often hear senior writers talk about the Waterloo cultural touchstones of yesteryear. Things like the Imprint lawsuit, the Fed Hall drama, the MathSoc office couch—things from before my time that have largely faded from memory over my years as a student. One other such thing was FASS's pre-COVID connection with **mathNEWS**.

FASS and **mathNEWS** used to be much closer, from what I was told. However, over COVID, as clubs were forced to move online, a lot of the existing social order was broken down and rebuilt. What used to be a symbiotic relationship got lost in the great shuffle. Only embers of what once was—a couple emails a term offering **mathNEWS** two free press tickets—remain. Due to a series of last-minute illnesses, I managed to snag one of those tickets.

FASS is old—older than **mathNEWS**. Apparently, after our forerunners at Waterloo made a club to allocate time slots for use of their singular room-sized computer (some of you may know this as the Computer Science Club), they decided the next item on the agenda was an amateur theatre company for Faculty, Alumni, Students, and Staff.

FASS is *amateur* theatre. It's such pure, humble, aw shucks, salt-of-the-earth amateur theatre. The sets are scrappy, the props are flimsy, there's thirty-odd seats in the KW Little Theatre, they dance, they sing, they soliloquize, they crack wise, laughter rings, we cry, we also sing, they holler and roar, we get mugged for several minutes by a guy in a giant toilet costume made of cardboard, everything is made of cardboard, and the audience is there for exactly one reason—to enjoy some good amateur theatre—and the audience got exactly that.

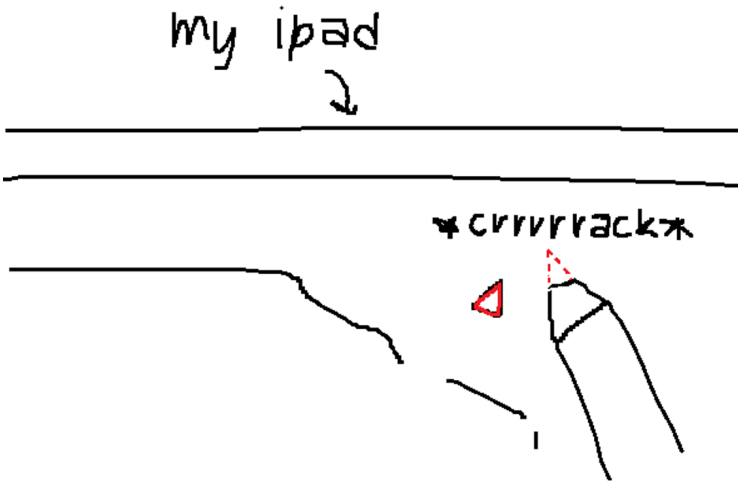
I enjoyed FASS. I hope to return for their next show in fall.

aphf

You go to a dark alley in MC and someone's like, "Hey, I want to sell you this polynomial." You really want to use this polynomial, but before you fork over a lot of money, you want to make sure it isn't just zero.

PROF. MIKE WAITE

INACCURATE* ARTIST'S RENDITION OF MY IPAD PEN TIP BREAKING



DIGITAL PAINT ON MICROSOFT PAINT CANVAS IN A
REMOTE DESKTOP SESSION ON A WINDOWS MACHINE
FROM A MAC LAPTOP (USING ITS TOUCHPAD, OF
COURSE)

leah

*It didn't really fall off, the tip is internally damaged, I think.

NICO SPRONK RECENTLY HIRED BY PAKISTAN'S TOURISM DEPT.

[Whilst discussing level curves in MATH 247] "In fact, fifteen years ago, I had a student from Pakistan who was struggling with level curves. He was in my office, and I was like 'I'll show you some level curves on Google.' I'm like just tell me places in the world to look and I knew what he was gonna say... What do you think he was gonna say? K2 of course, he's from Pakistan, they're very nationalistic about it. So I'm like ahhh yeah okay K2, I know what K2 is. I just randomly pick a spot in Northern Pakistan to show him, and I'm like, 'Yeah if you look here, these lines coming close together...' — Hooooly cow... the random valley I had... the bottom of the valley was four *thousand* meters below immediate ridge lines. And I'm like, I've never seen anything like this in my life... Asia is crazy. Like, we have topography here... they have *topography* there. Man... so anyways I was just stunned—look it up for yourself—go to Northern Pakistan and just realise that the rocky mountains are little bitty bubs. The hindu khush is nuts man. And you know the Himalayas are even more nuts, but I think the valley floor is higher." — Nico Spronk

Nationalistic K2 Enjoyer

UNTITLED

im ok
not rly
but that's ok
cuz i have a midterm tomorrow
and an assignment due after that
and if i don't finish these errands bad things will happen
so i will do them first
because im a real adult
and i can do things

i can do it—
i should—no, my therapist told me not to use that word so i
won't—i meant i ought.
im strong, right?
and i can do everything
that i have to
because i have to
because im ok
i have to be

anonymous

VALENTINE'S WEEK IN WATERLOO

If you're single, you should probably flee the city,
Unless midterms have drowned you in misery.
Then no need to stress, no need to pine,
Your GPA is your valentine.
And after reading week, the only thing
That'll break your heart is your midterm mark.

Still desperate? Sign up for Aphrodite with low expectations
And prepare to be disappointed.
Debug your feelings with recursion and pain,
Your love life's complexity? NP-hard to explain.

If you're already with someone, congrats,
Finding love here is as hard as touching grass.
So, take a stroll, go on a date,
Freeze as you watch romantic sunsets on Columbia Lake.

If you're jobless, spend the night right,
Leetcoding "hard" problems under candlelight.
If you're in co-op, say goodbye to the fun,
Your date is the intern project still not done.

So, whether you are taken, single, or job-seeking in vain,
Waterloo in February? Just embrace the pain.

Mia More



“BUY CANADIAN!” SAYS LOCAL SMALL BUSINESS OWNER SHMALEN SHMESTON



Dick Smithers

N MATH 2025 GRAD PRANK IDEAS

- Cover the floor in turf and put up touch grass signs
- Setup a trolley problem in the trains lab
- Hand out plastic rings and make the CS students take an oath
- Turn MC Comfy into a pillow fort
- Turn the Mac Lab into an escape room
- Have 4B student shoot 1A students with paintballs
- Put up banners in E7 because there's no room for banners here
- Hand out cake on pi day
- Cover the walls in copies of the Inside Out email and Piazza shitposts
- Hang up a bunch of funny instructor crowdmark comments

grasstoucher69

Please can we do something? I am sick of being jealous of the eng students...

N REASONS WHY YOU SHOULD GO TO PAC POOL AT 8 AM

- fewer people and more space
- nearly no smell of chloramines
- good playlist
- you can grab a coffee afterwards
- and then write a **mathNEWS** article, whose submission deadline is at 10 AM on Tuesday fyi
- and still have time to catch classes/work (at least in my case)

Thanks to jet lag, I got to wake up early in the morning to give this swimming schedule a try. It was fun. Will definitely try again.

eralogos

TIKZ

```
\begin{tikzpicture}

\fill[red] (-1,0) arc[start angle=180,end angle=
↺0,radius=1cm] -- (1,-2.5) arc[start angle=0,
↺end angle=-180,radius=0.5cm] -- (-1,0);

\fill[red] (1.2,-0.3) rectangle (2.2,-2.2);

\fill[white] (-0.5,0.5) arc[start angle=200,end_
↺angle=-20,radius=1cm] -- (0.5,-0.2) arc[start_
↺angle=-20,end angle=200,radius=0.5cm] -- cycle;

\draw[thick] (-0.5,0.5) arc[start angle=200,end_
↺angle=-20,radius=1cm] -- (0.5,-0.2) arc[start_
↺angle=-20,end angle=200,radius=0.5cm] -- cycle;

\draw[thick] (-1,0) arc[start angle=180,end_
↺angle=0,radius=1cm] -- (1,-2.5) arc[start_
↺angle=0,end angle=-180,radius=0.5cm] -- (-1,0);

\draw[thick] (1.2,-0.3) rectangle (2.2,-2.2);

\end{tikzpicture}
```

easty

I'm confused.

PROF. RUXANDRA MORARU

CSC FLASH !!!!

FIRST ONE SINCE FOREVER LOL

The Computer Science Club (CSC) is back in action! Find our club room at MC 3036/3037 to hang out! We have the cheapest pop on campus (that we know of). 50¢ for a regular can of pop is hard to beat, so pop on in, and have a refreshing drink while meeting many other cool, possibly like-minded people!

The Computer Science Club held its first meeting of 2025 last Monday (or a few Mondays ago by now) to elect new executive officers. Iris, the Chief Returning Officer of this term, hosted the elections to ensure a smooth transition of power between executive teams. Due to unfortunate date lineups, the hugely popular Sex Toy Bingo—hosted by WUSA, was due that night as well. Subsequently, insufficient people showed up to the election night, leading to club members fishing out random people from the DC library to participate in the election (with their club membership paid in full by the CRO). Thus, the election was able to finally start, albeit roughly 30 minutes behind schedule. After long and careful consideration from the club members, congratulations to Sourojeet, Enming, Alex, and Samir for being *legally* (no rules were broken) elected to be Prez, VP, AVP, and Trez respectively!

Recently, we collaborated with MathSoc and DSC to host resume reviews! The event was hugely successful with people constantly waiting outside MC Comfy to get their resume reviewed. Thank you to everyone who helped out including the resume critics, reviewees, and organizers.

If you want a talk on a specific topic, and know a professor, or grad student that would be willing to present a talk on it. Whether it be about trains, AI, or even the technology behind ICBMs, send an email to exec@cscclub.uwaterloo.ca with their name, and topic! We'll reach out to them and ask whether they want to give a talk, we'll sort out the logistics as long as they bring the topic!

The beloved Projects Program makes a return! Right now we're planning out how to run the Projects Program this term, but stay tuned, we'll be hopefully announcing it by Mid-March. For anyone who doesn't know, the Projects Program is an event where you can join as either an individual, or a team. Then you, and your team will work on a cs-related project of your own choosing throughout the term. Every so often, we'll run an event related to it, where we check in, and talk about our progress. Then at the end, we'll judge the projects, and award prizes to the winners!

Finally, we have plans to bring back the hugely successful ALT-TAB. The date is still TBD, but expect it to run around the time EoT (End of Term event) would typically run. If you don't already know, ALT-TAB is for you (yes you, the reader or anyone in general) to give a talk about any passion they are involved with. It is for you to share your ideas with your peers in a talk-like format! Be sure to look out for this upcoming event.

Our Beginning of Term event (BoT) happened on Wednesday,

January 29th. We had a massive turnout with no food remaining after the event. Thank you to the events committee for organizing this hugely successful event. Much was done at the meeting, including holding a ratification vote for our sus-admin, who sadly did not obtain enough votes at election night to be re-elected. That is no-longer the case... we now have a newly re-elected sys-admin. The previous terms amendment to our constitution relating to CSC's syscom and termcom management has also been ratified by members almost unanimously at BoT. So finally the CSC clubroom whiteboard can be used again without a giant, ugly, horrendous, unhandsome and bothersome block taking up most of the space. On a side note, y'all organizers need to get better at the snake game. No shot you guys are getting sub-20 on the snake game when you guys are the organizers. But thank you to everyone who showed up at BoT, and make sure you keep showing up so that your food investment gets returned.

Recently we got the good news that we can hold our first industry talk for this term! The excellent at Blackberry responded to our excellent External Affairs team to host a wonderful industry talk later this term. We are very pleased to be blessed (in the future) with their gracious presence. The talks will be hosted in March on the 25th, 26th, and 27th respectively.

Stay tuned for our next big event—trivia! It is going to be our flagship event this term with much fun anticipated. Not only will it be fun, it'll be partially academic, so you can brush up on your trivia knowledge while eating free food and winning cool prizes! The date is still TBD, so stay tuned on our club instagram for the date when it gets announced.

For anyone who liked CSC Circles in the past, it returned. The first meeting was held on February 7 this year! We had a solid turn out with many snacks like cheetos, doritos, and cookies. The Reps team had solid energy throughout the night hosting Jeopardy with the teams ferociously fighting for first place. Congrats to team worms for winning the trivia!

cscclub

UNTITLED

```
# TODO
sortByColumn(thingsToDo, "dueDate")
while(thingsToDo.length > 0)
{
    do(thingsToDo.pop());
}
sleep();
```

Antigone of Toronto

CSC FLASH — FUN

We've received funding to spend a little less than 40k on a server from SLEF (Student Life Endowment Fund, WUSA). 40k also happens to be enough to buy a car!!!! We'll buy the server at some point... We're currently considering buying a CSC (CS Corvette) to add to our arsenal of "why does CSC own this thing?"

Recently, on a cold morning, the NEAC (Non-Existent Activity Committee, EngSoc) came into existence and decided to vandalise the CSC door. They very rudely taped an ugly purple poster onto our beautiful club room door located at MC 3036 and left a cold-blooded letter detailing their disgusting activities. Even after a week, we are still in shock that such a tragedy occurred and we are looking for active ways to retaliate. Perhaps we shall get a M5 sooner than expected ;).

We are restocking and updating the CSC library, the most comprehensive MathSoc library. We need recommendations for new textbooks or books on C++, Rust, and RISC-V. If you haven't checked a book out from us yet, perhaps this article is your calling to visit the office and see our enormous and diverse set of books. Come and indulge in your love for books.

cclub

N FRIENDSHIP LANGUAGES

- Sending you emails with weird emoticons when I'm eight years old. These emails promise you that even though I'm moving away I'll teleport to your house through our dishwashers, it makes sense at the time.
- Putting temporary blue dye in your hair when you're over for a sleepover. We freak out that your parents might not like it and my mom helps us wash it all out. Our white towels are blue, and my mom still laughs about it.
- Scouring bookstores for Daphne Du Maurier books that aren't *Rebecca*, since you like her.
- Remembering the "2015: year in review" rap we made up for school, verbatim, almost ten years later.
- You texting me whenever you see an actor from *The Next Step* in the media.
- Taking four years to watch the first three seasons of *Dawson's Creek* long distance over facetime.
- Buying vegan desserts I see in the grocery store for you and you saving emergen-C packets for me.
- Taping candy to the window for your birthday and teaching you Russian sneezing rhymes.
- Proofreading each other's emails and making fun of you for schedule-sending them.

peacelovemath

RIZ AHMED V. RIZZ V. RIZ TEAM

THE RESULTS THAT NO ONE ASKED FOR (INCLUDING MYSELF)

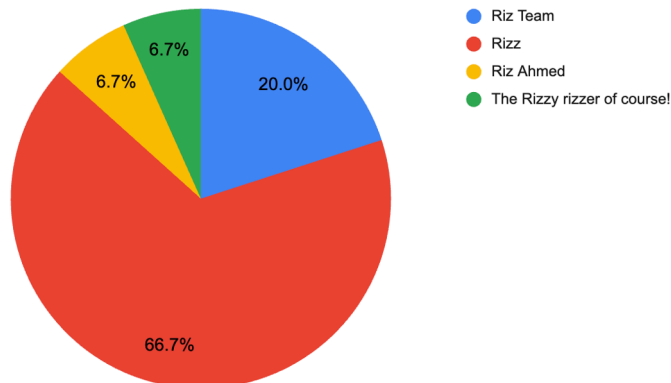
In **mathNEWS** 156.6, I asked the question "Riz Ahmed v. Rizz v. Riz Team. Who will win?." Was it a coherent statement that had a point? No.

Was it funny? Yes. But only to me on that specific day because final assignments and my thesis had me running on 3 hours of sleep daily for an entire week.

Is it funny to me now? No, I in fact forget why I had thought this was funny in the first place. I apologies for wasting the sacred pages of **mathNEWS** for this nonsense.

However, I have received multiple requests¹ to post the results. So here it is. Hopefully now we can move past this and forget it ever happened.

Who will win?



15 Responses were received. Rizz was the clear winner, garnering a commanding 60% of the vote, with the Riz team next in line with 20% of the vote. Riz Ahmed did not fare as well, receiving as many votes as the write in suggestion "The Rizzy rizzler of course!" (6.7%).

Lars Nootbaar

1. These multiple requests were from the same person repeatedly.



MMMM...math....NEWS....

gridCOMMENT 157.3

hey guys,

february is upon us and you know what that means. university of waterloo faculty of mathematics graduate school admissions are coming out. that might be related to this **gridWORD**, it might not. regardless, i don't know how many of you are prospective grad students here, but if you are, best of luck :3

last time, i asked you guys: if you could be any type of sea creature, what would you be? and you all said:

- Partly Cloudy: [meme image of helo fish] (lagoon triggerfish)
- Demosthenes: *Octopus*

- softboiledegg: *bony-eared assfish*
- Lars Nootbaar and aphf: *an Ogopogo*
- rijrya: *ghost nipper*

thank you Partly Cloudy for the image—a picture is truly worth a thousand words. please pick up your prize at mc 3030!!!! this issue's **gridQUESTION** is not a question, but an answer: "1.5". YOU, my dear **gridWORDer**, must come up with a **gridQUESTION** for which the answer will fit. good luck on your midterms and may the best **gridWORDer** win

warm regards,

spaggettiinhalers

ACROSS

- Virgule
- Payday extra
- First aid support service by Campus Wellness
- Eagle's nest
- Where one might predict the future — without a crystal ball*
- Shade
- Promising picnic forecast
- Kind of truck
- Taro root
- Tell tall tales
- Snowy ___
- Golden fungi
- Copy of a sketch
- Un ___ Loco
- Fancy tie
- Abraham's eldest
- Egg cells
- Where one might master two of math's most powerful techniques*
- Where one might get a degree that computes*
- "See ya!"
- Outlawed pitch
- Undersides

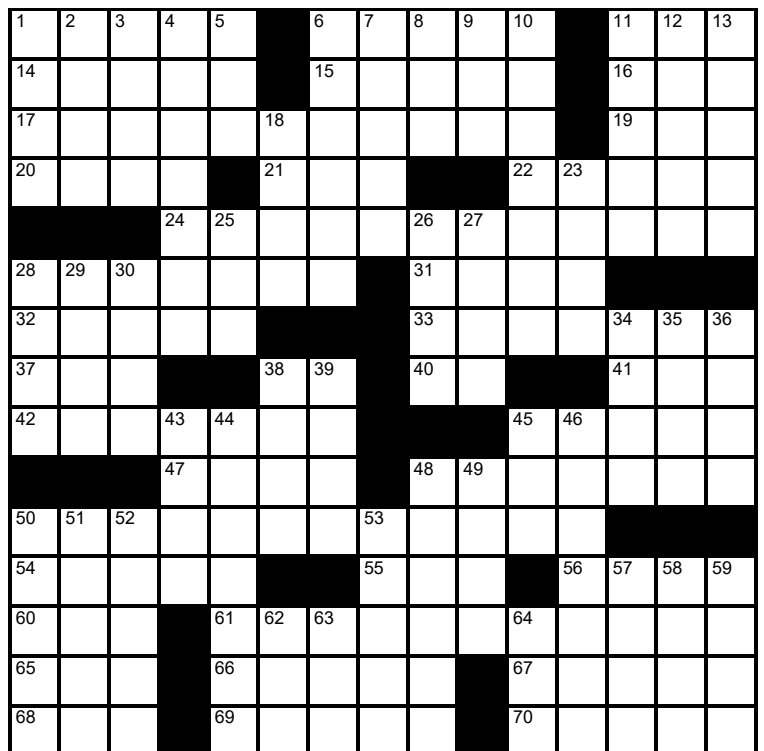
- Pocket problem
- Two-edged swords
- Related to radiology
- Flower spike
- Kimono tie
- Future's opposite
- A Bobbsey twin
- Pleasing to Emily Post
- "___ time"
- Must-haves
- Pelvic
- Any boat
- "Silly" birds
- Where one might go way beyond basic arithmetic*

DOWN

- Sound's partner
- Detective's need
- Uninteresting
- Wind from the Sahara
- Cut down
- Sheep talk
- Stable valence group
- Degree in math?
- Function
- Shrill cry

- Meanie
- Indian coin
- Midterm events, maybe?
- Exuberance
- Grab (onto)
- "Not Like Us", maybe?
- ___ Smiley, a.k.a. Awesome Face
- Flagmaker Betsy
- Town NNE of Santa Fe
- Invitation request
- Smoothie berry
- Equipped
- Ogler
- Marked down
- Lockup
- Creme cookie
- Flimsy
- Honking

- Health resort
- Vegetable oil source
- RNA sugar
- Battery contents
- Indian royals
- Where one might build models to save the world, no assembly required*
- Crowded
- Merchandise
- Part of SEATO
- Where one might get a degree that's highly significant*
- Pt. of M.I.T.
- Born abroad
- "Golly ___!"
- Service award



lookAHEAD

SUN FEB 16	MON FEB 17	TUE FEB 18	WED FEB 19	THU FEB 20	FRI FEB 21	SAT FEB 22
Reading week continues	Family Day	Reading week continues to continue ECE 498B Final Report deadline, for some reason		Reading week (day ???)		Reading week continues to feel like it just started
SUN FEB 23	MON FEB 24	TUE FEB 25	WED FEB 26	THU FEB 27	FRI FEB 28	SAT MAR 1
Reading week ends	mathNEWS 157.4 production night 6:30 PM, PHY 145		C&O Prof Talk 5:00 PM, room TBD	Polar Bear Day	mathNEWS 157.4 releases	Valentine's Day 2 Application to Graduate due

WANT TO GET INVOLVED IN THEATER?

IT WILL BE FUN!

KWLT is currently looking for teams of directors and stage manager pairs for their annual week-long theater competition from March 8th – March 15th.

You can find all the details at: kwlt.org

If you are wondering how fun this would be, I encourage you to read the article *Theater People Are Awesome* from issue 154.6.

I didn't even write it. A different set of mathNEWS denizens wrote an article about what a great experience they had.

BeyondMeta



LAST ISSUE'S gridSOLUTION

U	S	E	S		S	C	I	F	I		P	U	L	P
P	U	C	E		H	O	K	A	N		E	N	O	L
S	C	H	N	A	U	Z	E	R	S		A	L	G	A
	C	O	O	L	L	Y		S	I	X		O	R	C
W	E	I	R	S			F	I	S	H	H	O	O	K
E	E	N		O	G	R	E		T	O	U	S	L	E
E	D	G	E		N	O	E	L		S	M	E	L	T
					D	O	U	B	L	E	T	A	P	
B	O	R	E	R		S	I	G	N		S	W	A	B
A	P	E	M	A	N		N	O	T	E		O	B	I
S	H	O	A	L	I	N	G			A	V	O	I	D
S	I	P		S	P	Y		S	T	R	O	L	L	
O	D	E	S		P	A	N	H	A	N	D	L	E	R
O	I	N	K		E	L	B	O	W		K	E	N	O
N	A	S	A		R	A	C	E	S		A	N	E	W