

## “SINCE NO ONE READS OVER READING WEEK, WHAT SHOULD WE RENAME IT TO?”

Midterm season returns once again. Every term I think it won't this time, but weirdly it does. Good luck to each and every one of you, I hope you feel prepared, and if not, you have reading week to not study over. I personally only have two “real” midterms this term: two of my courses don't have any in-person exams and the third has three term tests instead. I unfortunately missed a good few lectures due to being ill and will be spending reading week catching up hopefully.

Besides the crowds of students waiting outside PAC, and the general mood of dread espoused by our student body about their respective exams, another constant of Fall term returns: it's cold. Two days in a row now I've gone outside in decently okay weather, only to have it immediately rain on me, which I've decided to take personally and start a cult aimed towards lobbying the government to outlaw Raining on Sara (text me to join). Rain in general is pretty important though, so it'd still need to be legal to rain, but I'm sure the clouds could like clear out in a given area above me. I'm not super excited for it to start snowing since traversal becomes a massive headache, but campus is really pretty after a fresh snowfall I think, and the festive season in general can be nice. I will miss sunlight dearly though, long days made Spring term so much more bearable.

Also, good news, I will not be taking a fifth study term in a row, thank god. I got extremely lucky and have a co-op position next term, which I'm very grateful for as I think another study term would actually have had me explode in lecture, which would've been messy and inconvenient. I'm also not sure if they do VIFs for spontaneous explosion.

Speaking of cults, concerning rain or otherwise, this issue has a lot of fun articles, including but not limited to ranking programming language cults, Real Journalism™, really good creative pieces, recipes, and a **mathASKS** with CS Professor Freda Shi. To the first years, this is really, really hard. Good job surviving thus far. You should be proud of yourselves, I am proud of you. Good luck again with midterms, you will make it through this. Do your best to actually study over reading week, but also please rest, you deserve it.

abstractED  
Editor, mathNEWS

derailed  
Editor, mathNEWS

SEASONED SLACKER	“Might as well cancel it and shorten the school term by a week” week
USMAN!	try to get ahead of your courses and get nothing done week
BSGCG	<i>freaking</i> week
AND0III	Stuck in waterloo because home is an airplane trip away and its way too expensive to fly there for a week week
VERDANIK	Week
PIXEL	guilt because you could be doing more but don't week
SEXY_SOFTWARE_BABE	Anxiety week
A	Relax Week
YAMNUSKA	Leaving Week
YUMMYPi	Baking week (pie, not weed. Although I guess you can do both)
YALEVOYLIAN	Anime Week
ERALOGOS	Writing Week
GAYA	dont kys youre too sexy week
NIKE	the spooky seven
APHF	Poor commitment to reading? Call that reading weak.
LARS NOOTBAAR	Weading Reek final answer
HEADPHONES97	there-is-joy-in-my-life-again week
FINEGEOMETER	Ostensible Break
HYPERLYNX	With midterms on every student's mind, I propose Dreading Week
DOLLAR STORE PERSON	“Pretending to lock in but instead sleeps in” week
NO PUN INDENTED	ketchup week
NOT A N*RD	I'm gonna study so h—oh it's over week

## ARTICLE OF THE ISSUE

Thank you, macinnes — we loved the detailed research behind [I Need You To Understand How Batshit Insane The Bus To Church Group Is.](#) Come to MC 3030 for a \$25 Conestoga Mall gift card.

Hell yeah. I'm like a blackBOX whisperer.

SARA NAYAR, mathNEWS EDITOR FOR FALL 2024  
ALONG WITH OWEN GALLAGHER, ISABELA SOUZA,  
RIVER STANLEY, DAVID TERESI, AND JUSTIN YOUNG

# mathASKS 156.3

FEATURING PROFESSOR FREDA SHI

**HEXA: I SAW YOU MINORED IN SOCIOLOGY, WHAT INTERESTED YOU IN THAT SUBJECT?**

The big stories in classical theories. I was initially fascinated by the theories of Weber, Durkheim, et al. After learning more about it (and more about linguistics and NLP), I'm now most interested in statistical methods and machine learning for sociolinguistics.

**ERALOGOS: I KNOW YOU LOVE COKE. WHAT ABOUT COKE ZERO OR PEPSI?**

Wow, you must have read my thesis, or at least the acknowledgment. I've recently been drinking more Coke Diet, but if I must choose between Coke Zero and Pepsi, I'll go with tap water.

**\_\_INIT\_\_: FAVOURITE WORD?**

Probably "Ludwig"? I started to work on NLP after reading the biography of Ludwig Wittgenstein, who significantly advanced the development of linguistic philosophy, and then named my cat after him. Now Ludwig, to me, means my lovely and smart kitty.



**(ATTACHING A PHOTO OF ME AND LUDWIG, ON THE DAY I RECEIVED THE JOB OFFER FROM UW!)**

**YALEVOYLIAN: WHAT KINDS OF PROBLEMS DO YOU STUDY IN COMPUTATIONAL LINGUISTICS? ALSO, PANCAKES OR WAFFLES?**

Computational linguistics is sometimes interchangeable with natural language processing but focuses more on the scientific perspective of language. For example, why do some languages have so many morphological features (tense, number, gender, etc.) while others don't? What are the underlying rationales for many linguistic phenomena? We address these questions

by combining computational modeling, corpus analysis, and psycholinguistic experimentation.

Waffles, but Wildberry pancakes (in Chicago, see next answer).

**MOLASSES: ANY RECOMMENDATIONS FOR PLACES TO VISIT WHILE IN CHICAGO?**

Everyone will probably see the Art Institute, and I wholeheartedly recommend that. For restaurants, try Nella Pizza e Pasta (in Hyde Park, on 55<sup>th</sup> Street), and Wildberry!<sup>1</sup>

**MOLASSES: WHAT DREW YOU TO RESEARCH GROUNDING IN LANGUAGE MODELS? ALSO, WHAT IS GROUNDING IN LANGUAGE MODELS?**

By grounding, I mean learning to process the primary data source X (in most of my settings, language), seeking supervision from other data sources Y (e.g., vision) that have positive mutual information with X. The intuition is quite straightforward: for historical reasons, most work in NLP and linguistics only focuses on text; however, language is never next in isolation, and we interact with the real concrete world—why not use this rich information to build a better machine language learner?

**MOLASSES: ANY ADVICE FOR CS 486 STUDENTS?**

Read some recent papers, and do not hesitate to ask questions!

**DICK SMITHERS: WHAT'S A BIG MISCONCEPTION ABOUT AI YOU SEE THESE DAYS THAT YOU WANT TO CORRECT?**

It's probably not misconception, but I find "alignment" is becoming overloaded. There's been a convention in NLP that "alignment" means finding the corresponding words in mutually translatable sentences in two languages, and generally, in machine learning, "alignment" is used when referring to finding concrete correspondence between two data sources; however, when people talk about "LLM alignment" nowadays, they mean the general problem of having LLM output meet (align) people's expectation. I'm not sure how this discrepancy started, but it's always good to first define "alignment" whenever you start talking about it!

**LEAH: WHAT'S ONE THING YOU WISH YOU HAD MORE TIME FOR?**

Coding. I still have some time for coding now, but I wish I had more time for it.

**LEAH: WHAT'S THE MOST INTERESTING PLACE YOU'VE EVER VISITED?**

Newseum,<sup>2</sup> a museum of news. It just gave me an extremely different experience from reading everyday news. Unfortunately, it's been permanently closed since 2019.

**🧠 : WHAT WAS THE LAST THING YOU READ OR WATCHED THAT REALLY MADE YOU THINK?**

Emil Cioran’s books, especially *The Trouble with Being Born* (De l’inconvénient d’être né), and *A Short History of Decay* (Précis de décomposition). It’s hard to describe the feelings I had when reading his books—maybe it’s the joy of thinking with him and seeing vague and messy ideas in my mind become words, sentences, and articles.

**☕ : WHAT IS THE BEST PLACE TO GET COFFEE ON CAMPUS?**

Anywhere in DC with an espresso machine (like some labs). I occasionally bring the ground of my favourite bean<sup>3</sup> from home, and I’m happy to share!

1. <https://wildberrycafe.com/>
2. <https://en.wikipedia.org/wiki/Newseum>
3. <https://bluebottlecoffee.com/ca/eng/product/hayes-valley-espresso>

# N HEHEHAHA JOKES

These are my top 5 favorite jokes to tell people when I’m sad. **Disclaimer:** If we are friends don’t read this article because what if one day I want to tell you one of those jokes. Ok, you could read this article, but then you have to pretend not to know the answer to the joke if I tell it or you have to promise to forget. If we are friends and you read this article you should just smash your head on the desk after so you forget these jokes, ok? Ok. Cool.

1. What do you call an alligator in a vest?

An investigator (hehehehehe)

2. Did you hear about the strawberry who got into a car accident?

It got into (had had had had)

3. Did you hear about the actor who fell through the floorboards?

He was going through (lo!lo!lo!) boards

4. Did you hear about the bomb that went off in the cheese factory?

The only thing left was da-brie (hehehehehe)

5. What is a marsupial’s love language?

Kodaly time (hehehehehe)

Now I’m sure that at this point you’re thinking, wow these are the best, most creative jokes I’ve ever heard. Tell them to your friends! You can even tell them to me and I’ll probably laugh anyways. But I’m extremely easy to tell jokes to. I’ll laugh at anything. Ok bye!

methori

# SO I’M BACK

## mathNEWS IS MY PERSONAL JOURNAL RIGHT?

Oops I was gonna write something funny but I ran out of time so instead I’m gonna wax nonsense while I’m on the GO train to work.

So I’m back. But not really. I split my time between being a working adult with a totally real job<sup>TM</sup> two hours away<sup>1</sup> from here, while also living like a highschooler at my childhood home about an hour from here. And then I’m also a student, right here, when I read the copies of **mathNEWS** my roommates leave on our dining table.

A couple of months ago, I was also a bright eyed newcomer to a brand new city, eight hours from here. A working adult, sure, but my job and my focus on being the dazzling city’s new girl makes it feel very different from the much more grounded work life I have right now.

All of this is to say that I currently feel like I am on the cusp of four very different lives. Some of them kinda suck after I’ve gotten used to my new but not too newfound freedom (seriously who wants to go back to high school), but some of them are both enticing and soon-to-be the rest of my life, if I choose it. And, one of these lives is going away soon, maybe I could linger and let the last dregs of it float around at the corners for as long as I can keep them around, but for the most part I think there’s only so long you can hang around university before people start telling you to move on.

So my home and my friends and my work and my studies and my hobbies and my free time are constantly changing, not completely but noticeably, not in the span of years or even months but almost day to day, as I move between two hours from here, one hour from here, and here. And parts from my life eight hours from here come knocking on the door, asking how I’m doing from so far away, asking when or if I’m coming back. And parts from two hours from here ask if that part will become all the parts in six months.<sup>2</sup> And parts from one hour from here asks why I don’t feel all the way there, whether I’ve already left that life behind, asks what I’m looking for now. And here, parts ask when I’ll be leaving and moving on, telling me about where they might go, knowing we’re all in states that that are close to the end.

And I feel like there’s not one but four of me, moving between lives, slipping into old and new routines, unable to stabilize or choose for the life of me, mourning lives I haven’t even lost yet, anticipating and dreading all the options I’m so lucky to have.

Ah crap I got to get to work.

Not a N\*rd

1. All distances are done in public transit time because that’s how I measure my life now
2. I don’t think I can tell my boss to read this article for my answer

# RANKING PROGRAMMING LANGUAGE COMMUNITIES IN HOW GOOD OF A CULT THEY WOULD FORM

*IF YOU THINK ABOUT IT EVERYTHING REALLY IS JUST A CULT*

## 1. RUST

Though newcomers, the Rust cult has quickly gained traction. “Rustology” has a decent ring to it, and I’m sure the community secretly has plans for world domination; for carcinization is real in biology, and no doubt in software too. They sing requiems of the second coming of their lord and saviour, Ferris. 10/10 for strong recruitment.

## 2. C

An old sect, perhaps older than Christianity itself, the Society of Crossed Cs secretly run the world, yet to the layman, their presence is quite unknown. Their members are the elites, the top dogs of the world—rich boomers who lived and survived the dotcom bubble and bought Canadian real estate in the 60s. 8.5/10 for world domination.

## 3. PYTHON

The Pythonic Pan-global Group is a band of loosely connected smaller cults, targeting specific members in backend, frontend, big data, AI tech bros, and anything else in between. Though membership is diverse, their beliefs are convergent with reverence towards snakes and coding hymns that sound eerily like regular English. A member of the PPG may stare you down in silence, but one must be wary that their whitespace is semantically significant. 8/10 for sneks.

## 4. RACKET

The Cult of Racket is one we are all too familiar with. They may claim to be radical free thinkers, yet bind themselves with parentheses. Nearly 90% of global bracket exports can be attributed to the Cult of Racket. A lesser-known fact—in the year 146, prophet Brad Lushman, of the Society of Crossed C’s, once tried to wipe the Cult off the map, to “expose the lies of Racket.” The Cult has since laid low, yet echos its influence in every bracket ever typed. 9/10.

## 5. JAVASCRIPT

The JavaScript Pantheon has grown too big to become a cult. After obtaining mainstream coverage from news outlets, and a mismanaged plan by upper management to increase acquisitions, the modern JavaScript Pantheon buckles under its own weight, with members corrupting the main tenets as they see fit, contributing garbage to their NPM-icon. Most in the cult have fallen out of love with it. 5/10.

## 6. .NET

The DotNET Division is a cult manufactured by Microsoft. 3/10 for being a barely disguised attempt at vendor lock-in.

## 7. MACHINE LANGUAGE

Very few know of the Bit Sect. Their members speak in tongues, and to the untrained ear it would almost sound like morse. It is rumoured that members of the cult train for decades, gaining mastery over machine—some have sighted beautiful and terrifying anime robots crossing the horizon, mumbling cultists in tow. Whether this is truth or merely propaganda is yet to be seen. 7/10.

## 8. HASKELL

The Haskellians and the Cult of Racket share a mutual understanding, though having chosen to forgo the parentheses for monad, an irreparable rift has formed, never to be closed. The Haskellians devote themselves to purity, with many cleansing rituals and huge archives, full of research dating back thousands of years. Fun fact: “A monad is a monoid in the category of endofunctors” is their slogan, having accidentally been leaked to the outside world and subsequently normalized. 9/10 for tidiness.

## 9. TYPESCRIPT

An offshoot of the JavaScript Pantheon, similar to how the Romans stole the Greek Pantheon and changed a few names around. From a business perspective, the TypeScript Pantheon is in much better shape—recruitment is strong, churn is low, and cult member satisfaction is high. Many choose to defect from the flailing JavaScript Pantheon, and the rites of indoctrination include celebration—for new members finally regain control of their own lives and can perhaps finally find someone of their own type. 9/10 for breakoff groups.

## 10. FORTRAN

The Fortran Four have not stood the test of time. Dwindling membership has left the cult standing on its last knees, most of its members having been wiped out in the manifest destiny campaign of the Society of Crossed C’s. Their last bastions remember the good old days of 58, and focus their efforts nowadays from recruitment to remembrance. Perhaps one day the Fortran Four will cease to exist, yet they for sure will never be forgotten. 7/10.

andoiii

## N REASONS WHY

- I got into ECE
- I accepted my offer

i\_decay

# CELESTE STRAWBERRY JAM BEGINNER LOBBY RATINGS

## PART 2/3

Continuation of the reviews from last time! Onto the yellow beginner maps.

### IF MY 'DRIVEWAY' ALMOST DID YOU IN...: 4/5

The main mechanic is very simple but fun. The map is themed on an iconic falling block from the prologue of the base game (hence the map name), and it works pretty well. I only have a small nitpick, which is that the theming is generally nothing new since it uses the exact same assets from the base game. That doesn't detract from the gameplay itself though, so this map still gets a good rating from me.

### CASSETTE CLIFFS: 3/5

I really like the visuals, but cassette block (rhythm based) gameplay isn't my favourite. I also found it a little disorienting how the music speeds up and slows down from room to room to match the ideal pace for the disappearing blocks. Lastly, and this is the biggest reason why I rated this map relatively low: the spikes are often just really hard to see against the background. I can't even count the number of times I died in my deathless runs to not seeing the spikes.

### OVER THE CITY: 2.5/5

The gimmick of this map is that it takes away your dash, which personally I don't think amounts for very interesting gameplay, especially at beginner difficulties. In higher difficulties there's more varied tech that you can do (e.g. neutrals). In this map, though, even with the midair jump crystals, your movement feels very limited. This still would be fine, but the map goes on for so long that everyone I've talked to has said they've gotten bored halfway in. Couple that with the fact that you can cheese the entire deathless challenge by collecting dozens of midair jumps in one of the first rooms by doing the same inputs for a minute straight, and this map just doesn't turn out to be much fun.

### TROPOSPHERE: 4.5/5

Enough negativity, let's talk about a really good map now! Troposphere primarily uses dream blocks as the main gameplay element, which as I mentioned in part 1 are really fun. So of course the gameplay is going to be fun in this one. The really standout aspect of this map though, which I haven't talked about yet, is the music. Nearly every Strawberry Jam map has custom music, and in my opinion the music for this map is really fucking good. The only complaint I've seen is that the dream block variant that gives you two dashes is hard to differentiate from the normal blocks, but I honestly don't think that's that big of a deal.

### POTENTIAL FOR ANYTHING: 4/5

This map is an homage to VVVVVV, a fantastic and beloved platformer about flipping gravity that I have never played. So while I unfortunately am not really the target audience for this map, I can still say with confidence that it is disorienting but reasonably fun. I think one of the rooms is a little too precise for a deathless challenge, and the visuals are a little bare, but I think I can let that one go since it's on purpose to reference the original game. Pretty good overall!

For the record, I wanted to flip the rating upside down, but apparently there's no good unicode text for an upside down "4."

### MIDNIGHT SPIRE: 3.5/5

Like, it's okay, I guess? I just didn't find it that interesting, honestly. The gameplay is kinda just the same throughout and it didn't hold my attention very well. I admire that it flows well and has decent visuals, but something about it (maybe the music?) is slightly boredom-inducing.

### PAINT: 6/5?????

How is this map so good??? I can't gush over it too long because of the word limit but my goodness it's beautiful! And the story too—I've done long creative projects before, and I *felt* the burnout and perfectionism and trying and trying and hoping that if I put enough in I could make things good enough and just ignoring that it wasn't healthy. It really did speak to me. And while the map was long, the gameplay was varied enough to be engaging the whole way through. I've heard people say it's hard to tell what you can land on, but personally I never ran into that. Honestly, this might be the best map in the entire mod.

### ROSE GARDEN: 4/5

This map references a mechanic from Super Mario Galaxy, and the music quotes Gusty Garden Galaxy pretty much directly. I found some of the moves kind of annoying to pull off; some of the throws missed for no particular reason and the roses were really drifty and hard to control at times, but in general it was fun. Not much else to say about this one.

### TREEHIVE: 5/5

Is it a surprise that another 5/5 map has dream blocks as a mechanic? But this also gets points for being super satisfying. Instead of dying if you hit a wall while traveling through a dream block, you bounce off it, and there are also blocks that move together when you land on them or grab them, and everything moving together is so so satisfying. Good music and decoration wraps this up as another flawless map, nothing more to say.

THE SQUEEZE: 4/5

It's short but that's alright. It doesn't overstay its welcome. This map comes in with one idea in mind, aligning blocks to fit into pixel perfect gaps. It pulls it off perfectly, and ends it before the mechanic becomes too tired. It might be the easiest deathless challenge because of its length, but that's alright. I just think it doesn't reach the peaks of enjoyability that some of the other maps that I rated higher did.

hyperlynx

## APPRECIATION POST FOR THE THISTLES THAT GROW THROUGH MY BACK PATIO

They're indestructible. Every so often the landscaping company comes along and cuts them down, and they just grow right back up again. They don't give a shit. Oh, you wanted to sit here and read a book? Tough shit, I was here first.

I don't know how they do it. There's no crawl space under the patio, so I can't imagine the soil is particularly nutritious, and the sunlight probably only passes through the slits at noon. Where are they getting this energy? Keep in mind—these things get massive. Some are taller than me.

Look at this one. Somehow it managed to grow through the slit in the patio, then through *another, intersecting slit* in the bench on top of the patio. What the fuck??



THIS CREATURE WILL OUTLIVE US ALL

\_\_init\_\_

## BENEATH THE PAVEMENT

You say you've been on the road.

You haven't truly been on the road.


I started a young environmental scientist, just like you are now. Eager to see the world. So when the opportunity to do field research came along, I jumped at the chance. What one to comes to learn quickly, is that to see things in the field, one spends more time driving than seeing anything.

To bring the lab truck from one drumlin to another could take hours. To do an entire synoptic survey of a watershed could take days. I had my hesitations from the long hours and menial work; But I had to start from somewhere, right? But when the opportunity came to come on full time after I graduated, I didn't pass it up.

Eventually the long hours of travel through rural Ontario begins to wear you down. Years of continental breakfasts and shitty Tim Hortons lunches built on me. I never awoke on the same bed. I was home so seldomly, I started to store my laundry in the trunk. My mood rose and fell with the price of diesel. A haze began to build on me the more I drove. I started to go days without talking to anyone else. Sometimes, I couldn't even remember where my house was.

Eventually, you start to see things others can't.

It started 4 years into the job, when I was out driving near Wilberforce looking for rock outcrops. It had been a long day, the Super 8 in Midland hadn't washed my towels from the day before, and I had found a hair in my farmers wrap. I had turned off the road into the Foodland to pick up a pre-made Salad for dinner, hoping for an early bedtime afterwards. That's when I first saw it. As I went through the produce section, I saw little flashes at the corner of my eyes...



Want to keep reading?

Subscribe today, and get access to the articles Lars Nootbaar could not complete due to time and creativity constraints for **\$2.99 CAD/month!**

[Subscribe](#)

Get access to exciting articles such as "Lars Nootbaar's Plan For World Peace" and this one today!

Lars Nootbaar

This was an attempt to write an article during a field trip when I had no internet, but I ran out of time and creative energy to finish. Complete articles will resume when such time and creative energy is restored. Best, Management.

# mathNEWS netWORK 2

GOOD MORNING MATHIES!

I'M YOUR ABELIAN CHAMELEON, BACK WITH ANOTHER THRILLING EPISODE OF mathNEWS NETWORK.

IN RECENT EVENTS, GEESE HAVE STARTED MIGRATING SOUTH FOR THE WINTER, BUT SOME UNFORTUNATE SOULS HAVE BEEN LEFT BEHIND?

\*SOB\* EVERYONE ELSE IS FLYING SOUTH TO THEIR \$100/HR CALI CO-OPS.

THAT'S ROUGH, BUDDY. HOW BAD IS IT?

YET I'M STUCK IN WATERLOO AGAIN. I'M STARTING TO DOUBT IF I'LL EVER MAKE IT IN LIFE.

\$65/HR AT BLACKBERRY. I'M A DISAPPOINTMENT TO MY ENTIRE FAMILY.

BREAKING! SOMEONE HAS ORDERED A COMPLETELY REASONABLE MEAL FROM LAZEEZ?!

WHAT? IS IT WEIRD TO NOT WANT INSANE STOMACH PROBLEMS FOR THE NEXT THREE DAYS?

YOU GUYS ASK FOR EXTRA GARLIC AND TEN LINES OF SPICE, AND THEN BLAME THE RESTAURANT FOR SCREWING YOU UP.

SHE GOT NO LINES OF HOT SAUCE?

LIGHT GARLIC?

THERE'S A SALAD IN THAT?!

FUCKED UP. THAT'S FUCKED UP.

I'VE NEVER PUT THAT LITTLE SAUCE BEFORE. IT WAS TERRIFYING.

MY MUSCLE MEMORY KEPT WORKING AGAINST ME. I TRASHED THREE MEALS AND MY MANAGER SAID IT'S COMING OUT OF MY PAY. PLEASE. NEVER AGAIN.

AND NOW TO mathNEWS-CHAN FOR THE WEATHER.

THANK YOU, mathNEWS-CHAN!

40% CHANCE OF MORNING SHOWERS! IF THOSE DON'T HAPPEN, CONSIDER BRINGING A HAZMAT SUIT, TO PROTECT YOURSELF FROM ENGINEERS.

AS THE FALL SEASON COMES TO A CLOSE, AND THE MIDTERM SEASON STARTS PICKING UP, EXPECT A DELUGE OF BLOOD, SWEAT, AND TEARS. ESPECIALLY THE LATTER.

OUT HERE IN THE WATERLOO REGION, WE'RE SEEING A HIGH OF 30 AND A LOW OF NEGATIVE 10. STANDARD CANADIAN WEATHER.

SEVERE WEATHER ALERT

HERE AT THE VELOCITY 5K SEMIFINALS! WHAT EXCITING STARTUP PITCHES WILL WE SEE TODAY?

SOMETIMES, ENTREPRENEURS HAVE STUPID IDEAS. IN A MOMENT OF IMPAIRED JUDGEMENT, WE MIGHT THINK: WHAT IF OUR NEXT STARTUP HELPS OTHER STARTUPS START UP?

AN IDIOT LIKE JOHN. HE'S DESPERATE TO BE THE NEXT STEVE JOBS. IN HIS INFINITE WISDOM, HE COMES UP WITH A FUCKING ACCELERATOR, THINKING IT'S A NEW, CLEVER IDEA.

THAT'S WHY WE'RE MAKING JOLT, THE AI ACCELERATOR ASSISTANT. WE REPACKAGE EXISTING LANGUAGE MODELS WITH A FANCY FRONTEND TO SCAM DUMBASSES LIKE JOHN.

OUR TOTAL ADDRESSABLE MARKET IS \$800 BILLION.

MOST OF US ARE SMART ENOUGH TO DISMISS IT. BUT THERE'S ALWAYS THE OCCASIONAL IDIOT.

HE'S TOO STUPID TO ACTUALLY GET IT ROLLING, THOUGH. HE NEEDS HELP.

READING WEEK IS COMING UP! WHAT ARE YOUR PLANS?

READING WEEK?

MORE LIKE LYING IN BED AND WATCHING YOUTUBE SHORTS WEEK.

IT'S CALLED READING WEEK BECAUSE IT'S THE FIRST TIME I'LL BE READING MY NOTES.

THEY LEAVE BREAD-CRUMBS. THEY SHINE A LIGHT AT THE END OF THE TUNNEL. A PROMISE OF SALVATION. FINALLY. A BREAK.

YOU READ YOUR NOTES?

SNAP LIKE THAT, IT'S GONE. THE SWEET NECTAR OF DOING FLUCK-ALL DISAPPEARS INTO THE OCEAN OF TIME. DESPERATE MEMORIES OF A TWO MONTH SUMMER CLAW AT YOUR SKULL. THEY AMPLIFY THE SUFFERING TENFOLD.

WELL, THAT'S ALL I HAVE FOR TODAY. BACK TO YOU, mathNEWS-CHAN!

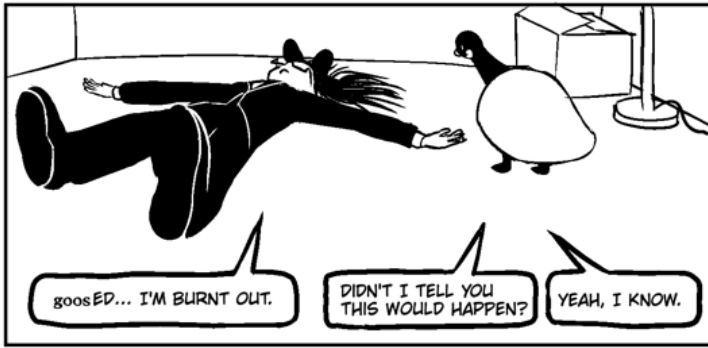
AREN'T WE ALL!

THANK YOU, mathNEWS-CHAN.

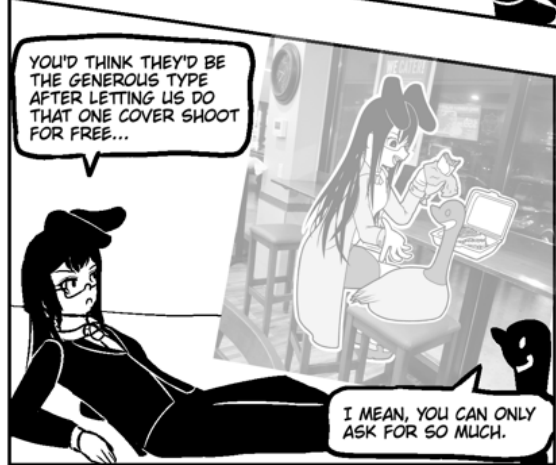
mathNEWS-CHAN, I FEEL LIKE I'M SLOWLY GOING INSANE.

WELL, THAT'S ALL, FOLKS. SEE YOU NEXT TIME ON mathNEWS netWORK!





DIDN'T I TELL YOU THIS WOULD HAPPEN?  
YEAH, I KNOW.



TO BE CONTINUED...

# I NEED YOU TO UNDERSTAND HOW BATSHIT INSANE THE BUS TO CHURCH GROUP IS

Bus to Church is at it again with their chalking the campus and it's driving me fucking insane because they actively teach hate and they've got genuinely the most batshit insane takes I've ever seen displayed proudly on their website for all to see. And if you've ever participated in any online space, you know that's saying a lot. The other on-campus publication I contribute to (which I will not name) doesn't like it when I have opinions, so I'm making a desperate attempt through **mathNEWS** to get people to understand just how absurd and potentially dangerous this group's beliefs are.

Before I fully get into this, I need to make some disclaimers. First of all, I absolutely do not encourage harassment of any kind. A lot of the awful takes I'm going to talk about come from one specific individual in the church community—the pastor—but that does not mean it's okay to harass him or anyone else because of the things I'm sharing here. The second one is that this article is not a condemnation of Christianity in general—just the specific church I'm about to talk about and the hatred they spread. Consider this a content warning for bigotry of all kinds.

Having gotten that out of the way, let's talk about Trinity Bible Chapel (TBC), which is responsible for the Bus to Church program (which offers a free shuttle bus to their Sunday services to Waterloo and Laurier students) and its associated chalking.<sup>1</sup> The most popular sermon on their YouTube channel condemns homosexuality, immigration, non-Christian religions, pornography, the concept of multiculturalism, and of course abortion all at once (which, if nothing else, did make sourcing for this paragraph very easy).<sup>2</sup> You may have encountered their street evangelism team uptown or by Laurier if you're ever around those areas on Fridays or Saturdays. If you've heard of the church itself, it may have been for their crusade against the lifesaving public health measures imposed by the government at the height of the COVID-19 pandemic.<sup>3</sup> Their pastor, Jacob Reaume, actually seems to brag on the church website<sup>4</sup> about the \$230,000 in contempt-of-court fees the church racked up for continuing to host large unmasked in-person gatherings after repeatedly being ordered to stop.<sup>5</sup>

This gives me a convenient segue into talking about the pastor's blog, which is what finally drove me to write this article. It's published on the TBC website and is updated sporadically, with maybe five or six posts scattered throughout the year. The pastor says pretty much everything you might expect based on the last paragraph: teaching children about gender identity is “one step away from pedophilia,”<sup>6</sup> immigrants are the equivalent of “an apocalyptic army,”<sup>7</sup> and a woman is “the weaker covenant partner” in a marriage.<sup>8</sup> He seems in recent years to have become somewhat fond of a certain slur for trans people I'm assuming I can't say in **mathNEWS** and also, interestingly, denies that it's a slur while still using it in a derogatory manner.<sup>9</sup> It probably wasn't entirely healthy for me

to read through the blog, but it was one of those cases where you can't help but watch the train wreck.

The pastor's blog has a lot of awful takes on it from classic bigotry to opinions that are just baffling, but the one that takes the bullshit cake is a post called “Against Equal Opportunity.”<sup>10</sup> This post uses the word “wokeness” in its first sentence and just gets worse and worse from there. The pastor argues that the different socioeconomic circumstances people are born into is God's design and trying to improve someone's circumstances is heresy. He suggests that Canada should require any applicants for public office to take a religious test and to come from a family that has been “naturalized in Canada for a certain number of generations” to defend against “alien ideologies.” Next, he suggests that the vote should be restricted to “property owners who receive no government handouts” and “one per household.” So only colonial white Christian Canadians should be able to run for office and only rich, fully abled married people (presumably the man of the household) should be able to vote. Spectacular. Then he gets into the absolutely batshit stuff with the sentence “not all forms of slavery are immoral.” What the actual fuck. Who can be enslaved “ethically,” then? Homeless people and those with drug addictions, of course! The pastor complains about the audacity of people to be homeless and then says “vagrants and addicts could be rehabilitated as slaves under ethical masters.” I can't make this shit up. It's so messed up that I honestly don't even know how to defend against it. You'll have to make your own assessment of how horrifying this is.

I'm not necessarily saying that people shouldn't be allowed to post certain opinions on their own websites. Censoring people for their opinions is a very slippery slope, and being categorically against it means that people have to be allowed to express opinions you disagree with. My concern with the hatred that TBC spreads is that I believe it has the potential to be actively dangerous. In a blog post from 2023 about a new statue of Hindu deity Hanuman being built on Hindu temple grounds in Brampton,<sup>11</sup> the pastor goes on another rant about his beautiful white Christian country of Canada being destroyed by multiculturalism. Along with incredibly tone-deaf statements about white Christians supposedly being the “original” residents of Canada and another use of the t-slur for no apparent reason, the pastor outright says “Hinduism is rank idolatry, and its fruit is filth and human suffering.” Spreading bigotry like this is dangerous on its own, but the article concludes with the statement “repentance also includes reducing monkey-man idols to ash and rubble.” Can that be interpreted any way other than actively encouraging violence and vandalism?

I could go on—there's some climate change denial in the mix as well<sup>12</sup>—but I've made my point. Just please, when you see the chalk on campus, remember what values and opinions it endorses.

If anyone reading this is looking for a new place of worship, I highly advise against getting on that bus.

### macinnes

1. [https://www.instagram.com/trinitybiblechapel/p/CyVwGxDJ4/?hl=en&img\\_index=1](https://www.instagram.com/trinitybiblechapel/p/CyVwGxDJ4/?hl=en&img_index=1)
2. <https://www.youtube.com/watch?v=SfXfgeEEuKE>
3. <https://kitchener.ctvnews.ca/timeline-trinity-bible-chapel-loses-court-challenge-over-covid-19-restrictions-1.5281356?>
4. <https://trinitybiblechapel.ca/our-latest-fines-my-last-covid-blog-hopefully/>
5. <https://kitchener.ctvnews.ca/trinity-bible-chapel-served-motion-for-contempt-order-lawyer-says-1.5283256>
6. <https://trinitybiblechapel.ca/protect-your-children-from-public-school/>
7. <https://trinitybiblechapel.ca/towards-a-biblical-view-of-immigration/>
8. <https://trinitybiblechapel.ca/what-does-makes-her-commit-adultery-mean-matt-532/>
9. <https://trinitybiblechapel.ca/a-gay-bar-with-free-math-lessons/>
10. <https://trinitybiblechapel.ca/against-equal-opportunity/>
11. <https://trinitybiblechapel.ca/bramptons-monkey-man-god/>
12. <https://trinitybiblechapel.ca/the-word-of-god-and-climate-change/>

## MY EXPERIENCE AT FASS — A VARIETY SHOW

On Friday Oct 4<sup>th</sup>, I was honored to attend the variety show hosted by FASS as a **mathNEWS** writer. FASS is a theatre company affiliated with University of Waterloo, and the variety show is performed by many university clubs, including UW Improv, ACE, Warriors Band, the Film Club and the JamNetwork.

At the beginning, I was surprised to find that the show was at AL 113 instead of Theatre of the Arts. It was a relatively small place, but the stage work was flawless. The light and sound effect was quite good actually! I appreciated the tech team's effort of turning a regular lecture room to be a production-ready multi-functional stage.

Overall, I really enjoyed the rizz here. It was a close-knit community, and it seemed that the performers and the audience had known each other for a long time. They vibed together to make the show amusing and memorable. Although I am not a theatre person, I also recognized some familiar faces from going to UW Audio Video Expo last term, from KWLTL performances, or from *Immolation* played by UWTheatre. It was great seeing these actors being active on stage. They love what they are doing!

Personally, improv performance was still new to me. These plays were performed by UW Improv (@uwimprovisation on Instagram). I enjoyed how dramatic the story can be. From apocalypse ruled by the turkeys to thanksgiving cooking shows, the actors need to react fast to the everchanging scenes and their newly-acquired characters. It often left me curious on how they learn to do it. Improv is also a challenge to the memory. If I were put on the stage, I might have many moments like "What's going on?" and "Wait, what was my role again?"

Speaking of other clubs and their performances, Warriors Band (@wlooband) was amazing. I haven't watched a Warriors game yet, so I haven't experienced their live performance on the battlefield. I heard that they will perform on major soccer or basketball games. Besides drums and snares, they also have

a team of brass instruments. UW ACE's acapella (@uw\_ace) was also very enjoyable. I went to many UW A Cappella EOT previously, and it was nice hearing their new songs. We have a huge A Cappella base in UWaterloo. ACE, The AcaBellas, The Musical InterDudes, The Unaccompanied Minors and The Water Boys are the big names out there. Besides EOT, every A Cappella group also has their own performance schedule. Go check it out!

UW Film (@uwfilmclub\_) brought us two films to the show. *Moon King* is a hilarious masterpiece that I rewatched multiple times. I will leave the roughcut video link here<sup>1</sup> for our **mathNEWS** audience to enjoy. Share your thoughts, and I will be happy to listen. We also got three beautiful solo acoustic guitar songs brought by UW JamNetwork.<sup>2</sup> JamNetwork is one of the most active clubs out there. They have many workshops, performances and social events every week. I am a fan of music theory and composition, and I really enjoyed their bi-weekly lectures/workshops on music theory. Go check out their event schedule, and I am sure that you will find an event that suits you.

We have so many talented actors out here. Although graduated, I still enjoy coming back to the campus and see what the brilliant people can achieve. It was great seeing many university clubs became active again after COVID. Thank you, to the many execs of university clubs and student organizations, and yes that includes you our beloved **mathNEWS** editors, for building such an energetic and vibrant community. Keep on keeping on.

eralogos

1. [www.youtube.com/watch?v=OGCmEaoiHzQ](https://www.youtube.com/watch?v=OGCmEaoiHzQ)
2. <https://jamnetworkuw.ca>

**mathNEWS**

# I SAW THE PEE PEE POO POO MAN

ATTENTION TTC CUSTOMERS: EVERYONE IS BORN WITH A CHIP IN THEIR BRAIN

[Warnings: spoilers, graphic content, sexual content]

I was in my first year of university when the Pee Pee Poo Poo Man struck. Late in November of 2019, he entered several university buildings carrying a bucket during his attacks and, upon finding an unsuspecting victim, he would raise the bucket over their head and release a liquefied mix of urine and feces. Such attacks took place at University of Toronto and at York University, so students at the University of Waterloo were terrified of a similar event closer to home. And, in my opinion, rightfully so—with a name like “Waterloo,” how could a feces-flinging fiend forgo such a feat? But perhaps I overestimated both his sense of irony and the authorities’ sense of schadenfreude; soon after his third attack, he was apprehended by police and, as per the most recent article I could find, was out on bail before his court date in February 2020.<sup>1</sup>

Imagine my surprise, then, when I realized earlier this year that a film would be made about this paradigm-shifting event. One to be made by Toronto locals themselves, no less. I was intrigued yet skeptical, but when tickets went on sale later this year, I was willing to let go of the admission fee to see what would come of it.

On 26 September 2024, I saw *The Pee Pee Poo Poo Man* at a soirée in a packed Toronto theatre. Displayed at the admission line was the original bucket prop used in the movie, along with a certificate of authenticity guaranteeing its future value. Fans came with his signature hard hat and bucket, some of which appeared full. Audience members casually made potty jokes and wondered aloud if this was another entry into a “Toronto cinematic universe.”<sup>2</sup> Writer-director Braden Sitter welcomed us, “Hello, pee pee poo poo people.” The atmosphere was electric.

The film begins with a quotation from anthropologist Ernest Becker, “We are gods with anuses,”<sup>3</sup> and a disclaimer about its historical accuracy that notes we “don’t know if this man is real.” Indeed, in this film, Sitter seeks not to document the reality of our perpetrator, but to build a personal mythology around him and to explore how his actions ripple through his urban environment. No more than a minute later, its first chapter opens to our main character and shit slinger Miguel (Rishi Rodriguez) lying on the couch, VR headset on his eyes, masturbating to lizard porn.<sup>4</sup>

From his couch, Miguel begins his long arc through the collective imagination of the city’s residents, beginning first as a flyposter before descending into madness, all framed in the backdrop of Walter (Spencer Rice), a curious but in-over-his-head reporter, looking to get the insider scoop on Miguel’s story.

It is unclear what exactly drives Miguel to this end. Is it the casual disdain or disrespect he encounters in the outside world? Is it a psychological problem? Or is it simply the act of

living in Toronto that pushes him to don the hard hat? Sitter never makes Miguel’s motivations clear, but his actions and outcomes speak for themselves. This, if nothing else, should indicate the kind of film that will follow. Our main character suffers through lucidity, paranoia, and mania. Imaginary voices and divine callings fill his mind, CIA agents infiltrate his television set and his bathroom stall, and the staple he gunned in his scalp now picks up radio signals. With this cacophony Sitter attempts to wrangle a coherent story around Walter’s interview, but in truth it is not worth trying to wrap your head around whatever plot there is; just let it be dumped on you.<sup>5</sup>

*The Pee Pee Poo Poo Man* is a viscerally entertaining watch, containing allusions to MK-ULTRA, toilet-based escapes, CGI dinosaurs, and a scene of what could be blasphemously described as a baptism. A highlight of the film, of course, are the innumerable feces attack scenes. Perpetrated on various actors playing Toronto passersby (and some local stars), Sitter and his production team spared no expense in filming these, explaining that melted No-Name-brand chocolate ice cream was used to simulate the bucket’s contents. Some may worry they get repetitive. In truth, seeing these poo attacks never got old.<sup>6</sup>

Focus, however, is placed not only on Miguel, but on the various vignettes of Toronto life. In doing this, Sitter seeks to capture the mood of the city during these real-life attacks, and in these moments *The Pee Pee Poo Poo Man* shines. Normal conversations between normal people, sometimes worrying about becoming one of Miguel’s victims, but often just living their lives. Of course, these moments are sometimes interrupted by a brown slurry hurtling towards the actors’ faces. Yet this need not always be the case; one particular scene near the end of the movie is dripping with anticipation for a feces attack that never comes. Instead, we are treated to what one audience member described as an exchange that draws upon the essence of Toronto. Perhaps that is what this film is best: a distillation of what it means to be Torontonian and the ties that bind the city’s residents together.

In short, the movie’s shit, but in a good way.

verdanik

1. Ngabo, Gilbert. (2020, Jan. 16). “Case of man accused in Toronto feces attacks returns to court.” *The Toronto Star*.
2. Chris, an audience member, mused that this film could join the likes of *The Incredible Hulk* (2008), *Run This Town* (2019), and *The Man From Toronto* (2022) in such a universe.
3. Apparently there’s some deeper meaning to this quotation, but I don’t think anyone cares about that.
4. The filmmakers claim it was commissioned specifically for the movie.
5. During a post-screening Q&A, one audience member claimed to have watched the movie while tripping. Had I been less dedicated to sharing this experience with my readers, I might have joined her.

6. Perhaps that says more about your dear reviewer than it does about the movie itself.

Disclaimer: Following the film and Q&A session, the filmmakers ran a raffle in which I won a small prize. Winners were selected at random and my selection in no way influenced the opinions expressed in this article.

## HELP, MY CODE IS SCREAMING AND SO AM I

I can't... I can't stop hearing them. I don't know how long it's been—days, weeks? Time's a blur, it's all blurring together and my head... my head won't stop. I can't focus on anything anymore, not even on the code, not on anything that makes sense. All these assignments, midterms, projects... they just keep piling up. Each deadline just screams at me, whispers at me like it's something alive, creeping into my mind, crawling under my skin.

The voices... they're louder now. They weren't always this loud, you know? At first, it was just this faint murmur, like someone talking across the room. I thought it was just stress, just... just normal, right? People get stressed. Everyone here is stressed. It's Waterloo, it's CS—this is supposed to happen. But it's not stopping. It's not stopping! Every time I close my eyes, every time I try to sleep, it's like there are people arguing in my head, pulling me in different directions, pulling me apart.

I don't even know if I'm making sense right now. I can barely string together a thought without something cutting in, like another voice, another part of me I don't recognize anymore. What is this? Am I going insane? I haven't slept in... in... I can't remember. I tried melatonin, coffee, all the things you're supposed to do. But they keep telling me to stay awake. They tell me the deadlines are coming, the bugs are waiting, the code is broken, I'm broken. I'm falling apart, and I can feel it, but I can't stop.

And... and the worst part is, I think they're right. Maybe I'm not cut out for this. Maybe this place is breaking me down, turning me into something I don't even recognize. I can't do this anymore. Why is it so hard? Everyone else is surviving, thriving even. You hear about the co-op placements, the interviews, everyone getting their life together, and I'm just... stuck. Just stuck in this loop of madness, hearing the voices, feeling the panic crawl through my veins.

I tried talking to someone, but how do you even explain this? How do you say, "I think my brain is eating itself alive, but I still need to pass algorithms next week"? They'll just tell me to take a break, but what if that's not enough? What if the break doesn't stop the voices? I'm scared it's too late.

Maybe I've already lost myself.

Segmentation fault (core dumped)

## OCTOBER IS FOR FANFICTION

It's notorious if you know it and even more notorious if you don't! October is fanfiction Christmas, because this is the month of prompt challenges. It's such an important month, that I'm letting the normies know just in case this stumbles upon the eyes of someone who *gets it*.

First of all, a lot of people think that fanfiction is just sex! The truth is, only *part* of it is sex. Do I write sex? No, but I commend the people who do, because it makes them happy, so why shouldn't they? Forget about it being October. It's *whumptober*, *inktober*, *flufftober*, and even *kinktober* for the freaks. What is whump? It's when you beat the shit out of your favourite characters but then (maybe) add some comfort at the end! What is fluff? It's the most heartwarming, tooth-decaying sweetness your eyes will ever feast upon. Maybe you don't write, but you draw? It's inktober for you. Kinktober is exactly what you think it is. And why is it so important? Because EVERY DAY in October there is a prompt! And the writer writes the daily prompt, and then the reader reads the daily prompt and leaves a nice comment or something. And it's just great. So if you're still debating whether or not you should read fanfiction, stop lying to yourself and get an AO3 account. All you have to do is google it, it's so easy, it literally can't get any easier.<sup>1</sup>

nike

1. <https://archiveofourown.org>

## INTERCONTINENTAL BALLISTIC MISSILE ON YOUR FRIENDS

1. e4, d5
2. Nf3, dxe4
3. Ng5, Nf6
4. d3, exd3
5. Bxd3, h6
6. Nxf7, Kxf7
7. Bg6+, Kxg6
8. Launch an RT-2PM2 «Topol-M» cold-launched three-stage solid-propellant silo-based intercontinental ballistic missile to attack black's remaining pieces

gg ez lmaO

BananaCat



# profQUOTES

**AMATH 231: ZORAN MISKOVIC**

“ The symbol has an official name: nabla. Not blahblah.

**AMATH 271: MIKE WAITE**

“ I have one last thing to tell you... a bunch of sigmas.

**AMATH 351: FRANCIS POULIN**

“ 2 times 2 is 4; minus 1, that's 3.

**BIOL 266: ANDREW DOXEY**

“ There's a package out there... that works.

**BU 288: RITA PERSAUD**

“ Self actualization. Like people who made it in life: those big CEO guys, like Jeff Bozo.

**CO 342: JIM GEELAN**

“ I am Lord Voldemort.

**CO 431: OLIVER PECHENIK**

“ You should be worried, but you can usually do it. You should always be worried.

“ Let's just remember in the back of our minds that we're kinda sad.

**CO 456: MARTIN PEI**

“ For this time only, we will say that the earth is flat.

**CS135: PATRICK ROH**

“ You can share this with a friend, I have no friends.

**CS 145: TROY VASIGA**

“ You are all leaf nodes, as you have not had sex. I however, am not a leaf node.

“ A human will be reading this. Or a grad student, which is approximately human.

“ I hope everyone clapped when you hit puberty.

**CS241E: ONDREJ LHOTAK**

“ Haskell is like if you want the power of C but with a sane language.

**CS 245: LILA KARI**

“ I'm going to tell you the secret to life: if you don't know what to do with a problem, try proof by contradiction.

“ ...and I wonder what your social life is like.

**CS 245E: SHAI BEN-DAVID**

“ I'm losing all of my assets today.

**CS 246E: BRAD LUSHMAN**

“ You don't want a lot of friends. They know all of your secrets and they can betray you.

“ I hesitate to call throwing things a responsible way of dealing with things. We're talking about programs here, not people.

**CS 341: ÉRIC SCHOIST**

“ If you recognize this, by sheer luck or by using the online encyclopedia of integer sequences...

**CS 343: PETER BUHR**

“ *[Pointing to the word atomic]* This does not mean radioactive—this comes from ancient greek, “at” meaning deep-fried and “omic” meaning running shoe.

**CS 346: JEFF AVERY**

“ You're lucky I like you. You can have my baby goose.

**CS 360: RAFAEL OLIVEIRA**

“ I'm sorry, guys. You should take off marks on my evaluation. “He lied to me.” But I lied to you multiple times, for the sake of clarity.

“ You guys studied math, right? But now you're computer scientists, which means you're smarter. And lazier. Those things go together. You become smarter to become lazier.

“ You're an AI bro and your boss at NVIDIA comes up to you in his leather jacket. *[One half of the class laughs, the other half sits there. He points to the half that's sitting there]* Oh, you're true complexity theorists. You don't know the CEO of NVIDIA.



**CS 466: SEPEHR ASSADI**

“ Do people even read books?

“ We will be going over an algorithm that asymptotically gets the optimal runtime for any given problem  $P$ . Please don't do this in future algorithms courses you take. In this course if you use it... I cannot fail you, but I will do something to you.

**CS 488: STEPHEN MANN**

“ If you really want a boost in performance, turn back-face and front-face culling on.

“ What do you call someone who speaks three languages? Trilingual. What do you call someone who speaks two languages? Bilingual. What do you call someone who speaks one language? American.

**EC 120: TAMMY SCHIRLE**

“ *[Draws trapezoid on board]* So we need to find the area of this odd shape, how are we going to do that? *[Crowd thoughtful silence]*

**GER 101: BARBARA SCHMENK**

“ Rice is uncountable.

“ It's like I'm milking you for German words.

**MATH 136: MICHAEL RUBINSTEIN**

“ Professor: Now this is a proof by magic.  
Student: Will this be required on the midterm?  
Professor: Yes.

**MATH 137: SACHIN KOTECHA**

“ Because this is not calculus down the street at Laurier, this is calculus at UW... *[Writes definitions on board]* *[Crowd oohs]*

**MATH 249: OLIVER PECHENIK**

“ You count the small ones and see “ooh 14” and “ooh 42,” and then it's always the Catalan numbers.

“ We will call it Fred. Fred the Theorem.

“ You should have made a big Pascal's triangle and hung it in your dorm room so that you can stare at it every night.

“ This is the complete graph, I think  $K$  stands for complete.

“ Just wait until you learn that every caterpillar is a cactus. That'll give you something to talk about at Thanksgiving.

“ I see  $Q_n$ . I think  $Q$  stands for cube!

“ If you think of something dumb, this is the counterexample.

**MSE 541: MARK SMUCKER**

“ For most people, that's what it is—you go through life and you don't get wealthy.

“ They see it and say, “Oh my gosh, the United States is controlled by the deep state.”

“ Smoking's not good for your lungs, by the way.

**PLAN 387: ROB FEICK**

“ *[While introducing a new assignment]* It's either going to be wonderful or we'll crash and burn, but we'll do it together.

**PMATH 367: BLAKE MADILL**

“ The only clopen subsets... *[Student groans]* You thought about chickens didn't you?

“ Be self conscious.

“ I like to remind *[Matt Kennedy]* that he's the second most famous mathematician from Red Deer

“ Shout out to Alaoglu, may his unit ball be always compact.

“ I never say Snew to his face, but I love it. I'm jealous.

“ My job is awesome because Steve New paved the way.

“ A lemma after a lemma, making lemma-nade.

“ Do we use the Axiom of Choice? No! It makes me uncomfortable, so we'll use Zorn's Lemma, which is equivalent to the Axiom of Choice.

“ Professor: “Look at this, 20.48, madness.”  
Student: “Engineers.”  
Professor: “Yep, this is why bridges fall down.”

“ The explanation is less clear, I like my first false explanation better.

“ Me and my team have agreed to murder PMATH 451.

“ You are once again living in  $\mathbb{R}^3$ , you savage.

“ We love you! We love you! Now be quiet.

“ I am ending class early today because I need a burger.

“ Be self conscious.

“ I'm sure that in some dark alley of topology a stupid counterexample exists.

- “ I love the term Snew. I wish my name had such a good contraction on WatIAM.
- “ It is impossible to hurt [Steven New]’s feelings.
- “ Steve and I teach six courses per term each, so it is nearly impossible to get through a degree without having at least one of us.
- “ I easily shook hands with 1000 people [at the Ontario university fair]. A few wanted to do pure math, and another 997 wanted to do CS.
- “ You could include the empty set in the basis, but that’s kind of like hiring a dead person and putting them on payroll.

PMATH 446: BEN WEBSTER

- “ Elements of the Jacobson radical got no rizz!

PMATH 450: LAURENT MARCOUX

- “ ...which back in tha hood we refer to as  $\nu_1$ .

PMATH 451: PAWEL SARKOWICZ

- “ That’s what Waterloo does to you. It makes you ill-defined. I’m sorry.

PMATH 451: MATT KENNEDY

- “ M.

PMATH 453: NICO SPRONK

- “ I used axiom of choice everywhere, so my results are all garbage.
- “ Modulo a white lie, this completely characterizes these spaces.
- “ If any of you are physicists, you might hate me... I don’t care: I’m tenured.

PMATH 945: JASON BELL

- “ There’s a topologist—he’s dead, but he was alive...
- “ I remember his father was on a German talk show... His father is probably dead too.
- “ Because I’ve made it easier to die.
- “ So we’re halfway there, but we’re not living on a prayer so we’ll do this.
- “ We can steal from our past selves.
- “ That was our stealing lesson.

PMATH 950: RUXANDRA MORARU

- “ I’m confused.
- “ I want to be precise... Ok well, whatever.

PMATH 465: DOUG PARK

- “ [Discussing adjusting grades] I’m not going to curve it, I’m going to line it.

STAT 230: JAMES ADCOCK

- “ Oh dear! Something has gone terribly wrong! Please have mercy!

STAT 240: YINGLI QIN

- “ The blue ball is CS.

STAT 372: RILEY METZGER

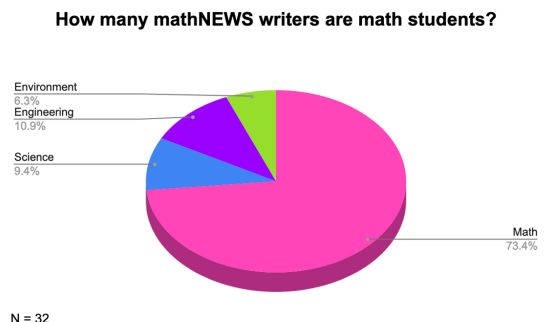
- “ mathNEWS has decided that I am not funny. Only the funny people get quoted and I never get quoted.

## HOW MANY mathNEWS WRITERS ARE ACTUALLY MATH STUDENTS?

ILLUSTRATED IN THE FORM OF A PIE CHART

In the last issue, I read mathgeek’s article on favourite Non-CS/Math courses mathNEWS writers had taken, and a few course codes had me raising my eyebrows. BME 182? What are mathNEWS writers doing taking first-year engineering courses?

There is a possibility that this was simply an odd case of course exceptions, but my curiosity probed me to inquire deeper. So, this week, I went around during prod night and interrogated all our writers in order to answer the question:



There are many imposters among us.



# HACK THE SOUTH WINNER'S POV??!?!?

*ALTERNATIVE TITLE: HOW MUCH OF AN AWKWARD DEGENERATE CAN I GET?*

If you've walked around the math buildings in the first week of class, you may have seen an intriguing poster containing a MS Paint version of the Hack the North logo, a brief spiel of a "true" hackathon for HTN rejects, and a QR code. Intrigued by both the bold stance and the free food, I decided to scan the code and show up. Boy, was I in for a surprise.

My first thoughts were the satirical, cobbled atmosphere of the room, with the despondent "Komm Susser Tod" playing in the background, the dinner à la Costco pizza, the organizers finishing their opening slides, and the iconic, pixelated logo projected on the DC 1351 screen. The opening ceremony was quite similar, with a tinge of existential crisis achieved by "why?" on the second slide, a history of hackathons founded by Mr. Hackathon as part of the CIA (related to Project MKUltra?), and a speech given by Joe Biden himself. Yes, he even said "Jill, the voices are talking again."

The first challenge introduced right after had two puzzles, of varying difficulty. The first started off with a JPEG of scrambled letters in four different colours and a Wikipedia article hint, while the other was a riddle of an object "dividing all that is smooth," like your mind and even planets. I started with the first puzzle and immediately pulled out my Canva whiteboard, ready to colour pick every letter. The Wikipedia article was about the Burrows-Wheeler transform, an algorithm used to rearrange letters in data compression. The general idea is that you input a message with an end-of-file character, then find all cycled sequences of the original message, arrange them alphabetically and your output is the last column. Using this idea, I tried to group the characters with the same colour to make a message, but was stuck on how to order the letters. After another hint, instead of noting each colour in RGB, I converted them to HSV, which gives a number for hue, saturation and value each. In each category, the value would greatly vary, so I sorted them in increasing order. If there was a variance in hue too, I think I sorted by that first, but don't quote me on that. Anyway, I performed the inverse transform (simply adding output of length  $n$  at rightmost column, sorting that column alphabetically, then repeat to the left until you've done it  $n$  times and the input being the horizontal message with the end-of-file character at the end) on these four groups. I ended up with two pleasantries, the cryptic comment "the last group needs an image provider" and a seven-character code. After another sly hint from an organizer, I looked up an Imgur image with the code at the end of the URL. The photo was just a plain photo saying "cardinality," which was the final answer. For reference, this took me from 8pm-11pm Friday, then 10am-4:30pm because colour picking twice for 60+ characters, only to write a wrong value, combined with understanding the transform, and messing up in my Excel file while doing the inverse transform takes a while.

As for the second part, it took me 10–15 minutes after the first one to get "hemisphere", which was quite easy.

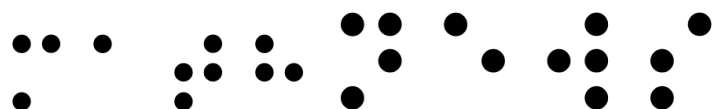
As interest dipped over the weekend, Challenge 2 was cancelled and Challenge 3 was started only for it not to be tested since I was the only participant to show up for the closing ceremony. The part of Challenge 3 that was completed was certainly interesting though, as we had to design a bot that tried to gain the most upvotes while having to upvote other posts to post ourselves. My major contribution to my group was almost exploiting the upvoting system until that got patched. In other words, I basically did nothing for Challenge 3, but since Challenge 1 was the only completed challenge and I think we were the only ones to finish 1a, theoretically I carried my team to victory?

Anyway, it was certainly an interesting and thought-provoking experience. Although at first glance, it just seems like a joke (which it definitely is), Hack the South satirically comments on application decisions, buzzword projects done to put on your resume, and the potential bias of sponsorship in the hackathon world. This is definitely shown through the emphasis on the ideal, meritocratic hackathon that HTS asserts to be and even the organizers' own thoughts. However, buzzword projects and sponsorships drive interest and allow hackathons to be hosted, or else they fall into disorganization like HTS, so I personally think there's some missing nuance here. As for the application decisions, I can understand the frustration, especially since HTN and the university feel very linked with the banners hung on E5 and the university posting about HTN for their benefit. I think what's more important here is transparency in the hackathon acceptance process in general, as I at least know what the company wants in a job application. However, I don't think this was ever intended to be seriously considered as criticism. I mean, one of the organizers is a **mathNEWS** editor AND there was a "your mom" joke snuck in here; need I say more?

Another thing that stood out was the lack of diversity within this small sample, as I was the only woman for most of the weekend. Of course, this is a very niche "hackathon", but it does highlight the gender disparity in hackathons and STEM in general. Speaking of demographics, out of a poll from the HTS discord, primarily participants were in younger years in CS, Math, or Engineering, so there is a hint of merit to this point here. TBH, I certainly felt uncomfortable being the only woman there, but that might also be my imposter syndrome due to my low self esteem unrelated to my gender. Also, this was my first hackathon... so that likely played a part too.

Regardless, I did enjoy my time and might show up to HTS3. 5.5/10 overall, 6.9/10 for degeneracy.

Dollar Store Person



# THE LAND THEY CALL GESPE'G: 3/3

## THE HALL

Picture a Hall. Not a hall, but a Hall. Capital H. In my imagining, it's one well-maintained deep room, with black-clothed tables set throughout. The walls are soft white, there's few windows, but there's pictures instead: each one a wintry landscape—in some, there's even a deer. In one corner of the Hall stands a well-stocked fridge; above, the ceiling tiles are rectangular with light panels poorly hiding fluorescent tubes. You can book it through the Hall's modern website. They accept credit cards.

Let me tell you about the Hall in the land they call Gespe'g.

When my family visited the Gaspé peninsula this year, we knew that before the Appalachians would set us free, we would have to visit the Hall. I'd never been, but in my father's descriptions, it was legendary. *The Hall*, home of many a Gaspésian occasion. *The Hall*, backdrop of countless summer days. *The Hall*, the beating heart of the Atlantic coast.

When the day comes, my family—mom, dad, uncle, and I—pack into a car and depart the beach town of Percé. With the ocean air cramming into our ears, we ascend a seventeen percent grade into the Appalachian mountains. Cresting a hill, we swerve, pass under a reddish rockwall one hundred metres high, climb another hill, dive into a valley of pines, and Percé, at last, sets us free.

Through level fields, we drive. Town after town pass us by, until we approach the town of the Hall. Yet, once there, all I find are empty shells, land where my grandfather's general store once stood, and a gas station so old, it lacks self-serve. No legendary community heart. No Hall.

We drive still. Stores fade, replaced by lawns of unkempt wildgrass, old motels cozy and decaying, and isolated art galleries I'll never fathom the viability of. With civilization fading behind us, we finally find the Hall.

At the town's furthest edge, a brilliant chapel spire rises from the Earth, with a silver-plated roof to capture shards of the distant sun. Time-weathered displays paint its pointed windows, and metal crosses bind its solid doors to their frame. Nothing mars the chapel yard, save for an old graveyard, and a lonely, ash-coloured wooden barn.

Rust coats the barn's tin roofing, which thinly hangs over the barn's only door, found in the vertical middle of its two-storey wall. Amid sides of long-greayed wood, an uneven ramp of sun-baked planks snakes up from the grass to meet it. Below In its sealed lower level, shadows play among long-abandoned horse stables, withering in the dark. I was lucky we were here for the chapel Hall; we wouldn't be locked in with them.

The chapel was closed.

In the land they call Gespe'g, the Hall isn't a building in the center of town.

It's not even the chapel on the outside of town.

It's the time-forgotten barn behind it.



Who walks with you? We had barely visited the Hall before our appointment came to leave it. Finally, we had to confront our reason for being there. My parents, my uncle, and I walk down the moss-encrusted ramp to the clearing path. At its end, the trees open to a grassy field, wherein stand a hundred vertical stones.

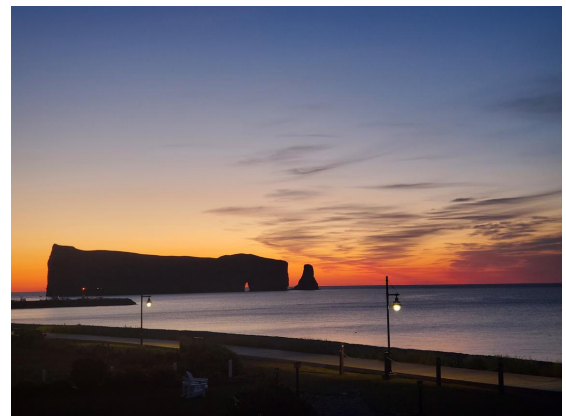
Who walks with you? We arrive at the cemetery, and amid the cars at its side, Ontario license plates shine lakefront blue. Some forty people gather at the entrance, some returning home, some who'd never left. Forty people, all of whom either answered the call to travel *eighteen hours* for a fifteen minute ceremony, or who heard about the passing of a grandfather who hadn't lived in the Gaspé for almost *fifty years*, and still elected to attend.

Who walks with you? We enter the cemetery, and within, a car awaits. Family sits in the backseat, people who had once invited my family into their home, now too ill to stand. Time stuns; how dare it caress this untouched place? How can the hands be so weak, that welcomed me into their home just one visit ago? We pass by stones engraved with the names of loved ones I've known. Our congregation grows in number, memory walks between us.

Who walks with you? We stop, and before us stands a knee-high gravestone. On its face, letters spell my family's shared name. Forty relatives gather, spirits fill the gaps among them, and my great-aunt holds me closer than ever.

Who walks with you?

Home.



The ceremony is over in barely fifteen minutes. In ten minutes more, someone has made my father laugh. My great-aunt has let me out of her arms, and my mother and I search the cemetery for odd gravestones and unfortunate names. Soon, all attendees have driven back to the Hall, leaving my uncle, mom, dad, and I, to walk.

In moments, we ascend the ramp into the Hall.

Polished wooden floors stretch the length of its single room; at its end, sunlight streams through the window into a white kitchen, stocked by relatives with plates of sandwiches, fruits, and desserts. Above them, a painted sign celebrates the Hall's hundred year anniversary: nineteen eighty-five. Tables pack the room wall-to-wall, each with white plastic tablecloths spread atop. Each one seats my family: those I've never known, those that raised me, those I've only heard tales of, all clustered into this single room in the chapel barn. And all around, wood-panel walls rise in pale yellow, a particular shade my grandmother's family has used for generations that *to this day*, we paint the spaces we care about the most.

Long before the arrival of the Europeans, the Mi'kmaq people called this land Gespe'g. In their language, the word means End. Land's End. In that Hall, I could believe it. Heaven, in my estimation, is this. An old, pale yellow room, hand-constructed, with simple furnishings and homemade foods. Those I love cluster around every table, and laughter fills the air. My family is with me, sunlight streams through the windows, and outside, mountains and waves roll across the distant horizons.

molasses

## DOING JOURNALISM FOR mathNEWS: FASS!

So **mathNEWS** was invited to watch the FASS play and having had good experiences with FASS in the past, I decided to go.

TL;DR: It was totally worth it.

The show was a bit of an act by FASS + a lot of extra performances in breaks by the following UW associations:

- JamNetwork
- Warriors Band
- Improv Club
- Acapella Club
- Film Club

All the performances were super entertaining and even though I got in for free (journalist privileges hehe), I definitely would not mind paying the mere \$7 fee to watch that because it was definitely worth more in terms of entertainment.

## N REASONS WHY YOU SHOULD WATCH ALIEN STAGE!

*IVAN IS ALIVE, HYUNA IS MY GODDESS AND MIZISUA IS MY UNIVERSE*

- intriguing story of aliens taking over earth and alien-raised humans being forced into a singing survival show
- well written
- peak music
- unique and developed characters
- jaw-dropping art and animation
- room for interpretation
- fun to analyze and spiral over!
- tragic yuri
- doomed yaoui
- toxic straights
- written and directed by the most power couple to ever power couple vivinos and qmeng
- ~~tragedy~~ super heartwarming!
- CUREs depression

clematis

## N THINGS TO AVOID AS AN AO3 ENJOYER

- Do not read a Spider-Man and Batman crossover fanfiction in 2021.
- Do not reach the end and read all the works in the "Works inspired by" list.
- DO NOT become a fan of one of the authors who write said spinoffs.
- Do not explore r/uwaterloo months before applying to Waterloo and search for advice.
- DO NOT click into the reddit profile of accounts you think give helpful tips for the program you want to enter (tip: don't do this in general).
- DO NOT discover that the profile you clicked into is the same author you read on AO3 through their r/Fanfiction flair.
- DO NOT ACCIDENTALLY ATTEND THE SAME CLUB THEY ARE IN!
- Most importantly, don't have friends who expose the previous seven things to the author during the club meeting.

Once you have successfully avoided these things, go on AO3 and have fun reading/writing!

Tuesday

# IN(WA)TERLOODE

## DON'T LOOK AT ME (ZUTARA WATERLOO FANFIC PT 4)

katara's entire world plunges under ice when she walks in.

for one quicksilver second, she genuinely thinks she's dreaming. or hallucinating might be more accurate, given that her assignment was submitted under an hour ago and aang was snoring away on their couch upstairs. she'd fallen face-first into bed, but when sleep refused to take her too, she'd gotten back up grumbling about her frankly embarrassing pile of laundry. now—*well*. now laundry's the last thing on her mind.

(what's been on her mind: a head and a head pillowed across white fur, outstretched through red-lit dark with laughter glowing bright enough to dispel it. her own ringing out to match, *her* hand on his cheek. and later; the broken line of his mouth, the bent curve of his back as he walked away.)

her fingers go cold first, then hot as they curl into a fist. she'd know the back of the figure sorting clothes anywhere, and it makes heat prickle along the nape of her neck. of all the places she's been looking, she never expected him here—in her building, in her *laundry room*, blocking her favourite washing machine with a dollar-store hamper squarely in its space.

katara throws her shoulders back and stomps right over, noting that his hamper is barely half-full just as she shoves it out of the way with her hip. she drops her own laundry basket and watches it thump to the ground with gorgeous, gratifying weight.

only then does she turn to meet a golden gaze, scorching in its search for hers. katara raises her chin and remembers what her mother taught her. “you.”

she can see the way his tongue sweeps behind his teeth in silent debate, lips tightening before he relents with a shrug. “me,” he agrees, but it's a stranger who looks away, brushing a hand by his ear. he does it the same way he does everything, unconcerned and borderline contemptuous, and she hates that she cares enough to recognize it.

(that whatever scraps of information she's managed to piece together about this guy, they're as significant as the dust bunnies and forgotten lint decorating the tiled floor.)

katara stares as he messes with his clothes, stunned to silence at the sight of him outside dp, doing something as simple as laundry. in *sweatpants*, no less. the everyday chores of an everyday life—except that's the opposite of what the whispers say.

not that she cares. not that they've been right about finding him at icon, anyway.

“so?” she says, watching as he avoids giving her a second glance. it comes out louder than she intends. “what are you doing here?”

that snags his attention, brow arching as he gestures fluidly at his *all-black* load of laundry—the few bits of red she does catch blend into the colour flooding her vision. “i figured it was obvious.”

“not that,” she hisses, “what are you doing in *here*?”

something in his expression gives way, and she finds what she's been scanning for—a glimpse of the boy from a library stairwell. zuko blinks at her, and she wonders idly if he'd adjusted his hearing aid properly before he opens his mouth and shatters whatever understanding they'd shared before.

“i live here.”

katara barks out a laugh. “get out.”

the gut reaction breaks something between them, a crack in the ice sealing over quick as a snap. “pretty sure access to this place is part of my lease. unit 203.”

*of course*. she wants to fall over and start crying hysterically. “302.”

she might almost say he's smiling, if she didn't know everything that came from his mouth was a lie. if she were two weeks younger.

katara wants to kick his hamper over. better yet, she wants to use the squeeze theorem on his *neck*, wants the corner faucet to activate in her distress and drown him where he stands. she wants to grab his shoulders and shake him until the truth comes out, all of it, in all of its searing, splintering agony—everything he's used to keep the knife sharp in her back, to fan the flames tearing through her stomach each time she thinks of him.

(like going to dana porter and claiming an empty landing, like searching mc's hallways for a head of perfect hair, like rolling to the other side of her pillow and staring into the dark to find him gone.)

she *wants* to say he's smiling, and that hurts more than anything else he could've done.

“can you just—say something?”

“what, that i'm glad we're neighbours?” the attempt at amusement falls flat, and zuko sighs. “i didn't think you'd want to hear what i have to say.”

she lied. sincerity hurts most.

“does it matter?” she says, turning to fiddle with her washer. “that's never stopped you before.”

“i didn't think you hated me, before.”

katara nearly swallows her tongue. it's her turn not to respond, and she hears zuko's second sigh all the clearer. the door to his machine closes, and she startles at the sight of his hamper full once more, every item inside dry as ash.

"as requested," zuko murmurs, a long wave of his hand to the empty room before he reaches for his hamper. "it's all yours, princess."

had she wanted that?

"wait," she blurts. he pauses in the doorway, eyes shadowed over his shoulder. the air itself feels wrong, heavy with humidity and hollow with hurt, every part of this puzzle

dependent on a million tiny factors—going out with everyone over the weekend, spilling her coffee when toph asked aang about other engineers for his next project, tiptoeing past sokka's door at five in the morning—and she knows that things will never happen like this again.

like they're disjoint by their very nature, and this could be it.

"i'm sorry, katara," he says softly. at last. but zuko walks away again, door swinging shut in his wake, and that really is it.

that's it.

big a

## COMET ALERT COMET ALERT

Surprisingly, **C/2023 A3 (Tsuchinshan–ATLAS)** isn't the name of Elon Musk's next child. Instead, it's a once-in-a- (long period of time) opportunity to marvel at the cosmos, and witness something that would have scared out ancestors shitless.

Who is **C/2023 A3 (Tsuchinshan–ATLAS)** (I'll call him Chris from now on to save words)? He's a comet! Specifically, Chris is a big snowball who has recently decided on a change of scenery from the Oort cloud, the big cloud of rock and debris at the edge of the solar system. He was first spotted in January 2023, and has made good use of the time, plummeting towards the Sun at a maximum speed 67.33 kilometers per second. After his closest distance with our star on September 27<sup>th</sup>, he is now rushing back to periphery of our solar system. This gives us the perfect opportunity to see him mid-transit, and the optimal timeframe is roughly from October 11–20.

Now, why should you care about Chris? Well, if you don't own a telescope, this is probably one of your best chances to see a comet for a very long time. He is a very friendly one, and can be seen with the unaided eye easily. Here is a quick guide to greeting Chris:

- He is shy and stays close to the sun. Your best timing will be right after sunset, at around 7:10 if you're reading this on the day **mathNEWS** is published. Much after this (say, 7:40), and he will likely have dipped below the horizon.
- Don't take too long! Chris will keep straying from the Sun over the next week or so, and will fade accordingly until only people with telescopes can see him.
- Make sure you pick the right place. You will be looking directly (10°) above the horizon, essentially just where the sun has set. This means you need a good western horizon. Thankfully, Waterloo is very flat and you should have very good options.
- To you, Chris should look like a faint trail in the sky—his nucleus is much, much fainter and

will probably only be picked up by a good pair of binoculars.

- To that end, if you have binoculars, bring them out! They will really improve the experience. However, **do not point them at the Sun unless you want to smell your retinas burning.** Seriously. Your eyes cannot even blink fast enough to stop permanent blindness.
- Bring friends! Socializing with a comet and stargazing in general is a wonderful experience to share with the people you are close to.

Now, having read this guide, you should be able to give Chris a proper welcome. Lucky for him, too: if he had arrived at most points in human history, he along with any of his other friends would have been seen as omens of disaster, death, and poor midterm grades. Thankfully, our society has progressed, and we have learned to blame other entities (such as Mr. Goose) if our results are poor.

Now, what's next for Chris? Well, he's going back to his home in the Oort cloud, but his current orbital parameters show that he might shoot past it and be entirely ejected from the Solar System. Who knows, one day he might find another home and another civilization to visit. If only he could bring our best wishes with him...

Shahabee

## EASY RANDOM

xjt znp upnx qhzns

the above is ciphertext, don't reject it again s'il vous plaît **mathNEWS**.

unmade zookeeper

# CAH IS WORKER-OWNED, AND THAT'S WHAT MAKES IT GREAT

## AN ADDENDUM IN LIGHT OF RECENT OCCURRENCES

Hi everyone, I'm back!

The only explanation I will be giving for my absence the past two issues is that I managed to completely torpedo my personal life in the first & second weeks of the term, got sick for the third week, felt marginally okay the fourth week, and was sick *again* this past weekend. Now I have a philosophy paper, a quiz, and three (four?) CS assignments due<sup>1</sup> on Friday that I have barely started, a ton of readings to do by Wednesday, and a midterm I haven't studied for Thursday evening.

All that to say is that life is going great and I definitely am 100% making a good decision to come to prod night this time as opposed to doing anything even marginally more productive.

Anyway.



You want to know who life is going great for and are definitely 100% making good decisions? The Cards Against Humanity people.

*For a recap of what the Cards Against Humanity team have gotten up to in the past, please refer to my article [CAH is a boring game—but the company, and its initiatives, are not in mathNEWS 153.2](#).*

What has this organization decided to do this time, you ask? Well, this time, they're suing Elon Musk—more specifically, SpaceX—for trespassing on and causing property damage to their land. When you think of what type of land a card-game company might own, you might assume that they are speaking about card-making factories, or perhaps office buildings. For your average card-game company, you would probably be correct.

But as I've established previously, CAH is anything but average. No, the land that they are in the process of suing SpaceX for trespassing and destruction of property for is a chunk of land along the Florida-Mexico border. There are no factories or office buildings on this land, and largely only served as a wildlife preserve. The reason behind Cards Against Humanity's purchase of this land stems from largely the same place as this current lawsuit:

**Politics time!** The year is 2017, Donald Trump has just been Supreme Leader of the World President of the United States, back long before the attempted insurrection/coup (amongst everything else). One of the major Republican campaign “platforms” (it's a stretch to refer to them as such) was to “build the wall” between the US and Mexico. The same racist, xenophobic shit as always with the overwhelming majority of politicians.

So, in this context, what does this card game company do? *Let's crowdfund money and add our own to buy up land along the border, “to make it ‘as time-consuming and expensive as possible for the wall to get built.”*<sup>2</sup> They did just that, and in fact succeeded at not having the wall be built along that section of land.<sup>3</sup> Since the land was purchased, it has remained largely untouched, serving its' original purpose while also acting as a wildlife reserve as a bonus.

Now, how exactly does SpaceX come into this story? It turns out that SpaceX happens to have a Starbase facility just 3 miles away, and as such they own a bunch of property adjacent to CAH's land. It was also recently discovered that Elon Musk has directed SpaceX employees to dump excess construction materials from their projects onto and set up construction zones and power generators in this adjacent property. Presumably, this is to avoid the hassle and the tiny 0.0001%<sup>4</sup> reduction in the company's profits that would come from having to actually respect the private property laws that capitalists claim to wish to protect so very much.

As a result, CAH claims that their property has been damaged (& that its value has depreciated) because of the actions of SpaceX. CAH also alleges that damage has been done to the environment and their company's reputation as a result of “dumping enormous mounds of gravel and bringing in generators to run equipment and lights”<sup>2</sup> on their property. CAH is currently in the process of suing SpaceX for \$15 million USD in civil court for “alleged trespassing on its lot in Cameron County, Texas.”<sup>2</sup>

As always, I wish the Cards Against Humanity company all the best in their endeavors (which is something I cannot say for pretty much any other corporation ever). Keep up the great work in showing the world the power of worker co-ops, and next time sue the billionaire for much more than \$15 million. Although in this case the amount being requested is the amount needed to pay back all the crowd-funders for the money they put toward this project, Elon Musk can certainly afford to pay more. Given all the tax “loopholes” ~~let's be honest here it's just legal tax evasion~~ that are available to billionaires, in the US as well as other places (such as Canada), the hoarders who have enough money that they could completely end world hunger can afford to lose a little bit more.<sup>5, 6</sup>



I guess that wraps up my anti-capitalist rant for the week. I hope you enjoyed me returning to one of my earlier articles to add in another initiative that is currently a bit more relevant. Maybe once this is published, I'll read both articles back-to-back to see how my writing has changed over the year (singular).

I have to go at least try to work on my CS assignments now, please wish me luck because god knows I need it. You know it's a desperate situation when I, as an atheist, starts praying. Best of luck to you all on your midterms as well, and I'll be back next issue [as long as I don't get sick for a *third* time this term] with another article on another random topic.

### Sexy\_Software\_Babe

1. Technically only one is due this week, but one also has a late deadline this week and each of them builds off the previous one so...
2. Sourced from CNN at <https://tinyurl.com/3a5ajdmh>

3. This border wall idea failed almost completely—only 52 miles, or 83.7 kilometers, of new primary barriers were built during Trump's term in office. Sourced from PolitiFact; <https://tinyurl.com/ta3pxtbj>
4. As opposed to the previous footnote, the source for this number is that I made it the fuck up. But it really doesn't cost that much in the grand scheme of things for a massive corporation like SpaceX to go slightly farther out of their way in order to avoid being massive hypocrites.
5. <https://www.wfpusa.org/articles/how-much-would-it-cost-to-end-world-hunger/>
6. <https://www.forbes.com/profile/elon-musk/?listuri=rtb>

## THIS ARTICLE WAS SUBMITTED VIA EMAIL

### AND THE mathNEWS PEOPLE HAVE TO CLEAN IT UP

[Editor's Note: whether this article was in fact submitted via email is a subject of debate at mathNEWS. Gmail appears to object.]

SO i am basically submitting this article by email because MY LAPTOP RECENTLY GOT CONFISCATED BY THE POLICE and before you assume it was over possession of illegal content it was because the device and the serial number were tipped off to the police because supposedly this device was STOLEN but not by me by the guy who sold it to me i swear

so anyway i got detained by the police and as im writing this I AM IN THE STATION AND they probably would have confiscated my phone considering that too was bought second hand off facebook marketplace but ANYWAY i dont care because some scumbag sold me fake airpods on facebook marketplace and IM REALLY MAD ABOUT IT!!!!!!

but anyway im writing it from the station and they dont know i have this device but i wannaget this article in by email and the cell is basiclky a faraday cage and i dont even know if they will get this article BUT YOU ALL NEED TO KNOW THIS!!!!!! oh i dont know if this will affect their verdict on whether to release or arret me but the device may or may not have homemade malware on it but THEY WONT ACCESS THE DRIVE i enrpted and they cant infringe my fifth amendment rights oh wait i just realised we dont live in america WELL STILL IM SURE THERE'S SOMETING THAT APPLIES IN Canada

so anyway uhh

im not sure what to do but im kind of stalling for time, the police wouldnt let me do my homework in here they ddidnt let me tke my assignment swith me and also all my shit is typesetted on a latEx document on that laptop so i probably shouldnt have this phone with me i hid it where the sun dont shine AHAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHAHA and i looked totally normal while doing it too so they dont suspect a THING but ive heard stories about them using cattle prods to torture detainees maybe this was a bad idea

im actually kind of worried now

PLEASE HELP ME get me out of here I SWEAR I DIDNT DO ANYTHING ILLEgal look i know im a person with a chequered past and i have done questionable things in the past BUT I REALLY DONT WANT TO HAVE TO PLEAD MY CASE IN FRONT OF A JUDGE AND JURY i just really need them to not suspect me of being guilty of anything else and then i can go free THATS really all I need

oh what THE HELL theyre bringing another detainee in this room i wonder what their name is

its several people actually i think 5 people wait actually i dont think they are the talkative type i dont wanna gdraw any attention from them they could probably kill me i would really RATHER NOT have to deal with that

this might be the last submission i make to mathNEWS in a while

thanks for everything though see you all on the other side

Sentimental Komuro Michael Sakamoto  
Dada-sensei



# ABOUT MEETING YOUR HEROES, FEAT. FELIKS ZEMDEGS AND LEVY ROZMAN

I solved my first Rubik's cube in 2009. I was slow, but it didn't matter because my friends and family still thought it was cool. And while I was perfectly satisfied just solving the cube, the world was fast at work minting the prodigies of a revolution: "Speedcubing."

That same year, Kiwi kid Feliks Zemdegs broke 11 continental records in his very first competition. Over the next decade, he would secure nearly 100 world records across 16 categories, and almost single-handedly bring the 3x3x3 world record down from 7.08s<sup>1</sup> to 4.22s.

He was a genuinely humble guy who—in my opinion—was the single biggest reason the speedcubing community was as wholesome as it was. As I grew up, I looked up to him.

Fast-forward 14 years and I'm in Denmark on exchange. Someone I met on a bus<sup>2</sup> invited me to a tiny competition in Roskilde, Denmark, and having never been to one, I said why not.

I bussed there in time for lunch, with my leftover peanut shrimp stir fry. I sat beside some friendly nerds, and a few minutes later, none other than Feliks Zemdegs was sitting across from me.



I learned the rules of chess in 2018. I sucked, but my friends and I enjoyed it so we started training together, and before the year's end, we had qualified for nationals.

That same year, American Levy Rozman became an International Master and began streaming as GothamChess. Over the next six years, he would slowly and methodically cement his position in the YouTube hall of fame as the world's largest chess streamer.

He was an open, honest character who enjoyed his job so much it made you want to quit yours to chase your childhood dreams. He was my favourite YouTuber.

I watched him for most of those six years, and every few months he talks about a major event he'll be at in a random city that I'm never anywhere near. This time, the event was the World Blitz Chess Championship finals in Paris, featuring Magnus Carlsen and Hans Neimann.<sup>3</sup>

The opportunity to explore a beautiful city while experiencing a historic chess event was not something I'd be turning down. So I booked my trip, and all of a sudden I was sitting with chess nerds from around the world in a tiny room beside the Louvre, watching Magnus and Hans battle it out, with none other than Levy Rozman commentating.



It would probably be entertaining or insightful to share with you how my conversations with these folks went, and perhaps what I learned from it all. But it might not be.

Life is a long, continuous string of memories, like a beaded necklace. It has an end, but almost none of the beads know that, let alone care. I can see some patterns on my necklace; a plentiful series of simple cube and chess hobby beads, squished in between some important, life-event beads that always seem to get in the way. But the hobby beads are consistent and persistent, together building a pattern across the necklace that tells a bigger, unfinished story.

This month, I added two more beads to my necklace. They are important, life-event beads, but they match the humble patterns of the simple hobby beads, too.



**no pun indented**

1. This was Erik Akkersdijk's 2008 record. Interestingly he is rated 2232 in chess.com blitz at the time of writing, according to me reading over his shoulder.
2. You may already know this if you read my article in **mathNEWS** issue 156.1. His name's Mark. Thanks for the invite Mark!
3. Yes, the butt plug guy. We still don't know how his \$100,000,000 lawsuit against Mother Claustrophobe<sup>4</sup> was settled.
4. Source: <https://mattbruv.github.io/MenuGarden/>

---

## JOFFERY

### BRAINROT EDITION

Joffery lived his life as an imposter, a fake student living his life as a robot. He started to learn about brainrot. "I'm going to show you my skibidi rizz," a student said to Joffery. Joffery noted this language and added it to his vocabulary and went on with his day. Later that day a girl passed Joffery and said hi. His brain remembered the sentence he heard before and said "Hi nice to meet you, I'm going to show you my skibidi rizz!" The girl was baffled, amazed by his bravado. Joffery walked away as if nothing happened smiling with his new usage of this phrase. Joffery was famous by the end of the day. Even at his interview he hit them with the skibidi rizz which baffled the interviewer and he was immediately given the job. Joffery became the president of the rizz club as well as a famous professor of RIZ 101 maximizing rizz and Ws.

BananaCat



# YUMMYPI RETURNS FROM RETIREMENT TO DROP AN UNNECESSARILY DETAILED PIE CRUST RECIPE

The air is getting crisp... the leaves are becoming crunchy... and pumpkin spice everything is back on the menu of every single restaurant, cafe, and fast food chain (I actually like pumpkin spice, so I say this with endearment). Whereas bugs are crawling away, I come crawling out.

You see, now that the weather is cooler, it's the perfect time to fire up your (landlord's) oven and make delicious, warm baked goods without raising the temperature of your kitchen by ten degrees. And one of my favourite things to make is pie.

A warm slice of fresh pie after a cool autumn day is one of life's little pleasures. Here are some ideas so you, too, can see the vision:

## SAVOURY PIES

- Chicken pot pie
- Shepherds pie
- Beef and beer pie
- Steak and kidney pie
- Beef stew pie
- Sausage pies
- Ham and cheese quiche
- Cheese and spinach quiche
- Butter chicken pie
- Curry chicken pie
- Turkey pot pie
- Chicken and leek pie
- Mushroom and leek pie
- Tourtière

## SWEET PIES

- Apple pie
- Peach pie
- Sweet potato pie
- Pumpkin pie
- Raspberry pie
- Blueberry pie
- Blackberry pie
- Cherry pie
- Lemon meringue pie
- Key lime pie
- Banana cream pie
- Custard pudding pie
- Strawberry pie
- Pecan pie
- Chocolate cheesecake pie
- Mississippi mud pie
- Oreo pie

Anyway, now that you've completed the mandatory paragraphs before the actual recipe, here is exactly how I like to make my most well-received pie crust (I have also made graham cracker

crusts, and mashed potato top crusts, but this is the one that gets me the most compliments):

## ALL BUTTER PIE CRUST (MAKES 1 DOUBLE-CRUST/2 PIE CRUSTS)

1. Add 2.5 cups of all-purpose flour (about 313 grams) into a large mixing bowl. You do not need to be super exact.
2. With a butter knife, add in chunks of cold butter (1 cup of butter total, 227 grams). Again, don't worry if you're a little under/over.
3. If you're using salted butter, add ½ tsp of sea salt. If you're using unsalted butter, add 1-1.5 tsp of sea salt.
4. With two clean hands (TRIM YOUR FINGERNAILS PLEASE GOD PLEASEEE), mix the ingredients together, rubbing the flour into the butter. Keep going until the dough feels "heavy" and a bit like wet breadcrumbs. It should smell very pleasantly like sweet butter.
5. Wash your hands (or ask a friend to help). Get ½ cup of cold water and slowly add to the bowl with one hand, mixing it with the other hand, until you feel it coming together nicely into a nice dough ball. You may not need to add all the water! I usually end up having some extra water that I pour down the sink. If you can make a dough ball that "cleans up" the sides of your mixing bowl, that usually means you can stop there.
6. You can now divide your pie crust dough in half and roll out accordingly.
7. You can let the dough rest in the fridge if you'd like (plastic-wrapped in flat discs so it doesn't dry out), just make sure it's close to room temperature before you attempt to roll it out (hard pie dough is a pain in the ass to roll out).

Ta-da! You just made delicious pie dough. Now, it's true that lard or vegetable shortening will give you a flakier crust (this is because both are closer to 100% fat, and most butter in Canada is about 80%), but I think the taste of pure butter can't be beat. Some people use half butter and half lard-shortening for a balance, which I've also tried. But to be honest, I usually only have butter in my fridge, so that's what I end up using.

I would love to try making pie crust with European butter someday (which starts at 82% and the really high end ones will be 90% fat), but that stuff's like \$15 due to Canada's dairy protections. I'm sure if I try to smuggle a bar in my carry-on I'll be taken out back by security or it'll melt into a pathetic puddle (making my socks and underwear frightfully delicious).

Anyway! There's something fun for you to do this reading week, when you're tired of reading. Hope you enjoy : )

## ON DOING SOMETHING

About a year and a half ago, I wrote an article called *Do Something*. I was in first year at the time, and lamenting the fact that I had as yet not “done anything,” by which I meant that I didn’t have any important accomplishments to feel good about. Looking back, it was kind of a silly thing to be worried about considering I had barely even started university, but from the beginning of middle school all the way up to now I’ve been surrounded by tremendously smart and talented people, and quite often it’s made me feel like I was wasting my potential by comparison.

If you’re in first year, by the way, please don’t fall into this way of thinking. I know everyone likes to offer banal platitudes like “everyone starts from somewhere” and “comparison is the thief of joy,” but the fact of the matter is that I recently proved yalevoylan’s theorem, which states that the set of students at the University of Waterloo form a directed set when equipped with the partial order of crackedness. This means that there will always be someone better than you, and also someone better than anyone you happen to know. You can find preprints of the paper outside my office on the 7<sup>th</sup> floor of MC.

But anyway, that’s not what this article is about. Since first year I’ve continued to study, and learn, and find productive ways to occupy my free time around the school. Now, in my third year, I can say with confidence that I am doing something. But not just something, no, quite a few things in fact. In addition to the standard issue 5-course academic load, I’m also doing a URA with a computer science professor, writing for this fantastic publication, and attending no fewer than 4 weekly rehearsals for the various musical groups I play in. Together with the meetings and events held by clubs that I participate in recreationally, and my mild obsession with spending at least a couple hours cooking on most days, my schedule has felt quite a bit more hectic over the past month than it did before. I love what I do, don’t get me wrong, but there have definitely been a few moments when I think that, to quote MathSoc’s VPF:

“i took on too many responsibilities this term :bleak: :bleak:”

Seriously, I shudder to think that a ton of my friends have comparable amounts of commitments as me but are also taking graduate-level mathematics or are entire club presidents or MathSoc executives. If you are one, thank you for your service, because I’m not cut out for politics.

It’s nice to have responsibilities and to feel like you’re putting in meaningful work to make the university a better place for others, even if only in a small way, but it’s important to make sure you’re not biting off more than you can chew. Managing one’s time is of universal importance when it comes to managing the myriad aspects of student life, but this is doubly true when you have important duties besides doing assignments and studying for exams. If you aspire to such things, or if you’re already do them, make sure you prioritize your tasks—academic and non-academic—and try to focus on one at a time. As much as we would like to think it is,

multitasking isn’t real because our brains aren’t multithreaded. If you really find yourself in a situation with multiple approaching deadlines and you feel compelled to tackle more than one thing at the same time, try the coroutine approach of switching between them as you complete different subtasks. (This has had mixed outcomes in my personal experience, I would advise in favour of maintaining a singular focus during your work as often as you can.)

Finally, to whoever needs to hear it, make sure you get enough sleep. Maybe try and catch up on some over reading week, and do something fun too. I, for one, plan to finally watch *West Side Story*.

yalevoylan

---

## SUDDEN REALIZATION I CAN TAKE INITIATIVE TO MAKE FRIENDS!!!

Anyone feel lonely in Waterloo? ME!!!

Every friend seems too busy to accompany. But yes, everyone feels lonely. Last Sunday I just randomly asked a girl I have known since Orientation Week, and we take courses together for 2 terms, always sit together and have a good conversation each time.

Actually, it’s strange that we never had any daily chat or had a meal together. She was shocked and accepted my invitation quickly. During the meal, she even said thank you to me—thank me for inviting her! She is always so lonely but she just cannot take the step to ask someone out and strengthen their friendship.

Whoa. That sounds like me in the past. I was just waiting for someone to invite me to be a friend. But I can take a first step to ask others to be my friends! How can I know this so lately?????

I just made the decision that I’m going to ask someone “I know, met before, had a good talk, but just didn’t get any closer to becoming a true friend” out for a lunch or dinner. As long as I’m thinking about this process, a list of fantastic people just comes out of my mind. Every time, thinking about this name list just makes me so happy, feeling so lucky to live in the world. I now call it my “Happiness List.”

AKEIJIN



# 1 YEAR

He looked me in the eyes and told me he would be voting Conservative, because they were the best option for Israel. I said I couldn't, because they were a threat to me, as a woman, as a queer person, and as an immigrant (Your family are immigrants too. You're a minority too). He apologized. He told me sorry and said that Israel was more important to him. (Aren't you a Canadian Jew? Isn't the country you live in more important than some far away promised land? Am I playing into the dual loyalty trope? I didn't say anything).



I tried to argue in language they could understand. Does locking an angry people up with those that stoke their anger calm them down? Does giving them yourself to blame keep you safe? Is it the most effective way to keep our people safe? Keep my grandparents safe? They're all terrorists, they said. Every last one of them. The kids. Does torturing and starving terrorists stop them from becoming terrorists? I couldn't argue with this, because arguing meant accepting their logic.



I scroll down my Instagram feed. I try to ignore the videos of death and suffering. I absentmindedly double tap on a piece of art about fighting against authority, from a Russian political prisoner. I scroll back up, I unlike the post. Has the account posted anything about Palestine? Would my Zionist friends see this and question my beliefs? Question if I'm a "real Jew" if I like posts from people who criticize Israel? I want to share a post about a local issue, and I scroll past the page where they talk about indigenous sovereignty and mention Palestine before sharing to my story. Maybe I still hope onto hope that people will see reason if they don't feel like their worldview is threatened by the first words they see.



"Queers for Palestine is like Chickens for KFC", they laugh. I don't say anything. I don't introduce myself with my pronouns next time a new person joins the conversation. They never talk about queer people in any other context. We are nothing to them but something to laugh about when we disagree.



"What about Israeli civilians?" someone asks. They're not Jewish. "What would people with Israeli loved ones think hearing you say this?" A Palestinian talks about worrying for their family. I think about my grandparents. What about them? They have an apartment to live in, a shelter to run to, a hospital for their medical needs. My parents are trying to convince them to come back to America. They don't talk about who lived on the land before their beachside retirement community was built there.



"You don't have any relatives who are Holocaust survivors?" I was asked. "I know your family has been in America for generations, but even American Jews had connections in Europe during the Holocaust." I can't speak on Israel because I didn't have Holocaust survivor family members, she told me. I didn't argue. I didn't tell her that of course, my American Jewish family had relatives in Europe before the Holocaust. In Ukraine, in Belarus, in Poland, in Hungary, and in Germany. Probably more that I'll never know about. I don't argue that I don't have any Holocaust survivor relatives because none of them survived. I don't tell her about my great-grandfather's cousin who wrote to him before his family was deported. I don't tell her how his neighbour had a sister in Israel, and her husband wrote back telling them they couldn't help, they should have had the foresight to save up and move to the land years ago. That those who stayed behind weren't chosen by HaShem.



I don't message my friends on the No Committee when I see their blurry graphics on Instagram. I no longer had faith they would believe I was saying anything to help them. They could no longer take criticism. They were always right, and any criticism only came from the enemy. I would not place myself before their path and let them call me the enemy.



I don't go to the Hillel safe space today for the anniversary of October 7. I wouldn't feel safe there. I wouldn't feel safe there because they didn't feel safe with me there, because the slightest deviation from the norm they have locked themselves into made them feel threatened. More threatened than they could conceive of the bombs falling over Gaza being a threat. And when they feel threatened, they lash out.

tzedek

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

**A mathNEWS EDITOR WHO  
NEEDS NEW FRIENDS**

# N GRAMMAR MISTAKES THAT PISS ME OFF

FOR NO REAL REASON BUT THAT GRAMMAR WAS DRILLED INTO ME AS A CHILD

*warning: this list only applies to people who can only speak english, because if you can speak several languages i'm jealous of you and you can do whatever you want*

- APOSTROPHES IN THE WRONG PLACES!!!!
  - seriously. apostrophes either indicate possession or replace missing characters
  - if you're graduating in 2028, it's '28 not 28'. wtf are you replacing after 28 dawg
  - if owen owns something, it's owen's. if there is more than one owen, it's owens
  - its is the only one where i'm like okay that's fair enough, because its is possessive but doesn't use an apostrophe
- your vs. you're
  - YOUR is possessive
  - YOU'RE is YOU ARE!!!! do not tell me "your annoying." what the fuck are you saying about my annoying???? leave it alone :(
- two vs. too vs. to
  - two is a number
  - too is an excess, ("too much")
  - how the fuck do i explain "to" in a few words
- their vs. they're vs. there
  - their is possessive
  - THEY'RE is THEY ARE!!!!
  - there,,,,, like "over there"
- then vs. than
  - this one pisses me off so much omfg fwkkjhodhunewoghu
- here vs. hear
  - if you write "come hear" i'm fucking leaving
- accept vs. except
  - accept is like approving or allowing something
  - except is exclusionary
- weather vs. whether
  - you're telling me you don't know whether or not weather is similar to climate?
- a lot of homophones, to be honest. but i'm a fan of spelling so maybe that's just not fair
- i.e. vs. eg.
  - i.e. stands for id est, which is "that is" in latin. its an explanation
  - eg. is short for "for example"
- I vs. me
  - THIS ONE GETS ON MY FUCKING NERVESSSSSSSSS WHEN I'M USING IT CORRECTLY AND SOMEONE TELLS ME I'M WRONG
  - like. it's "the professor hates me and my friends" NOT "the professor hates my friends and I" if you take out "and my friends" it should still make sense!!!!!!
- lose vs. loose
  - this one grinds my gears
  - you lose something when it goes missing
  - something is loose when it it not tight

*some non-grammar honorable mentions*

- i don't like it when people start conclusion paragraphs in essays with "in conclusion" it's just like... oh you think i'm dumb? you think i can't tell this is the conclusion paragraph?
- "quote on quote" instead "quote unquote"

*also some mistakes that don't piss me off*

- affect vs. effect
  - ngl, even i forget which one is correct sometimes
- who vs. whom
  - but if you're regularly using whom correctly, my panties just dropped
- run-on sentences in informal settings i fucking love run-on sentences they're so silly and fun and i tend to use a lot of run-ons when texting my friends while drunk (i am not drunk rn, bee tee dubs)

*gaya*

*i found out you can change the colour of your text!*

*[Editor's Note: I respect you submitting this entire article in pink, but unfortunately, we only print in black and white.]*

## MAYONNAISE SANDWICH — RECIPE

A MEAL FOR TREASONISTS AND MATHEMATICIANS ALIKE.

### INGREDIENTS

- 2 slices of bread (ideally Wonder bread)
- At least 5 tbsp. of mayonnaise

### METHOD

1. Place both slices of bread in the toaster.
2. Take both slices of bread out of the toaster.
3. Place slices of bread on a plate.
4. Take *at least* 2.5 tbsp. of mayonnaise, place on the left slice.
5. Take *at least* 2.5 tbsp. of mayonnaise, place on the right slice.
6. Smush both slices together.
7. Enjoy, preferably with a glass of full-fat cream.

Serves 1.

*rishu*

# WHY PLAYGROUNDS NEED TO CHANGE

*HEARD I COULD PUT MY UNRESEARCHED MISCELANEOUS OPINIONS HERE AND GET FREE FOOD FOR IT*

I don't know how common this is in people my age, but as a kid I used to love playing on playgrounds with my friends. There was just something about that experience; running around, trying to tag or avoid or throw balls at each other, running up slides, jumping off ladders, climbing up on top of monkey bars and pulling our feet just out of reach of the players below. Playing until you were all tired or had to go back, and then coming out the next day and doing it all again, it never got old. And as I've grown older, been places, seen playgrounds taken down and rebuilt anew, I've found myself growing out of my playground phase and of physically active games in general, and not particularly by choice. I've of course found it increasingly difficult to play in playgrounds I used to spend hours in, but I've also particularly noticed that the new playgrounds being built are often counter-inducive to the type of play I used to love, and are restricting the possibilities of modern kids who may never get to have the same experiences I used to have constant access to.

We've all heard about how important it is to exercise. It gives numerous health benefits, both physical and mental, and it's something that I've repeatedly tried and failed to keep a consistent part of my life for a while now. When I was younger though, I used to exercise all the time, especially in the warmer months, going out every day after school and just running and climbing and moving around because I wanted to, and it felt great. I've never really been a fan of competitive sports and I don't think I ever will be, but I'm really only now realizing the significance of an activity that involves exercising *and* socializing *and* is just incredibly fun, that I could just go out and do with my friends for free every day. Playgrounds at their best allow kids to do that easily, and turn even the most simple event like "race you from here to there" into something engaging and dynamic, fueled by more than just competition. And really, this is a service that could be incredibly beneficial to more than just kids! We all know that you don't just stop gaining benefits from exercise as you get older, and you don't just stop enjoying games with others either. Despite this, it seems like everyone is insistent that your options for doing these things together get reduced to methods that are harder to do on a whim, and in my opinion are also less enjoyable. As well, it seems like the people in charge of building new playgrounds are infuriatingly insistent on removing from them the aspects that I believe make them so important for kids. I do not understand why this is happening, and I believe that changing it is important.

Ok so, playgrounds are meant for playing physical games in right? They're called playgrounds, meaning that there is something about the "ground" i.e. the physical space, is designed specifically for playing in, meaning that something makes it better to play in than other non-play grounds. I'm pretty sure that's the general consensus, that playgrounds are spaces meant for physically active games. But I keep seeing new playgrounds that seem to be designed to limit this as much as possible. The structures seem to be getting more constrained, with bars pushing up on either side that barely

allow two kids to fit next to each other, and the ramps and bridges lead directly in one path from beginning to end with very little room for deviation. Being conducive to movement means being conducive to *freedom* of movement, and forcing kids to move in one specific way won't at all incentivize them to move more. Playgrounds should be made more open, with wider bridges, fewer barred walls, no overhang over ladders or slides, that allows kids to *actually move around* where they want to.

I also think that variety in the equipment is important, offering many different ways of *how* you can move. One of my favorite childhood playground structures has seven different ladders throughout it, and none are the same. Each one changes the way you progress through space, whether you're racing or chasing or escaping. When adding new features to a playground, the first thought should always be "How does this effect the way that someone moves in this space?" I see all these modern playgrounds with all these extra bits, that'll just involve moving a ball through an embedded maze, or hitting instruments with a metal rod tied to a post, and that's great and all but kids will get bored of that in about five minutes. It won't convince them to get them to do the exercise that will actually be good for them. Equipment like swings, teeter-totters, or even those little spinny-seat things are much better at offering kids a different fun way to move their bodies, especially when they don't have those restrictions on height or speed or springiness which again seem to be just too common in modern designs. I've heard opinions from older people that kids need to learn to get hurt more, but as someone who has broke their arm and hated it, I kind of disagree. Safety is important, I'm all in favour of more safety, but if that comes at the expense of what playgrounds are meant to do, at the cost of preventing kids, teens, even adults from getting the exercising and socialising and just plain fun that they need, it's not worth it. If playgrounds were designed with movement first, it would make them much more enjoyable for anyone of any age, and better for them as well. So uh, if some future (or current) playground engineer is reading **mathNEWS**, please heed my call. It would make me, and many many others, very happy. Thank you all for reading!

Doublewhip

---

## READING WEEK TO-READ LIST

*PUTTING THE "READING" IN READING WEEK*

1. Nebula's Civilization
2. Lord of the Rings
3. Forty Milleniums of Cultivation

Fried Rice

# REVIEWING ALL CAMPUS BUILDINGS AS STUDY SPOTS

## PT. 4

Hello again! I am back with another round of studying on all campus buildings. It's getting colder out so making the trek from my apartment to the outskirts of campus is getting harder... I fear for what the zero degree weather will do to my motivation... But I'll do anything for my lovely **mathNEWS** readers! It also helps that we've finally reached MC (the motherland) ♡♡♡.

### FEDERATION HALL (FED)

Starting off strong, I did *not* study here because I morally object to the University terminating Fed Hall's lease to WUSA (formerly known as Feds) when student fees paid for this building. But I object even harder to UW Food Services taking over and charging students ridiculous prices. This building is also a nightclub-turned-catering-and-events-venue so not much room for studying. Rating: 0.123/10

### GENERAL SERVICES COMPLEX (GSC)

This is also not really a building with study spaces but I did accidentally wander in here once after hours! Oops! Rating: 3.14/10

### HAGEY HALL OF THE HUMANITIES (HH)

I had no clue Hagey Hall's government name included "of the Humanities," but I like it when a building is aptly named so I appreciate this. Anyways, what an odd building! It feels like they mashed together together two entirely separate buildings to create a disjoint union of cramped old hallways and modern, open-air spaces. Maybe that's what you get when you stick Accounting in the Arts faculty (Laurier BBA is better!). I studied next to the piano and alongside the fun orbs that flash the colours of Italy. Rating: 7.1/10

### LYLE S. HALLMAN INSTITUTE FOR HEALTH PROMOTION (LHI)

Again with the government names! Of all the buildings that I've studied in (and there are so *so* many at this point), Health buildings make it the hardest to distinguish which building you're actually currently in. For example, the Health building with an entrance next to PAC has a huge sign saying LHI on it, which would make you think you're about to enter LHI, right? Wrong! The building floor plan clearly states you're now in BMH. So then where is LHI, you ask? Your guess is as good as mine. And my guess was to get as close as possible to the aforementioned huge sign. I eventually stumbled upon a Sunlife-funded study space with cushy couches. Here, I spoke to a nice janitor for the better part of an hour. Crazy things happen when you take off the noise-cancelling headphones! Rating: 8/10

### MATHEMATICS 3 (M3)

TBH I've always kind of thought of M3 as a really boring building. Like, it has one massive lecture hall and what else? But I was proven wrong! It's actually a very decent building. I studied in the Designated Study Spot on the first floor, which it seems I've been mistaking as a silent study for the last two years. In my defense math students can be very quiet (antisocial). I was not the biggest fan of this room for two reasons: there's a sign on the door telling you not to study there past 11pm (don't tell me what to do), and the windows in the room are super high up which makes me feel like I'm in prison (I like to reserve that feeling for MC). There are also tables on the upper floors that are reminiscent of the floor 5 and 6 MC tables (yay consistency!) which are cool. Rating: 6.9/10

### MATHEMATICS AND COMPUTER (MC)

This is the best building to study in. Requires no explanation. Rating: 10/10

### MODERN LANGUAGES (ML)

Home of yet another Tim Hortons, ML hosts a funky little basement diner that I've never actually seen open. The day I tried studying here, TEDxUW hosted their annual conference, which unfortunately meant I could not study in the theatre. Instead, I studied at a lonesome table on the upper floor, overlooking a sea of fishes that I like to imagine speak all the different languages we teach at UW. Rating: 5.5/10

headphones97

## JOY

What is joy?

When the geckos slide into the summer sun,  
it's the sizzling of their warm bellies on the rocks.

When the fall light peeks down through the leaves,  
it's the unseen glistening of the many wandering creeks.

When the wild dahlias raise their faces to the sky,  
it's the beauty that makes you wonder; what is joy?

It's the great wide oak in a vast green plain

It's my sister's middle name.

no Happy Birthday indented

# MC WASHROOM SINK FREELoadERS

If you've ever been to a bathroom in MC you know the ones.

Giant semicircular bowls, with a large, shower-like tap rising from the centre. A tap which, when activated, shoots out ridiculously hot water.

Controlled by a foot pedal.

One day, I found myself washing my hands at one such sink when another person approached, presumably to wash their hands as well. For the sake of convenience, I will refer to them Rob (This is a random name I have no idea what the name of some stranger in the bathroom is). This should have been no big deal, right? I was putting my foot down on the pedal to activate the sink and expected Rob would have enough basic human decency to do the same. We both continued to rinse our hands until it was time for me to use soap.

Naturally (as an environmentally conscious, water conserving, all around great human being) I instinctively lifted my foot of the sink pedal and began applying my soap. And that's when it happened.

For a brief moment—less than a second—almost imperceptible to the human eye—the sink shut off. I looked up from my hands, towards Rob, and I saw it. His face portrayed a mix of sleepiness, apathy, and all around boredom, but I saw the truth in his eyes. A look of panic, of shame. As quickly as the water shut off, Rob placed his foot on the pedal and turned the sink back on.

I couldn't believe it. I had been expending MY energy, placing MY foot on the pedal, turning on the sink to wash MY hands, and I was secretly letting Rob freeload this whole time?

I felt violated. Betrayed, even. Here I was, doing the eco-friendly dance of soap-lather-rinse-repeat, while Rob stood there like a silent opportunist, basking in the heat of the water I had summoned. Did Rob think *nothing* of this? Did he not understand the unspoken social contract of these sinks?

"*But maybe he didn't know!*" you may say. "*Unlikely,*" I would say, considering that Rob wasted no time taking control and using the sink himself when his water flow was threatened.

"*Ok, why are you being so hard on him?*" you may say next. That's the thing. I am being hard on him. I **have** to. In order for the MC bathrooms to have any semblance of order and law, we need to set a code. It's (probably) the only thing that separates us from the animals.

Today (with the wisdom, world-weariness, and knowledge I now carry), I would have let Rob know my frustration. I would have told him about general custom and human decency. I would have given him a piece of my mind, right there in the 3<sup>rd</sup> floor MC bathroom.

But I didn't. I'm not Rob's parent. I wasn't about to yell at some stranger in the bathroom. Instead, I take solace in the fact that the MC washrooms are not for the faint of heart. If it's not me, it will be someone else. If you want to keep pulling stunts like how Rob did, go wash your hands at E7.

It's sink or swim out there, and I **know** Rob will eventually sink.

Pixel

## WHERE MY FELLOW BRITISH COLUMBIANS AT?

AYYYYYYYYYYYYYYYYY I'M ALSO NOT GOING HOME FOR READING WEEK

It's a little bit far so I guess I'll just stay here...

Whole Number Haver

I miss home ☹️

## ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

mathNEWS is a normally fortnightly publication, funded by and responsible to the undergraduate math students of the University of Waterloo, as represented by the Mathematics Society of the University of Waterloo, hereafter referred to as MathSoc. mathNEWS is editorially independent of MathSoc. Content is the responsibility of the mathNEWS editors; however, any opinions expressed herein are those of the authors and not necessarily those of MathSoc or mathNEWS. Current and back issues of mathNEWS are available electronically via the World Wide Web at <https://mathnews.uwaterloo.ca>. Send your correspondence to: mathNEWS, MC3030, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N2L 3G1, or to userid [mathnews@gmail.com](mailto:mathnews@gmail.com) on the Internet.

mathNEWS is overseen by the Board of Publications, an autonomous board of the Federation of Students, University of Waterloo, hereafter referred to as Feds. mathNEWS is editorially independent of Feds and the Board of Publications. mathNEWS has never been requested to withhold Improper Content as defined under Feds Policy 71.

Except where otherwise noted, this work is licensed under the Creative Commons Attribution-Noncommercial-No Derivative Works 2.5 Canada License. To view a copy of this licence, visit <https://creativecommons.org/licenses/by-nc-nd/2.5/ca/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA. Terms may be renegotiated by contacting the mathNEWS Editorial Team.

# PIZZA VIGILANTE BUSINESS

On October 7, 8:53 pm, we noticed a SUSPICIOUS figure lingering around the row of neatly aligned pizzas, hard-won from our writers' Pizza Quest.

As you may well know, **mathNEWS** writers only take 1 slice of pizza per person to ensure that everyone has a slice, and gets seconds or thirds if there is enough to spare.

This person, clad only in what can only be described as an aura of EVILNESS (and wearing a maroon t-shirt) stole 4 slices of pizza soon after we had all settled down to eat. After a while, he came back. He gave a quick glance around the room to make sure no one was watching him before taking another plate and 5 more slices. But this time—we were ready. As he scurried off, several slices of pizza in hand, sure of his victory, we followed him. He speed walked away, back to his evil lair—the computer lab.

Through the glass, we watched as he brought the pizza to his friends. A sweet gesture, if not based on thievery. They celebrated with their makeshift pizza party, greasy fingers smearing over the keyboards, blissfully unaware of being watched.

Not long later, two of his friends tried to get more pizza for themselves. We stopped them at the door. “Are you part of **mathNEWS**???”

“Yes,” said the lying liars who lied.

“Did you write something for the week?” We asked.

A pause. “Uh, no.”

*AHA!*

At this point, thirds were called and there was no more pizza left for them to steal.

To the people who stole **mathNEWS** pizza... We know who you are. We will find you. Don't take 9+ slices of pizza for yourself and friends who didn't write any articles for **mathNEWS**. Next time, we'll bring a nerf gun.

## Witness Statements:

- “I saw them do it :(" — BananaCat
- “Shame. You owe **mathNEWS** 3 separate articles :(" — The Anonymous Aardvark, who tailed and caught the perpetrators tomato red-handed.

DHJA (Department of Having Justice and Accountability)

# HAVE YOU LOOKED AT THE CEILING TODAY?

## DON'T LOOK YET

I wake to its good morning, and drift off to its good night; my day begins and ends with the ceiling as my silent, comforting, companion.

How much time in my life has been spent looking at the ceiling? It's almost always there so surely often—whether I realize it or not. I remember as a kid I would stare at the popcorn ceiling in my room to see how many dots I could connect, creating the outlines of my heroes. I conjured images of Spidermans, Batmans, and Supermans, but never of the ceiling itself: the truest hero of them all.

That's the thing about the ceiling: it's under-appreciated—it deserves better.

Have **you** looked at a ceiling today? Surely you've been inside a building at some point—probably you're in one right now. When you entered this building, surely you assumed that there was a ceiling, right? You took comfort in knowing that it stood there, just beyond your sight, protecting you from the elements. Perhaps you sat by a window as it rained, watching droplets race each other to the bottom. In that moment did you stop and thank the ceiling—did you even think of it? Is the window, an article meant literally to be looked through, more worthy of acknowledgment than the ceiling? We selfishly take its existence for granted, assuming it will simply *be there*.

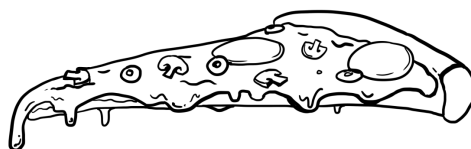
Naturally, it makes sense that an assumption about the ceiling's existence involves assumptions about its appearance.

What do you think the ceiling in PAC looks like, do you remember? Surely you've looked up in despair during an exam? I remember it as a crisscross of beams, vents, and lights; a factory producing scribbles, sweat, and tears. Looking away from page 20 of a hellish stats final, did you acknowledge a favourite beam? Did you name it, remember it, and look for it fondly the next time? The ceiling provided you comfort in that moment, is it not deserving of more respect?

I want to experience a world that appreciates the ceiling, one where people walk into a building and crane their necks to get a look—to answer the question: “What does the ceiling look like in here?” Next time you enter a building, familiar or new, let this question be the first you ask.

Go ahead now, look at the ceiling. What do you think?

A Work Randl





# NES TETRIS REBIRTH ACHIEVED!

Congratulations to dogplayingtetris for being the first NES Tetris player to reach “rebirth”, the point when the level counter experiences integer overflow and rolls back to zero.

Video link: <https://www.youtube.com/watch?v=fXhbtI5SneE>

Let’s retell the path to get here, by means of the glitches along the way. All timestamps are relative to the start of the run.

- Dogplayingtetris starts the game on level 19, the highest starting level possible. So the game is supposed to start advancing the level counter at  $(19 + 1) * 10 = 200$  lines. But due to confusion between binary and binary-coded decimal, it instead sees that 19 as 0x13, and starts advancing the level counter at  $(13 + 1) * 10 = 140$  lines instead.
- At 7:03 into the run, Dog reaches level 29, and the game speeds up to a speed that’s *supposed* to be unplayable. If you just hold down the buttons, the pieces don’t move fast enough to reach the sides of the board. Button-mashing sort of works around this, but it’s tiring and inconsistent. But in 2020, a technique was invented to reach the maximal mashing speed with little hand strain. Using this technique, Dog is able to play far past the point which was once considered the “kill screen”.
- The level counter normally breaks at level 30. After all, it wasn’t supposed to be reachable! Dog is playing on a modded Tetris cartridge that patches this bug.
- At 25:37, Dog clears his thousandth line. But the line counter only has three digits of space, so it displays as “A00”. (This happened to the score counter earlier, but that’s due to a mod; the original game caps the score counter at 999999.)
- At 33:27, Dog reaches level 138, and the color palette goes crazy. Normally, the game loops through standard ten color palettes. It does so by taking the level number, repeatedly subtracting ten until doing so would make the result negative, and then using the result to index into a color table. But 128, as a signed byte, is treated as negative 128. So the color is read from the wrong part of memory.
- At 35:23, Dog reaches level 146. At this point, the glitched colors have been going on for a while, but this is the first time the color palette is very difficult to see. This is the point at which the first-ever run to reach the glitched colors ended.
- At 38:02, the game should have crashed with probability greater than 70%. This rises to 100% by 38:13. Dog’s Tetris cartridge is modified to fix this crash.
- At 56:47, Dog reaches level 235. Up until this point, every level (except level 19) has lasted ten lines. For glitchy reasons I don’t understand, this one lasts *eight hundred and ten*. And of course, it happens to have one of the least visible color palettes possible.

The previous record run ended a short distance into this level.

- At 1:11:54, Dog comments that the piece counts (not visible on the video) now start in “A”, since he’s placed more than a thousand of each piece. Except for the long bars, of which there had only been 998.
- At 1:16:30, Dog becomes the first person to complete level 235. He proclaims he’s “seen the light”, and I don’t think he just means the brighter color palette.
- At 1:21:23, Dog completes level 255. The level counter, being a single byte, loops back to zero. The game slows to a crawl, Dog celebrates, and the final great marathon goal of NES Tetris is complete.

Dog continues to play for another forty minutes. The only other moment of note is at 1:46:29, when the line counter passes “Z99”, and the letters become symbols. He finally tops out at level 91, having played for over two hours, cleared over forty-two hundred lines, rolled over the level counter, and scored over twenty-nine million points.

What’s next? There isn’t an obvious next achievement to go for after rebirth. And the run is already so long that people were reluctant to try for it. I predict that instead, people will turn to other categories, such as getting the highest score within the fewest lines. And of course, there’s always the competitions.

If this is correct, Dog’s run marks the end of a great arc of Tetris history. From the first level 31 back in September 2018, to the glitched colors in August 2022, to the game crash in April 2024, to Dog’s rebirth in October 2024, players have been pushing to get farther and farther into the game. Now? They’re done.

Congrats!

*finegeometer*

---

## LINEAR LOVE STORY 6

Two vector spaces found love in a matrix

$$\begin{bmatrix} 420 & -327 & 29 \\ -137 & 848 & 11 \\ 703 & 194 & 69 \end{bmatrix}$$

They know not all their interests map perfectly to the other’s life. Even though trying out the other’s passion does not have the same dimension, they’re glad to have a chance to share it; a fundamental moment of connection.

*Totally Ununimodular*

## “I LOVE YOU”

is kind of a weird message to receive from an Internet stranger as a 14-year-old.

This is partially due to conditioning. From the first moments I had access to the Internet, I was told not to trust Internet strangers, to trust them even less than real-life strangers, that any kid I met on the internet might be a predatory adult behind the screen, waiting for the right moment to strike. I was told never to share personal details, to always tread cautiously. My parents had an even stronger take: they were convinced no real friendship could possibly be made over the Internet. Of course, I knew better. (And I still do. Parents: sometimes your kids are right.)

The rest is good advice, to be sure, but sometimes being overly cautious is a bad thing. As a kid, at least to me, it was pretty easy to tell if someone on the internet was an adult. What kind of adult makes pretend operating systems in PowerPoint? If you were a predator, why the hell would you tell me you lived in West Fucking Virginia? And you'd have to be playing an awfully long game, considering we'd been chatting every day for at least a month. Still, the abundance of caution stuck in my head as we talked. I was careful to not reveal anything too personal, though I'm sure I broke the rules sometimes (there's probably a selfie of ten-year-old me on the Wayback Machine archive of an old forum somewhere).

So that's the first reason it might have been weird. The second is just that, for whatever reason, I have a hard time accepting that other people like me.<sup>1</sup> I'm not sure why this mental block exists. I don't think I need it. It probably sounds sad to you, but I'm used to it. It doesn't bother me that much. It does kinda suck though, especially for the people who do actually like me. Not really fair to them. They've gotta be sick of being pushed away by some insecure asshole who doesn't respect how they feel.

It was only about a year ago when this started to change. I met someone who—for lack of a better way to summarize—wouldn't take no for an answer, but in a good way. She nudged me out of my comfort zone with exactly the right amount of force—gently, but persistently (she would say stubbornly) making it known how she felt, over and over until I gave in. And I'm glad I did. I've never felt more grateful for anything in my life.

I don't know if anyone else has this same mental block. If you do, I want to at least encourage you to try to get rid of it. People like you, I promise. People like everyone. Put yourself out there, you'll be surprised. And if you meet someone like the person I met, don't push them away like you did to all those other people. Give them a chance. Hold onto them. Seriously; you've struck gold.

And to the kid from West Virginia: you probably won't see this, unless by chance you moved to Waterloo for math, in which case you might recognize my writer name. I think the last message I sent to you was “ok”, all lowercase, immediately

after the “I love you” message. I never found out in what way you loved me—I'm pretty sure I didn't love you romantically, but as a friend? Sure. Sorry for being weird about that. I hope I didn't hurt your feelings too badly. You likely forgot about it entirely—this was forever ago—but I'm writing this now because, for the first time, I feel like if it happened again I would react differently.

I hope you're still up to your strange PowerPoint shenanigans. I hope you went to that uni in West Virginia with the silly pod trains. I hope you're doing okay.

\_\_init\_\_

1. other than family and close friends, of course! <3

## ASPECT RATIOS OF NATIONAL FLAGS

Have you ever thought about the aspect ratio of national flags? Probably not, that's why I wrote this article! The most common aspect ratios for flags are exactly what you would expect: 2:3 used by 88 of 195 sovereign states; 1:2 used by 55 sovereign states; and 3:5 used by 17 sovereign states. In fact, if a country uses a 1:2 ratio, you can probably blame the British :) Most former colonies use the same aspect ratio as their colonizers, hence former British colonies (e.g. Canada) almost always use a 1:2 ratio.

Then, there are countries like El Salvador, who decided that they are too cool for the Spanish and decided on a ratio of 189:335 (why?). Some countries are squares (literally), such as Switzerland and Vatican City with a perfect square ratio (1:1).

Now those are boring aspect ratios and not the reason I wanted to write this article. My inspiration came from learning that the aspect ratio of Nepal's flag is irrational. Not only is the aspect ratio irrational, but it's also only due to the blue border! The inner red part of the flag has an exact ratio of 4:3. Once you include the blue border it becomes  $\approx 5000000000:4101687939$  or:

$$1 : \frac{6136891429688 - 306253616715\sqrt{2} - \sqrt{118 - 48\sqrt{2}}(934861968 + 20332617192\sqrt{2})}{4506606337686}$$

Side notes about Nepal's flag: it is the only non-rectangular flag and the only flag with a decimal ratio below 1 (i.e. taller than it is wide)

Nepal is not the only flag to have an irrational ratio. Togo is the only other country with an irrational ratio, it's much shorter than Nepal's ratio but it's because they use the fucking golden ratio,  $1:\phi$ .

# N TANTALIZING CONCEPTS COVERED IN MATH 237 SO FAR

## THIS IS MY FORM OF STUDYING FOR THE MIDTERM AND I'M SORRY

- Multivariable Functions: Let's be honest, they're more fun (~~in bed~~) on graphs than scalar functions. And variety is the spice of life, so it's hot in both regards!
- Level Curves: I know I just said variety is hot, but consistency is hot too! And I always want to visualize those 3D curves a bit better, a bit closer, a bit more attentively
- Cross Sections: Damn, I wanna intersect all those planes... Let me lay it on the graph and \*REDACTED\*
- Epsilon-Delta definition of a limit: It's hot how little we have to see it! Although, it's quite mesmerizing to ogle from afar
- Proving the limit does not exist: Okay, this one is just satisfying. Sure, I can't bring  $f(x)$  to the edge of its limits but
- Continuity: Hello!!! Who doesn't want to stroke a smooth, supple function?
- Squeeze Theorem: It has a mildly suggestive name AND it makes proving continuity easier; what more could you ask for in a theorem? Plus I love finding a function  $B(x, y)$  in my neighbourhood ;)
- Partial Derivatives: I mean, those Ds are rather funky yet curvy. Also, it is a necessary condition for differentiability (which implies good ol' continuity) and derivatives in general are hot! There, I said it!
- Clairaut's Theorem: Another satisfying theorem, but it loses points for the fact that Alexis Clairaut is not my type. If only George Boole proved this :/
- Hessian Matrix: Square matrices are hot. Partial derivatives are hot. Symmetry is hot. That's all I can say.
- Linear Approximation: My friend said it's fun to do, so take that as you will.
- Chain Rule: I don't think I need to explain this one, but I of course will as let's be honest, I should have shut up a long time ago, and we're at the end so I might as well complete this. Anyway, the rule is wonderfully satisfying. And like RiRi said, chains and whips excite me!

*i cannot be associated with this masterpiece*



normalparameters

If you are confused, see 152.2 and 152.5, after which I suspect you will still be confused

# ONLY PLAY CLASS OF '09: THE FLIPSIDE IF YOU HATE YOURSELF

First of all, I didn't buy it. But people's reviews were absolutely atrocious. So then I did the next best thing, which was watching hours of gameplay!!! :(

And what the fuck. The allure of Class of '09 is its stupid humour, but in the flipside there were literally so few funny moments you could count them on your fingers. All I can think about is the seven seconds bit. Cruel, but I laughed nonetheless. I'm not going to explain it here so that if you do play, I don't take away the only joy you may get. The little funniness that exists is entirely overshadowed by the hour of foot fetish content and minimum wage nightmares. Not enough for you? There's a route that delves into modern sex slavery! There's an ending where \_\_\_ fucking DIES in the saddest way ever. There's also an ending where \_\_\_ dies, but that's not as sad because there isn't much to be sad about when it comes to \_\_\_\_\_. If anything, them dying is the best out of the five endings.

Wait, what? Did your ears hear correctly? There's only FIVE endings, when the original had 15 and the re up had seven?!?!? This isn't the same level as regular Class of '09. This is essentially fanfiction, except fanfiction is astoundingly better than this game. On that note, maybe it's finally time to write an article about fanfiction...

nike



## EPISODE 68: CS 136 — REGULAR EXPRESSIONS

MathSoc Cartoons presents episode 68 of the MathSoc Cartoons series: [CS 136 — Regular Expressions!](#)

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

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

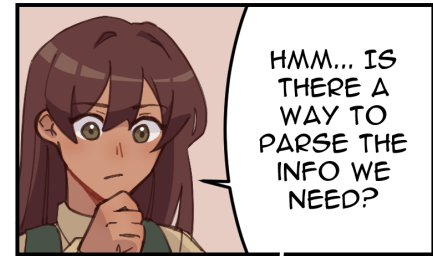
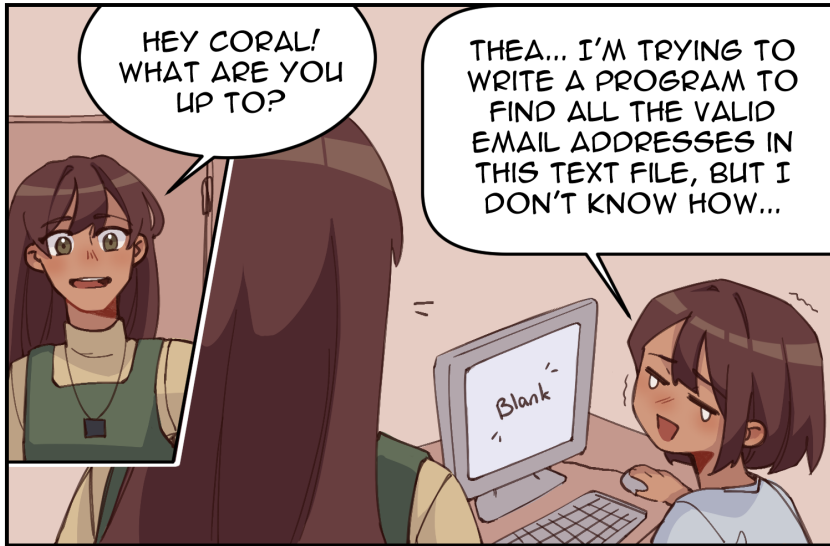
As always, feedback, suggestions, and fan art can be left on the MathSoc Cartoons channel in the MathSoc Discord server or sent to [cartoons@mathsoc.uwaterloo.ca](mailto:cartoons@mathsoc.uwaterloo.ca).

MathSoc Cartoons

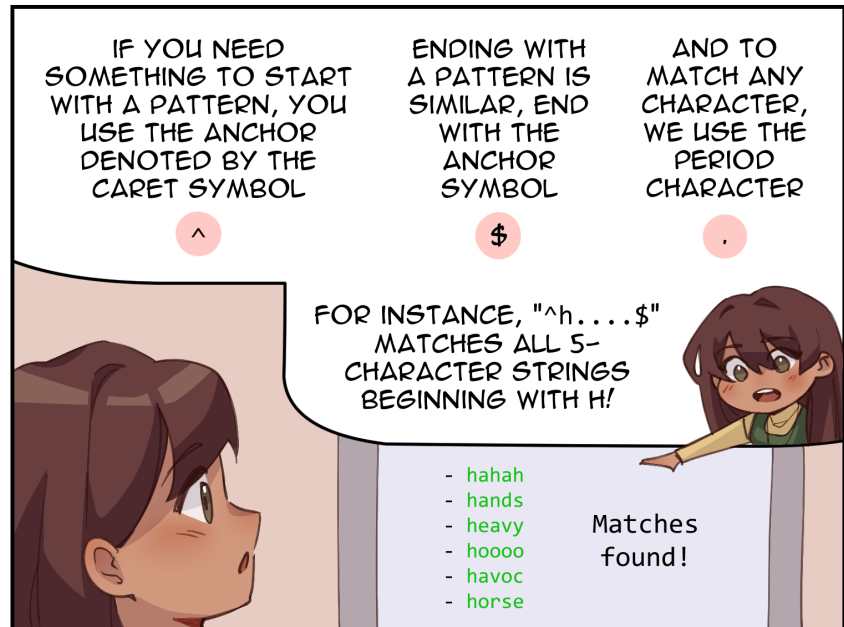
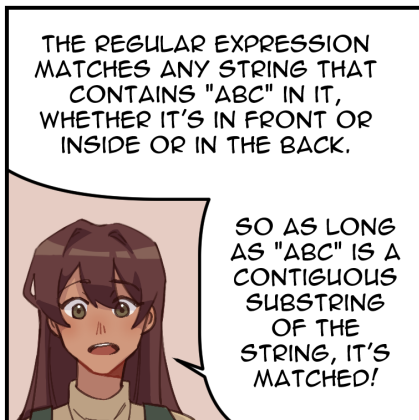
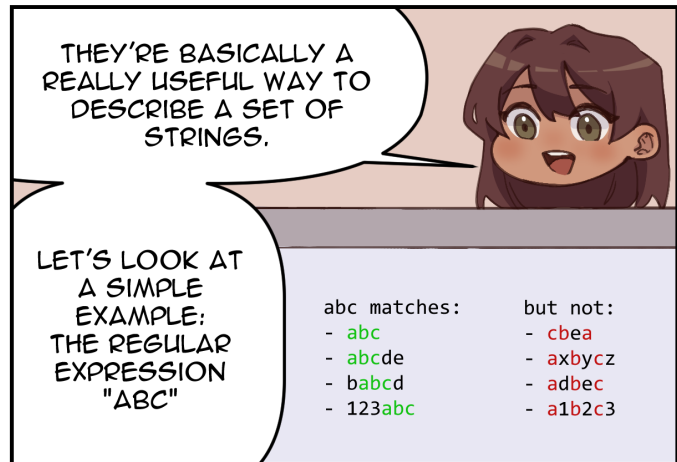
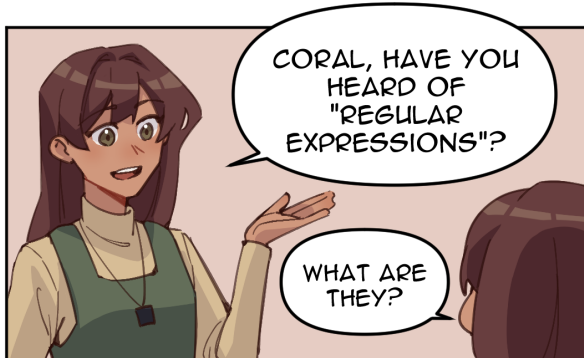
© 2024 Bryan Chen and Renae Balido, all rights reserved. Published under license by MathSoc. Do not reproduce.

CS 136: REGULAR EXPRESSIONS

STORY BY BRYAN CHEN | ART BY RENAE BALIDO



~ ENTER REGULAR EXPRESSIONS ~



© 2024 Bryan Chen and Renae Balido, all rights reserved. Published under license by MathSoc. Do not reproduce.

**CS 136: REGULAR EXPRESSIONS**

STORY BY BRYAN CHEN | ART BY RENAE BALIDO

AND IF YOU NEED SOMETHING SPECIFIC, YOU CAN USE THE FOLLOWING:

OH!

- [a-z] matches characters a-z
- [abc] matches only a, b, or c
- \d or [0-9] matches digits 0 to 9
- \w matches any alphanumeric character including underscores, equivalent to [a-z A-Z 0-9 \_]

BUT HOW CAN I COUNT ARBITRARY NUMBERS OF CHARACTERS AND PATTERNS?

I'M GLAD YOU ASKED! MEET THE QUANTIFIERS:

- \* matches 0 or more occurrences of the preceding pattern
- + matches 1 or more
- ? matches 0 or 1
- {n} matches exactly n occurrences
- {n,} matches n or more occurrences
- {m,n} matches between m to n occurrences, inclusive

AND ONE MORE THING: YOU CAN GROUP PATTERNS TOGETHER WITH (...)

FOR EXAMPLE, (\d{2})-(\d{2})-(\d{4}) CAPTURES ANY LINE CONTAINING A DD-MM-YYYY DATE FORMAT!

HMM, SO TO BUILD AN EMAIL EXPRESSION WE NEED...

- ONE OR MORE ALPHANUMERIC CHARACTERS, INCLUDING SYMBOLS LIKE ., \$, + OR - BEFORE THE @
- THE @ CHARACTER ITSELF
- THE DOMAIN NAME, WHICH CONTAINS ALPHANUMERIC CHARACTER SAND PERIODS AND HYPHENS
- THE PERIOD AFTER THE DOMAIN NAME
- THE DOMAIN SUFFIX, CONSISTING OF ONLY LETTERS AND IS AT LEAST 2 CHARACTERS LONG

THAT'S IT! THE PATTERN IS

<sup>BEGINNING</sup> ^ <sup>AT LEAST 1 CHARS LONG</sup> [\w.%+-] <sup>MATCHES THE DOMAIN NAME</sup> + @ <sup>PERIOD</sup> [\w.-] <sup>AT LEAST 2 CHARS LONG</sup> + \. <sup>AT LEAST 1 CHARS LONG</sup> \w {2,} <sup>ENDING</sup> \$

<sup>MATCHES THE FIRST PART OF THE EMAIL</sup> <sup>AT SYMBOL</sup> <sup>AT LEAST 1 CHARS LONG</sup> <sup>MATCHES THE DOMAIN SUFFIX</sup>

NOW YOU CAN USE IT ON AN EGREP CALL TO FIND ALL THE LINES CONTAINING VALID EMAILS!

AND DON'T FORGET: MOST PROGRAMMING LANGUAGES HAVE BUILT-IN SUPPORT FOR MATCHING REGULAR EXPRESSIONS, TOO!

```

import re Python
import java.util.regex.*; Java
import "regexp" Go use regex::Regex; Rust
#include <regex.h> C import <regex>; C++
using System.Text.RegularExpressions; C#
    
```

REGULAR EXPRESSIONS FOR EVERYONE!

# ACCOUNTABILITY UPDATE

If you haven't read my previous article, go read it. It provides important context to this one.

As I mentioned in my previous article, the Subway app ruined my sandwich experience. They forced me to use a strong password even though I was just going to use my account to pre-order sandwiches and pay when I pick them up. Another part of that problem is the fact that I have to have an account at all.

As I mentioned, pizza places have this figured out. You can order online and check out or choose to pay at the counter, all without an account. Subway did not get the memo. Neither did really any other chain restaurant, which usually don't even let you order ahead, and force you to use one of the devils of food service, food delivery apps. I will have an article on those guys someday but right now we're here to talk about unnecessary accounts.

I can kind of understand why Subway wants me to have an account, so people can't just spam them with sandwich orders, but pizza places don't seem to have a serious problem with this. I have heard of prank calls but I don't think people are just ordering a pizza and not picking it up. I don't think this is an actual problem. Subway just wants to collect your information probably. Nevertheless, against my better judgement, I will give Subway a pass on this one.

The thing that I hate the most is how every fucking company requires me to make an account and join their "Talent Community" whenever I want to apply for a job. During co-op season this is excruciating. It's already the worst when they say to also apply on their website to be considered, but making me create an account is just an extra piece of shit added to the pile. I have never in my life gotten an email as a result of joining a talent community so either these accounts are a waste of time (possible) or I am useless and unemployable (equally possible).

I think in general I just hate having to make an account for a service I am going to use once ever. I recently bought concert tickets and was forced to not only make an account on Dice (which I had never heard of) but I also had to download the app because that was the only way to view and use my ticket. If you wanted to live your life without a mobile phone, fuck you. I feel like half of my accounts are for one-off services that I have never used since.

Everyone is criticized for using the same password for all their accounts, but if you're going to make me have a million accounts, how can I be expected to remember a million passwords? Obviously I'm going to reuse some. If I only had like five accounts they could all have different passwords. If LastPass or other password manager companies are reading this, I am open to sponsorship in the form of co-op employment, and in return I will create a follow-up article promoting your service and saying that I love having accounts because they are so easy to manage.

For anyone wondering at this point, the title to this article is only related to the topic by the fact that they both have "account" in them. This has nothing to do with any sort of accountability even though that is a very hot topic nowadays. I am hoping to scam people into reading my article, since anyone who is interested by the title and starts reading my stuff will definitely always finish it since it is such high quality literature. Similarly, reading my last article isn't necessary to understand this one but it is important that I get more attention so hopefully I trick people into reading that too.

In conclusion, we should model much of our online infrastructure after pizza places. Accounts should not be necessary unless you actually have to store information with the service. Things should be accessible by phone or in person and not just online. All websites should allow you to buy pizza. Extra sauce should always be free.

Yamnuska

---

## FAVOURITE STUDY SPOTS!

Here are the favourite study spots of **mathNEWS** writers:

- MC 6<sup>th</sup> floor
- MC 4<sup>th</sup> floor
- MC 3<sup>rd</sup> floor Mac Lab
- The seats outside the upper entrance to B1 271
- MathSoc Exec Office
- DC when it's not stinky (my real favourite is a secret) (5)
- STC (2)
- QNC (my real favourite is also a secret)
- E6 4<sup>th</sup> floor, pretending to be an engineer
- I don't have one
- FemPhys (2)
- DP
- The 8<sup>th</sup> floor of DP
- my apartment
- MC Comfy (my real favourite is confidential) (2)
- Math C&D Balcony
- Math C&D
- **mathNEWS** office (2)
- Rev basement
- My dark bedroom
- The one person lock-in box in the SE EIT Lounge
- SJU Library
- home (2)
- dorm room

mathgeek



The logo for mathNEWS, with 'math' in a lowercase, rounded font and 'NEWS' in a larger, outlined, uppercase font. A stylized arrow points upwards from the 'N'.

# FASS SHOW IS REALLY DIFFERENT FROM WHAT I EXPECT FROM CAMPUS CLUBS

Last Friday (10/5) I went to the FASS show, by FASS, Warriors Band, UW Improv, JamNetwork, UW ACE, and Film Club.

What I enjoyed the most that night was the interactive experience.

The stage wasn't just at the front; the whole room was their stage. Actors would stand up from various corners and seats, cheer, and then enter the stage under the spotlight. The surprise of realizing that the actors were actually sitting right behind you was incredibly captivating, making audiences feel they were indeed included in the performance.

These actors weren't dressed in extravagant costumes—most were in casual clothes—which made them feel approachable, just like normal students around us. Yet, their emotions, expressiveness, and improvisational skills were unmatched. This contrast was truly amazing.

I especially loved the hosts. It felt like they turned hosting into several mini-performances, each eye-catching and unexpected. The pacing of the show was perfect too. After the drama performance, the Warriors Band took the stage, and their thunderous sound drowned out all the applause and cheers. But no one would say it was bad—it was simply incredible! It was the first time I realized how some songs could sound completely different when performed by an orchestra compared to their original versions, and it was so interesting!

The entire evening was full of surprises and excitement, and I left feeling energized and inspired. It was a truly unforgettable experience!

Let's Go FASS!!!

Angela

# THE LIMITS OF A LIMERICK

They always study underneath a roof  
 Convincing themselves that the difficulty is a spoof  
 Though no matter what they do  
 The rumors of MATH 137 are true  
 No one is ready for the Epsilon-Delta proof

thebutler

# CAPYBARA POETRY CONTINUED

## POEM 1

In the field afar  
 There once lay  
 King John the Capybara  
 On a pile of hay

## POEM 2

Living a life of solitude  
 Walking a very lonely path  
 King John the Capybara halts  
 Taking his final breath  
 Seeing his last sight  
 He keels over and dies

Falling  
 Falling  
 Falling from a very high height.

Plunk!

## POEM 3

But alas,  
 From the dawn  
 From the ashes  
 King John rises



annaardvark

# Schlorpppppp!

A NOODLE-EATING mathNEWS EDITOR

## FOREVER 15

*CW: Death*

13 days ago would have been your 20<sup>th</sup> birthday. You died one day after the pandemic restrictions started, on March 14, 2020. We never had a funeral for you. We couldn't, no matter how much we wanted to.

I remember hearing the news the day you died. We went to different high schools, so we drifted apart. I regret not keeping up with you, and by the time I found your contact again you were in the hospital following a heart attack. I knew you were sick, but I thought you could get through anything. After all, you were the strongest person I had ever met.

Death is really unfair. The silence at the dinner table where you used to sit, your room that has been unchanged for 4 years, your dog that wonders where you went that notices your scent slowly fading away, and the obituary that comes up when you Google your name all serve as reminders that you were once here. That you were once my age, looking forward to the future, excited to make new friends and play hockey on a university team. All the things you wanted to do, now all the things you never could.

I'm 20, but you're still 15. I'm in university, but your Instagram bio still has your high school in it. I miss talking to you and hearing your laugh and seeing you smile again. I forgot the password to my old Instagram account that used to follow you, and even though I know you'll never accept it I requested to follow you again. Maybe I'm requesting to follow you as a way of saying I wish I could join you again. I remember when we would talk, and how no matter what happened you could make me feel better. You were one of the few people who made middle school not feel like Hell. God sent you to turn my middle school experience into Heaven, and I guess that 4 years ago He called you back. Talking with you and spending time with you was like meeting my Guardian Angel in person, and now when I talk to you it really is talking to an angel.

I hope wherever you are is full of hockey rinks for you to skate on and dogs for you to pet, and I hope to see you again.

Love you forever Mac.

bsgcg

## MIDTERM ENCOURAGEMENT

◀(\*•◻•\*)▶

Remember you are a beautiful person. You will crush these midterms. Study hard and don't stress too much. Good luck!

Catboy Supremacy

## APPLIED MATH CLUB PROFTALK ANNOUNCEMENT

**THE SECOND OF THE TERM!**

The Applied Math Club will be hosting a ProfTalk by Francis Poulin on Tuesday, October 22<sup>nd</sup> at 5pm in DWE 1515.

**Title:** Chaos and Power! (Yes, an exclamation mark is necessary)

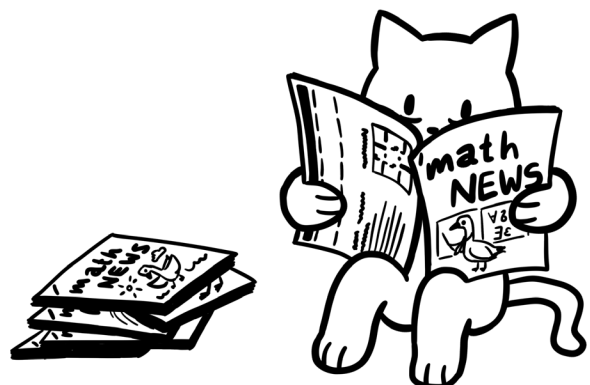
**Abstract:** Edward (Ed) Lorentz is often called the father of Chaos. He was a professor at MIT, not in Mathematics but in Meteorology. In 1963 he published a paper entitled "Deterministic nonperiodic flow" that introduced a Strange Attractor and the idea of the Butterfly Effect, what we now strongly associate with Chaos. Even though Chaos is well known in popular science, the scientific community cannot seem to agree on a precise definition of "What is Chaos"? But one characteristic that is always present in each definition is the idea that Chaos is unpredictable, which makes weather prediction such a hard problem.

This talk will consist of two parts. In the first I will give an introduction to the famous Lorentz model and how it was derived in an attempt to idealize Atmospheric Convection. Ed discovered that this model, as trivial as it seems in comparison to the real atmosphere, is essentially unpredictable, and hence chaotic. In the second I use Fourier Analysis to determine the Power Spectrum of a time-series and show how this introduced a natural definition for chaos. Therefore, through power we can better understand Chaos.

**Food:** Refreshments will be provided to Pure Math, Applied Math and C&O club members.

If you aren't already a Pure Math, Applied Math and C&O club member you can join by bringing a toonie (\$2) to the talk.

VP AMath of the Pure Math, Applied Math  
and C&O Club





## N THOUGHTS ON THE DAILY LINKEDIN GAMES

### CROSSCLIMB

- Tab should skip to the next line, shift tab should go to the previous line
- Man how hard would it be to come up with better word ladders? Some of these are really uncreative, they should never have the words all start with the same letter
- And maybe get some better clues too. LinkedIn's worth 30 billion dollars, just poach someone from NYT
- Could be made better by having a jingle play upon completion

### PINPOINT

- There is nothing to comment on it's pinpoint

### QUEENS

- As a user of the Xs, they really should allow you to click and drag to place a line of Xs. Manually entering each one is carpal tunnel inducing
- This one feels like the first daily game they thought up, and the other two were made so LinkedIn Games could be a whole department and not just Queens
- Far and away the best LinkedIn game, and that's not just my opinion, none of my connections regularly play the other two, ~8 of them play Queens
- Probably because Queens boasts excellent game and level design
- And beautiful character arcs too
- In fact, Queens is proof of video games as an art form
- Which means LinkedIn is an artist
- Sometimes I wake up and I feel a clenched sensation and I realize it's because LinkedIn Queens has me by the balls

I have never gotten a job using LinkedIn, and I know you haven't either. I cannot fathom why you would still have an account on this website if it's not to play Queens.

aphf

## FRIENDS

When one wasn't there anymore, I needed the others even more. Reach out and don't get trapped in your own mind. It sucks.

furriertransform

## SEVERAL INTERESTING FACTS ABOUT SPIDERS

Have you ever wondered how spiders seem to be able to build webs between arbitrarily high and very far apart structures? This never crossed my mind until I spend several hours wandering a forest with some friends and noticed how many webs like this there were. How does the spider start it? Does it jump? Does it make a super long web and walk via the ground from one point to another? No! The spider, being far smarter than me, picks a spot and creates a super long loose web, and just waits for the wind to blow it into something! Apparently the vibrations sent through the web by it sticking to something tell the spider it can start building. I think this is very cool.

Also, while researching this topic I found that they sent spiders (named Arabella and Anita) into space to see if they would be able to build webs in zero gravity, and if the webs would look different. It only took one day for the first spider to adapt to being weightless, and she built an incomplete web which she finished the following day. The web was unusually thin in most parts, but its thickness varied, which isn't true of webs spun on earth. Apparently, spiders sense their own weight to determine how thick their web needs to be, so maybe that has something to do with it.

nazz

## I FUCKING HATE THE NEW IOS UPDATE

It's fall, and that means Apple has dropped another iOS iteration that adds basic features users have been asking for for a decade. This time, they went the extra mile and decided to make their UI as ugly and un-user-friendly as possible!

The photos app has been redesigned to remove tabs containing access to folders and albums. Even options like the *edit* button on photos have been over complicated and moved around. I have to scroll through a ton of menus to get to my recently deleted folder?

All this "customization" everyone keeps hyping up is also just ugly, unnecessary and over complicated menus and buttons being thrown in to a simple layout. I guess some people enjoy customizing their icons into vile colours, but the control center having smaller icons and new tabs that I had to remove after getting the update?

Tell me, which engineer took over Apple's UI department and thought this update was a good idea?

Usman!

# STOP USING ANTI-BANGER MATH JOKES LANGUAGE

**instead of saying:** what a strange intrusive thought  
**say:** alright this one's a banger 🔥

**instead of saying:** it's a shame that i got ghosted  
**say:** they couldn't handle my bangers fr 🔥

**instead of saying:** maybe a therapist would help me manage my intrusive thoughts  
**say:** nah this one's crazy, the people gotta hear this banger 🔥

**instead of saying:** damn i wish i could talk to people at this house party  
**say:** they don't know the bangers i'm about to unload on them 🔥

**instead of saying:** man i shouldn't said that during the job interview  
**say:** this banger will be appreciated in its due time 🔥

**instead of saying:** maybe i shouldn't be having this thought  
**say:** big social norm is trying to take my bangers away 🔥

**instead of saying:** that person is behaving erratically, maybe i should help them  
**say:** unleash thy bangers my child 🔥

**instead of saying:** i wish i knew my purpose in this world  
**say:** god put me here to spread my bangers 🔥

**instead of saying:** wow i finally made it to the new world, 1492 is gonna be such a prosperous and cooperative year for our societies  
**say:** the locals shall experience the full wrath of my bangers 🔥

**instead of saying:** it's too bad the government put me on the no-fly list  
**say:** history will absolve me and my bangers 🔥

1. 5, 13, 21, 29, \_\_\_
  - a. 37
  - b. 38
  - c. 39
  - d. 42
  - e. 43
2. What's the butterfly's favourite subject?
3. How to insult a circle?
4. Math teacher's favourite season?

Answers:

1. a
2. Mothematics
3. You're pointless
4. SUMMer

tsdhami

## WHY BASKETBALL IS THE BEST SPORT TO EVER EXIST

Hey, you have probably played many sports, but I think basketball is the best sport there is, especially for math students. It is a super controversial opinion, but I think the element of teamwork in basketball helps students work well with others. The hard work involved in running around and doing different basketball plays helps improve strategy-making as well. Moreover, extensive exercise helps students get into shape after a long day of studying which also helps improve mental health. So, next time you are feeling stressed or need a break, it would be great to play some basketball because it is indeed the best sport to ever exist. I think it will help you improve your performance as a student as well. Thank you for reading my article everyone, I really appreciate it.

χ

Happy\_Sport



# ANOTHER MESSAGE

## A SEQUEL FROM 155.2

I hope you've received my message from 155.2. I don't know about you, but "I can feel it in the air" this time around. That is key. I have another message for you today:

```
HTAa77ixm3k46P000mMgXar+Bfdg4H7MNlzWicIvqK6WB+xQz
E/pl6YqhXw6zDBFcmYSunxL9N1PJJZYKDXb+/oLbEHDxKxhVd
9YJro9N1yHwstbZDF6R0+/LGITsJ9Go5lj5LFM5ujGLdygrb1
IbIwRG3mcBzJVbA8m/ehxgflRydEf55+XuLWRXv0HGzCLoLb
s3iMMfq30KukyczP/egM6JCswjzrbrCLtSRFU3e2v0yDWyWZH
ksJpbhP3GUqX0M0BVHMh3aVxFYdgpDj+5VaPrFThSWaB6enoh
0taaJ3BKgpBHNAtioR7wSvHYLHfx0n/4aLXL9Giqj6Xsp0QNa
nYK9KkLsSobVEKS7a904Gqhj/whTfaFvXMqOWrYyvASl8pc3+
4lmcKjMqc66PWzv+I5PH25eP+zjNQ6EsBtN1TweC6esPdmMMI
GMK29Wb70ns0/dQ5d64f7DiDU7D1efqeq30nhmIK5uxgLASUA
iy3XnqX0Q1q2pvJKPrw1vqdYdTSYCjYNa1b08HdEKDlr8YhMH
rjRm4HZBx+yvFQg+1akjP2DLViJzIgcBI1QkMUQkIi2P29F6U
zsFAef+BwMuG5uzRBehL+Aa1kqKNaeLdUdzUYISiBDkoLMGI
lyqCvfSHTQagwxmSk9rhM3hKFuzm09ZnFl8nUKbZlfzVuClZp
r/x5nLTVI95amaEgf4c9UXcyCDHhwdFXThuY3IAcC1BPajwOR
V4tepPR9wRAL+2gCuR0EPRfKk0S2jUndovvwPYRkEqwp5DLMD
Xoz13EXbtLkS8Bfrdk+Zj34t4l3+fbZyI0+LfdSeUB/PogDmd
e45s72zhN+xTj2x0zo/c/8Z1VdUdCxW0GqKeYjt7cfaUJ5nrT
c6kZxuvG6N23jqCztQLnHm9gz/Ea86ft42LbbW0+HALDpI1VG
GeIjffjU/KWoXja3st5uVPH21ST2Z6UBfMRW0vKE0v+Ub37+E
p0Lpps0ZcisG2Ii0X99IFL+bmXcUENsxFvYphZAY07uxIgd
vLlB+E1Yh9AsnVQvcx/rkoA4pQMANXL53ZvwDK3ozR8P2Uv+V
XPLCL67QNSKfCebKB30JobU6iZk8xDYAGH31PQezFtYdhXrJ
ATAncaDusn7qnIF/ScPtgPM5U5IIaSBRay8mIoS/gh0Hk20Y+
vwBn7b5AWJ1l0eVF009PZ3UnZlo12B448VVi2lNtxiphDIR2A
jeq0Uvw84ebzC/F0EUH/Pj/Bo0B/4qW0iw/wMpE+SPCTH9P2c
k9QlbgDpR+UtThwKynZkn1KvB+QKD5g302XdXlBrvdqiN7Mmd
YLXrCxykaUvNuTEPb+HxGCrP9m1RHZcLMPEGufXtSyHXw4TiK
RkNoKECzUeTYTwhv8P3ZzvGPD7EgM6Hlyqbd0laviNB6YrUc
CqLyFJD9oLSZFqUK2v7C5hWMZ8c39sEm10TJZY2e1A2iY0+d
OYXeTha0JPN5QJKI3bu4z6rUDHEMLCoaoECveyMxTuBx+LLZZ
PHCYgwu6YJfTXBpymEVTEAchSgojEPPLbSyW7KcciLff9F/lS
B6EmW/l6lKu5PV0dP2fuW0n+qjGdFyBN3pCYRKx0cNQNecX7
OQp/kwLFuCk6qk7f2ulKfwm0MuFRVQ/m/6axCDmeXTirlbNbm
1p5Wxrwe0upXVCjQWL0kSyiVCB6eNl5UFhgs3T5xaIhsSepwd
snLqES5MB8t4BA90TC156Q9U2f4Af+edB7q3Kxe5FfVpzsKq0
QF421ntKFXIE6Y7xNDqTcQ74CR6XpJgJ3Ev6TnBIQpRueVU0Q
u0Y0jthR9FW6ibXswQYoq96JuN8sp+xohxhwvest6yM0ND6qX
0GhgBOUYLmYg9t++aCueZEPcUHqLa/2fn9V+e3WHbqzw75C
LLr0KhyGcPfyrbshKLoEdD+JmJrCyIVA3Vqdbum76IReavAJ
nDpVd1/Msg6N6AbFDLFRsbtSpAdpL2/DkZrpzvTwZdNA70ma
wOEIo7TAjRqxs0XaTT05Be9gIRvIkuEHIP6wp22jEmXZkUstb
ITjepyr/tSr7F7PnySkJ0EoHHwCmD57zznmV4uSVvhojRKT7
2Czg709Kpl1k3q
```

"I can feel it in the air" is the AES-192 key with initialization vector "abcdefghijklmnop".

They are SSBjYW4gZmVlbcBpdCBpbib0aGugYwly and YWJjZGvmZ2hpamtsbW5vcA= respectively.

Try using <https://string-o-matic.com/aes-decrypt>, but doing it in Go works better. Make sure to use the base64 settings. Good luck.

Totally Ununimodular

# Σ©XIUWZGWWW

CO-AUTHORED BY APHF & NORMALPARAMETERS

whoops I switched tabs

Totally Ununimodular

# I WILL FIND YOU JEFFERY.

;)

Jeffery's Enemy



My eyes are open but I can't see. My mind is blind and still. I crawl inward into the dark abyss and curl into the soft fog. And I fall...

asleep

Sudo Nim

**My 5-year-old daughter is in crisis because she's not bilingual and all her friends at school are. One day she came home and said "Daddy, I speak Italian." I say "Okay, hit me." She looks me dead in the eye and says "Buongiorno Ohio."**

PROF. BLAKE MADILL

# 2024 GALLONS PER HOUR

## gridCOMMENT 156.3

hallo america ya :3

my deepest condolences to everyone who went on a hunt for the northern lights last week and didn't find any. hopefully you enjoyed the beautiful stars in the sky nonetheless, as well as any other celestial bodies you may have observed idk lol

last time, i asked you guys "who is your favourite musician and what is your favourite piece by them?" and you all said:

- awmlet: chopin - waltz in e minor op posth b 56
- interestingbuckeroo123: nyan cat song by "daniwell"
- softboiledegg: claude debussy - clair de lune
- sallbukkerz: lemon demon. two trucks. perfection.
- Lars Nootbaar and aphf: 'Ancient Mesopotamia' by Mr. Nicky's World History Songs
- macaulay: Billy Joel, because the verses of Piano Man are limericks
- rutabaga111: hindemith, since he was a violist, and his string quartet 1
- nike: hiroyuki sawano and symphonicsuite (aot) part 2-6<sup>th</sup>: thanksat

thanks everyone for the diverse music recommendations!! i listened to the entirety of each and every one of them, and

i'm gonna have to give it to Lars Nootbaar and aphf - nothing gets my head banging harder than raps about history. rest assured that this song has made it into my driving playlist, and waterloo's roads will continue to stay dangerous so everyone say thank you Lars Nootbaar and aphf!!! please pick up your \$5 gift card from the **mathNEWS** office, MC 3030

i'm seeing a lot of new faces (or pseudonyms), so let's do some introductions. i don't want to reuse the fun fact question from 155.1 because that would be wildly unoriginal and lazy of me, which is something i PEAremporarily refuse to do. instead, i would like everyone to tell me what faculty and program you are in, and the rarest program will win!! in the case of a tie, i shall ask the most trusted and unbiased source: chatgpt.

please send your **gridWORD** solution, **gridQUESTION** answer, and pseudonym to [mathnews@gmail.com](mailto:mathnews@gmail.com) by monday, october 21 at six post meridien thanks guys also please no lying for the sake of fair play

love,

spaggettiinhalers

### ACROSS

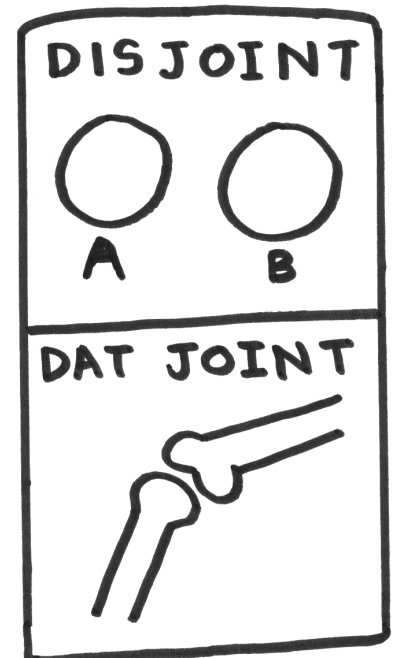
1. Waterloo math contest for middle schoolers
6. Kid\*
9. \_\_\_ free energy
14. Bad
15. \_\_\_ Khan
16. Plato's plaza
17. Kidney filtration units
19. Cow stomach
20. Ranking contestants
22. Not up yet
23. Part of T.G.I.F.
26. Faux \_\_\_
27. Dionysian women
29. Big Branch\*
31. Harper's \_\_\_
32. Hound's trail
33. Apple gadget
34. Beaver's work
37. Spooky
38. Razzle dazzle
39. Olive\*
40. Unfaithful Fulmer
41. Nonpoetic text
42. Parenting challenges
43. Ten Lions\*
45. Green-skinned god
46. Wedding planner
48. "\_\_\_, humbug!"
49. Approximately
50. Sea eagles
51. Anterior thigh nerve
54. Medieval clubs
56. Crab or spider
60. Development areas
61. Make stuff up
62. Sycophant

63. Pauses
64. Hallucinogen
65. Binge

### DOWN

1. Joke
2. Piercer
3. Pie in the sky?
4. Adds
5. Type of build, maybe
6. Modem units
7. Wrinkly fruit
8. Double boiler
9. Pom Pom and Mop Mop\*
10. Large lizard
11. Canadian jet manufacturer (plural)
12. Strain
13. Smooths
18. Bum
21. Watcher
23. "A Doll's House" playwright
24. Sun helmet
25. Ghillie Callums
28. Ring bearer, maybe
30. Myrna of "The Thin Man"
31. Crow
33. Near miss
35. Yolk sacs
36. Unkempt
38. Lets go
39. Hawaiian wreath
41. \_\_\_ pipe
42. Tops, maybe
44. Supplement
45. Pledge
46. Leg part

47. Boiling
48. Held back, as breath
52. Rock Lobster\*
53. Funny Farmer\*
55. Bro's sib
57. Good thing to break
58. Poetic tribute
59. Blonde's secret, maybe



1	2	3	4	5		6	7	8		9	10	11	12	13
14						15				16				
17					18					19				
			20						21		22			
23	24	25		26				27		28				
29			30				31							
32						33						34	35	36
37					38						39			
40				41						42				
		43	44						45					
46	47							48				49		
50					51		52				53			
54				55		56						57	58	59
60						61				62				
63						64				65				

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

# lookAHEAD

SUN OCT 13	MON OCT 14	TUE OCT 15	WED OCT 16	THU OCT 17	FRI OCT 18	SAT OCT 19
Reading Week!!!!	Reading Week!!!! Thanksgiving Day	Reading Week!!!!	Reading Week!!!!	Reading Week!!!	Reading Week!! Tuition and fee refund deadline—50%	Reading Week!
SUN OCT 20	MON OCT 21	TUE OCT 22	WED OCT 23	THU OCT 24	FRI OCT 25	SAT OCT 26
Reading week ends	mathNEWS 156.4 production night, MC 4041, 6:30 pm	Applied Math Club Prof Talk @ DWE 1515, 5 pm	AMath Pizza Social @ MC 6460, 12 pm		mathNEWS 156.4 hits the shelves  Convocation begins	

## PUT THIS ARTICLE ON THE LAST PAGE PLEASE

THANKS IN ADVANCE

iiiiiiiiiiiiiiiiiiii next mathNEWS issue in the pile

wacfeld



## LAST ISSUE'S gridSOLUTION

	1	2	3		4	5	6	7		8	9	10	11													
	T	H	E		M	O	L	Y		S	O	D	A													
12	G	A	I	N		13	A	S	I	A		14	Q	U	I	C	15	K								
16	A	S	P	S		17	S	L	E	W		18	U	T	E	R	I									
19	R	E	P		20	O	H	O		21	S	P	A		23	T	E	N								
24	B	R	O		25	W	N				26	E	B		27											
					28	F	O		29	X		30	B	R	A		32	I	S	34	35					
36	E	T	C	H					39	K	N	E	E				41	D	H	O	W					
42	D	O	H						43	J	U	M	P		44	S			45	I	R	E				
46	I	R	O	N					48	M	A	S	K				49	O	V	E	R					
50	T	Y	P	O					51	P	B	S					52	I	C	E						
					54	T	H	E									56	A	R	57	58	59				
60	B	A	D			63	O	A		64	R			65	H	T	N		67	M	P	G				
68	O	M	E	G	A					70	E	Q	A	O				72	T	A	R	O				
73	A	M	E	E	R					74	L	A	Z	Y				75	E	G	I	S				
						76	O	P	E	D								77	U	S	E	S	78	D	O	G

otherNEWS is made technically possible by club executives of the Math Faculty.

I say “technically” because if they had sent us more news this week, this box wouldn’t be here.

THE mathNEWS EDITOR WHO PUTS THE “NEWS” IN mathNEWS