



## “WHAT WOULD WIN A mathNEWS HALLOWEEN COSTUME CONTEST?”

Halloween is (almost) here. Frights which await us include paranormal activity, heinous criminal masterminds waiting for this time of year to roll around again, and the PD assignment you forgot about this week.

Waterloo isn't particularly known for its night life, as many of you are probably painfully aware of, so what exactly do you *do* on Halloween night this year (besides continuing to dig into a new, crispy, hot-off-the-presses issue of **mathNEWS**)? Last year, I dressed up as Doug Rattmann using a UWaterloo lab coat, attempted to make popcorn and nearly burned down our entire apartment building; then, covered in the smell of popcorn ashes and melted plastic, ran to Conestoga Mall to catch the Five Nights at Freddy's movie. That isn't exactly something I would recommend trying (especially for the second time), so I guess I'll have to find something else this year. I'm sure MathSoc has some fun events, so you could go to those, I suppose. Alternatively, just find a Laurier friend, or if you don't have one, obtain one by breaking into Lazaridis Hall (thanks Mike!), and follow them to wherever they're going, hoping you don't stick out like a goose-shaped sore thumb.

Maybe in true Waterloo spirit, you could just spend Halloween alone. Isn't that much scarier, anyway? Here's a potential itinerary: First, buy some Halloween-themed treats, go back to your dorm room, and enjoy them with a classic 90s Halloween movie (buy a CRT monitor for extra immersion). Then, turn off the lights and tell yourself a really terrifying campfire story (you don't even need a flashlight since you can't see your own face, but you can still use one if you want I guess). Then, and here's the most frightening part: cry yourself to sleep because you don't have anyone to spend Halloween with.

So what have our writers done to contribute to the mood of the season? Present us with some frightfully wonderful articles, of course. We kick off with an awesome **mathASKS** from Datacurve founder Serena Ge, comics in various mediums, chillingly well written personal tales, and, uh, ceramic. You're in for a ride that will send shivers down your spine, so buckle up, and forget about PD for a little while.

waterED  
Editor, mathNEWS

revivED  
Editor, mathNEWS

WHOLE NUMBER HAVER	The Iron Warrior (things trying to rise from the dead are scary)
SEASONED SLACKER	mathNEWS-chan, obviously
MOLASSES	entirely accurate prod night emails
NOTOH	mr goose, and any other answer is heresy
YALEVOYLIAN	A Stephen New suit
TOTALLY UNUNIMODULAR	Charcoal base, barbecue sauce, black olives, no cheese
LARS NOOTBAAR	The one person who doesn't dress up as a cat maid
DICK SMITHERS	The ghost of Feridun
USMAN!	I know you are all going to say <b>mathNEWS</b> chan you sick perverts
DOLLAR STORE PERSON	none left beef pizza
ANDOIII	goose
MIZU5	a pizza box
HEADPHONES97	sexy pink tie
GAYA	idk but something really fucking stupid
AKEIJIN	Dress like a weird <b>mathNEWS</b> pizza
NIKE	mr goose
APHF	dog maids (eats invasive cat maids)
NO PUN INDENTED	Tommy Wiseau, fashion icon and actor extraordinaire
ERALOGOS	William Lyon Mackenzie King's mom
NOT A N*RD	Classic cat maid outfit
MOBPSYCHOFAN	Bust of Jerma but lifesize
BEFUDDLED	Articles which are slightly longer than one page

## ARTICLE OF THE ISSUE

Between probability fanfiction, religious tales, braille lessons, and more, there were many strong contenders for AOTI this week. Our winner is notoh's [Punching Infinity in the Face](#). Next time a bright-eyed UW applicant asks "why should I take math?," I'll be sure to introduce them to the nearest boxing ring. notoh, come by MC 3030 for your prize!

Continuously deform a cow into a bagel, right now.

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

# mathASKS 156.4

FEATURING SERENA GE, FOUNDER OF DATACURVE (YC W24) AND UW CS '27 DROPOUT

## USMAN!: HOW'S THE AI CRAZE AFFECTING YOUR STARTUP FOR THE BETTER AND FOR THE WORSE?

It's definitely affecting us in a good way right now. There's a ton of demand from not just AI labs but also enterprises. Our goal is just to keep up. Actually, most of our customers so far have been inbound (they came to us instead of us going to them). So the demand is really crazy right now, yeah. Lots of projects and contracts.

## PIXEL: CAN YOU GIVE ME A JOB? (PLS)

Lol.

## YALEVOYLIAN: WHAT IS MODEL REASONING? I'M NOT USUALLY A BIG FAN OF AI, BUT THIS SOUNDS INTERESTING.

Everyone working on reasoning probably wonders what exactly reasoning is. While working on reasoning for foundation models previously, that whole time I wondered what exactly reasoning was (imo no one really knows). Without any definitive answer, here are my two cents. Reasoning feels like the mental process of "figuring out" something that doesn't have a clear answer when you see it immediately. It's a sort of intelligence that's not about memorization or knowing lots of facts. An example of reasoning can be solving a math problem because, when I look at the question, I don't exactly know what the answer is—I have to "reason" which, in practice, looks like a BFS or DFS search, or in general some non-linear process in your brain. First, I might think about what type of problem this is, which has many possibilities. Then, if I have a hypothesis, I might narrow down to think about the possible approaches to solve that type of problem. If I try some solutions and they don't work, I have to backtrack and re-consider/solve in a different chain of thought until I get the right answer. So training AI to reason might be trying to get systems to learn and simulate these obscure human mental processes as reliably as humans that can solve hard/important/obscure problems.

## BIG A: HOW'S IT FEEL TO LIVE THE DREAM (AS THEY SAY) + IS IT ALL THAT YOU'D HOPED IT WOULD BE?

Is that your dream lol? I thought the dream was to have a chill life getting lots of money at a FAANG. Ok, but yeah, startup for sure was my dream personally, and I had a vague idea of how it would be but, in practice, almost a year later, there's a lot more nuance. FYI I can provide some more information on where I'm coming from in terms of my experience so to help contextualize my take. I'd been working on side projects since middle of last year until late last year, accepted to YC, pivoted 3 times from Jan to March until we got to Datacurve, raised \$2.2M, from April to Oct grew the company from \$0 to multiple 7 figures annualized revenue selling to top foundation model labs and enterprises with a team of 3–4 people.

First of all, what I learned is that startup is simultaneously incredibly fun, but also painful as fuck. It's probably the equivalent of extreme sports—career edition.

This is the most fun and painful thing—fun because this is about doing the coolest thing at the highest level of impact I can imagine with your favorite people ever. If we have some crazy idea, we can just execute immediately. Like, if we wanna try meme marketing, we just do. If we wanna buy a claw machine for the office, we just order it. If we want to talk to xxx or whoever, we can just get an intro. The feeling is that the world is your oyster. This level of autonomy makes me feel alive and no longer insignificant. Being around people who built this world makes me realize I can do that too. SF's optimism and positive sum game environment really makes you internalize that you can just do things. And so we do—get tech giants and labs folks dream of working at but as customers. So, we have high leverage to improve their models with data at scale. Seems crazy, but we can just do it.

At the same time, I've never been through so much pain over and over again in such a short timeframe. Waking up takes courage, because it's another day of giving 120% and literally fighting for your life. Things go up and down, and it hits every time since this is entirely your baby. The pressure and stakes are so high. It's entirely up to you to make it work when there's no clear answers to how to make it work. Unlike objective things like assignments where one, you know what to do, and two, it's in your control, there are so many factors flying around and amidst that it's entirely your responsibility to just make it work. How? No one knows, but *you* figure it out.

Time moves differently here with so many things happening at once. Someone once came onsite for a work trial just to have a breakdown at the end of day because of how overwhelming it is (yes it is, but just another day for us). The expectations we need to hold ourselves to are so high that we've had another person quit on the same day he started (remotely too, it's crazy expectations). This is hard mode. There's no way to romanticize the fact that it's hard and painful.

## \_\_INIT\_\_: WHAT WAS YOUR FAVOURITE CLASS BEFORE YOU DROPPED OUT?

I only did 1A and 1B by the way. Fav course was probably MATH 135. I also enjoyed a philosophy course, PP 111. As a BBA non-enjoyer, I will also let you know that my least fav course is BU 111/121. I thought I needed both CS and Business education to become a founder, following Naval's quote: "Learn to sell, learn to build, if you can do both, you will be unstoppable," but hated BBA, so very glad I dropped it and upset I didn't drop it fast enough (although DDs as people are great people).

**GAYA: DO YOU EVER REGRET DROPPING OUT? DO YOU EVER WONDER “WHAT IF”?**

Hm. I do think back but almost never had any feelings of regret. In fact if I were to be very honest with you, I feel relieved that I left. The reason being, I think the default path of the Waterloo pipeline is getting a high paying SWE job at a big company, which I always knew is *not* what I want to do with my life. I didn't like that default path and felt like it was not a fit to the pipeline. I've always been more interested in living a crazy adventure, and it's ok to be poor if I fail because I can always go back to my mom's basement. I've enjoyed building since high school because of how powerful software is—you literally make something once and duplicate it to millions at the cost of nothing. Startup was my desired path for a long time, so since high school, I knew I wanted to get enough experience and skills until I could start my own startup. This went according to plan except I didn't realize dropping out would be so early.

To your question though, I did have a bit of hesitancy/regret about what my life would be if instead of becoming a founder. I aimed to become the best engineer or researcher I could've been. Before coming to Waterloo, I was entirely interested in CS as a tool to build things. During Waterloo I somewhat developed a love for the tool/technology itself, not just the product of it. So I started to get caught up in the knowledge of technical depth. Before leaving to do YC, there were some cool courses like CO and CS courses I wanted to take. At the start of YC I felt FOMO because I wasn't taking those courses peers were taking. After a bit of YC I realized: one, courses aren't very relevant to what I'm doing in the real world, two, if I ever need to know anything, I can learn it quickly, and three, my co-founder is way more cracked than me technically and I will never catch up to his level of talent no matter what I do, and he will never catch up to my level of intuition and talent in my areas of strength. Knowing where I add most value is not by being a smart as fuck technical nerd, I have no outstanding regrets.

**NORMALPARAMETERS: WHY DOES THE DATACURVE WEBSITE SAY “SCHEDULE A CALL” SO OFTEN AND PROMINENTLY? IS THAT HOW BUSINESS WORKS NOW?**

So we are B2B—our customers are AI labs and enterprises (not consumers like you and I). The sales pipeline is you get that company on a discovery call, then you engage more until they become a customer. We emphasize the call to action of setting up a call because it's the first step with potential customers.

**ERALOGOS: WHAT ARE YOU CURRENTLY THINKING OR READING? THE CORRESPONDING SECTION IN YOUR WEBSITE MAY BE OUTDATED?**

My bad, I haven't updated my site in a while. Currently starting to read *The Hard Thing About Hard Things* and *Thinking In Systems*.

Thinking a lot about what IS the world we're trying to build with the most intelligent AI systems. All the smart folks

working on improving AI capabilities believe it'll lead to a fruitful future for society, but who is actually planning and designing how the world is going to work as we near towards AGI and more intelligent systems? The whole reason I want to be doing Datacurve specifically over some B2B SaaS idea that automates a vertical business process is because I think data is a high leverage way to improve model intelligence, given the premise that improving model intelligence leads to a better future and improves the world somehow. But who is working on that world design? What's the plan if these smart folks do our jobs right? Is it a universal basic income? What's the structure that makes sure this intelligence doesn't just further exaggerate inequality and wealth gaps? Can we figure out what are we working towards and what we define to be the end goal?

**AVERAGE UW STUDENT: DO YOU THINK YOU'RE BETTER THAN ME?**

Lmao you're funny. Generally it's like we're on very different paths and you have a criteria for yourself and I have a criteria for myself—each criteria being very different. In some metric, someone might define their own success as having a really good relationship, step into marriage, provide for a family and build the family to be loving for everyone. To get there they measure success as stability in an upwards trend—a big TC or things like that. By that definition I'm a complete failure and I will be going forward. My grandparents probably think I'm a disgrace. Our rubrics are entirely different so the only common criteria is, do you live up to your own expectations of yourself?

**APHF: DOES THE DATA CURVE**

Bro what does that even mean (btw I made Datacurve logo a sigmoid function lol)

**NIKE: WHAT DO YOU BUY WITH ALL THE MONEY YOU HAVE FROM NOT GOING TO THERAPY?**

Therapy is great. I think most founders around me do therapy. It's very valid. What I like about therapy is that it makes you introspect and think a lot about yourself, taking you from a reactive state from the day to day to taking more control once you evaluate what you're doing and how you are. The smartest people I've met are super introspective, they either write a lot or think a lot or journal a lot.

**MOLASSES: HOW DID YOU KNOW WHEN TO DROP OUT? WHAT WAS THE PIVOTAL MOMENT, IF ANY?**

Always knew I wanted to drop out. It's a matter of when I could do that. It goes back to the question above about if I have any regret where I mentioned no because dropping out to do startup has always been the plan.

When Garry Tan called us after the YC interview, we were 4 hours away from landing in SFO for an interview at another accelerator who heard we got a YC interview. We weren't sure if Garry wanted to reject us on call or if he was actually

considering accepting 2 kids—18 and 19 years old—who named their company “UncleGPT”—into Y Combinator. As soon as we landed we called him back. Garry said, “Welcome to YC.” We said “Yes.” We didn’t need to think about it. Life just changed in a few seconds.

**NO PUN INDENTED: HOW DID YOU GET TO YC24 WITHOUT A CORE IDEA? WAS IT STRESSFUL, AND WHAT WAS THE BIGGEST FACTOR IN YOUR TEAM FINALLY SETTLING ON DATACURVE?**

I did get into YC with a core idea. It was called UncleGPT. We were working on general web agents, like a planning system for task decomposition plus web agent to execute tasks. We worked on it for the past 8 months part time during coop because web agents are cool—a “huge if true.” UncleGPT had some 1–2k users but the usage rate was really good, where almost 20% of people depleted their free credits at the time. Talking to Garry from YC, we thought we could make it into a semi-autonomous/AI PM tool, so that was the idea we started with. We pivoted 2–3 times after that during YC, realizing we don’t care about PM tools, that we are not PMs so have no context on how to do it, and we found out we’re not interested in making just any B2B SaaS, we really wanna do something so sick to push technology.

When we decided to stop working on our last pivot, an AI backlog groomer (I literally couldn’t bring myself to work on this every day because there’s no way I dropped out of school to do a fucking enterprise backlog groomer for the next 10 years), we were visiting our next door neighbor, Kevin Lu another Waterloo dropout from Sweep AI. They mentioned a reputable customer sometimes > quantity of customers; like if you had OpenAI as a customer, that would be great. Then my co-founder asked, “What would Ivan (Cohere—I was his intern) buy?” I said, “Good data.” That moment we saw the idea in front of us this whole time having seen first hand about data quality working at a foundation model lab. We have stuck to this idea of high quality coding data since then.

**NORMAL: DATA SCRAPING INVOLVES STEALING SIGNIFICANT QUANTITIES OF COPYRIGHTED WORK WITHOUT CREATORS’ KNOWLEDGE OR CONSENT. EVEN SCRAPERS WHICH PROMISE NOT TO DO THIS GENERALLY DO IT ANYWAY. WHY WOULD YOU PURSUE THIS LINE OF WORK?**

That’s not at all what we do. And no, we are not in that line of work of scraping copyrighted work without consent. What you’re talking about is pre-training data scraping done mostly internally in AI labs. Labs are trying to get the best scrapers that scrape the best quality or highest quantity of data online and process it, but I’ve never worked on pre-training. That corpus of unstructured data is used to train next token prediction, but the reason why ChatGPT follows instructions is due to post-training which includes supervised fine tuning (SFT) and reinforcement learning with human feedback (RLHF). That data is typically manually curated by data vendors such as Scale AI or Surge AI and now us, for coding specifically. Where we get data is a fun paid coding platform we built called [shipd.ai](#), where vetted programmers go there to set and solve coding problems while getting paid.

High quality coding post training data is super important because models improve from one, data and two, research, and so often people underestimate just how much data affects capabilities. Data is like the core bread and butter—it’s literally the instructions you’re teaching models to learn, so if data is shit, it’s hard to go far. When I worked at Cohere I realized that—how important data was. The reason why code data is most important in my opinion is because if models are excellent at coding, that is crazy impactful. If models were great at coding, anyone could create and build, no longer bottlenecked at execution of ideas. So that’s why I’m working on specifically code data.

**CUTLET: THE NEW YORK TIMES SUED MICROSOFT AND OPENAI FOR COPYRIGHT INFRINGEMENT IN DECEMBER, AND THE CASE IS STILL UNDECIDED. WHILE DATACURVE’S PRODUCT IS HUMAN-CREATED DATA (AND DATACURVE’S TERMS GRANT IT ALL IP RIGHTS TO USER SUBMISSIONS), COMPANIES LIKE OPENAI TRAIN ON COPYRIGHTED DATA IN THEIR MODELS. (IN FACT, I’VE FOUND mathNEWS ISSUES IN COMMON CRAWL DATASETS, POSSIBLY USED BY OPENAI — AGAINST mathNEWS’ LICENSE!) HOW DO YOU FEEL ABOUT THE ETHICS OF USING COPYRIGHTED DATA IN GENERATIVE MODELS? DO YOU SEE ANY RELATED PROBLEMS THE INDUSTRY WILL NEED TO ADDRESS IN THE LONG TERM?**

I obviously don’t believe labs should do that. It’s objectively unethical. But I also don’t really touch this data scraping stuff so it’s not at all in my control. As mentioned above in the previous question.

**EPIC\_WATERMAN: DO YOU SEE LLMS TODAY AS OVERSATURATED OR UNDERUTILIZED? ARE PEOPLE USING THEM FOR THE RIGHT THINGS, OR DO YOU THINK THEY MIGHT BE LESS USEFUL IN THE FIELDS WE ARE CURRENTLY SEEING THEM EMPLOYED IN?**

I think LLMs are utilized pretty well in the startup space for B2B—where startups are using LLMs in industry use cases and starting to sell into each industry. It felt like half all the companies in my YC batch were vertical LLM applications, essentially automating a specific process in a specific industry using LLM in the product. There’s LLM powered document processing for wealth management firms, LLM powered police report writing or construction report, for tax documents, customer support... one area I feel like is underutilized or emerging is actually consumer LLM. You see, there are LLMs for solving math problems, there are starting to be LLM-powered toys for children, where is a really good LLM AI girlfriend/boyfriend, where is a widely adapted LLM-powered therapist... etc. I think there’s a lot of cool things to be popularized in the consumer space with LLMs. (so many “LLM”s in this paragraph)

**[mathNEWS]**

# REVIEWING EVERY GAME ON THE AIR CANADA IN-FLIGHT ENTERTAINMENT SYSTEM

- **Angry Birds World Tour:** This is an Angry Birds game, alright. I'm not sure what makes it a "world tour" other than the menu breaks the levels down into five "continents" where the pigs look like mildly offensive stereotypes of the region (the European pigs have berets and baguettes, and the Middle Eastern pigs look like they're in Aladdin). This would theoretically be one of the better games, but whatever hardware they're running these games on is *really* sluggish, so any physics rendering will slow the game to a crawl. **6/10**
- **Backgammon:** The description optimistically claims it will "entertain you for hours." I do not know how to play backgammon, and could not figure it out from the instructions they gave. I lasted 4 minutes before I gave up. **3/10**
- **Bejeweled 2:** Fun fact! It doesn't seem like the in-flight system wipes anyone's high scores after the plane lands, so I can see that some absolute legend who sat in my seat before got a score of almost 17,000 in the endless mode. I shudder to think how long he must have played for. Anyways, it's Bejeweled. **8/10**
- **Candy Sky:** This is a physics-based game, so it runs like shit. However, unlike Angry Birds, it also requires you to have precise timing to make jumps, which is very difficult when the game is running at 5 FPS. **1/10**
- **Chess:** Fun fact! The in-flight system also doesn't wipe anyone's username, so I can see that the last person in my seat who tried to play this game online used the name "big d." I waited like five minutes for someone to match with me, but no one else on the plane was playing. **7/10**
- **Crosswords:** They somehow fucked up crosswords. You need to pull up an on-screen keyboard to write clues which is super non-responsive, plus you can't see all the clues at once, you need to tap into a tile to see them, which would probably get old *very* fast. Points for having almost 200 crosswords, though. **4/10**
- **Gomoku Dynasty:** This is like Connect Four, but played on a Go board, without gravity, and where you connect five instead of four. It was actually pretty fun! I would have played more if I hadn't decided that I wanted to play more, worse games instead. **9/10**
- **Anuvu:** It was at this point that I started to get curious about the organization whose name was on the copyright of all these games. Anuvu (pronounced 'a new view') is a company that seems to be a white-label airplane in-flight entertainment system provider. For some reason, I never considered that Air Canada didn't just make all of this in-house. They claim to have made 140 unique games. I'm glad they didn't put them all in on this flight or this article would have been impossible to write. **20/140**
- **Gobble Snake:** This shit is unplayable. Literally. I don't know how to play it. It looks like a Snake-style adventure game but I genuinely have no idea how to control it. Worst game yet. **0/10**
- **Hangman:** This one is weirdly sadistic. The opening screen is of a cowboy outlaw, holding bags of money, presumably being arrested. We then see him terrified for his life with his head in a noose. If you lose the game, his eyes bulge out of his skull and you watch him die live. Uh, other than that, it's hangman. **5/10**
- **Hidden Object Hunt:** Have you ever wanted to play a game of I Spy but instead of a book of richly detailed art made by professionals, all the images were awful photoshops with no sense of accurate scale? Well, you're in luck! Also, please get away from me. **2/10**
- **Hue Drops:** This is an actually kind of interesting puzzle game? That doesn't seem to be a rip-off of anything? Wow! It's pretty hard to lose this one, but a little novelty goes a VERY long way at this point. **8/10**
- **The Tetris Movie:** Yes, technically the Tetris movie is *not* a game. However, the entire time I was playing these games, the guy in front of me was watching this movie, and he had subtitles on so I caught most of it. The true story here is super interesting,<sup>1</sup> but the movie is just... fine. Nothing here is bad, but they felt the need to Hollywood-ify the story, which is a letdown. It makes the parts that are actually true feel less impactful. **7/10**
- **The Incredibles: Jack-Jack Escape:** Wow, they got the Disney license. If only the graphics didn't look like terrible fan art of the Incredibles. Gameplay-wise, it's just an extremely basic puzzle-platformer, but nothing outright bad. **5/10**
- **Luggage Lane:** Really difficult for some reason? Even with the shared progress of everyone else who's ever used this seat, the game was only a third-completed. A harder game than I could stomach after 16 straight hours in airports or on planes, but still commendable. **7/10**
- **Mickey Mouse: Date Dash:** Hold on, this game is kind of great? It's an auto-runner 2D platformer, with well-designed levels, art that actually looks like the 2013 Mickey Mouse series, and best of all, it's a high-speed game that *doesn't run like complete shit!* Wow! What a concept! I know that sounds like a backhanded compliment, but at this point I'm genuinely impressed. I'd play this on its own merits. There's very few other things on this list I can say that for. **10/10**
- **Pool Lounge:** It's pool but with bad physics. **3/10**
- **Solitaire Regal:** It's solitaire. **7/10**



- **Sudoku Classic:** It's sudoku. 6/10
- **Trivia Classic:** It's Trivial Pursuit. I tried two questions and they were both about British political figures. I don't know if that's emblematic of the rest of the game because at this point I had almost landed and I needed to speed through these. 4/10
- **Twinkle Twins:** A boring card-matching game. 2/10
- **Yahtzee:** Wow, they got the real license. On my first roll of my first ever game of Yahtzee, I got a Yahtzee. I've been chasing that high ever since. 4/10

I brought real games to play on the plane. I don't know why I did this.

Dick Smithers

1. <https://youtu.be/fQtxKmgJCB>

## HOW TO WRITE GOOD CODE

- Have a problem to solve.
- Look for libraries to solve it, and test them. They don't work.
- Try to code a solution yourself. That doesn't work either.
- Keep trying. Reject approach after approach, for being too complicated or error-prone.
- Decide you don't trust anything short of a formally verified program, written in a proof assistant. But proof assistants are too hard to use, so reject that too.
- Give up on the project.
- Keep thinking about it anyway. Let the problem stick in the back of your mind. Come back to it, over and over. For years.
- Suddenly, a solution pops fully formed into your mind. You code it up, and it works on the first try. But you've long since forgotten why you needed to solve the problem, so you walk away again.
- Months later, you revisit the problem once more. Do a full rewrite, finding new insights and simplifications along the way.
- You're left with an absolute gem. One hundred and twenty lines of Haskell, split across four thirty line files. Each file has its own purpose, and each achieves it with maximal elegance. It isn't efficient, and you don't need it anymore anyway, but none of that seems to matter. The code is *beautiful*.

*finegeometer*

## GET A FRENCH PRESS

You know what I hate more than coffee snobs? Coffee snobs who think having a Keurig makes them the most elite connoisseurs of coffee to ever walk this Earth. You're paying \$200+ upfront for a glorified coffee machine plus \$30 every month for 24 cups of coffee? If you're having one cup of coffee a day, you're out before the month ends and filling your stomach with the most dookie coffee to ever exist.

If you want good tasting coffee for a much cheaper price, let me introduce you to the French press! I got mine for only \$10 from IKEA, but I heard that IKEA recently switched some metal parts to plastic, so I'd recommend a good metal one from Amazon for \$15 to \$30. Now you have a coffee maker that requires no additional costs for upkeep—including no filter papers!

Now, you need some better coffee than the GARBAGE Tim's and Starbucks Keurig pods you've been buying. Head over to Costco, Walmart, or wherever else you buy stuff, and get a big jug of Folgers ground coffee. It'll cost you like \$20 and last you two terms if you're having coffee everyday—and that's accounting for making a whole French press worth of coffee, so like, 4 cups a day. If you have a Costco membership and want an even better taste, I recommend Birch Bark Coffee Co's Inukshuk Dark Roast. You'll be getting a little less than the Folgers tub, but you can grind the beans at Costco's coffee grinders and enjoy an even better taste.

"But that's so much coffee! I just want a cup of day!" Put whatever you have left in a mug and put it in the fridge. You now have iced coffee to study with throughout the day. Or just... brew less.

"But, but, but, French presses look too complicated!"

1. Add 4 teaspoons of your ground coffee to the French press.
2. Heat up some water in a kettle, stop preferably before it boils.
3. Add the hot water to the French press, wait a couple seconds and break the crust forming on top.
4. After a minute (some people will say 4 minutes is ideal, I think it's too much, you can play around with it) lid the French press with the plunger up.
5. Push the plunger down to filter all the coffee.
6. Pour the coffee into your cup. Make sure you put remaining coffee in another vessel so it isn't over-brewing in your French press. Put in the fridge if you want iced coffee for later.
7. Add creamer and sugar to your coffee if you wish to do so.
8. Clean the French press.

You now have infinitely better tasting coffee for a small fraction of the price, and don't have a stupid Keurig on your countertop. Enjoy!

Usman!

# SUNSHINE SUPER SCAM

This article is about a topic that probably affects like 0.1% of **mathNEWS** readers. I was really angry about it last December but slowly became less mad over time, until an email I got a few days ago refueled my fury. This article is about the cost of lift tickets to the Sunshine Village ski resort in Banff, Alberta.

I want to write a disclaimer here that I recognize that skiing and other snow sports are rich people activities, and that I should be grateful that I can afford to do them in any capacity, blah blah blah if things keep going the way they are I will not be able to afford to go snowboarding even if I manage to Cali and not Bust.

In January 2020, a few months before nothing of note happened, I went to Sunshine for the first time, and it was great. I was a Lake Louise my whole life but I kind of didn't like it because most of Lake Louise is just steep mogul runs, which are quite difficult to get down on a snowboard, and basically impossible to enjoy in my experience. The terrain at Sunshine was much more interesting. There were many more runs that were available to me on my snowboard, and since it was all new, it seemed more special. My lift ticket was under \$100. I think it was close, but that was a reasonable price to pay in my opinion. \$100 in 2020 is around \$118 in 2024.

I generally go skiing/snowboarding with my sister once per season while I'm home for Christmas. This past winter, I convinced her that we should go to Sunshine, rather than Lake Louise. I had recently learned about what I thought was a really good deal, something called the Sunshine Super Card. The Super Card was \$100 and it gave you your first, fourth, and seventh lift tickets free at Sunshine, and the ones in between you got discounts on. Keep in mind that as far as I knew, the regular lift ticket was around \$100, so you are literally getting your money's worth if you go once, and then any additional times you are saving money. The only catch is that you had to buy it before December 31<sup>st</sup>. We were planning on going on December 28<sup>th</sup> or something so this was a no-brainer.

We went for our first day any it went off without a hitch. Our lift ticket was free since we had paid for the \$100 Super Card, so it all seemed to be going well. The snow was pretty crappy because climate change or whatever, but it was a fine time for a hundred bucks. We considered going again before I went back to Waterloo since the Super Card gave us \$30 off on weekends and \$50 off on weekdays. We looked at the lift ticket price and our chins hit the floor when they were priced at *165 smackaroos*. Remember, according to inflation, lift tickets in 2024 should cost \$118, and this was at the end of 2023. Outraged, we determined that the shitty snow was not worth the cost, even if we got \$50 off.

It's alright though, because not only does the Super Card give you benefits at Sunshine, it also gives you a free ski day at Canada Olympic Park, the local hill in Calgary, which is not very big but is still fine when it's free, which it was with my Super Card. "Hell yeah, free ski day," I thought to myself. I then looked into how to redeem my free lift ticket to COP,

only to find that there are *blackout dates* for that deal where you can't redeem it and the blackout dates span the entire time that almost everyone would want to use them. The blackout was from December 23<sup>rd</sup> to January 7<sup>th</sup>. That is literally the entire time I am home. This whole product is set up to look like a great deal and is actually only marginally better than just getting a normal lift ticket.

I was pretty pissed off about this, but it was Christmas time and I couldn't complain too much because I still got a good deal on my one day of poor quality snowboarding. I wrote it down into my complaint list for **mathNEWS** articles but it got a pretty low priority because I had more pressing complaints. I actually recently decided to not even bother writing about it since I didn't feel very strongly about it anymore, until I got an email on October 19<sup>th</sup> from Sunshine telling me to buy the Super Card for the 2024/2025 season. The price? One hundred and thirty fucking dollars.

You bastards. In no universe does inflation explain a 30% increase in price over one year. This is a classic case of "why would we make less money, when we could fuck the consumer and make more money?" They're just price-gouging for fun despite the fact that snow quality gets worse every year. I don't know what the regular lift ticket prices are yet because they haven't been posted yet. I'm sure they're waiting for the results of their annual bullshit tolerance survey.

In conclusion, I'm sick of prices going up because fuck you. Companies have decided that they want to make more money and that the consumer will simply accept anything into their ass that the companies push. I'm over it. I don't know what to do but I'm mad. Fuck you Sunshine, fuck you Loblaws, and fuck you Spotify, who also recently raised their subscription prices because what else are you gonna do but pay for it? Streaming services putting ads back in because fuck you, pay for double premium. Games that are a subscription service rather than just a thing you buy and own, because again, why less money when more money?

In case any future employers of mine end up reading this, I will not make any suggestions on actions we should take about this.

Yamnuska

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## CURB

Approaching the curb  
Not looking in front of me  
To the ground I go

Totally Ununimodular



# ON BEING COMFORTABLY WEIRD

I am a weird individual. I could chalk it up to being neurospicy but the fact remains I have little hope of not being a little weird. I also would not want to be any other way. While I could certainly do with less executive dysfunction, if I were to lose my insatiable joy de vivre I would be a completely different person. I wouldn't be me. I like the weirdo that I am.

However, there are different kinds of weird and it depends on the situation. There's delightfully charming versus creepy and off-putting. Where does one draw the line to prevent one from becoming the other? I think the answer there isn't some nice convenient answer to this question. Different people will have different standards. At some point, you will just have to draw your own line about whose opinion you care about. No matter what, you will never be enough for some people. Some people might have valid reasons to dislike and some are truly not worth caring about and these two sets create an overlapping Venn diagram.

It is very easy to picture some kind of bigot who will never accept being non-binary and it's very easy to dismiss their opinion outright. On the flip side, there's the question: at what point post-graduation does it become uncomfortably weird for someone to still write for **mathNEWS**? Ever since **mathNEWS** has been so booming with enthusiasm from writers that the editors have instituted article length limits, I have taken that a little as a cue to significantly dial back my **mathNEWS** writing. Very much on the logic that, if they have to curtail the writing of current students, who am I to take that space?

However, the last time I was in town I was explicitly invited to prod night by an editor. Contributing that night made me realize just how much I miss writing for **mathNEWS**. Conversations with current students made me see that perspective was very much appreciated. I have written upwards of 200 **mathNEWS** articles at this point. I would hope that I have learned a thing or two about how to write a good one.<sup>1</sup> I do believe I have more to contribute that is relevant to the current undergrads. My memories of campus date back to the last millennium. I have an institutional memory of UW, knowledge that is easily lost to the current student body by the transitory nature of an undergrad.

I had significantly reduced my contributions out of the fear of crossing that line into uncomfortable weirdness, but was that even the right call to make? I don't mind being different. If I see everyone going in a particular direction I will often wonder if anything is being overlooked. Can I contribute more by covering something that isn't being considered?

So, 'til I am explicitly told to stop, I am going to keep writing for **mathNEWS**. My motivation is not pizza, so unless an article meets my standards I will hold back on publishing it, but I miss the regular writing deadline. I really enjoy how scouring for ideas to write makes me actively notice the world more. The fact that **mathNEWS** has allowed my writing to reach people has been such a privilege, one that I am not quite ready to give up.

If students at UW are anything like I remember, them demonstrating how to be comfortably weird is something that will continue to resonate.

Beyond Meta

1. Not all of these articles are good but if you don't let yourself make mistakes you deny yourself the opportunity to learn. I do really stand by some of them. For example, a personal favourite is *Humans vs ChatGPT Part 2* which you can find here: <https://mathnews.uwaterloo.ca/wp-content/uploads/2023/03/mathNEWS-151-4.pdf>

# THE DEVIL WENT DOWN TO OHIO

The Devil went down to Ohio, he fell off like Kai Cenat  
He had no rizz cause his face card declined so he had to get a level 10 gyatt  
When he came accross a quirked up white boy who was hittin the griddy hot  
So the Devil jumped onto the toilet and said, "Blud lemme tell you what."

"I guess you didn't know it, but I was once a sigma too,  
And if you ask for fanum tax, I'd thug shake it with you.  
Now you hit the griddy well son, but give the Devil his due:  
My griddy rizzed up Livvy Dunne, I'll bet i can mog you too."

The boy said, "My name's Johnny, and it might be delulu of me,  
But I'll take your bet cause I'm a chad and you're just skibidi."

Johnny start the grindset, and hit the griddy hard,  
Cause the Devil thinks he's carti and you're not even the fart  
And if you edge enough, you'll be the next new Baby Gronk  
But if you goon, the Devil's gonna mog

👉👉👉👉👉👉👉👉👉👉👉

The Devil started mewling and said "It's time to lock in"  
He thought if he could bust it down then he would surely win.  
Then family guy funny moments emerged from the backrooms abyss  
Lois and Peter joined him and it looked something like this

👉👉👉👉👉👉👉👉👉👉👉

notmobpsychofan

# MATHNEWS

# THE HORRORS OF HALIFAX TRANSIT

*For life be, after all, only a waitin' for somethin' else than what we're doin'; and death be all that we can rightly depend on.*

DRACULA BY BRAM STOKER, 1897

A cold wind blows. Fog rolls between the trees. Chills hang in the air. I come to you with a tale from the East. It is one of uncertainty, of perplexity, of madness, though perhaps not the one you may be thinking of. No, I speak to you not from the deep dark forests of Transylvania, but somewhere much closer to home. In the far eastern reaches of this country lies the city of Halifax. Terrorized by a spectre of car dependency, it lies in desperate wait to be brought back to life. Its commuter service, Halifax Transit, may hold the key to driving off this demonic beast, but the network itself may still be in its wretched throes.

## WITH BROODING WINGS

It would be unfair of me to place the blame squarely on the transit agency itself. In truth, the city's geography, history, and modern state may all contribute to an inefficient service. Halifax is flanked on nearly all sides by bodies of water, forcing most commuters to cram through a few narrow corridors on land or by bridge. In this way, the attractive harbour and defensible positions of the 18<sup>th</sup> century entail the uncomfortable constraints and infrastructural debt of today. As the city progressed, a tram and trolleybus network appeared before disappearing to disrepair or lack of ridership. Today, nearly the entire Halifax Transit system is a bus network. And perhaps by virtue of the municipality's relatively small size, no alternative to the road is available for commuters—that is, save for a public ferry service that traverses the harbour which, nearly three hundred years after its introduction, still shuttles noisily across the water.

Despite these challenges, Halifax performs somewhat well in ridership, seeing 8.3% of residents use public transit as their main mode of commuting compared to 4.5% of Waterloo Region residents and 15.6% of those in Toronto's orbit.<sup>1</sup> So by no means do I intend to say that Halifax is unique in its problems. Indeed, this state reflects the deeply troubling state of public transportation in so many North American cities. What I am saying is that the region has had the capacity to support a better system and, for one reason or another, has squandered it.

## SANITY IN STRAIT-WAISTCOATS

The bus system, as it currently stands, is on shaky ground. Through a combination of geographic constraints, short-sighted decision-making, and lack of urgency at many levels of government, Halifax Transit has shaped up to be a formidable beast to tame. The bus system is a tangled mess of routes, leading every which way except the one you need. Routes are akin to sightseeing tours rather than commuter service. While digital navigation has made it easier to traverse this byzantine web, it remains a stumbling block for those who do not access

them; the system map they fall back on, of course, remains inscrutable. Terminals may also be partially to blame for the mess. Many of the terminating routes travel along the same streets for long stretches, contributing both to confusing bus stop signs and to debilitating delays in the system itself.



## THE FAULT OF OUR SCIENCE

Not only is the structure of the system in a questionable state, but so too is its accessibility. For example, many transit agencies in Ontario relied on exact change or tokens to validate fare payment, until smart card systems like Presto were launched more than a decade ago. Similarly, Halifax Transit accepted exact change, a monthly pass, a UPass sticker on a student card, a paper transfer, or a paper ticket. And where could riders buy these paper tickets? Almost never at transit terminals—the places where transit users are most likely to be, mind you—but rather at select “retail partners” found on the Halifax Transit website. This mind-boggling setup significantly impedes ease of use which, combined with the jumbled route structure, tangles the system even further. Thankfully, the powers that be recognized the problem and have developed a solution. Their solution? HFXGO, a mobile app launched just last year that allows riders to purchase bus tickets online and validate their payment by showing a QR code. While arguably a step in the right direction, the system has faced controversy both for the time taken to implement and for its convoluted interface and validation system.

## CASTLES IN THE AIR

It is not all doom and gloom, however. Politicians at the municipal level have been very supportive of Halifax Transit's long-term vision for the region's transportation system. In 2021, city councillors unanimously approved a Rapid Transit Strategy, a design intended to modernize the system, speed up its buses, and address the burgeoning population centers of the region. Four bus rapid transit lines are outlined in this plan, each with simple colour-coded designations. With the goal of promoting the use of transfers across the system, they strike relatively short and direct paths between popular destinations across the city. Moreover, the plan seeks to exploit the city's unique geography even further by introducing three new

ferry routes to get commuters off the roads, bringing them across the water to the downtown in under twenty minutes. With this, the plan also addresses infrastructural changes that support this new system.

### A SEA OF WONDERS

So there is light at the end of the tunnel. A plan is in place which may finally bring Halifax Transit up to par with systems in comparable cities. What's more, an election held last week has brought in some new blood to council and to the mayoral seat. It may not be enough to finally rid the city of the woes it faces, but a stake through the heart of car dependency is better than nothing.

Hope you have a happy Halloween.

verdanik

1. 2021 Canadian census data
2. It is a biased sample, but take a peek at the HFXGO app reviews to see what I mean.

## HOMEMADE CONNECTIONS

I made my own NYT minigames connections specifically targeted towards Waterloo math students, here's a QR code so that you can get feedback on guesses or a photo if you are less technologically inclined:

CLUB	LIBRARY	MAJOR	BAR
WHEEL	CYCLE	MINOR	NOTE
BUG	PACKAGE	ARRAY	PARK
FACE	CHORD	LOOP	MOVIE-THEATRE



## REVIEWING ALL CAMPUS BUILDINGS AS STUDY SPOTS PT. 5

Another day, another building to slay!

### PSYCHOLOGY, ANTHROPOLOGY, AND SOCIOLOGY (PAS)

I've finally reached the only other brutalist building on campus, yay! [Editor's note: Dana Porter? Needles Hall? :(] For some reason, PAS receives much less hate for being ugly than MC, but that might simply be because no one ever talks about PAS, which is sad because PAS is awesome! The main floor of this building hosts what is undoubtedly the coolest staircase on campus (or maybe staircases is more appropriate). While the classrooms are windowless and somewhat depressing, I found three great study spots. First is a lab on the basement level with actually-comfy couches (sorry MC Comfy), next to the enticing Gambling Lab. Next, I found a hidden outdoor patio with lots of colourful tables to balance the ever-present Gray of the building walls. Finally is the Psych student lounge which was lovely, but also I'm not 100% sure I'm allowed in there because I am very much not a Psych student, oops ☹️. Writing this article has convinced me that maybe PAS is superior to MC??? Rating: 10/10

### PHYSICS (PHY)

I've been told that Physics has lead pipes which may or may not be true, but if it were to be true, I would NOT be surprised. That building is old, and it shows. Also, not to fearmonger, but the water there has always tasted kind of off to me. Anyways, I am not here to hate randomly, but rather to hate in a methodical and justified manner (but also occasionally to love). There are a couple of tables and designated areas to study at in this building, but for some reason, I've never particularly taken to them. I do love the observatory though! Unfortunately that is not a study spot though so rating: 4.6/10

### MIKE AND OPHELIA LAZARIDIS QUANTUM-NANO CENTRE (QNC)

Another building I love! QNC is the perfect building to study in. There are three floors of designated study tables, two of which overlook the lovely Rock Garden. Actually, I believe there are more study spots on upper QNC floors but unfortunately I cannot speak on them as I only recently realized QNC has an elevator, and I never felt like climbing up more than three floors so this review is limited by my laziness. Though the QNC basement may not have windows, it has love (is this too old a reference for people to get). It also has a plethora of whiteboards on which I lovingly poured my heart out on in the form of lengthy FOL proofs in the days prior to my CS 245 final exam. FYI this is also the perfect place to consume an entire pint of CnD Ben and Jerry's during finals season (or anytime)!!! Rating: 9.8/10

# THE CONGREGATION

**“In the narrow valley besieged by the false and faithless,  
He cuts the path to paradise.”**

The congregation inhabited a narrow plateau. Over generations, they had carved out space for their small hamlet, but still it was a hostile place. To their west was a deep and dark forest in a sunken land, filled with shadowy beasts said to snatch away children who wandered too far. To the east were mountains so tall there were no passes over them. The peaks were said to reach above the sky.

**“His works are in service of the faithful, His invisible design venerable.”**

No member of the congregation had ever seen God, but they had seen evidence of His miracles. When members went missing and the congregation found the trail heading towards the deep forest, they knew that the member was lost. No one had ever returned from the sunken land. On very rare occasions, however, when the congregation followed the missing member’s trail, they found it led into some sort of pasture or open plain and then ended abruptly. There would be no further sign of the missing member, yet the congregation rejoiced, for they knew the member had indeed been righteous. The disappearing trail meant the member had been chosen. It meant the member had ascended to paradise.

**“And He shall lift up the faithful, for by His virtue are they virtuous, by providence shall He provide.”**

At one time, the sites of the ascensions had been considered holy. Members had bathed in the warm sun in the open plains on clear days, and they had prayed that God would choose them, but He never came. The louder they called to Him, the more His absence was felt. The truly desperate spent full days in the fields, resting only at night or during gloomy days, and still He did not come for them. And so, the congregation learned that only the pure of heart—only those members who were truly at peace—could ever be chosen to ascend.

**“And he shall lay low the blasphemers, for all that He is is truth, and all that is truth is He.”**

Out of fear that God would consider them desiring and impure, the congregation instead began to avoid the sites of the ascensions, but they continued to worship. They followed the word of God—they gathered and prayed and sang songs of exaltation, they performed rituals to free themselves of yearning, and they did not allow themselves to covet ascension. They learned that God was not meant to be seen.

**“You will know Him by His virtue, by His wisdom, and by His righteous fury.”**

So, it came as a terrible surprise when, on a cold day in early spring, a young member of the congregation saw God. She was with her mother that morning. The frosts had come the night before, but the pair had needed food, so they made their way

under overcast skies to a remote meadow where they hoped to find something to eat.

Initially, the young member, who was little more than a child, could not comprehend what she saw. All she could do was look up in awe as the sky began to bubble, and then to roil and shake with more and more violence until it churned with ferocity not seen in even the fiercest storms. She watched as the sky split open, and from an altitude above the heavens screamed down a great spear which, with unerring precision, punched right through her mother. The force of the impact knocked the child down as a wave flattened the flora in the field and sent loose petals flying. Her mother screamed in agony and writhed in pain, trying in vain to escape, but the spear gripped her too tightly. She was hoisted up, the spear pulling her apart from the inside as the young member looked on, unable to force herself to flee.

She watched her mother, torn and mangled by the heavenly spear, ascend, dragged upwards into the churning roiling sky until she disappeared above it.

**“And in the end, all that shall remain is—”**

“My mother was taken!” interrupted the young member, bursting into the worship hall.

It was not the busiest ceremony, being a weekday afternoon, but the scant gathered members began to buzz in praise.

“I always knew she was faithful,” “Oh yes, she was pious indeed,” “A worthy soul if I ever saw one,” They whispered to each other.

From the dais, the preacher silenced the room. “You must be proud, young one. This is a great honour. Now, let us pray and give thanks for this miracle!”

“None of you understand!” shouted the young member, “I saw her! She wasn’t happy to be taken, she was in pain!”

The preacher’s expression darkened. “Be careful with your words, young one. God does not look kindly upon blasphemers.”

“You’re wrong!” shrieked the young member, “We aren’t God’s subjects! We’re His prey! There is no paradise!”

“Blasphemy!” boomed the preacher, “If you have such disdain for God’s light, perhaps you will enjoy living without it! If you do not want to be amongst God’s children, you can die with the heretical! Take her to the sunken lands!”

The young member turned to run but, before she could move even an inch, four members were upon her. They quickly overpowered her, and no matter how much she kicked and bit, there was nothing she could do to break free. They dragged her across the plateau to the sunken lands and, upon reaching

the precipice over the dark forest, they tossed her in, and she tumbled to the depths below.

“Now, let us resume our prayer,” said the preacher, when all the members of the congregation had returned to the worship hall.

“And in the end, all that shall remain is He,” chanted the congregation of bivalve mollusks in the lakebed. “Clamen.”

aphf

## A REVIEW OF THE MASTER AND MARGARITA'S NYC THEATER ADAPTATION

### OR HOW I LEARNED TO STOP WORRYING AND LOVE YALTA

A couple weeks ago, New York's Theatre 86, a Russian theatre company in Uptown run by Aleksey Burago, put on a performance of *The Master and Margarita*.

#### CONTEXT

*The Master and Margarita* is a novel by the Ukrainian author Mikhail Bulgakov. I won't repeat too much of what you can find on a Wikipedia page, but as the director (paraphrased) put it, the first half is a pointed satire of the Soviet Union at the time, and the latter is the telling of a more deeply personal story. The devil arrives in Moscow donning the name “Woland” and takes revenge on individuals Bulgakov deemed corrupt or insolent, primarily in the artistic world—theatre directors, writers, police, and, uh, atheists, as he was not a particularly big fan of the state sponsored atheism at the time. We are introduced to a writer, “The Master,” representing Bulgakov, who is cast away from publication despite his superior writing to those receiving public attention; and the lover, Margarita, whom he has abandoned, who adored his novel on Pontius Pilate's execution of Jesus Christ, a recurring theme in the novel. A bunch of stuff happens, she's recruited to be the hostess of the devil's ball, yadda yadda, and she gets reunited with the Master. The whole thing is pretty absurd but is written quite beautifully, and although some of the criticisms are transparent, much is up to interpretation and many broad philosophical topics are questioned. I imagine it is particularly relevant to the current environment in Russia, and the director indeed said that this is a “novel of the future” as well.

#### THE PLAY

Again, there are a lot of angles you can take on this story, and a lot of different things you can put emphasis on. I watched a Russian television adaptation that paced things very slowly and took the whole thing relatively seriously. This was pretty different—the whole thing was presented in a very satirical lens, acted out in an almost Vaudeville manner, with a lot of physical comedy gags and curious choreography. It was clearly a low-budget production; Theatre 86 is located at the top floor of a church, and only about thirty seats were available (at only \$45 USD each—quite a steal compared to what I paid for the *Attack on Titan* musical the next day! Although that was also really cool.) Despite that, I was really impressed by what they were able to pull off, certainly rivaling what I would expect in

a major theatre festival. The Master's performance was particularly impressive, as he provided a serious and down-to-earth contrast to the other characters' silliness. The show was only two hours or so, which obviously cannot accommodate the entire plot of the novel, and thus some creative decisions had to be made. Most of the removals were fine in my opinion, but some of the writing was changed, and there were a couple disappointments—for instance, Woland predicts the decapitation of one of the writers he speaks to at the very beginning of the novel; in the text, he does so in very vague terms, only providing a cryptic phrase, but the reveal is changed here to be a lot more explicit, specifying he would be decapitated outright, but throwing in a small bait and twist about how it would happen. It's not a huge deal but I think it contributed to the vibe of the story. I also think Margarita was acted a little *too* overly dramatically at some points, that to me felt like they were supposed to be very serious—for instance, in her darkest moments, lamenting over the loss of the Master. Most of my criticisms are minor nitpicks like this though. Overall it's pretty incredible they were able to compress it into the time they had; the screen adaptation was something like 8 hours. (Apparently, there is a much shorter movie adaptation coming out?) There was even a huge illustrated mural of most of the characters at the back of the stage which was cool to look at. I got a chance to talk to the director about his interpretation of the character of Woland; he essentially said that he was just an agent for revenge for the first bit of the novel, but as its complexity grew, his role as well had to shift and adapt to something more nuanced. To be honest, that might not be exactly what he meant, but I'm still thinking about what he said. Then a Serbian guy came, which he and another staff member were really happy about for some reason, and assumed I was friends with him(?)

So, how do you, dear reader, watch this? Unfortunately you can't, it was only on for a couple weekends. But hopefully this encourages you to read *The Master and Margarita*, because it's a very good novel, if not a little wacky, and anti-atheist (is that a double negative?). Or maybe you'll be encouraged to go to New York. There's a lot going on there.

epic\_waterman



# profQUOTES

## AMATH 251, MIKE WAITE:

- “ No, that never happens. That would be bad for mechanics. For classical mechanics, anyway.
- “ It’s funny, right, it’s a generalized force but it’s not the force in general, and it’s a generalized momentum but it’s not the momentum in general.
- “ I want to impress upon you how easy it is compared to what we did in the second week, but it’s not so easy that I could do it in two minutes.

## AMATH 251: MOHAMMAD KOHANDEL

- “ If you find this weird or difficult, I’m happy.

## AMATH 271: MIKE WAITE

- “ A bunch of his friends got executed but he kinda survived somehow.

## AMATH 351, FRANCIS POULIN

- “ We are not talking about doughnut drums, we are talking about normal circular drums with no holes inside.

## CO 456: MARTIN PEI

- “ For this one time only, we will assume that the earth is flat.
- “ Google is a charity. That is the most false statement I’ve ever said.
- “ There’s always some banging upstairs. Does anyone know whats up there? MathSoc?

## CS 341: ERIC SHOST

- “ So if there’s a minor annoyance you say “zut,” if it’s a bit bigger you say “oh la la,” and if it’s bigger than that then you say things I am not allowed to say here.
- “ Most implementations use a stack. I’m not going to do that, mainly because it doesn’t work. That’s a good reason not to do it.

## CS 343: PETER BUHR

- “ Page 1, Note, except for include files, all sort code must appear within mergesort.  
Within mergesort, you can create anything you want.

## CS 360: RAFAEL OLIVEIRA

- “ You go to a dark alley in MC and someone’s like, “Hey, I really want to sell you this polynomial.” You really want to use this polynomial, but before you fork over a lot of money, you want to make sure this polynomial isn’t just zero. I’m just selling you snake oil.

## GER 101: BARBARA SCHMENK

- “ Speak German to yourself; out-loud, in the shower. Drink alcohol if it helps, research shows—they wouldn’t do this research anymore—(...)

## HIST 312: GEOFFREY HAYS

- “ Oops, I just showed my bias.

## MATH 145: JERRY WANG

- “ We can fix this problem by assuming that it never happens!!

## MATH 147: LAURENT MARCOUX

- “ Already at this young and tender age, we have seen that life can be cruel and full of sequences which do not converge.

## MATH 249: OLIVER PECHENIK

- “ Let’s circle our leaves! There’s a leaf, there’s a leaf, there’s a leaf, there’s a leaf... there’s some more leaves... that one’s not a leaf...
- “ This is great if you’re, say, a chemist.

## PHYS 124: ROBERT MANN

- “ *[Explaining about complaints regarding regrading]* I take silence as consent.

## PMATH 367: BLAKE MADILL

- “ In MATH 145, I’ll write a proposition down and someone will go [nasally voice] ‘erm, does that require the axiom of choice?’
- “ *[Dreading profQUOTES]* I think I’m almost too quotable, I need to tone it down.
- “ Oh, I see there is a wasp in the room. [...] This will make things interesting! [...] Good, I see the wasp is annoying you all one by one.

- “ *[Wasp: bzzzt 🐝 🐝]*

- “ It’s like the wasp and the piano are testing me. Does he have ADHD? Does he have adhd? Let’s see!
- “ [Stepping on the wasp] Haha! I am victorious.
- “ Better to step on it than on the people playing piano.
- “ Now, as I lecture, I continue to trample [the wasp]. It wasn’t enough to kill it, I am continuing to stomp on it. Highly disrespectful.
- “ [Class sings Happy Birthday] There are many reasons we need more women in math, and this is one of them.
- “ Dense? Dense in what?
- “ But now the intuition is that you’ve seen the proof, so you don’t need intuition.
- “ Successor and predecessor, who cares. I can’t spell them so I won’t write them down.
- “ [The final exam is] in a small room in MC. I can do whatever I want, there will be no witnesses.

**PMATH 450: LAURENT MARCOUX**

- “ Lo and behold; not just lo or behold.
- “ To me, leaving notes on the board and then walking away is like not flushing the toilet. Maybe I’m just old-fashioned.
- “ Let’s not get caught up in the politics of this. Let’s put on our pants.
- “ Ooh look, we’re doing 453! Maybe I’ll leave my notes on the board.
- “ The midterm has 12 questions on it. I asked professor Spronk to look at it and he said that if he had studied enough he could do it. Not in a hour though, of course.
- “ I couldn’t have said it better myself, at least not without getting into trouble with the administration.
- “ If you are referring to some arcane property of pre-images that you and some penguin in Antarctica are the only ones to have seen, you might want to include a proof.
- “ ... so we can make our lives easier. You know what? let’s not make our lives easier.

**PMATH 451: MATT KENNEDY**

- “ Your Assignment 2 should be returned imminently. This is because I told the TA if he didn’t get it back soon, I’d kill him. This is what you can do when the TA is your own PhD student.

**PMATH 950: RUXANDRA MORARU**

- “ I don’t like to put any judgement, but some authors like to include the empty set in their definitions.
- “ Especially if I’m around analysts, I have to be very careful.
- PSYCH 261: DANIEL SMILEK**
- “ I just was not joyful.
- “ I think I would rather subject undergraduates to experiments than rats.
- “ You guys know Elon, right. Your favourite X guy. Neuralink, that kind of stuff. They were in the news recently, their monkeys have been having problems.
- “ Radioactive stuff is actually fine. It damages some stuff, your body heals it, it’s fine.
- “ Elon Musk is probably doing this in his backyard there, or his basement.

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## THE COVER FOR VOLUME 156 ISSUE 3 IS A DUCK AND SHE DOESN'T HAVE "GOOSE VIBES"

Clearly you all struggle with waterfowl identification, despite attending the University of **WATERloo**.

On the cover of **mathNEWS** 156.3 is Brainy the duck. She’s a fawn and white Indian Runner Duck and is genetically a mallard.

Brainy is not a goose (just look at her beak!) and resents any such suggestion. She also demands lettuce and mealworms.

Stop referring to her as a GOOSE!

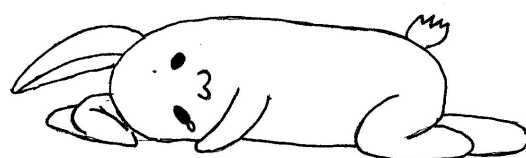
QUAAAAAAAAAAACK

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## BRAINY = DUCK

I can confirm (the wildlife expert that I am) that Brainy is in fact a duck and **not** a goose

wildlife\_expert





# ANIME REVIEWS PART 11

## HALLOWEEN EDITION, I GUESS?

“Reading” week. Ha.

### PARANOIA AGENT — 8 / 10

Man, how does one even describe this show? It's like... uh... *Serial Experiments Lain* meets *Welcome to the NHK* meets *Friday the 13<sup>th</sup>*. Yeah, that about sums it up. If it interests you, definitely check this out before reading my review—I'm forced to be a bit more spoiler-y this time around to discuss the themes.

Conceived by the late great Satoshi Kon in an effort to amalgamate some creative ideas that didn't fit into his other projects, *Paranoia Agent* begins with a window into the life of the quiet yet eccentric cartoonist Tsukiko Sagi. Under mounting pressure to come up with a second design after her first character “Maromi” becomes a national sensation, she grows stressed and anxious—until, while walking home one day, she gets whacked in the leg by a kid on roller skates with a baseball bat. With a complete lack of a lead, the police are initially baffled and suspicious of Sagi. But when several others around the city are attacked, hospitalized, and even killed by the assailant, who comes to be known as “Lil' Slugger,” it becomes clear that someone weird is happening.

As it happens, Lil' Slugger isn't actually a person, but a personification of a psychological desire from Sagi's past—that of wanting an escape by way of becoming a victim. This shared desire by others experiencing the many hardships of modern life causes Lil' Slugger to be made manifest in the physical world, and it's for this reason that many of the encounters with and stories about him blur the line between fantasy and reality, a theme prominent in Kon's other works like *Perfect Blue* and *Millennium Actress*.

This might sound like mere fiction at first, but if you remember the “killer clown sighting” hysteria of 2016 that eventually led to a couple of real attacks, you'll realize that with mass media and the internet, it's very possible for reality to become that which we perceive it to be, and for these agents of paranoia (hence the show's title) to do actual harm. Which is kind of scary, right? I'm not a big horror guy, but this show was genuinely terrifying at times.

Not only is *Paranoia Agent* philosophical and mind-screwy, which is always a bonus in my book, it's also particularly Japanese. The situations from which the many faces of the story seek to escape include a stressful work culture, cutthroat academic competition in elementary school, and even the brutal nature of the anime industry (gotta love that meta humour). Moreover, cutesy characters like Maromi and those in anime more broadly are pointed out to be another form of fantastical escapism from the pain and alienation of life in Japan. Is it just a coincidence that anime developed right after the bombings of Hiroshima and Nagasaki? Something to think about.

For all the praise I give it, however, I do think it's a little too long; the presentation of the ideas would have worked better as a movie in my estimation. But really, don't let that stop you—*Paranoia Agent* is a phenomenal anime, especially for this Spooktober season.

### KOKORO CONNECT — 8 / 10

A quick note to begin—if you look this anime up online, you may notice an apparent disagreement on how many episodes it has. For instance, Wikipedia says there are 17 while MyAnimeList has 13, and different streaming services disagree similarly. It turns out that the initial airing had 13, and then 4 more were added in the form of an OVA a couple months later, with only some sources grouping them together. I'm of the opinion that the 17 episodes should be taken as a whole; in fact, had it ended with the 13<sup>th</sup>, I would doubtless have rated it a 6/10.

As to the show itself, the idea isn't exactly original: there's a group of high school friends, and one day they inexplicably find their minds swapped into each other's bodies, through which they come to a deeper understanding of each other's lives. A tale as old as... hmm... as old as 1882, when Thomas Anstey Guthrie's similarly-premised novel *Vice Versa* was published. If you're familiar with *Toradora!*, it's a bit like that—especially with regard to the romantic dynamics—but with a generous sprinkling of the supernatural. To be honest, I was a little bit worried because I can think of a million ways that a story like this could be incredibly cheesy, trite, or otherwise predictable and boring. But—credit to writer Sadanatsu Anda—none of them came to pass!

On the whole, I think *Kokoro Connect* is excellently written, and does a great job of dissecting the motivations and dispositions of each of the characters, spurred on by the paranormal phenomena they experience at the hand of a mysterious spirit-being known as “Heartseed.” In particular, something that I think is done much better here than in similar shows is pointing out the traits that make characters uninteresting. To give one example, background characters like the quiet and often-anxious Yui Kiriyama are literally called “background characters” by Heartseed (which is hilarious) and are thereby encouraged to have more of a personality. As far as stories about spirit-beings interacting with people go, I think this is rather an inventive take on it.

However, I do have two complaints. The first is that the series' melodrama can be heavy-handed at times, and almost every tense exchange between characters is punctuated by the same piano melody. This is fine in principle, but it was overused in my opinion, and I think silence would have fit better in some cases. The other is that Heartseed's identity and the goal of his meddling in the lives of these seemingly random high school kids is left as a complete mystery, which was a bit unsatisfying.

Ordinarily this would knock down my rating a bit, but I feel in this case that the quality of writing really does make up for

it. If you're interested in something vaguely spooky but also romantic, this is the way to go.

yalevoynian

## TEETER-TOTTER TERROR

### *PLEASE MAKE THIS THE NEXT OLYMPIC SPORT!*

There was a game me and my friends used to play when we were kids called Teeter-Totter Terror (or TTT for short) and I haven't been able to play it in years but it was really fun and I wanna talk about it.

Ok, so the rules are pretty simple. First, get a teeter-totter, also known as a "see-saw" if you have no childlike sense of whimsy. Make sure it is a springy bouncy one, has plenty of room to move up and down without hitting the ground, and doesn't have any bars in the middle of the seat, so preferably the one-person ones instead of the wider two-person ones.

Ok, quick tangent: this first step is actually the hardest because most playgrounds have teeter-totters that SUCK and get one or more of the details wrong. My friends and I were fortunate enough to have a proper teeter-totter at our school and so we could play it a lot, but you never realize just how lucky you are until you try to play Teeter-Totter Terror anywhere else.

Anyway, as I was saying, the rules are simple. Get a proper teeter-totter, get one person to stand up on the seat on one end, and another person to stand up on the seat on the other end. Whoever falls off first loses. There are a few strategies you can adopt, but mostly you're going to be trying to push the teeter-totter down to bounce your opponent up, and trying to stay on when your opponent bounces you up. It's a lot of fun! As we played it more, different playstyles were developed and I think we had a loose ranking system too. There's a surprising amount of room for flexibility, and I'm sure if we had kept playing we could have taken it even further.

The most common playstyle was typically called playing "front," although I usually think of it as "defensive." You stand sideways on the seat and take a wide stance, tucking your front foot under the little lip or edge of the head of your seat to stabilize. You bend your knees and push down and up to bounce your opponent, and when they bounce you back you hold your ground and try to keep your balance. The next most common strategy was my personal favourite, known as playing "back," or "offensive." You stand straight up, facing your opponent, feet close together, on the back of the seat. You crouch low, and then when your opponent bounces you, you jump straight up as high as you can, and then come down hard as you crouch down again, and while your opponent is still trying to get their balance back, jump straight up as high as you can again and repeat until one of you has fallen. This strategy is of course riskier since you have to stick the landing each time, but it also gives you way more power. I also just think it's so much fun, I love trying to jump as high up as I can, it's like a trampoline but both you and your opponent feel

the weight of each landing, it's like freeing and empowering at the same time.

Other strategies involve rapidly shifting your legs to shake the teeter-totter instead of bouncing it (this one really messed me up), walking across the teeter-totter to push your opponent off (rarely successful, but if you manage to get across it's kind of impossible to defend against), and doing the biggest, craziest jump off you can do in the hopes your opponent will fall off the side before you hit the ground (usually ineffective against experienced players, but always looked very fun). And even within those nobody ever played quite the same. I just feel like there's a lot of potential and I'm disappointed we never got to explore it further.

I don't remember exactly how long ago it was, but before I graduated middle school our playground was taken down and rebuilt entirely anew. The new playground was worse in quite a few ways, but the biggest crime of all was that there was no teeter-totter. We weren't playing TTT quite as much then, but it still felt like an abrupt end. I had already realized by then that almost every other teeter-totter in every other playground wasn't good enough to play one of my favourite games on. I don't even know what the point is of a teeter-totter that you can't even play on. What are you supposed to do, just sit on it? I've tried that since, it just makes me sad about the missed potential. And it's been so long that even if I did find a perfect teeter-totter, I probably wouldn't be nearly as good as I used to be. I might even hurt myself! In my entire time playing as a kid I never suffered any serious injuries, but my bones are probably all brittle now or something, I'd find a way to mess it up. It was a game unlike any other, and I may never get to play it again.

Part of me is still optimistic though. Maybe some day I'll be able to get someone to construct a teeter-totter specifically for the game so I can practice and invite more people in. Or maybe one of my old school friends will if they're feeling nostalgic like I am, maybe one of them gets the exact job that lets them bring it back. Idk. I've always had this dream of two TTT athletes standing on either end of a long teeter-totter positioned high over a deep pool. Perfectly bouncy springs, no ground to slam into, and no stupid bars in the middle of the seat. Just pure Teeter-Totter, pure Terror. I guarantee it would be exciting to watch! Or if not all that, then maybe one day I'll come across another proper teeter-totter, and I won't be afraid to get on and jump again. Thank you all for reading!

Doublewhip

# HOME COOKING 101L: EAT YOUR DAMN SOUP

## IT'S EASY, CHEAP, AND HEALTHY

In issue 156.2, I gave some generic, theoretical cooking advice to aspiring home cooks who'd like to get good with *Home Cooking 101: The Basics*. This is the practical follow-up where I provide some actual instructions to follow in the form of a "recipe" while preaching about soup.

In the most fundamental form, soup is just edible ingredients boiled in water. That's literally it. This means you can do the following extremely simple steps and get a reasonable pot of soup:

1. Gather all leftover vegetables, meats, and other ingredients you don't know what to do with from the fridge. Even those belonging to your roommates that you know will go bad before they remember to use them. *Especially* those.<sup>1</sup> (Just share the soup with them if you do. Actually, just share the soup regardless.)
2. Wash and peel as necessary, then chop everything into pieces sized between "I can probably one-bite this by dislocating my jaw" and "I should not have taken my academic frustrations out on this produce"<sup>2</sup> before tossing into a pot with enough water to at least submerge them (though I recommend more than that, go with your vibes).
3. Boil for A Long Time (at least 30 minutes, whenever you feel it's at least cooked and safe to eat), then add whatever seasonings you have and/or want in small increments and tasting it, until satisfied. (Salt and MSG usually recommended.)

Alternatively, here's my personal recipe:

1. (Optional) boil 1–1.5 lb stewing beef in 3–4L of water. It will want to foam, so remove the lid and turn down the heat when that happens to prevent the pot from vomiting on your stove. If short on budget, simply boil water and skip the beef instead, or substitute with whatever cheap protein source you can find.
2. Wash and chop up 6–8 sticks of celery, 2–4 carrots, 3–5 potatoes, and 1 onion. If you are bothered by vegetable skins, peel the carrots and potatoes before chopping. If not, leave the peel on because the extra fiber is good for you ~~not like it's also a convenient excuse to be lazy like I usually do.~~
3. Add vegetables to soup in no particular order. You can even add them as you chop next to the stove by picking them up between your knife and your hand to skip washing the transfer container.
4. Add a few spoonfuls of chicken bouillon powder, then let boil on low heat with lid on until everything is fully cooked and safe to eat. Optionally boil for longer until things are as soft as you want. Finish off by seasoning to taste with any combination of chicken bouillon powder, salt,

MSG, and if you are feeling daring, some ground pepper.

I recommend pairing bread, pastries, or any other convenient carb sources with soup. It's also viable to add leftover rice to the soup, or simply adding uncooked rice into the soup as long as additional water 2x the volume of rice is added like you would when cooking rice alone. But in the end, all proportions are really just recommendations, swap out ingredients, change the amounts, do whatever the hell you want, it'll usually work since it's really hard to fuck up soup.<sup>3</sup>

There are a number of advantages to this diet. Like I already alluded to, this is a budget-friendly way to eat, as one can simply pick up all the cheapest vegetables, proteins, and sources of carbs to sustain themselves while having a healthy and balanced diet. It reduces food waste by offering an easy out for aspiring home cooks who buy a bunch of ingredients for a specific dish and have no idea what to do with the leftovers. It's easy and time-saving, since cooking up a big pot of soup before midterms<sup>4</sup> easily provides sustenance for the entire week when paired with bread and such. The warmth of hot soup also provides much-needed emotional comfort.<sup>5</sup>

In conclusion, eat your damn soup. You are welcome.

资深咸鱼 (Seasoned Slacker)

1. I do not condone theft, this is just for the bit. Talk to your roommates first instead. I *do* condone preventing food waste.
2. I deny all allegations. Also, you can put them through a blender if you think purely liquid soup is acceptable and you'd rather clean a blender than cut vegetables. But I *will* judge your lack of texture.
3. If you somehow did anyways, please send the result to the **mathNEWS** discord #food channel so that we can laugh at you and/or be disturbed by the cursed ingredient choices you make. Don't panic if you over-seasoned it though, just add more water and try again. But if you burnt the bottom of the soup by turning the heat too high *and* not stirring because you didn't read the previous article, then you are just cooked. Scrub the bottom of the pot with steel wool real good and try again.
4. I intended for this to go with the previous issue, when this would have helped midterm-prepping, but a slacker's gotta slack. Oh well, at least there's no consequences of missing my self-imposed deadline aside from the shame I no longer have.
5. Not a substitute for genuine human interactions; remember to call your loved ones no matter how busy you get, they probably miss you.

# Racket

BRAD LUSHMAN

## UNDER THE UNCAPTURABLE

Packed into a car, looking out over Columbia Lake, the black sky didn't look that different. Streetlights dotted the landscape, trees stood out against the ambient glow; it was just that above, the clouds didn't look right. Somehow, they were slightly too stretched. Almost smeared against the above, and slightly green. Travelers stopped at intersections, pointing phone cameras at the stars. Seekers foraged into the Laurel Creek Conservation Area, and at the city's northern edge, students clustered at the final intersection to watch the skies.

The Sun had sent home.



We drove, thirty minutes through dark hills and quiet corners, passing countless cars parked at the roadside, stargazers staking their claim to the beyond. Many parked along major arteries, but we wanted better. We found our safe spot at the side road labeled "Warning: Drive At Own Risk." With a cornfield to our left, a harvested open plain to our right, we rumbled along a gravelled path until we found our spot to stop. Behind us, a few farms held silent vigil in the shadows, their warehouses and farmhouses distant boxes against the treelines. All that broke the night's silence was barking dogs on the October air.



From our isolated side road, wispy cornstalks lined the base of our vision. Trees cast outlines against the distant void, and just above, the stars slept, forming a dark patch on the horizon save for the seven stars of the big dipper, framed in shadow, brilliant above the blowing corn.

Above, crowning the constellation, brushstrokes of faint lily and rose drew hues from the abyss beyond.

Everyone I've asked about it went home after that.



As I watch the sky, I keep seeing pale flashes. I look around, searching for a spotlight, a concert, something that could highlight the clouds so briefly. Nothing. Thirty minutes pass, all the while, I'm trying to figure out when I last saw an optometrist.

"Did you see that?" someone with me says. It happens again. And again. Flashes, patches of faintly brighter sky appear and disappear, each one present for only a second, before flying above our heads and beyond. To this day I don't know what it was. A direct hit from the solar storm? A magnetic flare-up?

It doesn't stop. With greater intensity, patches of faintly brighter light apparate across our vision, more large, more fast, more often. Each one spans massive swaths of the atmosphere—raise a hand before you as though to shield your eyes; each patch is about the area of sky hidden by your open

palm. Some form in waves, traveling from the horizon to the zenith in world-encompassing curves, traveling hundreds of kilometers in a second, only to tangent away into distant space. Abyssal radiation glances off the planet at unfathomable speeds; magnetism shielding life below from the wails of the void beyond.

From our silent cornfield, we watched the magnetic field fight Ragnarok alone.

How do you respond to that? What do you say when the Gods come home?

We asked my friend if he had applied to grad schools yet.

*molasses*

He had not.

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## THE LEAVES ARE PRETTY, GO TO A RAVINE

It has occurred to me that some of you are not from the GTA and thus have not walked through a ravine during peak fall colours. Fortunately, there's an easy way to rectify this:

- Take the 30 or 30A GO bus to Bramalea GO
- Transfer to the 41 or 41A towards U of T Scarborough
- Wander their campus for a bit and leave a copy of **mathNEWS** somewhere
- When you're done, descend into the ravine and start walking south
- Continue heading south until you hit the lake. The only road you'll have to cross is Old Kingston<sup>1</sup>
- Once you're at the lake, head east along the shoreline until you hit Rouge Hill GO
- Catch a train to Union Station, then navigate back to Waterloo using your preferred navigation app

Do it this weekend. Forget about classwork, your mental health is more important.

init

1. I saw a family of deer here once!

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# 69

420

BananaCat

# BAYES' THEOREM X READER ONESHOT

*DEDICATED TO NOT A N\*RD (I'M SORRY (NO, I'M NOT))*

It's unlikely that you meet someone who changes your world. Sure, it's more likely than winning the lottery, yet based on the conditions, it's not always possible. What are the chances you locked eyes on them in this lecture hall, in this section, in this class, in this program, in this university, in this city, at the same time? Out of all the ways my life could have turned out, you bet it's close to zero. But again, it's non-zero.

"Oh fuck, it's freezing!" you thought as the wind blows against your skin, sending chills in your spine. Sure, you had a couple layers on, but that doesn't stop you from running towards the warmth. However, your sweater could never protect you in that lecture hall from gasping when someone took your usual spot! Yeah, you could have sat anywhere else, but you needed to stand your ground! You walked up to that second row and sat right beside them, but they didn't notice. It seems like they were flipping through their STAT 230 binder, ruffling their almost black hair and staring aghast with furrowed eyebrows. As you moved on to pulling your laptop out of your backpack, they patted the tip of your shoulder twice. You reflexively flinched and looked into their doe hazel eyes for a response.

"Excuse me, could you help me with this problem? I don't know what to do for part b. and c," they muttered.

"Well, sure, I could look at it," you quietly answered back.

The problem revolved around some disease with a given vaccine, where you have to determine the probability of infection and how many infected individuals had the vaccine. Because you just read the chapter slides for once, you knew the general idea on how to solve it, and their puppy eyes were waiting for help.

"Oh, I see. So for b., you have to use the Law of Total Probability given the two cases of having the vaccine or not, and then you can use Bayes' Theorem for c," you told them.

"Ah, that makes a lot of sense! Thank you so much—" they hesitated for a second. "Um, what is your name?"

You told them your name, and asked for theirs. How else would you get that seat that you want disguised as a friend?

"I'm Bayes, but you can call me Baye," they smirked.

"Oh, okay Baye. Nice to meet you," you smiled, trying not to stare at their face for too long. "Now that we're acquainted, may I ask you for a favour?"

"Sure?" their smooth voice peaked.

"Great. Could you not sit there next time? I really like that spot," you questioned with a now uneasy stomach.

After a handful of seconds, they finally remarked "Um, sure? I mean I could even move right now—"

"No!" you accidentally yelled, to the glare of others around you. Luckily, class didn't start for another five minutes, so you just took a deep breath and stated "Just stay there, it's my treat for today."

"Oh, I thought you were the treat," they asserted with a grin.

"Oh! Thanks," you bashfully giggled under my breath. "Uh, also make sure that the numerator you have matches one of the terms in your denominator. That way, you know you're on the right track," you added, taking a gulp from your water bottle.

"Oh, I appreciate that... That's very smart."

By this point, you were trying to calm yourself down after that compliment, so instead of hearing another one of their words, you put your water bottle away and stretched your lower back along the chair.

Suddenly, Baye touched your shoulder and you jolted, moving your arm so fast that you caught their hand before it left your touch. As you held down their hand and locked with their eyes, they asked "Hey, are you good? I wanted to ask you something."

"Yeah, yeah, of course," you sighed as you realized you should probably let go of their hand. Your heart was beating out of my body as time stalled, pushing away all the thoughts rolling in your head. Like what could they want to ask now? They didn't even start working on the problem, let alone another math problem.

"Do you ever think of the odds of everything?"

You answer with "I guess occasionally. Why do you ask?"

"Well, given that I sat in your spot, we would have at least spotted each other. But the chances of us meeting without that assumption, that's far more unlikely, considering how many seats there are in this lecture hall."

"But you're assuming that every spot has an equal chance of being chosen, when that's completely wrong. We have biases towards certain factors," you corrected them.

"Well, I guess I have a bias towards you now."

You were taken aback. Did they like you too?

"I might be a bit biased towards you too. Given that you sat there again, it's more probable that I would sit beside you than the complement," you flirted back.

"Can I give you a compliment? Because damn, that body of yours! I just want to partition those legs," they spouted. You had to cup your mouth as they chuckled at their delivery.

“Sorry, I just had to say it,” he snickered.

“That’s fine, just let me experiment on you mutually exclusively,” you blabbered with a seductive glint in your eyes, only to snort at the punch line.

“Settle down everybody!” the professor announced as the background music came to a close. You and Baye continued to laugh breathily but slowly gained focus on the lecture. Just as

their vision was solely focused on the projector’s slides, you sneakily wrote your number with a heart on the corner of their statistics notes.

Sure, it was unlikely you meet someone who changes your world, even given the circumstances, but the rest was history, and now you can call them your Baye.

Dollar Store Person

## MY LOVE LETTER TO ARIZONA

If you’re a normal person like me, you have an undying love of Arizona drinks.

*Arizona, you’ve done it again,* you think as you take the first sip on a thirty degree day. But wait- isn’t Arizona, like, a desert? Don’t they have no water? By downing this deluxe drink, am I depriving native Arizonans of their withering water supply? Oh god, am I a horrible person?

Relax! Being a horrible person has nothing to do with giving in to your cravings for this liquid luxury. (A/N: Arizona is indeed manufactured in Arizona, which was not what I initially researched. Being a horrible person has everything to do with your tea drinking habits.)

In my time here at Waterloo I have had many an Arizona from several different locations. But which flavour is the best? It depends. Are you in the mood for tea? Juice? A mixture of the two? And how close is the nearest Arizona to your location? Let’s see.

### SLC FLOCK STOP

Just walk to the back of the Flock Stop for a nice medley of Arizonas to choose from. There’s something for everyone here—the classic iced tea, the new and improved raspberry flavoured iced tea, the mango muncher juice. And, surprise, even grape! A bold choice to stock the shelves with.

### ESS COFFEE SHOP

What the ESS Coffee Shop lacks in quantity it makes up tenfold in quality. Only the finest of flavours can be found here, sure to please anyone that seeks an icy cold reprieve. And zoo wee mama, the mere price of two dollars is a rarity in a society past having the price on a can. What may have been

seen as too much five years ago is now a blessing to be found today. By necessity, they have the famed raspberry-flavoured iced tea.

### FARAH FOODS

Oh, what a selection. I remember back in the day, you could get an Arizona here for 99 cents, true to the printing on the can. Of course, nothing lasts forever. But the lineup of Arizonas here is something to behold. When you make your way to the back right of the store, your eyes feast upon an inventory of epic proportions. An honourable mention is the Orangeade which is as if lemonade and orange juice had a splendid baby together driven by exhaustive eugenics.

### E7

I have been notified that some Arizonas reside here, but alas, I am too lazy to go check.

### MC C&D

A humble and classic arrangement of Arizonas. You can find on the bottom fridge shelf some classic tea flavour AND raspberry iced tea. The can with the guy’s face on it is there too. And some mango, if you’re juicy.

So now you should be aware of the closest Arizona in your vicinity. Farah Foods and Flock Stop are both open 24/7, so there’s no excuse not to douse yourself in this angelic ambrosia the second you finish reading **mathNEWS**. Happy beverage drinking folks!!

nike

**So you wake up on Friday afternoon and you see a pink elephant walking down the street getting a drink...**

PROF. SURYA BANERJEE

# PUNCHING INFINITY IN THE FACE

## THE STORY OF ME AND WHY I HOPE TO BE

It was February 2022. I had just decided that I actually, genuinely, wanted to become a mathematician. To seal the deal and force myself to follow through on my dreams, I filled out the form to transfer from Software Engineering to Pure Math, and the rest was going to be history. That evening, I was telling a family friend about my decision, and I received a question I thought I had an answer for:

“So why a mathematician? Isn’t being a programmer much more useful and relevant?”

The answer I thought I had was along the lines of “I find math important and fun.” But I knew that couldn’t really be my answer. I found programming plenty important and fun. I told that family friend something half-assed, and tried to dismiss my unsatisfactory explanation as me struggling to verbalize my motivation.

But the question plagued me. Why do I do what I do? Since beginning university, as I have learned more math and approached something close to a real mathematician (in the limit), my life has transformed from something I hated every minute of, to something deeply fulfilling. Why?

The first answer I proposed to myself was *beauty*. This feels like it makes sense, as I certainly find intrinsic beauty in the act of doing mathematics! There’s nothing quite like carving out my own little niche of understanding within the universe, in my case by discovering cool facts about calculus on higher-dimensional shapes that I can be absolutely certain are *true*. Nevertheless, math’s beauty can only be half of my answer. There are lots of things I find beautiful and fulfilling, from writing fiction to the programming I left behind. Why is math the only thing I can live with myself doing?

I’ve finally figured out the other half of my answer.



Infinity is big. It’s really big. I know it sounds obvious, but infinity is so, so big. The more I think about it, the more I realize nobody—not you, not me, not anyone—understands infinity. Analysis as a field of math prides itself on trying to understand the infinitely big and infinitesimally small, but if you look closely at any analysis textbook, no matter how many times the authors write the symbol  $\infty$ , nothing is truly infinite. A sequence that diverges to infinity is just one that has arbitrarily large elements, *not* infinitely large. A sequence that converges gets arbitrarily close to its limit, *not* infinitely close. See the subtle distinction there? We never actually invoked infinity, we just approximated it with something finite. Humans are really good at that. We don’t think of infinity as *infinite*, we replace it in our minds with something much, much smaller: “really big.”

It’s important that we do this for our own sanity. We live finite lives in a finite world, and eventually, in a finite amount of

time, the Earth will be gone and humans will no longer exist in a form recognizable to us, if they even exist at all. Everyone I have ever and will ever make an impact on will eventually fade away, as I become forgotten. The universe is a sequence converging to its end, and no matter how many of its terms I affect, I can only possibly change finitely many of them: I lose, infinity wins.

This nihilistic confrontation with infinity has stared me down over the years as I have gotten better at math and engaged with infinity again and again, especially as I have pursued my dreams of understanding calculus, the field of math that professes to understand *infinitesimally small change*. These encounters have left me convinced of this fundamental fact: in the battle versus infinity, my defeat is inevitable.

So why am I here? I insist on living and doing math, not just despite this inevitability, but *in spite* of it, as I live a life where I come face-to-face with it every day. Why do I do anything in the face of this impending doom?

Well, why does anyone? I’m not special. Humans love to tell stories of impossible odds. If what I wrote above is at all true, an immediate corollary is that we live in the face of impossible odds every single day. It’s not a coincidence this is reflected in the stories we tell ourselves: think about the hero’s journey and its variants present across cultures. As people, we love stories of us succeeding despite the inevitable, despite the impossibility of life itself. To persist in this crazy world, we need to bring a relentless human optimism to the world, that this is all *worth it*, despite overwhelming evidence to the contrary. This optimism is fundamentally what I love about people.

And to me, nothing characterizes this human optimism more than the pursuit of understanding. Despite its seemingly obvious impossibility, we try to understand the universe every single day. Philosophers philosophize and artists create, all in the pursuit of this beautiful but ultimately impossible goal. But its impossibility doesn’t make it not worth trying.

My opponent in pursuit of this beautiful collective effort is infinity. I *need* to understand infinity and how it changes. In this goal, I will fail; infinity always wins. There is always more to learn, more to understand, more to fascinate me every single day until I am gone from this world. But no matter its impossibility, I *will* understand what I can, or I’ll die trying.

It’s like I’m in an infinitely long boxing match with the universe. My arms will break and my legs will collapse in the end, as I eventually go down for the count. But the least I can do, for myself, and for everyone I hold so dearly, is to square up and understand everything I possibly can, and in doing so, I will punch infinity in the face.



I know I'm trying to do the impossible. But all I can do is try. In the end, isn't that what being a person is about?

notoh

## I HATE BEING BROKE

Being poor is the worst thing you can ever experience in your life, especially as a university student. It destroys you from your physique to your dignity, personality and your literal soul, and you can do absolutely about it since the current job market sucks.

Without money, you can't maintain a healthy diet, which closes your gate to reach that dream body since no matter how much gym you go to, with the trashy food you consume every day you will never be fit.

Also, while you have already been stressed about your academics, you have to worry about how you are going to pay your rent, your insurance and your phone plan next month. Oh, amazing, you finally saved some money, oops, joke's on you, the \$900 bill is going to take it all from you. Nuh-uh, no new clothes, no new jewelry, no nothing that can improve the quality of your life even the slightest bit for you!

And as a pure math major, the only job I can take is a shitty research job. Thinking that this would actually cause me to struggle in finance for the rest of my life, maybe committing to a website where the two initials respectively start with the letter between N and P, and the one between E and G, would be a solution, which then leads to my other argument that being broke also takes away the dignity from you.

I would do anything to get more money, but not including changing my degree, cause god knows why I am obsessed with mathematics and I don't know what else to do with my life other than doing math. Yet still I would do anything besides this to get more money, one of the things including writing this article that is full of nonsense just to get free pizza from **mathNEWS**. I also wasted like one minute of time of whoever is reading this—considering time is money, this counts as me stealing some money from them, which makes me feel better.

Thank you for your money.

I mean time.

Playboi Cardiac Arrest



## YOU SHOULD GO WITH THE FLOW MORE

Like, of course you can try to plan everything, and planning is good, but the value of spontaneity is hard to overstate.

### TRAVELLING USUALLY REQUIRES PLANNING

This past week I was traveling all around Zealand and the south of Sweden with my buddy befuddled. We had 5 days to see roughly 555 things, so we did our very best at squeezing everything in and making it happen.

The only problem is that when you're exploring a new place, there's gonna be jet lag, public transit mishaps, and a fatal dose of "Oh that shop looks cool!" By the time we realized this at 10pm on day two, we were two hours away from home with nothing to eat and had walked nearly a marathon in 48 hours.

We decided to make a bit of a change at that point. It's fun to explore without pre-planning every destination, so we started making looser plans. It was absolutely worth it. Because of this, we got to enjoy the coast of Sweden and its Lighthouses, be the only guests at weird Mel's clone in Copenhagen, and just enjoy our time a lot more.

### BUT NOT EVERYTHING NEEDS TO BE PLANNED

Your whole life is a mountain range of events, and it's important to plan your next steps while you're climbing (so as to not die). You're always pulled forward by the alluring simplicity of reaching the top, and getting the best view of your next target. But with all your steps planned, what are you gonna do when your friends ask you if you wanna play board games tonight?

Many wonderful moments in life are planned, from cooking with roommates all the way up to weddings. Many, many wonderful moments aren't, though. Taking the opportunity to pet a cute dog, wandering into a comedy bar, last-minute exam season movie nights, or likely any fond memory you have from the last few weeks.

Perhaps to you, it feels easier to chart out a path up the mountain than it is to zip up your massive poofy parka, unbuckle your harnesses, throw aside your ice picks, and roll down wherever this wild world wants to take you.

Okay maybe not the best analogy, but you get my point. We could all use a bit more spontaneity.

Thanks for reading an article I should've just written to myself. This is a problem I have. You probably don't have this problem.

Please reverse everything I said if you're already in a poofy parka tumbling down a mountain.

no pun indented

# HALF OF mathNEWS netWORK 3

A RADIANT SUNRISE TO ALL YOU MATH PURVEYORS.

I AM mathNEWS-CHAN, YOUR FRACTAL PTERODACTYL, PREPARED WITH ANOTHER ASTONISHING EPISODE OF mathNEWS netWORK.

mathNEWS-CHAN, THERE'S SOMETHING DIFFERENT ABOUT YOU TODAY.

OH, IT MUST BE MY NEW EYELINER.

AH, THAT EXPLAINS IT.

IN TODAY'S NEWS, A LOCAL PURE MATH STUDENT HAS BEEN SHOT DEAD IN A HEARTBREAKING MURDER-ROBBERY.

I COULDN'T SEE HER FACE. BAM! BEFORE I KNEW IT, I WAS DEAD.

WHEN I CAME TO, MY WALLET, PHONE, AND DETACHABLE COSPLAY BUNNY EARS WERE GONE. THAT BASTARD!

A FESTIVAL OF PERILS. A CELEBRATION OF FEAR.

HALLOWEEN APPROACHES, AND WITH IT, SOME SPINE-TINGLING COSTUMES.

ooooooooooooo...

Not Ranked

I'M YOUR GREEEATEST NIIGHTMARE...

WE'RE HOPING TO TURN THE TABLES. YOU KNOW, TERRORIZE THE GEESE FOR ONCE.

TOO LONG WE'VE LIVED IN FEAR! VIVA LA REVOLUTION!

TWO CAN PLAY AT THAT GAME.

HERE AT THE MATH 137 MIDTERM.

00:51:00

LET'S SEE HOW PEOPLE ARE DOING.

I'M BEGGING YOU. PLEASE STOP INTERVIEWING ME.

I'M TRYING TO FOCUS.

HEY! ARE YOU ALLOWED TO BE HERE?

UH OH. GOOSE'D, RUN FOR IT.

WE'VE GOT A 71 IN M3. POTENTIAL CHEATING. LETHAL FORCE AUTHORIZED.

GOT IT. WE'LL BE RIGHT THERE.

A STEEL COLOSSUS INCHES DOWN THE RAILWAY. ITS GARISH BLUE FORM LIKE A CYANOTIC TAPEWORM. ITS BODY AN INSURMOUNTABLE WALL.

TO THIS GROTESQUE BEHEMOTH, AN EON IS LIKE THE BLINK OF AN EYE.

AS THE MINUTES TURN TO HOURS, AND THE HOURS TURN TO DAYS, THE CHILDREN START TO REALIZE THAT THEY MAY NEVER MAKE IT HOME AGAIN.

"MAMA," ONE CRIES, BREAKING THE SILENCE. A CHORUS OF WAILS SOON FOLLOWS.

IT IS OBVIOUS TO THE CHILDREN WAITING FOR ITS PASSING.

THE BEAST IS UNMOVED. IT CONTINUES ITS GLACIAL PACE.

PLEASE... I'M FREEZING... LET ME IN.

I'M SORRY, I CANNOT. TOO MANY LIKE YOU HAVE REPAID MY KINDNESS BY STEALING FROM ME. BUT I CAN GIVE YOU SOMETHING THAT WILL WARM YOU UP.

HERE. TAKE IT.

Clack

INSIDE OUT

A SORROWFUL SIGHT - DUE TO MIDTERMS, ONLY ONE STUDENT HAS ARRIVED TO THE mathNEWS prod NIGHT.

AHAHAHAHA!

I CAN ORDER A CHEESELESS SAUCELESS NONE PIZZA AND NOBODY WILL STOP ME!

HOLD IT RIGHT THERE.

YOU'RE ALIVE?!

COMPUTER. DEMOCRATIC OVERRIDE.

999 VOTES... FOR A REGULAR CHEESE PIZZA.

Cheeseless sauceless none pizza	1	999
Cheese pizza		

NOOOOOOOOOO!!!!!!

# A RESPONSE TO THE COVERAGE OF PALESTINE SOLIDARITY ACTIONS AND JEWISH SAFETY ON CAMPUS

It is incredibly difficult to cover events related to the ongoing genocide in Palestine, violence in Israel, and increasing Islamophobia and antisemitism around the world and here on campus. This difficulty is exactly why it is important for reporters to be accurate and unbiased in the language they use and the sources they present. Local media such as the Waterloo Region Record and UW Imprint have parroted one-sided narratives by a few individuals who claim to be representative of the Jewish community, ignoring the diversity that exists even within the relatively small group of Jewish students in Waterloo Region.

Perhaps some assert that the Oct 7 memorial held on Waterloo campus was “an opportunity for the Jewish community to come together and find strength in each other,”<sup>1</sup> but there are many others who disagree with what Hillel and Chabad represents, including their claim that they can represent all Jewish students. Groups such as Independent Jewish Voices and the Jewish Faculty Network actively represent Jewish voices in the University of Waterloo, Wilfrid Laurier University, and the wider regional community, and yet are often ignored and silenced in reports about Jewish experiences in the past year.

Luisa D’Amato’s column for The Record, “Anger over Israel is no excuse for hate speech on campus,”<sup>2</sup> minimizes the worsening tragedy of the murder of tens of thousands of civilians in Palestine only briefly, and then goes on to misrepresent the “affirming” nature of Hillel and Chabad and publish claims about hate speech with no evidence. D’Amato wrongly conflates Judaism and Zionism to categorically state that “Jewish students are suffering” because of protests for an end to apartheid. In one sentence, D’Amato dismisses the complex meaning behind the slogan “from the river to the sea”, stating an interpretation that is widely contested. The article claims the Gaza House encampment, which held several Shabbat celebrations this summer, make Jewish students feel unsafe, but makes no mention of the exclusionary nature of Hillel (an overtly Zionist organization) and Chabad (a Hasidic sect), nor the experiences of many intersectionally-marginalized Jewish students with rampant sexism, homophobia, and racism in organizations that purport to represent all Jews.

Both professional journalists and student volunteer writers have the responsibility to report accurately on complex and painful issues that affect members of our community. This includes the responsibility to represent the voices of those often silenced, and the accountability to acknowledge and respond to criticisms of their reporting. One-sided narratives like the ones we have seen so far only serve to perpetuate the

harm against Palestinian, Arab, and Muslim students, and do not make Jewish students any safer.

*A Jewish math student and a member of Independent Jewish Voices in Waterloo Region*

1. <https://uwimprint.ca/remembering-the-oct-7-massacre-one-year-later/>
2. [https://www.therecord.com/opinion/columnists/anger-over-israel-is-no-excuse-for-hate-speech-on-campus/article\\_31cd1495-1847-53dd-9664-614e0f1842f7.html](https://www.therecord.com/opinion/columnists/anger-over-israel-is-no-excuse-for-hate-speech-on-campus/article_31cd1495-1847-53dd-9664-614e0f1842f7.html)

## N PIECES OF INFORMATION ABOUT WIKIPEDIA

- There is a Wikipedia page full of random pieces of information about Wikipedia.
- The longest article title is “Cneoridium dumosum (Nuttall) Hooker F. Collected March 26, 1960, at an Elevation of about 1450 Meters on Cerro Quemazón, 15 Miles South of Bahía de Los Angeles, Baja California, México, Apparently for a Southeastward Range Extension of Some 140 Miles,” which is an article about a “humorous yet factual” paper written about a plant.
- The most edited article is titled “Administrator intervention against vandalism,” and is just a page where admins report vandalism. It has just under two million edits.
- The longest gap between edits from a single IPv4 address was 20 years, 9 months, and two weeks.
- The longest time between edits to an article was 21 years and 89 days. The article was entitled “Beato Angelico,” which was a nickname for the renaissance painter Fra Angelico. He has “Blessed” as an official title, as he was *beatified* by the catholic church for living such a holy life (he only painted religious subjects). He was called Beato Angelico for this reason; it’s Italian for “Blessed Angelic one.”
- There are many very short article titles; there is one for each ASCII character, and one for each unicode character.
- The disambiguation page with the most possible referents is “St. Mary’s Church,” which links to 782 articles.

# MORE PROGRAMMING LANGUAGES RATED ON HOW GOOD OF A CULT THEIR COMMUNITY WOULD FORM

## IT'S GETTING HARD TO THINK OF PROGRAMMING LANGUAGES

### 1. C++

The Double Plusians were a breakoff group from the original Society of the Crossed C's. Defecting from the Society's core values of fundamentalism, they've strived to build themselves a new codex supporting, if not a luxurious lifestyle, at least a more bearable one. This has backfired dramatically, resulting in a codex filled with contradiction and the creation of classes (a euphemism for castes). Even worse, the Book of Modules isn't even properly worked into the Double Plusian's lore. 5/10, needs to get their act together.

### 2. SCRATCH

Some debate the moral ethicalities with the Cat's Cult, as they target minors in society; though they do have a sizeable adult following. Their works inspire awe, though it is written in a tongue completely unintelligible to an outsider, to which they see only shapes. Interestingly, the Cat's Cult attracts an above average of creatives. 9/10 for questionable but strong recruitment strategy.

### 3. R

The Rho Program is actually just a fraternity for statisticians. Their reach is extensive, and their ranks have infiltrated almost every educational institution in the world. Their power to make graphs at a whim, without even needing a ruler! Any commoner whose mind has not been cursed with the knowledge of programming cults are immediately awed by even the most unexperienced intern in the Rho Program. No one in the cult realm respects them. 2/10.

### 4. SQL

Most famous for their extensive archiving efforts, the SQL Society was perhaps one of the most famous cults in the world, a reliable anchor tracking all the world's data since ancient times. Even the notorious Society of the Crossed C's outsourced their membership management to the SQL Society. Alas, their reputation was tarnished significantly when in 1800, one of their acolytes got slightly intoxicated and accidentally Dropped the entire database, destroying the structural foundations, causing it to fall into the depths of the earth. The "incident" alone almost ended the cult instantly. 8/10 for bouncing back.

### 5. JAVA

The lineage of the Javanians can be directly traced to the first coffee shops of France, right at the start of the Age of Enlightenment. According to their testament, it was said that a humble police inspector named Javert first dreamed the idea that would evolve into the bureaucratic, verbose, and formal undertones that would come to define Java. Alas, they mourn,

for a visionary as such to come to drown themselves in the Seine due to being miserable! Alas, this story is pure rubbish, as it is well-known that France does not exist. 9/10 for being fantastical at least.

### 6. BRAINF\*\*\*

Perhaps one of the most estranged cults, it is said indoctrination into the cult of Brainfuck warps one mind, inducing such a strong psychosis into each member that undying reverence and loyalty is immediately achieved. One could even say their brain was..., well, fucked. The US government has tried to commandeer their technology multiple times during the Cold War; knowing full well the destruction their technology would wreak in the wrong hands, they fortunately declined this offer. 10/10 for not destroying the world.

### 7. SCALA

The Scalies, was originally founded by a band of wayward Javanians who sook refuge with the Haskellians for a while, before forming their own group. The influences from both groups are very clear if one takes a quick glance at their founding codex. Alas, due to their namesake, everyone on the Internet thinks of them as a band of dragon furies. Personally, I'm pretty sure there is no distinction needed, for they are one and the same. 10/10.

### 8. THE PRIMPL SUITE

The Prophet Brad Lushman has a very impressive track record, which includes his later founding of the RIMPL Societies, built off POWs from the Cult of Racket and his devoted followers from the Society of the Crossed C's. Though these groups have not reached any global presence, strangely the University is the Societies' bastion. Many are secret members, and will not hesitate to regale good times and tales of conquest with Prophet Lushman in the days of the year 146. 8/10 for achieving big impact in a small area.

### 9. HTML/CSS

One would be viciously mocked to even attempt to consider the Web Consortium's First two Divisions a cult. 0/10.

### 10. BASH SCRIPT

The Bashful Brigade is one of the world's most revered, insofar that most of the other cult's technocrats are built on the foundations of the Brigade's codex and human capital. They too are feared, for they know that one false move could mean a highly undesirable visit from a Brigadier, a fork in one

hand, and a bomb in another; truly a terrifying sight. 9/10 for reverence.

andoiii

## SO UPDATE ON LAST TIME

HIIII everyone so as you are all aware from last issue THEY THREW ME IN PRISON WRONGFULLY, now i am kept in a confined cell that has a rat problem and THE WATER IS EVEN WORSE HERE THAN AT WATERLOO

my back is sore too

at least i dont have a cell mate tho. ITS ABOUT TIME BECAUSE MY FUCKEN ROOMMATES SUCK ASS SJFDKJLKSJ LKJALKFJS so anyway i am not really enjoying life here. they make me get up early in the morning (i dont know how much sleep i get but honestly probably not much less than i did in wwaterloo) BUT THEN THEY MAKE US ALL SCRUB TOILETS WITH TOOTHBRUSHES AND THEY FEED US ACTUAL SLOP

im writing this message to you through the phone i smuggled in. there are no power outlets here so this is the last time you will hear from me. BUT IT HAS TO BE SAID THAT I AM INNOCENT, PLEASE COME AND PLEAD MY CASE FOR ME I AM wait actually i dont know where this prison is located and get this THE GUARDS WONT EVEN TELL ME

and anyway you know that cliché they have on TV about prisoners making all sorts of crap like cans and licence plates and everything in between? well it's TRUE AND I HAVE TO DO THAT HERE too but honestly its kind of chill since i have no other way to keep myself entertained they wont let me on the basketball court or in the gym for some reason (actually i think they're doing construction)

so anyway the food, it's always cold and lacks any nutrition and i think its usually expired it tastes sour and pungent too, i do miss having decent meals but also i am kind of glad i have a break from the outside world

maybe prison is not so bad after all?

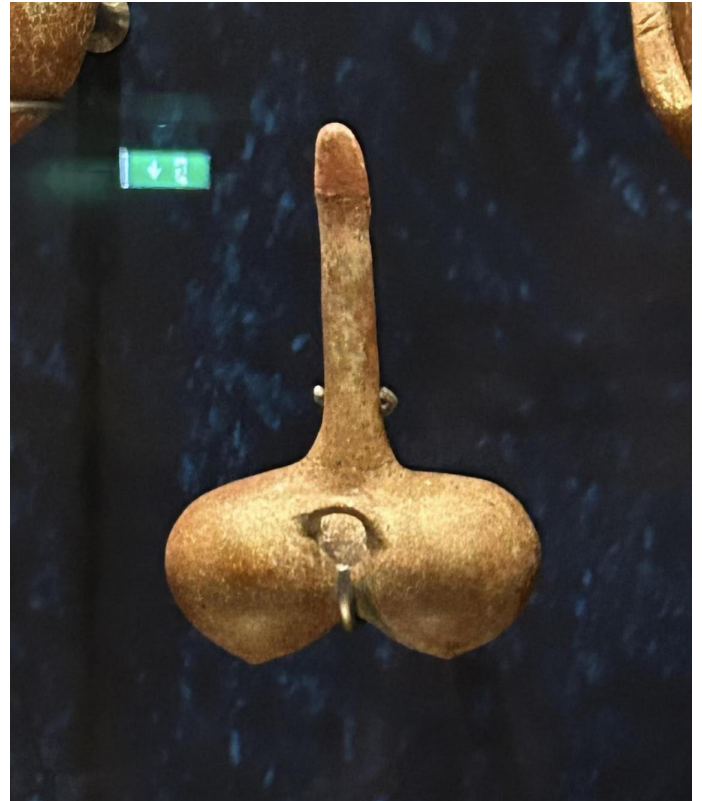
Sentimental Komuro Michael Sakamoto  
Dada-sensei

## A LOVE LETTER TO OBJECT NUMBER Z0014

*TO THE MOST BEAUTIFUL VASE OF THE CYPRIOT COLLECTION AT THE ATHENS MUSEUM OF CYCLADIC ART*

Roses are red, Violets are Blue, Object Number Z0014, I've fallen for you.

When I first laid my eyes upon your red polished neck, my heart skipped a beat. The twin spheres that bless your base continue to orbit my mind even three months after our brief encounter. Were we not separated by security, I may have been lucky to interlock my lips with your spout. My heart burns for you even hotter than the brightest kiln, and only fluid from your spout may quench my passions. Regardless of whatever ceramics I may encounter in the future, you will always be my one and only.



With Love,

Connecticut James

**What's my favourite menu item? I'd have to say it's the sausage biscuits for breakfast.**

PROF. JEFFREY SHALLIT

# YOU SHOULD JOIN mathNEWS

## BECAUSE, HONESTLY, I'M SO HAPPY I DID

i am not a sappy or heartfelt person, but genuinely, **mathNEWS** is really awesome and i'm so glad i joined. i was a first year last year in one of the first ever math living learning communities in uwaterloo, and one of our first events was an upper year panel. one of the students on the panel was a **mathNEWS** member. i'm not sure if he remembers this, and i'm sure he doesn't remember me, but he spent a large part of the panel plugging **mathNEWS** to us and convinced me and some my friends to join. the **mathNEWS** prod night before reading week, i was sitting behind this guy and he turned around and started talking to me (re: swearing at me in french after hearing i hate french people) and i think my soul left my body because that's my on-campus celebrity. anyways.

he told us about how fun **mathNEWS** is, how you get free pizza for writing, no matter how shitty it is, and how someone once wrote an erotic dream fanfiction and it got published. now, as i was writing this article, i realized: hey, i have no idea if this is true. and i cant find it. so, i walked up to the student from the panel and asked him about it and. oh god. a bunch of people teamed up to find the article, which we read aloud. you can find it at [mathnews.uwaterloo.ca](http://mathnews.uwaterloo.ca), it is in the October 7, 2022 edition, titled *Dream Thirst Post* by Not A N\*rd. As I was looking at this, I realized, oh my god, i recognize that pseudonym. Not A N\*rd is STILL IN **mathNEWS**!!!! and the people behind me turned to me and said HEY WE KNOW Not A N\*rd and THEN SHE WALKED IN AND WE GOT INTRODUCED. So, I spoke to the two reasons i'm in **mathNEWS** today. my life will never be the same.

**mathNEWS** has become a place filled with friends, smiles, happiness, and on-campus celebrities to me. when i started at uwaterloo, the huge change from my home and high school was affecting me a bit, making it hard to get out of bed and have fun. **mathNEWS** was one of the first things i would look forward to. even now, **mathNEWS** is a huge motivation for me to get up and start every other monday.

truly, join **mathNEWS**. everyone knows and loves **mathNEWS**. even if you're not in math, join. the last **mathNEWS** had a survey done by undercover engineers discovering what faculty **mathNEWS** members were in. math only made up like 75% of it. i'm trying to convince my engineering friend to join after being enlightened with this information.

that's another thing: if you tell people, "hey, i have a really fun club for you to join," 9 times out of ten, you're going to get the response "are you about to plug **mathNEWS**?" because it's SO popular. everyone in **mathNEWS** is constantly talking about **mathNEWS** and y'know why? because it's AWESOME! it's honestly a great way to bond with your friends or make new ones. everyone here is honestly super nice, personable, and funny.

some more fun **mathNEWS** facts:

- we practice democracy (vote on pizzas) but do approval voting so it's better than how we vote for our country's leaders
- we spent half an hour today watching someone try to get the computer to recognize handwritten letters in **mathNEWS** and cheered when it finally did
- burger pizza.
- people request a lot of controversial pizzas, so pizza voting can get very loud and take a very long time
- last year, my friend told a now-retired editor their pseudonym, and he responded "oh YOU'RE [pseudonym], okay" and they've never recovered
- in orientation, that same friend totally exposed our third, mutual friend to befuddled, THE befuddled, because befuddled is her on-campus celebrity. he is now a celebrity to all of us
- i helped convince big a, author of the incredible zutara fanfiction, to WRITE IT. IT WOULD NOT EXIST WITHOUT ME !!!!! [Editor's Note: THANK YOU !!!!! 😊]
- last year, when big a was hitting a slump with the zutara fanfiction, Dollar Store Person and i each paid them \$5 to continue. i'm not fucking kidding.
- **mathNEWS** is the reason i've started posting my fanfiction on ao3, and people like them !!! anyways shameless plug for gayanteater on archiveofourown
- I think Not A N\*rd is my **mathNEWS** mom now? but i already have too many parents

gaya

## N PMATH 453 PRE-MIDTERM AFFIRMATIONS

- I know the difference between  $L^p$  and  $l^p$
- I know which spaces are separable
- I know how to prove the Hahn-Banach theorem
- I understand all of the homework solutions I've written
- I know which ones of  $l^1$  and  $l^\infty$  map bijectively into the other's dual
- I can do assignment 1, question 5 d)
- I am going to be awake and able to perform adequately at 8:30 in the the morning
- I can totally pass this midterm

Shahabee

# REVIEW OF RHYTHM GAMES AT YUME ARCADE

Last week on Oct 19<sup>th</sup>, 2024, the first Japanese game arcade in Ontario launched their grand opening. Located at Chinatown in Toronto, Yume Arcade houses many famous Japanese rhythm games like *MaiMai* and *Taiko No Tatsujin*. For many rhythm gamers here, this is great news. It is the first time that we can give these unique rhythm games a try without travelling afar. I was happy to make it to Yume last week with my friends who are also hard-core rhythm gamers. Here are my reviews of their rhythm games that I tried.

## MAIMAI

Aka the Washing Machine. One of the most popular arcade rhythm games in the world. Gameplay-wise, it is very satisfying. Players beat with the music by clicking on the circular touchscreen and the eight buttons around it. Yes it is an eight-key rhythm game plus a touchscreen. There are so many types of notes! Two players play the same song on different screen simultaneously while they choose their own difficulty. I like the reactive feeling of clicking the buttons by hand. As it is duo-played, the clicking sound synchronizes with each other. Very satisfying. Highly recommended.

## TAIKO NO TATSUJIN

Another famous arcade rhythm game. You literally play the *Taiko*, the Japanese drum, to beat to the notes. On the screen, there are circles sliding from right to left, and you need to hit the circle when it overlaps with the ring. There are usually two types of notes: the red one requires you to hit the face of the drum while the blue one requires you to hit on the side. I found it relatively easy to learn, but the higher difficulties plays can go maniac. The feeling of play is also very satisfying and responsive. I liked it a lot! It can be duo-played as well!

## SOUND VORTEX

Aka SDVX. One of the most difficult rhythm games that I have ever played. With 4 keys on the top, two on the bottom, and two extra knobs positioned to the sides, the gameplay felt so overwhelming, but I absolutely loved it. Although being complex, the gameplay will become smooth and enjoyable overtime. There is definitely a sharp learning curve at the beginning. The video quality is also gorgeous, playing the game feels like DJing on a futuristic spaceship.

## WACCA

Another type of washing machine. Gameplay is similar to *MaiMai*. Instead of clicking on the buttons, you can touch the whole ring around the screen. You simply touch where the notes land and slide with them. Special notes require you slide you hand inwards and outwards. It was a very innovative rhythm game, and I enjoyed its visual representation a lot. Unfortunately, the WACCA series has been discontinued since September 2022, so we didn't get to play any new songs on the machine.

## VERDICT

Rhythm games are so oddly charming. At the beginning, it was the music that hooked me in. *Deemo* was my first rhythm game (if *Patapon* doesn't count), and the first game that I installed on my phone. I was at high school and lived in the school dorm during weekdays, where carrying mobile phones were prohibited. I can only use my mobile by hiding in the quilt after the lights went off in the dorm room (thank you to my roommates for not exposing me!). I loved every song in *Deemo*, and I still remembered that *Dream* by *Rabpit* was such a heart-warming one. Playing *Deemo* in darkness was a relaxing way to wind down for the day.

*Osu!* was my next rhythm game that I played consistently. It was a great game with a friendly and open community. The songs, also known as beatmaps, are submitted by individual mappers. I enjoyed downloading random songs from the website and got to discover music in different genres, e.g. *ATARI FRONT PROGRAM* by *Utsu-P/KAFU* and *Las Ketchup* — *The Ketchup Song* by *Asereje*. Do you know that UWaterloo has our own *osu!* club? They are awesome. Go check it out!

I enjoy playing rhythm games on arcade machines. Comparing to playing games on tablets or phones, playing arcade games is like doing physical exercise. You can literally beat with the music and feel the physical feedback! As most arcade games are live-serviced, they come with a big collection of music including many recent titles. What's more, the community is also very friendly. Despite being total strangers, we had many friendly conversations with each other due to similar interests. The staff and the venue were also very cultured and awesome. There were so many gorgeous posters, figurines and goods from different anime and games. I was not good at most of the games there, but will more practice I will get better. Will definitely visit again.

eralogos

Here at mathNEWS,  
we're not afraid to ask  
your toughest questions.

Of course, that doesn't  
stop us from posing  
your idiotic ones too.

THE mathASKS AMBASSADOR



## DEAR MOM AND DAD

When I came to visit you this Thanksgiving, I saw how much older and frailer you had become. When I gave you a shoulder massage, I didn't remember your shoulders being so thin and bony, like branches that would snap if I pressed too hard. You forget where you put things. Your teeth ache, your back aches. You complain about your arthritis flaring up again and I feel a twinge of worry flutter across my chest.

You, who I have argued and fought with countless times over countless topics, some petty and some not. You, who lovingly packed me lunch thousands of times and walked me to the public library, listening to me yammer on about the latest gossip in school.

You, who dried my tears countless of times. You, who made me cry countless of times. We haven't always had the best relationship, but you were always there for me, every single morning when I woke up and every night when I went to bed.

Sometimes, I think about how you two would've had an easier life without me. Chased your dreams. Gotten promotions. Traveled the world. Spent more time with your friends and family.

I used to think, when I was young, that people moving and changing their lifestyles to aid their aging parents was strange. You're tying yourself down for the people who made the choice to have you. You do not have any legal or social obligation to be by their side forever. But you were young then. I couldn't ever picture you being old and helpless, not when my whole life at that point was me being young and helpless.

I've changed a lot since I was young, but to you guys, it was just yesterday when you were holding my hand in the courtyard on the first day of school. Now I'm about to finish my schooling, and when I turn around to look at you, I think I understand. I understand how hard it was to raise me. I understand what you gave up. And I know if I spread my wings and flew far, far away from you, no one could blame me for living my life just for myself. For seeking my own happiness.

But I think I understand now, why you had me and raised me when you could've aborted me or given me up for adoption or just abandoned me on the side of the road. I wasn't a planned baby. The reason why you chose to be my parents are the same reasons why I won't leave you in your old age. Duty, responsibility, sure. But also love. The human condition. Wanting to hold your hand and take care of you, because it feels right.

You tell me the same stories again and again, but I pretend it's my first time hearing it, because I love the way your eyes light up when you talk. You save my favourite fruits for when I come home, because you know I love them, even if it's gone a little off by that point. You pretend we give a shit about Thanksgiving even though we are Chinese immigrants who have no family tradition of celebrating it, or even particularly

liking the taste of turkey. It's just an excuse to see each other again. And that's okay.

I love you.

yummyPi

## BEST ENTRY-LEVEL STAR WARS NOVELS

1. **Heir to the Empire (Timothy Zahn)**— Starts five years after Return of the Jedi, pre-Disney continuity. The characters are in satisfyingly logical places for them to be at that time. Luke is searching for more Jedi knowledge, Han and Leia are happily married, and from the remnants of the Empire a new threat emerges.
2. **Darth Plagueis (James Luceno)**— You know the meme, now here's a 452 page version of it! Has a lot of cool lore connections, covers a massive time span starting 35 years before The Phantom Menace up to shortly after.
3. **Vector Prime (RA Salvatore)**— The first of the longest series of SW books, was written to be a good entry point. Very intense, does a great job introducing the villains and making them feel incredibly dangerous.
4. **Rogue Squadron (Michael Stackpole)**— The first of the X-Wing series, follows the elite pilots of the New Republic. Lots of dogfighting to be found, but the real appeal is the characters, many of whom became fan favourites.

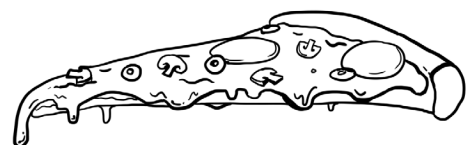
JoonWei

## ALIENS AIN'T SHIT

I could probably beat them up  
If an alien came at me, no, I would not give a fuck  
That's 'cause aliens don't know karate  
No, karate's made on earth  
I also don't know karate  
But I think that I could learn

(*Aliens ain't shit* by Carter Vail. 10/10. Also shoutout to Dirt Man)

0.423





# N REAL COMEDIC AND ODD LEGAL CASE NAMES

- Batman v. Commissioner
- Nintendo v. Bowser
- United States v. Article Consisting of 50,000 Cardboard Boxes More or Less, Each Containing One Pair of Clacker Balls
- United States v. One Tyrannosaurus Bataar Skeleton
- Chavez v. 'Cause Y'all Took My Phones I Don't Know Their Names
- United States v. Approximately 64,695 Pounds of Shark Fins
- U.S. v. One Solid Gold Object in Form of a Rooster
- South Dakota v. Fifteen Impounded Cats
- U.S. v. 62 cases of jam
- United States v. Approximately 450 Ancient Cuneiform Tablets and Approximately 3000 Ancient Clay Bullae
- **United States v. 11 ¼ Dozen Packages of Articles Labeled in Part Mrs. Moffat's Shoo-Fly Powders for Drunkenness**
- *United States v. Ninety-Five Barrels, More or Less, Alleged Apple Cider Vinegar*
- *U.S. v. Vampire Nation*
- *State of Texas vs. One Gold Crucifix*
- United States v. Approximately 81,454 Cans of Baby Formula
- 4 Exotic Dancers v. Spearmint Rhino and the Wild Goose
- Angst v. Angst
- Brake v. Speed
- *Easter Seals Society for Crippled Children v. Playboy Enterprises*
- *Robin Hood v. US Gov't Banking Industry*
- *United States v. One Cuneiform Tablet Known as the "Gilgamesh Dream Tablet"*
- *United States ex rel. Mayo v. Satan and His Staff*
- *Wang v. Poon*
- *United States v. 2,507 Live Canary-Winged Parakeets*
- Death v. Graves
- Satan v. Her Majesty the Queen

And finally,

- *United States v. International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America, AFL-CIO; Commission of La Cosa Nostra; Anthony Salerno, also known as Fat Tony; Matthew Ianniello, also known as Matty the Horse; Anthony Provenzano, also known as Tony Pro; Nunzio Provenzano, also known as Nunzi Pro; Anthony Corallo, also known as Tony Ducks; Salvatore Santoro; Christopher Furnari, Sr., also known as Christie Tick; Frank Manzo; Carmine Persico, also known as The Snake, also known as Junior; Gennaro Langella, also known as Gerry Lang; Philip Rastelli, also known as Rusty; Nicholas Marangelo, also known as Nicky Glasses; Joseph Massino, also known as Joey Messino; Anthony Ficarotta, also known as Figgy; Eugene Boffa, Sr.; Francis Sheeran; Milton Rockman, also known as Maishe; John Tronolone, also known as Peanuts;*

*Joseph John Aiuppa, also known as Joey Aiuppa, also known as Joe Doves, also known as Joey O'Brien; John Phillip Cerone, also known as Jackie Cerone, also known as Jackie the Lackie; Joseph Lombardo, also known as Joey the Clown; Angelo LaPietra, also known as The Nutcracker; Frank Balistreri, also known as Carl Angelo Deluna, also known as Toughy; Carl Civella, also known as Corky; Anthony Thomas Civella, also known as Tony Ripe; General Executive Board, International Brotherhood of Teamsters; Jackie Presser, General President [and other officers including sixteen Vice Presidents]; In re Application LXXXVI of the Independent Administrator, Leroy Ellis, Appellee v. Roadway Express, inc.*

Ethan Cruz

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## TITLE

The automatic doors in DC be like...

...

...

...

...

...

...

...

...

...

...zhjhjjvvvvyyyyyuuuuuum

Whole Number Haver

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## IF THIS IS NOT RIGHT, I MAY NEED TO MAKE A DEPARTURE.

"From the mortal realm, you mean?"

"Yes."

A tortured soul from Blake's MATH 245

# LANGUAGE BARRIERS DO EXIST. HOW TO OVERCOME

As an international student, the challenges we face can often seem more daunting than those experienced by local students. However, through my interactions with many nice people, I have some helpful suggestions for newcomers. (Will international students who are not native speakers read **mathNEWS**??? I still hate reading in English lol).

## WHO SHOULD LANGUAGE LEARNERS TALK TO AT THE BEGINNING?

Talk to everyone! If someone seems friendly, don't hesitate to strike up a conversation. If approaching random people feels uncomfortable, seek out those specifically there to help you: campus volunteers, residence life dons, MATES peer-support service, or the International Peer Community. There are plenty of resources on campus to help you enhance your language skills!

From my experience, the **Communication Partner Program** at Renison College is super beneficial. During registration, you can even select your partner's gender based on your preferences (e.g. as a Chinese girl I was delighted to choose a female partner with a Chinese background). You will be assigned a partner in that semester, who is usually a student learning language learning patterns. They are supposed to spend at least 20 hours with you in the term. As they volunteered to help, they are always friendly and helpful.

Roommates can also be invaluable. I was assigned to UWP, where all my roommates shared a Chinese background. Two of the three could speak Mandarin fluently, while the third could understand it. During my first year, we spent a lot of time

together in the living room, exploring different restaurants around campus. Our conversations blended English and Mandarin, helping me learn many practical words that aren't found in textbooks.

One memorable experience was when I desperately wanted to talk to someone but had no friends nearby. I walked into a random church and ended up chatting with the pastor for over an hour, despite not being Christian. People in churches are often kind and willing to listen.

## NEVER FEEL INFERIOR ABOUT YOUR ENGLISH SKILLS!

When I first arrived, everyone spoke English so fluently that it made me nervous. It was challenging to understand their words and express my thoughts clearly. However, this doesn't mean you're inferior! English is the language they've been speaking for eighteen years, and they're expected to deliver their ideas efficiently. In fact, you are even stronger than them: you've come to a new country, learned a new language, and navigated a completely different community where everyone is a stranger to you! So be confident and don't worry too much about your language skills (as long as it's understandable there's no big issue).

Congratulations on your achievements at Canada's top university! Keep striving for excellence and embrace every moment of your journey as you explore the world ahead. The experiences you gain will be invaluable, shaping not just your education but also your future. Enjoy the adventure!

AKEIJIN

# THE DEEZ NUTS DAYS

*FROM THE CREATOR OF THE JOKE YOU KNOW AND LOVE 'HORMONES? UH YEAH I SURE HOPE I DO' (YOU GOTTA SAY IT OUT LOUD TRUST ME, BRO)*

Have you been to Munch, Pine County, Minnesota? (Munch on deez nuts Monday)

Have you heard of Tupac? (Two pack of deez nuts Tuesday)

Do you know that guy Willyya? (Will ya put deez nuts on your face? Wednesday)

Did you hear the thunder outside? (Thunder deez nuts Thursday)

TGIF (Thank goodness I'm fucking deez nuts Friday)

Have you heard of the band Slawbunnies? (Slob on deez nuts Saturday)

I speak fluent succondese (Suck on deez nuts Sunday)

Created by the person that brought you The Man Days and nike B)

8===D

Please send me your favourite deez nuts joke (or really any bad joke) to the email below. I am going to use them to terrorize my best friend who hates these jokes. You can also just say hi or ask how I am idk it's up to you.

[imgonnafurdadbutonlyforthemone@gmail.com](mailto:imgonnafurdadbutonlyforthemone@gmail.com)

The email was supposed to be [imgonnafuckurdadbutonlyforthemoneybutunfortunatelyGoogledoesn'tsee-my-artistic-vision](mailto:imgonnafuckurdadbutonlyforthemoneybutunfortunatelyGoogledoesn'tsee-my-artistic-vision) :(

[imgonnafuckyourdadbutonlyforthemoneyidonthavedaddyissues](mailto:imgonnafuckyourdadbutonlyforthemoneyidonthavedaddyissues)

# THE QUEST FOR FOOD AT BRAMALEA GO

Bramalea GO was renovated just a few years ago, but it doesn't feel any less awkward of a space than before. The station feels designed to be passed through for less than a few minutes, but badly timed transfers often force passengers to wait around for an uncomfortable amount of time, without seating, water fountains, an information desk, or a clear exit. Surrounding you is a parking lot as far as the eye can see, and beyond that, warehouses, distribution centres, and Highway 407.

What do you do if you get hungry?

## ATTEMPT 1: THE VENDING MACHINE

The food options inside Bramalea GO consist of a couple vending machines, one of which seems to contain actual meals. The Daily Blends machine, which boasts itself as being AI-powered, offers options such as sandwiches, small tubs of salad-style foods, and fancy beverages. A dispenser on the side offers wooden utensils.

I use the touchscreen to select the tub of Gochujang Tofu Japchae with Kimchi (\$10.99). The AI-powered machine refuses to sell it to me, even though I can clearly see it through the glass door of the fridge. Fine, have it your way, I guess.

## ATTEMPT 2: THE FOOD TRUCK

Taking a peek at Google Maps reveals a welcome new addition since I was last here: a food truck! Since the owners of Sip n' Slide have gone through the effort of setting up a pin on Google Maps, it seems like they're planning on staying here for a while. I step into the Bramalea GO parking lot, and there it is, waiting for me.

I order two samosas for \$4.99. They arrive a few minutes later, freshly made, and rather than tamarind or chutney they're served with a packet of Heinz ketchup. The samosas themselves are alright—very oily, and the filling isn't super flavourful.

## ATTEMPT 3: THE WALK

It feels a bit daunting to leave Bramalea GO. Even if I make it to the other side of the massive parking lot, I'm not even convinced there'll be an exit. And if there is, I'll be met by Steeles Avenue—for Torontonians, that's synonymous with “the edge of the observable universe.”

But after crossing Steeles and starting to walk up Bramalea Road, it feels more friendly than I'd assumed from looking out the bus window. A tiny patch of grass by the sidewalk has been labelled as a “parkette” by the city. The sidewalk feels much more lively than an average walk along Weber Street, with a surprising amount of pedestrian traffic despite the scarcity of destinations. I pass by a middle-aged woman who has stopped to take a photo of the moon. Eventually, a newly-built midrise apartment complex begins to shade the sidewalk. People live here!

There are even a few shops on the bottom floor. I stop inside Yow! Wings and try the YowPow Chicken Sandwich (\$13.60 combo). It's pretty good. By my count it took about 10 minutes to walk here from when I left the station building, so this isn't a bad option for those absurdly timed Bramalea transfers.

## ATTEMPT 4: THE MALL

Hey, what's this path behind the apartment complex?

I start to follow it and end up in a long linear park, with a pair of paved, well-lit trails straddling a small creek. The sun has set entirely at this point, so the lighting is appreciated. I pick a side and start down the trail, and find myself walking through an actual neighbourhood. Not a modern sand-coloured McMansion neighbourhood; the houses here are all of a normal size, there's a small plaza, an elementary school, a playground, a community garden, a park bench or two. I feel more at home here than I do near my Beechwood rental. It's hard to believe I'm still just steps away from the hostile, impersonal landscape of Bramalea GO.

After about half an hour of walking, the trail abruptly ends, and I'm at Bramalea City Centre, which, contrary to its name, is just a mall. There is food here. I didn't try any of it. I assume you know what to expect from mall food court food. If you choose this food option, you might have to miss the next train and wait for the next one, but the walk alone makes it worth it if you have the time.

I leave the mall to see if there's anything else around, but don't find much. An old brutalist civic building is being converted into a satellite TMU campus. That's something. There's a bus terminal with buses that can take me back to the GO station a bit quicker... or I could just go back the way I came.

## ATTEMPT 5: THE VENDING MACHINE AGAIN

Having discovered the magical world outside Bramalea GO, I'm a little disappointed when I get back to the station and it's the same as I remember it. Specifically, they haven't added any water fountains in the couple hours that I've been gone—unfortunate, because I'd really like a drink right now. A bottle of water from the vending machine costs \$2.50.

I board my train, still thirsty.

\_\_init\_\_

I put this here just so I  
could fill this column.

A TIRED mathNEWS EDITOR


# MYSTERY! IN mathNEWS — PROLOGUE




**mathNEWS-Chan**  
Without it, they wouldn't be funny! If we don't get it back by the next issue...





**mathNEWS-Chan**  
Fortunately, it seems like we have a very competent volunteer.



**mathNEWS-ohan**  
Disaster!!! Someone help!!! The fate of the next issue is at hand!!!





**LeserIn**  
...when did I say anything about-



**mathNEWS-ohan**  
Why would someone steal the *asbestos cube*???





**mathNEWS-ohan**  
Knock on the office when you've found something!



**LeserIn**  
Why is that even still there? Maybe the health inspector piked it up.




**LeserIn**  
Alright, whatever...



**mathNEWS-Chan**  
Oh, you don't know? The cube is the source of *comedy* for all our articles.



# MY INTERNAL CONFLICT, BEING A mathNEWS WRITER AND A STUDENT, SIMULTANEOUSLY

WHY I CANNOT WRITE A SERIOUS ARTICLE THIS WEEK



Greetings, students, professors, avid **mathNEWS** readers, Germans, Greeks, Romans, Greek gods, aliens, animals, and all other walks of matter! Once again I welcome you to another installment of my disorganised and uncollected assortment of thoughts.

On my mind today is something a little bit more and a little bit less than serious than the average topic of interest. It's specifically in regards to the lack of serious content I publish to **mathNEWS** as an outlet, which while I understand serious content is not a market primarily focused on serious content, I do understand that engaging worthwhile non-“shitpost” (as the kids would say) material remains something that attracts many to the platform itself.

And now this is something that is beginning to bother me. It's been several months since I last wrote something coherent and actually worthwhile to engage with, and this article does not even entirely fit the criterion of being entirely serious, itself being a critique of my lack of serious content. Can you really call it original? Perhaps not. What's on my mind this week is the conflict of interests between actually applying myself mentally and physically into generating a string of characters which form words that derive semantic meaning from an arbitrary yet naturally developed construct we have embraced as written language—something which itself does is not difficult in isolation, but coupled with my obligations as a student and as an employed member of society, is a little bit more than trivial.

Most pressing of matters to me now is that I have a midterm on Wednesday. Yes, on Wednesday I come face to face with a professor and put pen to paper and sit in solitude for an hour,

while the professor stares me down and quickly concludes whether or not I am worthy of his interest as a student based on how, well, stupid the answers I give are. We've all been there. I, on the other hand, have zero excuse for what will inevitably be poor performance in the upcoming test.

I really don't! I'm not taking any other courses, I have plenty of time and attention to dedicate to this course. My job is not demanding, both mentally and physically. Yet I squander all the time I have been given in the world doing things that are not even tangentially, but in fact completely unrelated to the subject that I'm studying. It's embarrassing, both as a student who now has to acknowledge that I have never been taught how to learn or study, but also as a member of society (which is something I hope to be able to call myself), who cannot even follow through with my own obligations that were set not even by other people, but by myself! How can I be expected to respect others, when I cannot even respect myself? It is tragic, really.

But it is the unfortunate reality that I face.

Every word I type on this page is a word I could have spent completing my upcoming assignment. Every movement of muscle of my fingers on the keyboard generating the strings of characters that form words on this article, is a muscle I could have moved preparing for the midterm, moving pencils back and forth to create shapes which in turn are processed by our brains into recognised patterns that hold semantic value. Every breath of air that is inhaled into my lungs, is a sigh of displeasure that could have been released upon the dawning realisation that I am assured failure on this upcoming exam. Every moment spent lamenting my poor choice of continuing to associate and participate in **mathNEWS**, is a moment I could spend lamenting my poor choice of not using my reading week productively to prepare.

I brought this all upon myself. It is a shame, it is a travesty really. But instead I am going to continue whining and griping about all of my life's problems on this article, because it sure is a lot easier than it is to confront the demons inside me directly. Does it make me a coward? Certainly. But do not think for a second that you are above me in this regard. Unless, of course, you are. I am sure someone out there is.

I am trying my best as a person. Really, I am! I take pride in my work. I take pride in who I am and how far I have come as a person. Well, that's not entirely true. Not everything in my life is worth celebrating just as I am sure not everything in my life is worth denouncing. But today is one of those days that I think are better used reflecting and criticising oneself. Though perhaps it's best if you do so in a productive and constructive manner, rather than vomiting a word salad onto a WordPress editor page belonging to a student publication renowned for both serious and less than serious samples of writing. If you



are reading this, I genuinely appreciate the time you have given me by reading my disorganised scattered collection of midwitted thoughts and criticisms of everything, particularly myself. Maybe I can offer you something in return—don't make the same mistakes as me. If you're thinking of writing something similar for **mathNEWS** next issue, don't. Do something better with your life. Then come back to **mathNEWS** and write something jovial enough that people will be confident in your own confidence in life.

Don't ask me what the attached image has to do with the article or subject matter. I don't have an answer for you.

yakumoran810

## DEFENDING THOSE WHO CANNOT DEFEND THEMSELVES

### RESTORING THE STOLEN HONOUR OF FALLEN DOUGH TORUS

I hope you slept soundly last Monday and Tuesday...

BECAUSE I DIDN'T

Unfathomably terrible things were occurring in the **mathNEWS** Discord. An innocent bystander who couldn't speak back was subjected to unforgivable slander, by two former editors no less! Many won't speak up but I will.

I will speak for the Montreal Bagel.

They called it burned and poorly seasoned. THE BURNT IS PART OF THE SEASONING AND I WOULD HAVE IT NO OTHER WAY.

They said it was too fucking sweet and had no malty flavour. THE SWEETNESS OF THE MONTREAL BAGEL REPRESENTS THE SUBTLE SWEETNESS OF THE HUMAN CONDITION. TO REJECT IT IS TO REJECT HUMANITY.

They maligned their bigger hole size. I DON'T SEE ANYONE WEARING A NEW YORK BAGEL AS A BRACELET.

They said it does not go as well with cream cheese, or lox. THAT IS JUST INCORRECT.

Next time pick on someone who deserves it, like scooped bagels.

Lars Nootbaar

For both a great Montreal Style and "NYC-esque" Bagel, that is less than 6 hours away, go to the Bagel Nash in Thornhill. Or, go to T&T, which now has bagels from St Viateur???

## I WATCHED SHIVA BABY AND I GOT MAD ABOUT BAGELS

The Math Faculty has been running monthly queer movie screenings, and so far they have all been bangers. In September 2024, I see that the movie they've picked was *Shiva Baby*, which... well, it's a banger, for sure. But is it really a queer movie? I mean, sure, Danielle being bi and her relationship with Maya is one of the central parts of the plot, but *Shiva Baby* is not even near the top of the list if you asked me to name queer movies. I was otherwise occupied that day, so I didn't watch it with the Faculty, but I watched the movie on my own a few weeks later.

It was a very good Jewish movie that features themes of queerness and I was very happy to see a Jewish movie that did that. But in no way would I call it a queer movie that happened to be Jewish. I did not find it very relatable, because I grew up without a Jewish community, but it sounded exactly like the life that I know my cousins live.

The other day, however, there was an argument about bagels in the **mathNEWS** Discord server, and while I had missed the main discussion, it reminded me of an article I read about *Shiva Baby* after I watched it, and my gripe with Canadian Jewish food that annoys me to no end. Director Emma Seligman lived in Toronto and set her movie in New York, basing most of the movie on her experiences. In an interview, she talks about how much she realized the Toronto and New York Jewish experience differed after she made the movie. One example she used was how the shiva in the movie served a bagel platter with cream cheese, while in New York it would be expected to be deli.

In Waterloo and Toronto, every single Jewish event I've been to that featured bagels has served cream cheese, from plain to various custom flavours of it. Don't get me wrong, it's good, but the women in my family WOULD NEVER. Growing up religious, deli and cream cheese were mutually exclusive, and while cream cheese bagels were acceptable at home, it would be EMBARRASSING to serve it in public. Cream cheese bagels were a private affair. A quick breakfast. Girl dinner for a depressive episode which my mom would nag me about, because *you need soup and meat when you're sad*. It was a pathetic offering to your guests when you could easily make or buy a spread of deli with six different types of meat arranged all pretty.

Montreal style bagels were good, as a treat on a nice day out. But a New York style bagel plate with deli? That's what returning home feels like.

RapidEyeMovement



## HANDS 135: FUNDAMENTALS OF WAVE-BASED GREETINGS

When someone is to your side, and you want to wave to them, what hand do you wave with? Try it, wave at the nearest person beside you. Did you wave with your hand furthest from them?

If so, congrats! You've just aced the HANDS 135 midterm exam. If not, read on.

There's a wrong way to wave to people. It sounds crazy at first, but try waving again, this time, with your hand furthest from the other person. Does it feel a bit different?

If it does, that's because you're experiencing the notion of open body language. I once took a Grade 10 drama course where they taught us about this, so I'm going to try to paraphrase from that class as best I can. If my Grade 10 teachers were making things up, let this be your daily dose of misinformation on the internet (or in print!). <3

Consider first the situation of waving to someone on your side with your hand furthest from them. When you do so, your open hand adds to your person. It's not the focus, but rather, a background element that reframes your face and body in a friendly light.

The alternative is to wave to someone on your side with your nearer hand. Do you feel the separation it creates? By using your hand closest to the subject, it becomes the foreground of their view, casting your lovely face into a separate, background space. The hand serves as a wall, a divider between yourself and the target, splitting you across opposite sides of a once-unified environment. It creates distance. It disconnects.

On a stage, this is critical to consider. We want the audience to connect to characters, so if their actions and body movements separate them from the audience, we're in a bad spot. This doesn't just apply to musicals about sine waves—small things down to holding a book in the audience-nearest hand can disrupt the connection between audience and character.

In day-to-day life, it can create barriers too. Think about sitting next to someone on a couch—are they less approachable with their backpack between you? What about passing someone in a hall? Do they look more like they should be left alone if their laptop bag is on the side nearest to you?

This isn't to say you should always use open body language. But next time you intend to welcome someone into your space, spend a millisecond to think about it.

Do you wave with the right hand, or the wrong one?

*molasses*

## EXAMS...

**I failed math so many times...**

I can't even count!

**When my exam asked if I knew what plagiarism was...**

I copied the answer from the person next to me.

**Why did the student bring a ladder to the exam?**

Because they heard the questions were on a higher level!

**What exams do vampire teachers set?**

Blood tests.

**How do carpenters get certified?**

They take a board exam.

**Why did Daniel only answer questions 1, 3, 5 and 7 on the exam?**

Because he literally can't even.

**What did the stomach say to the brain before an exam?**

You look nervous.

*tsdhami*

---

## SYNOPSIS OF A DAY TRIP TO TOHRONOTOE

- I took a bus to Kitchener GO Station
- Waited at the GO station till 11:30
- I took a GO train to Union Station
- Found the building of my future employer
- Forgot they had a subway here for a moment
- Subway and bussed out to North York to meet a friend
- Subway and bussed back to Union to find another friend
- Infiltrated a WeWork and stole electricity and water
- Took a GO train to Bramalea GO
- Took a bus to UW, arriving home 11:30
- Realized my step count for the day was twenty THOUSAND
- my legs hurt

not bad

*andoi*

# “OH NICE ONLY ONE SUBPART LEFT—

—WE SHOULD BE DONE SOON”

Profs should really start putting difficulty markers next to questions so I know how LONG they will take.

Twice it has occurred that my group thought they were done with an assignment as we only had a subpart of a question left...

...and that subpart ended up taking LONGER than the rest of the assignment did...

Can't believe I missed prod night for this. [Editor's note: you were there I saw you]

(a very tired) aaqsr

## AVERAGE M245 ASSIGNMENT SOLVING SESSION

context: m245 assignments can be done in a group of max three students.

another context: this is at the point when we're almost completely done with most questions and someone goes:

**A:** We're almost done now. Holy—this could actually be our fastest assignment yet.

**B:** yeah, so true.

and we proceeded to spend 8 hours completing that “almost done” portion last week.

This week, the legacy continues. Right when we were almost done, person A again goes:

**A:** Damn, looks like we're gonna be done soon eh?—

**B:** Don't jinx us again—

**C:** Well, if I keep finding every possible mistake/way this could be solved wrongly, maybe I'll also stumble upon the actual solution (this was in reference to A quoting someone's quote about their fails not being fails but just things they learned that don't work in order to find the successful solution).

3.5 hours later and we have successfully actually achieved the legacy of having “almost completed” the assignment 3.5 hours ago and unironically being wrong 6 times until we came to the right solution for a question.

What a life and What a Day! (in Prof Blake's language :))

take\_that\_money

## AN AD I SAW IN THE COPENHAGEN METRO

Open on a smartly dressed man, standing on the subway, typing on his phone. Words appear in a search bar above his head. He is typing in Danish; I do not know what the words mean.

Cut to the phone. We see that the only thing on the screen is a picture of actor Willem Dafoe.

Cut back to the man. Willem Dafoe is now standing directly behind him.

The end.

This ad was less than 10 seconds long and I will be thinking about it for the rest of my life.

Dick Smithers

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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# MATH WHO? mathNEWS

## gridCOMMENT 156.4

good night everyone,

all the sockets in my room blew up and then every dryer in the building stopped working, so i am writing this in a damp pair of pants from the bathroom because the sockets still work here. but i digress.

last week, i asked you guys what faculty and program you are in, and you all said:

- Shreng IV: *Faculty of Engineering [at McMaster University] + Integrated Biomedical Engineering and Health Sciences, Co-Op, Mechanical Engineering, French minor*
- macaulay: *[Faculty of Mathematics] + C&O*
- softboiledegg: *[Faculty of Engineering] + mechanical engineering*
- rutabaga: *[Faculty of Mathematics] + cs ☺*
- mewsik: *[faculty of] arts + honours french ✍*
- nike: *faculty of environment + geography and environmental management*
- Lars Nootbaar and aphf: *[Faculty of Science and a super-secret mystery faculty] + Physics and a super-secret mystery program*
- awmlet: *arts faculty + medieval studies*

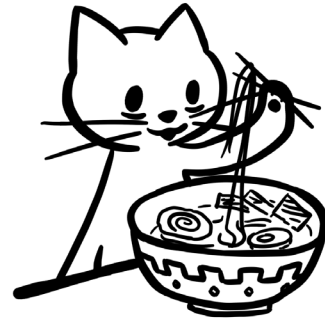
btw guys my program and the relevant faculties are included in the running too, because i also technically solved it. therefore, congratulations to nike for having no faculty or program repeats with anyone else!!!! i didn't even have to

chatgpt anything, shockingly, please pick up your prize at MC 3030 aka **mathNEWS** office. shreng iv, i respect the effort :) you'd've won if school was included, but unfortunately i didn't think to go that grand

now, since thanksgiving was last week (at the time of writing this **gridCOMMENT** and not at the time of your reading), i hope you have been able to relax a bit over reading week and reflect on where you are in life. this issue's **gridQUESTION** is: what are you thankful for? i'll go first: i'm thankful for reconstructive surgery, the information age, and ritter sport chocolate. please send your **gridWORD** solution, **gridQUESTION** answer, and pseudonym to [mathnews@gmail.com](mailto:mathnews@gmail.com) by mon nov 4<sup>th</sup> 6pm est ^u^

alphabetically,

aeeghhiilnprsstt (spaghettiiinhalers)



### ACROSS

1. Bite
6. Fire remnant
9. Ozone layer pollutant, for short
12. Big deer
14. Precedes "Don't cry, it's just a joke!"\*
15. 401(k) alternative
16. Velocity Incubator accelerates this
17. Gathers
19. Adversary
20. Precedes "Bless you!"\*
22. French naval missile
23. Grow
25. Excelled, slangily
26. Ere, non-poetically
27. Improvise
29. Morsel
30. Like some milk
33. Indecent
35. Precedes "You're welcome!"\*
39. Small grill
41. Low-oxygen condition
43. "Metamorphoses" poet
44. \_\_\_ Ma
46. Fatty
47. Hi-\_\_\_
49. Jellied garnish
51. Role-play
54. Mathematical ordinal

55. Smog
59. Bring back on
60. Aga \_\_\_
62. Combine
63. They keep **mathNEWS** alive
65. Recluse
67. Undefined value
68. Epitome of easiness
69. Machinelike
70. Value passed to a function
71. Present tense of 25-Across
72. School assignment

### DOWN

1. Old announcer
2. Sot's sound
3. Double-reed woodwind
4. Human
5. Small detail of conduct
6. Lawyer's org.
7. They told Steve Harwell the world is gonna roll him
8. Scam artist
9. Networking hardware company
10. Less restricted
11. Social class
12. Take into custody
13. Small wild ox

18. Pushover
21. Zeus' daughter
24. Clumsy
28. Holiday mo.
30. Precedes "I didn't know you were an owl!"\*
31. AIDS cause
32. \_\_\_-Wan Kenobi
34. Question you might respond to with 14-Across, 20-Across, 35-Across, 30-Down, or 48-Down\*
36. Can
37. Lousy egg?
38. Mary \_\_\_ cosmetics
40. Delirium
42. Chi follower
45. Jerk
48. Precedes "No, I'm not!"\*
50. Lighthouse
51. Circus site
52. Fragrant wood
53. Addams Family member
56. Friendship
57. Tubular pasta
58. Prez
61. Bills
64. Harden
66. Bygone bird

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70				71				72						

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

