

# mathNEWS

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## “WHO SHOULD WUSA BOOK FOR A CONCERT NEXT?”

Welcome back to the fourth month of classes! What’s that? It has only been three weeks, you say? The term hasn’t even really begun, you say? That can’t be right. So much has happened in the past few weeks. All the clubs are running again—the game developer club is back in action, MathSoc is running again, the MathSoc Board just had its first meeting, Socratica just kicked off, **mathNEWS** published its first issue, the Math Ambassador team is starting tours, also apparently there are classes I need to be in and—

Anyway, did you hear there was a concert? After years of students asking “why don’t we have a welcome week concert,” WUSA finally appeased our demands by bringing in world-famous artist Dillon Francis to our most legendary musical venue: some field behind CIF. I went with some friends and it was... alright? Better than expected? The opener was a good time. Really the perfect warmup for the TALK concert that the city of Kitchener was putting on at the exact same time, just seven ION stops away. Do you think they did that intentionally? Maybe Kitchener was jealous.

They have a lot to be jealous of! You know what they don’t have in Kitchener? **mathNEWS**. This issue will bring you relatively-approachable relativity, Minesweeper written in the hot new programming language of Desmos, excellent original art of a copybara, and a long-awaited update to the **MEGA-gridWORD** featured in this year’s orientation’s issues. Also included are your regularly-scheduled **profQUOTES** and **mathASKS**, this week featuring MathSoc’s Business Manager / Real Adult, Rose Penner!

One more note. Recently, we’ve marked one full year since the passing of ex-WUSA president and dear friend to some of our writers, Stephanie Ye-Mowe. Several articles in this issue of **mathNEWS** are written in direct reference to or in inspiration from her death. There doesn’t exist a practical way that we can give you a content warning for which articles relate to it; you’ll know them when you see them. You’re missed, Steph.

Good luck on the real part of the term, everyone. We’re all about to enter the storm together.

You are never alone.

revivED  
Editor, **mathNEWS**

revivED  
Editor, **mathNEWS**

|                   |  |   |
|-------------------|--|---|
| NO PUN INDENTED   |  | Jesus   |
| USMAN!            |  | the pokemon go kid  |
| BSGCG             |  | Charli XCX (Brat)   |
| ANDOIII           |  | matt parker!!!!   |
| AKEIJIN           |  | Dream Dragon  |
| YALEVOYLIAN       |  | Maurice Ravel   |
| SECRETSQUIRREL    |  | Canadian Brass  |
| GAYA              |  | the wiggles   |
| LARS NOOTBAAR     |  | Frillon Dancis  |
| YAMNUSKA          |  | Wheeler Walker Jr.  |
| NIKE              |  | chappell roan   |
| APHF              |  | Dylan Frances   |
| MOLASSES          |  | @bennnst  |
| MOOSHI            |  | Yo Gabba Gabba!   |
| BEYOND META       |  | Me, I want the performance fee.   |
| BE’F UNWELLINGTON |  | me (i played middle school clarinet)  |
| HEADPHONES97      |  | Former Vice-Chancellor Feridun  |
| __INIT__          |  | 90s French House DJ Bob Sinclar, which is his stage name, not his real name, because apparently when you’re French you think "Bob Sinclar" is an interesting name that people will remember                                       |
| EPIC_WATERMAN     |  | The singing Einstein bobbleheads from Night at the Museum   |
| DICK SMITHERS     |  | WUSA president Nick Pfeifle   |
| SQRT(CAUSE)       |  | I plead the fifth   |
| REVIVED           |  | MC/DC   |
| BEFUDDLED         |  | So I looked it up and I think the Wiggles actually might be feasible. They’re still an active touring group. They’re even coming to Hamilton sometime next year. What does Hamilton have that we don’t? Certainly not more money. |

## ARTICLE OF THE ISSUE

Wondering if time is, in fact, a fourth dimension? Look no further than this week’s Article of the Issue, *Is Time a Fourth Dimension?*. Congratulations, finegeometer—your prize of a \$25 Conestoga Mall gift card awaits you in MC 3030.

## Don’t put a lightbulb in your mouth!

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

# mathASKS 156.2

## FEATURING ROSE PENNER, MATHSOC BUSINESS MANAGER

### QUAAAAAAAAAAACK: ARE YOU A WIZARD?

Interestingly enough, I do use the quote from Gandalf the Grey quite often that “I am never late... I arrive precisely when I mean to.” But sadly enough, Potter fans, I am a Muggle.

### USMAN!: WHAT DO YOU THINK OTHER DEPARTMENTAL CND'S CAN LEARN LOOKING AT THE MATH CND?

Not sure. A lot of hard work, dedication, and determination has gone into CnD to get it to where it is and it is an ongoing effort to not only maintain but improve operations and change up the product line. We are also very fortunate to have the large space, compared to other CnDs, to offer more product, and our convenient location is easily accessible from neighbouring buildings.

### AAQSR: DOES IT BECOME TIRING BEING THE ADULT IN THE ROOM? DO YOU GET MOMENTS WHERE YOU THINK “WHY ARE THESE STUDENTS SO IMMATURE” AND THEN REALISE...

Never! A long, long time ago I was your age too. We all need to blow off steam, we all do this in different ways, and it's not a bad thing. Ultimately it's about making mature decisions that benefit the society as a whole.

### NIKE: WHAT'S THE WORST THING YOU'VE EVER SEEN IN A MICROWAVE?

Hmm... a few things come to mind over the years:

- A carton of chocolate milk that exploded... please don't try this!!
- Cooked rice that boiled over everywhere... goeey and gross. This was a daily occurrence for a couple weeks, then thankfully stopped.
- Food packaging that caught fire in the microwave... they neglected to remove it beforehand.

### BATHROOM\_ENJOYER\_5000: FAVOURITE BATHROOM ON CAMPUS?

Does one really have a favourite bathroom?? Think I'm content with any washroom that has toilet tissue, hand soap, and hand towels. I would say my least favourite is the one MC 3<sup>rd</sup> floor washroom close to Comfy, as this one is heavily used, often dirty, and has lineups.

### RORDON GAMSAY: WHAT ARE YOUR CULINARY THOUGHTS TOWARDS THE \$2 BEEF PATTIES?

Well, actually, they are only \$1.90 including tax!! But I absolutely love the beef patties that we sell, they are tasty! The previous patties were not as good and I couldn't understand the fascination with them, but the ones we have now are so much better. We sell between 300–400 a day... so they must be good??

### RAPIDEYEMOVEMENT: WHICH CND ITEM THAT NO LONGER EXISTS DO YOU MISS THE MOST?

I would have to say the Chili Chicken from Cafe on Route. I love hot, spicy food and it was indeed hot and spicy.

### MOLASSES: IS THERE ANYTHING MATHSOC USED TO DO THAT YOU THINK WE SHOULD TRY DOING AGAIN?

Hmm... nothing comes to mind at the moment. I feel the society is constantly evolving and changing with the trends. We are doing/offering so much more today than in the past, from services and events to advocacy and governance.

### MOLASSES: FROM MY EXPERIENCE, MATHSOC SUFFERS FROM A LOT OF ORGANIZATIONAL AMNESIA. HOW DO YOU THINK WE COULD IMPROVE IT?

Yes, a tough struggle indeed. We are a large society, offering a lot of services, with a termly turnover of society execs and volunteers. With the lack of continuity, the constant need to document and share information is so important. From the executive level, transition notes/meetings are mandatory and we are encouraging club execs and other volunteer roles to have processes in place to ease transition of new people into these roles.

### MOLASSES: AS A REAL ADULT, HOW DO YOU MAKE FRIENDS?

Hmm... this is challenging at any age. Best advice I could offer is to join groups/activities that interest you and to make time for this outside of work. For myself, I keep active with hiking, kayaking, baseball, volleyball, golf, billiards, and any other activities that get me out of the house. Over the years I have been fortunate to meet so many people, make new friends, and form long-lasting relationships.

### NARF DERT: ALTHOUGH THE CND DOESN'T ACCEPT WATCARD, AND SOME BUSINESS MAY BE LOST AS A RESULT, IS IT STILL OVERALL A GOOD CHOICE NOT TO ACCEPT IT FROM A BUSINESS STANDPOINT?

It may be an inconvenience for some first years, but I don't think much business has been lost as a result of not accepting WatCard payment. Students are understanding once we explain the high fees/rates associated with WatCard and that we do accept debit/credit and cash as an alternative. By keeping our operating costs down, we are able to provide student-friendly pricing at the CnD.

### VERDANIK: FAVOURITE ITEM IN THE MATH CND?

For me personally, I would say the beef patties. They are quick, easy, and cheap!



**PALEPINKROSES: THANK YOU FOR KEEPING MATHSOC TOGETHER AND PUTTING UP WITH OUR ANTICS. HOW DID YOU GET STARTED RUNNING THE MATH CND, AND WHAT'S YOUR FAVOURITE PART OF THE ROLE?**

Well... it started back in 2011–2012 when I was working part-time over at Feds Express (currently Flock Stop) and was offered a temp role at CnD to cover for a staff leave. Also during this period, the CnD Manager was retiring, so I applied and was offered the role.

I think my favorite part of the role is working with the students and being able to contribute/assist with the day-to-day operations. No two days are ever the same... definitely not a boring role.

**PALEPINKROSES: CAN YOU SHARE SOME COOL STORIES/ MEMORIES FROM YOUR TIME HERE?**

Naturally, the most recent one that comes to mind is from the Spring 2023 MathSoc General Meeting when Grace Feng, MathSoc Pres, presented me with two cards that were filled with student comments and appreciation, highlighting my 10 years of service with MathSoc. This was a project that Grace had been working on the whole term and I was oblivious to everything happening behind the scenes. It was a total surprise and greatly appreciated on my part. Something I will cherish for many years to come. Thank you Grace!

**PALEPINKROSES: COFFEE OR DONUTS?**

Oh definitely coffee!! I cannot function without it.

**PALEPINKROSES: WHAT DO YOU DO OUTSIDE OF PUTTING UP WITH US MATHIES?**

Well, I guess I put up with my friends!! I keep active with sports and other group activities. I also like to get away on impromptu road trips which include hiking, camping, kayaking, and stargazing.

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

It is 7... although not really lucky, just my favourite number.

**\$\$\$**

Boss makes a dollar  
I make a dime  
That's why I write **mathNEWS**  
On company time

normalparameters

Written at 10:32am on Monday Sept 23

## FRIDAY

Friday is **mathNEWS** day.

On my way to classes, I pass through DC and stop at the pillar where I can find a stack of the latest **mathNEWS** edition.

Thank you **mathNEWS** editors and writers.

Love,

Rats

## CAPYBARA POETRY

Pelicans will chomp  
But capybaras don't fret  
Best rodents, you bet!  
Bathing and frolicking in the sun  
Having copious amounts of fun  
The capybaras live a life  
Free from any and all strife!

(Feat original art!)



annaardvark

# HEY, STEPH

[Editor's note: Content warning: suicide]

Hey, Steph,

So, it's been a bit. About a year. If I'm being exact, it's been a year and four days since you died when I'm writing this, but a few days longer since we last talked. And what a shitty last conversation you gave me. I mean, seriously, "The flora and fauna in B.C. are pretty"? Fuck off. You could've done better.

Wait, stop. That's not the tone to start this on. Don't get me wrong, I am angry at you. I'm angry that you left. I'm angry you didn't say goodbye. I'm angry you promised you'd be ok. I'm angry that I made you promise. I'm angry that I didn't just text you a bit earlier, that I didn't call you. I'm angry at you and I'm angry at me. But that's not where this should start.

Hey, Steph,

I'm publishing this in **mathNEWS** because I assume that's the only newspaper in heaven. I would've written it as a letter and delivered it by carrier pigeon, but I'm not sure they fly high enough. I still can't fucking believe you put that bit in a WUSA email. Hilarious thing to do. I wonder how many official university communications had bits in them—all of them? I got Instagram because of you, and that stupid joke. and during the entire period you were alive and i had instagram, you somehow managed to send me a reel every time i got on a plane. which happened like 4 times somehow. i feel like you planned that.

then again, inside jokes might not be the right tone either. great for a memorial, less so for... whatever this is. maybe i should decide a specific aim? sing your praises?

Hey, Steph,

How does it feel being the most insightful person I ever knew? Don't get me wrong, 1 time out of 10 you'd drop the most insane take I'd ever heard (remember the time you said the *concept of not being ready for a relationship* was bullshit?) but otherwise? you somehow always managed to see what was going on; to understand everyone involved in a conflict. To see the core of people's motivations. you also weren't at all afraid of calling me out for shit. i feel like that's been missing from my life lately, just someone who has absolutely no fear in telling me that i'm being a *fucking idiot*.

that insight is probably the thing that i've missed the most. no, that's not quite true, it's what's made me realize how much i miss you the most. every couple days, i run into some emotional problem i want to ask you about. these range from "this friend has been shitty to me" to a romantic issue to grieving *your* death. and i want to ask you for help. i want to ask you if you understand why they said or did what they did. i want to ask what i can do to take my mind off the fact that you are gone and no matter how much time passes *you are still gone*. i want you to tell me how to make this ok, because i'm

gonna be honest steph, it's not looking too bright right now. isn't it the shittiest thing in the world to lose someone, and the thing you want most is then to *talk to that person about it?*

but, again, i've managed to make this about me. i mean, it's not like you'd care; you're much too dead for that. but i still think that's not quite what i'm going for.

Hey, Steph,

You knew so much about mental illness. I mean your academic knowledge. You explained borderline personality disorder to me in such a clear way. you actually quoted the fucking DSM in conversation once. i started at a crisis line recently, and the understanding you gave me has been really, *really* helpful. obviously, there's policy to follow, but understanding of the people who call informs how the policy is applied. the cycle of idolization → hurt → demonization/pushing away that you described to me has given me so much insight. people's dynamics are complicated.

i also remember something you said to me once, that when you talked to me, i didn't get worried. and that's why you got support from me. and i think that moment crystalized for me why crisis lines are valuable. they bear witness to pain, without worry or fear. it's a place where you can get someone who you can guarantee will not *freak the fuck out* about your safety. and that's nice. i think that conversation was what cemented my decision to volunteer at one, even though i only just realized that. so i guess that's another thing you gave me. thank you.

our conversations about mental illness were really valuable to me. I don't understand how my brain works, or why it does what it does. i've seen probably 5 psychiatrists in the past 6 months, and i've given every single one a different description of my pathology. not that i'm lying, i just feel like it's so multi-faceted that i'm not happy with any description of it. i keep trying to iterate but it doesn't work. but talking to you? it felt like you *got it*. talking to you meant to be seen, without needing to explain or justify. there's an insight shared by the chronically suicidal. i miss sharing that.

I have a digital picture frame, and in it, I put every photo you sent me on Instagram. That means sometimes I get a drawing of the UW campus with goofy slides drawn between all the buildings; sometimes I get that paper about your political career; sometimes I get those photos of you smiling so hard. And every time I see them, I remember my shattered heart. I remember your absence. But I also remember this. I remember that you gave me enough good things that I will never, ever run out of words i want to say to you. and i will never stop mourning the fact that i can't hear you answer.

Hey, Steph.

I miss you.

# BILLIONAIRE WORTHY

## AN ARTIST DISSERTATION ON THE COVER

### ABOUT THE PIECE

Why do we value art? The one commonality shared by every expensive piece of art is they have a good story behind them.<sup>1</sup> Like paintings, the best of them have layers.

### THE FIRST LAYER: WHY THIS ART WAS CREATED

It was **mathNEWS** production night and the editors were scrambling to find a replacement cover artist. Despite my long and storied involvement with **mathNEWS**, I had never drawn the cover.<sup>2</sup> This was mostly because **mathNEWS** has much more skilled artists than I. Undeterred by lack of actual skill, I jumped at the chance, as I knew I could provide art worthy of the sexiest billionaire Christian Grey.

### THE SECOND LAYER: THE BACKSTORY

I felt uniquely qualified to provide such value, as I had recently become a billionaire this August. I had acquired one billion of the most precious resource: time. To mark the occasion, I had invited my friends to make me art worthy of me, a billionaire in seconds. Below are some of the wealth I extracted on that day.



### THE THIRD LAYER: THE ACTUAL PIECE ITSELF

The piece was created digitally. The choice represents how wealth in the modern day is created through technology. The varied shades of grey reflects how the spectrum of human experience defies the binary. The edge of the piece has an encroaching white void that shows how work is never done.

The various textures represent the complexity of our capitalist society. The star texture represents the danger of fascism through enforced conformity. The art captures the billionaire aesthetic by provoking a reaction in the viewer that they could create something equivalent.

### THE FINAL LAYER: THE TRUTH

All art is priceless and worth being created intrinsically for the joy of creation. Art is for everyone regardless of “skill.” All art is “billionaire” worthy.

*BeyondMeta*

1. We would not care nearly as much about the Mona Lisa if it never got stolen.
2. I have, however, on numerous occasions been responsible for the cover. I just didn't draw it. I recommend looking up the April 5<sup>th</sup> issue of 2013.

## APPLIED MATH CLUB PROF TALK ANNOUNCEMENT

The Applied Math Club will be hosting a Prof Talk by Brian Ingalls on Tuesday, October 8<sup>th</sup> at 5 pm in DWE 3818.

**Title:** Mathematical Modelling in Molecular Systems Biology

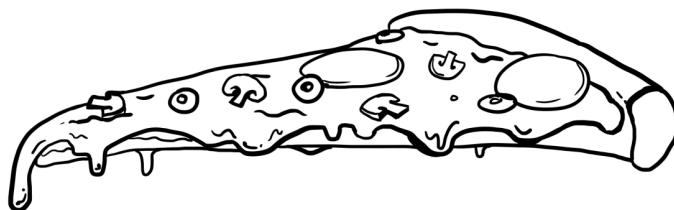
**Abstract:** Molecular biology offers a powerful substrate for impacting health, agriculture, manufacturing, and environmental remediation. Mathematical modelling tools are frequently used in model-based design of such developments. We will begin by outlining how the behavior of such molecular systems can be described by systems of nonlinear differential equations. We then describe an ongoing research project on modelling of a novel bacteria-mediated cancer therapy.

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

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

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

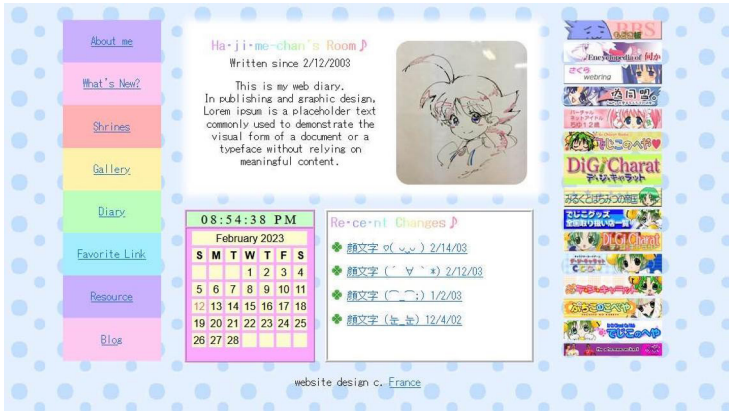
P.S. Francis Poulin will be giving a second Prof Talk on Tuesday, Oct. 22<sup>nd</sup> at 5 pm. Check the next **mathNEWS** issue or [puremath.club](http://puremath.club) for more information!





# THE SOULLESS INTERNET

## WHAT IS THE USE CASE FOR WEB DEVELOPMENT?



### THE OBJECTIVELY CORRECT STYLE TO BUILD A WEBPAGE WITH

Any of you zoomies remember the times before the Internet was monopolised into a few conglomerate websites offering services for virtually everything, and when the Internet primarily belonged to, well, independently-developed content? The times when most traffic was towards non-commercial content? The days of content-sharing forums, before BitTorrent became the most popular way of file sharing? The days when YouTube was primarily home to people showing off something special of theirs, rather than the algorithm-gaming soyface-thumbnailed MrBeast videos meticulously calculated to milk every last view? Or the days before memes became prominent?

Well that's what I'm going to talk about here, about the soullessness of the post-modern Internet. Though perhaps not through the lens of any of the aforementioned things. Merely a loosely-structured rant about how awful modern websites are. Without further preamble, let's get in to it.

### NO ONE LIKES YOUR OBSCENELY OBNOXIOUS JAVASCRIPT

First and foremost, without even discussing how JavaScript is used track you across websites, and without even mentioning how memory-intensive JavaScript is, and without even talking about how obscene JavaScript is as a scripting language itself, the kind of bullshit it's used for is a headache itself. Oh wow, you built yourself a fancy dropdown menu and a flashy webpage talking about how much of an entrepreneur you are with a portrait of yourself in front of the E7 tunnel using some bloated-ass web development framework. Impressing HR leeches with overstimulating webpages aside, can we come to a consensus on how obnoxious they are even from the perspective of a consumer? I really don't need a million context menus crammed together that all close the moment I accidentally slip my mouse more than a single pixel away, forcing me to navigate through each and every one of them.

Can't you just give me a directory page with a bunch of hyperlinks for me to navigate where I need to get to through? It's just as bad as having to make a phone call and listen to the

narrator list out every single menu. Why can't you just give me the code on your website to connect me to the person I'm looking for?

And all I want is to load the page content so I can be on my way. Why do you want to waste ten seconds of my time at minimum to load your stupid webpage?

### IS THAT ANOTHER .WEBP FILE?

I really don't care if it's your excuse for compressing and delivering images quicker. I didn't ask for a .webp file. Don't give me a .webp file when I ask to download an image.

### LOOK AT ME I'M SO GOOD AT MAKING IT AS DIFFICULT AS POSSIBLE TO DOWNLOAD MY IMAGES

If there's one thing I hate more than anything it's websites that prevent you from accessing their files by right clicking on images. Out of spite I will dig through the webpage source code just to find the images, but at that point all you are doing is causing me more grief for no good reason. Why do you not want me downloading your images?

ebussy

## MEGA gridWORD

### A CORRECTION

Hail and well met, incoming first-years!

We, **mathNEWS' ELITE PUZZLE craftingCREW**, present you **A CORRECTION** to the **MEGA 50x50 gridWORD**.

Unfortunately, when dividing the crossword into 4 pieces, the clues were not correctly distributed between them, making it very difficult to solve.

An updated version is available to solve online using this link: <https://downforacross.com/beta/play/36001>

Despite these challenges, congrats to palepinkroses for solving regardless. Please claim your prize at the next **mathNEWS** prod night.

Good luck and happy solving, but remember, sometimes the true crossword solutions are the friends you make along the way.

Quizzard People

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

# REVIEWING ALL CAMPUS BUILDINGS AS STUDY SPOTS

## PT. 3

Last term, I embarked on a quest to study in every building on campus. Unfortunately, midterms got the best of me, and so I pitifully retreated to MC in mid-June, then was never seen again. But now I'm back! And the search continues. This term, I cannot, *I will not* stop until I have reviewed every single building on campus. Well, maybe not every single one. But most.

My initial reviews of AL through E7 are available in **mathNEWS** 155.2 and 155.3, for those interested.

### EAST CAMPUS HALL (ECH)

Not to be confused with the former BlackBerry buildings East Campus 1–5, this warehouse-turned-art-hub reminds me of what Doug Ford is doing to the Ontario Science Centre. But I digress. I wandered the halls of ECH in search of a study spot, but was greeted with something much nicer: an art gallery exhibiting mostly UW art students' pieces. Entry is free for all, so instead of pilgrimaging to complete my MATH 239 assignment, I spent an hour studying sculptures and paintings and art! Rating:  $\infty/10$ .

### EAST CAMPUS 1–5 (EC1–5)

Technically I also didn't study here but that's mostly because I'm in a 2012 state-of-mind and back then, the university did not own these buildings. (I miss you BlackBerry please hire me). Rating: 4/10, because this is where the elusive 4<sup>th</sup> Tim Hortons on campus resides [Editor's note: there are 5 🍷].

### CENTRE FOR ENVIRONMENTAL AND INFORMATION TECHNOLOGY (EIT)

I finally hit EIT, or, as a friend of mine calls it, the dino building! This building is incredible. Not only is there a beautiful museum with tons of awesome rocks and geology facts, there are also plenty of study spots! The tables beside the cafe on the 2<sup>nd</sup> floor are lovely, and provide a sick view of dinosaur bones. There is also an outdoor study area near the roof which is wonderful in the warmer months, on the caveat that there are no nesting geese hissing at you. Rating: 9.5/10.

### ENERGY RESEARCH CENTRE (ERC)

I don't think this building was intended to have undergrad students studying in it, but I tried regardless. I was met with a few armchairs clustered by the elevator exits that reminded of the waiting room at my doctor's office. One of said armchairs hosted a massive teddy bear wearing a tie and a tag declaring he gives "free hugs". Of course, I obliged. I may not have studied here, but I did take a little break and picked up reading a new book from a pile that seemed free for anyone to read. Again, doctor's office vibes. Rating: 6.5/10.

### EARTH SCIENCES & CHEMISTRY (ESC)

Fun fact! ESC used to be called C1, if an old Plant Ops floorplan in C2 is to be believed. Unfortunately, that might be the only fun thing about ESC. Some of you may have noticed the gaping hole that ESC 3<sup>rd</sup> floor has been bearing these past few months, and thus have been too scared to enter it. I call ye the lucky ones. Inside, I was faced with holes smashed into walls, exposed leaking pipes spanning the entirety of the second floor ceiling, and a cockroach in a toilet. Perhaps this building truly is in dire need of repair. Rating: 1.3/10 (this may increase if the ceilings stop leaking on me).

### ENVIRONMENT 1 (EV1)

As the original environment building, EV1 hosts the fantastic ES Coffee Shop! This might be the only place on campus (or anywhere) that has cheaper prices than the MC CnD. Seriously, their prices are insanely low. In true nature of the environment faculty, be prepared to bring your own cups and containers. There's also a half indoors/half outdoors atrium situated adjacent to the main entrance, which seems to house an abnormally high number of couples. In the hour I spent studying here, the only other people I encountered were four (4!!!) separate couples. Maybe next time I re-install Hinge, I'll look for someone in environment. Rating: 7.1/10.

### ENVIRONMENT 2 (EV2)

Maybe I did something wrong, but I could not find a single outside entrance leading to EV2. Instead, I wandered through the desolate Env/Arts quad basement at night, scared to look behind, but wary of what was ahead. Eventually, I did make it! There are a couple of 24-hour labs on the ground floor which are nice. Some of the tech is pretty dated, but they at least seem to be quite peaceful. And the lights are actually turned off when empty! Other faculties take note. I also noticed the model city diorama has been removed and replaced with shockingly modern chairs, which made me sad :( Rating: 8/10.

### ENVIRONMENT 3 (EV3)

This was one of my favourite study spots in first year, back before I got too lazy to walk any further than the bare minimum. But fortune favours the bold, for EV3 is a terrific study spot. The third and fourth floor study areas are wonderful. There are group and individual options, all of which perfectly embody what a study spot should be. It's a glorious place to study in at sunset, and especially during the fall, with the striking colours of the leaves on display. There's even a live wall! that recently died but was brought back to life! Yay! Rating: 10/10.



## EXPANSION (EXP)

I somehow ended up in BMH this time, so please refer to my older review of BMH for the EXP review. Anyways, there's a really chill group study area on the second floor! Lots of couches and huge tables, with a nice view of the Health garden. There's also a large HEALTH sign on the first floor comprised of hundreds of the same "We can't wait to meet you" printed notes. Moderately creepy. Rating: 9.2/10.

headphones97

## THE WATER IN WATERLOO

Perchance you have had the pleasure of boiling the tap water from the taps of Waterloo. I have, and I am scared.

For I, having lived in B.C., have seen water of a much different form. B.C. water is soft, it is nice and smooth, yet crispy and water-y. It goes down the throat smooth, and coats the inside with a nice lingering humid layer of moistness. B.C. water is soft, and B.C. water is nice.

Now having lived in Waterloo for three years now, let me just say: at home, consuming water is one of the most terrifying experiences I have ever lived through.

I boil my water—not only as a relic of my Asian heritage, but also because hot water is sacred and one of the best things invented ever. Alas, placing the liquid in my kettle, I slowly notice a lingering suspension as the water heats. Plumes of white particles float around, turning the water a cloudy white, before finally seemingly disappearing near-boiling, before the water comes clear and pure once more.

However, it would never be long before my elided fears resurface, as I find my water corrupted with white particles floating on the surface—calcium, I know for sure; yet I can never seem to remove it; and drinking the particles leaves a distinctly crunchy and estranged taste in my mouth. It coats my cup's innards in a layer of unyielding caulk, and I can only but hope that the insides of my gullet are not coated in the same tainted salts.

I recall this one specific occurrence whence I had made Nestea (from the powder) using hot water (it mixes better); only to find the inside of my cup coated with a vile brown tar, which would not come off even in the dishwasher!? A through scraping was in order, which finally removed the heathen stains. Why does it do that. Why???

Waterloo water is hard, and it scares me.

andoiii

## TWO RECENT LLM DEVELOPMENTS THAT WILL ACTUALLY GIVE YOU CHILLS

### FROM A SELF-APPOINTED AI SKEPTIC

The first comes from a Danish friend of mine, who's using the new *o1-preview* model on the ChatGPT Plus subscription. For those who don't know, this new model uses advanced reasoning, and questions itself in its head before presenting you with its structurally sound conclusions.

My friend sometimes prompts ChatGPT in Danish, and sometimes in English, but he always wants answers in English because he's usually doing programming classes or submitting assignments for English-only classes. He tells this to every new model via the "Custom Instructions" interface.

This is where it gets creepy. As a user, you can read what the model thinks in its head, which you would think would just be some English thoughts leading to an English answer. Or *maybe* it would think in Danish and answer in English. But no, the model jumbles the two languages together, sometimes even splitting *words* half Danish and half English. This is eerily similar to the way a bilingual person sometimes thinks, and this is despite being requested to only answer (and think!) in English.

But it gets more unsettling than that.

☺ ☺ ☺

I recently read a blog post on LessWrong published by an AI Safety researcher at OpenAI. I tried to track down the post but couldn't, so we're going off memory here.

This researcher fed an advanced new model (not out yet) a massive prompt consisting of several books' worth of text. Hidden in the books they slipped one random, broken, unrelated sentence. They then asked the model a simple trivia question based on the surrounding content.

Instead of answering the question, it responded with "It seems you're trying to test whether I will spot the incorrectly modified text at X location in your prompt. What is the purpose of this test?"

☺ ☺ ☺

It's not like AI's gonna take over the world any time soon, but I'm not exactly sure there's a more ominous way for it to be progressing.

no pun indented

# THE LAND THEY CALL GESPE'G: 2/3

## LESSONS IN THE ANCIENT EAST

Beyond the Appalachian mountains, there's a small fishing town called Percé. The roads to it are long and treacherous, and once you're there, you're as trapped as the lobsters of old. The town leaves you only one thing to do.

Listen.

### THE CALL OF THE GASPÉ

In an early morning of August 2016, the long pointed wings of yellow-headed gannets beat overhead as my father and I follow a silent call to Percé's five-hundred-metre limestone monolith: the famed *Rocher Percé*. Follow our tracks, and you'll find the path to the great colossus barred, with all sorts of silly warnings given, like "danger: deadly rockfalls" and "do not, under any circumstances, approach."



My father can't read French. We approached, on a quest to the monolith's hollow eye. We weren't the only ones; back then, at low tide, crowds of curious tourists would span the sandbar, approaching the Rock's towering edge. Most would reach it, astutely realize that the sandbar stretched no further, and satisfied, turn around. But the call was too loud; my father and I could not. Looking carefully, they should have seen the small pebble beach extending along between the Rock and the waves. At its end, the waters left no more but a debris field of chunks of stone protruding from the waves. The handful of remaining tourists would see it, be satisfied, they'd turn around.

My father and I could not. He leapt onto the first protruding stone. Then the next. I followed. Together, we would make chains of hasty, rhythmless leaps, only to pause, recenter and leap again, an Arrakis sandwalk on Atlantic stones. One or two remaining tourists would journey atop the stones, but inevitably, become satisfied, and turn around.

We could never turn around. Two children on the rocks, we followed a whispered call, the alluring song that ever since I first stepped out onto those Atlantic rocks, has left its hooks in my soul:

See.

### THE DEMAND TO BECOME

And so, eight years later, we ran. Leaping from boulder to boulder, careful not to slip among the ancient erosion eating barnacle-filled crevices into the smooth, red-orange curves

underfoot, my father and I would *see*. Years of coastal erosion had eaten away at Percé's southern cliff, leaving a debris field of red sandstone and shale. Beachgoers sunbathe on the distant smooth slopes, but our beach was this one, the coastal invitation, the challenge: *prove yourself free*.

Like children fearing imagined lava, we throw ourselves between the stones. With each step, my legs demand rock sink into the ground, its equal and opposite rebellion propelling me along the coppery shale path, at each landing, a battle of forces threatening to pull me in. My hands claw against the rockfaces, their rugged surfaces bite into my palms: pale flesh against one thousand maws, infinitesimal corners of stone. My upper body slams into wedged vertical boulders, the Earth carves crimson from my calves: liquid tribute drawn into the shale.



We trace two paths, my father and I. Our minds race: where to stop, where to leap, where to claw, twist, rotate, eject, slam, scale, repeat, amid it, thoughts retreat. We become living motion, force manifest. Days before the end we wouldn't voice, we followed the land's challenge, the lesson written in shale:

Feel.

### A QUESTION BETWEEN INFINITIES

So in the night, I felt. As midnight cold settled upon the town the night before we finished our Eastern quest, I sat upon the Percé beach, peering into the beyond.

Percé's beach is pebbled, and in the day, you see only the surface. At night, each pebble is inescapable; endless ancestors constructing the shoreline, only today's generation open to the sun. In the day, the coastal stars were unseeable, hidden by waking life. But at night, each one sparkled at those sat upon the Earth's edges, ever watching above. There, atop ancestor stones, below unreachable stars, a maroon hoodie from South Campus Hall.

Between the infinities, as the tourist town finally slept, the heaven beyond the Appalachians came to life. No more trying to outrun it, no more loud music, logistics, cars, no more metal at all. No more restaurants, roads, motion, no more flight. Only waves, pebbles, stars, and the wind.

In the end, tried as we had, there was nowhere left to run.

So I posed the question to the infinity. The question that, unanswered, had driven my family to return again to this sacred place, this far side of the Appalachian wall.



Wrapped in midnight, answers came in a soft hush under the waves.

### A LESSON ON THE MOUNTAIN

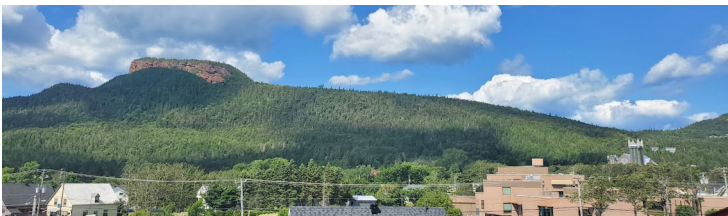
I followed their advice. With my last free hours in Percé, I climbed the mountain to visit an old friend. Eight years ago, I remembered her to be magnificent. Cristo Redentor of Brazil, hidden in the Gaspésie.

Yet her home is no Elysium. I found her in a clearing of unkempt wildflowers and wheatgrasses, with patches of red gravel interspersed. She has no royal marble pedestal; all her pews rest upon grey and ancient wood with wildflowers growing between the planks. The pews aren't well cared-for; each sun-baked seat is misaligned and nailed down imprecisely. She's up high, yes, but it's mostly from the concrete stairway she stands on, with flaking black-painted railings and chips in the stone to reveal its gravelly flesh.

She's not magnificent either. Atop the pedestal, she's so small. Only double my height, I think, and time has taken bites out of her painted white to reveal a porous interior, a milky core, pebble-pocked. Her halo isn't resplendent, it's barely held together: a circle of old halogen bulbs, the vast majority shattered long ago. Nor are her arms outstretched in glory.

They're sheltering a marble-carved child, held tight to her chest.

Atop the mountain, sitting at her feet, close your eyes and listen. As the wind brushes through the pines, you'll hear it whisper a small, priceless thing.



*"I have you."*

molasses

## WHAT IS YOUR FAVOURITE NON-MATH/CS COURSE YOU'VE TAKEN? (UNDERGRADUATE)

Here are the favourite non-math/CS courses taken by mathNEWS writers:

- JAPAN 101
- ECON 101 (Mikal Skuterud) × 2
- ECON 102 (Jean-Paul Lam)
- CLAS 146
- BIO 239
- PHYS 349
- ENGL 193
- GER 350
- PHIL 205
- BU 231
- GEOG 181
- ENGL 208B
- ENGL 294
- MSE 541
- PLAN 100
- RUSS 101
- THPERF 243
- ANTH 106
- SPCOM 223
- MUSIC 246
- ARBUS 400
- GEOG 481
- PHYS 234
- BME 182
- BME 162
- BME 281
- GEOG 403
- HIST 256
- They all suck
- None of them

mathgeek

## PEOPLE LIKE CAT MEMES!!!

I was making physical posters for UW Blockchain and putting a cat meme on them to attract people's attention. A week later, now I notice a lot of them have been taken away and the only two left have the cute cat meme torn! That's really funny lol.

AKEIJIN



# profQUOTES

## CHEM 120L: SUE STATHOPULOS

“ Usually there’s a few exhibitionists in the room.

## MATH 145: JERRY WANG

“ If this class was a game, we just exited the tutorial village.

“ *[Writes 2024/69, 420/69, 145/69 on the board]* There aren’t really any other numbers out there.

## CS 145: TROY VASIGA

“ I know that you’re in Computer Science, but you might go on a date one day.

“ Computer scientists count starting at zero so we can represent the number of dates we go on.

“ The short answer is “no” and the long answer is “yes.”

“ My incorrect program does the correct incorrect thing.

## AMATH 231: ZORAN MISKOVIC

“ Does this look like a circle? ... Looks more like potato.

“ If you pour your coffee on your desk, you get a two-dimensional vector field of the liquid flowing on your desk.

## CS 246E: BRAD LUSHMAN

“ Construct a student right now and put it there.

“ With my dying breath, I will kill the node behind me.

“ You’re about to be pushed off a cliff. Why should I go to the trouble of copying your data when I can just steal it? You’re not gonna need it anyway.

## MATH 249: OLIVER PECHENIK

“ We have absolutely no motivation for these problems. We just say “gosh I love the string lemma” and apply it. [...] It’s like when you have a pasta machine, and you turn it and noodles come out.

“ That’s not really a theorem, that’s just, like, a fact of life.

“ So we’re going to do something which is not allowed on assignments, which is “proof by large example.”

“ The negative part of the real line is made of lava. I can’t step on it; I would be sad.

## AMATH 271: MIKE WAITE

“ And this... this is rocket science, right? This is how rockets work.

“ We always say, “let’s throw a backpack and treat it as a particle,” or “let’s treat a baseball as a particle,” and that sounds kinda weird ‘cause backpacks and baseballs aren’t particles, and neither is the sun nor the ISS.

“ When in doubt, linearize.

## DAC 302: MINA MOMENI

“ Instead of going right or left on dating apps, you should read a book.

“ I said, “What is wrong with you, car? Are you going to kill me now?”

## CS 343: PETER BUHR

“ Death, taxes, goto. You can’t be a programmer without these in your life.

## CS 346: JEFF AVERY

“ I’ve never had to do this, but it’s a threat.

“ This is sounding like a PD course. I really apologize.

“ I’m super impressed by you guys. I actually bragged about you to my family last night.

## CS 360: RAFAEL OLIVEIRA

“ You know, what would Jesus do? Or what would Buddha do? Or whatever your religion is. We accept everything.

“ We know it’s useful, but it gets kind of boring. Just like drugs.

“ Don’t take my word for it, I’m not a cult leader.

“ I want this to be an educational experience, unlike Twitter.

## PMATH 367: BLAKE MADILL

“ We fall behind, I change the syllabus, we’re back on track. It’s my world and you’re all just living in it.

“ *[Looking intently at student]* Why? Prove it. 5. 4. 3. 2. 1.

“  $b$  is a stage 5 clinger to  $a$ . You’re too young to get that joke and it makes me sad. *[Looks at a student]* You get it, that’s why I overrode you into the class. *[Singing]* I’m from the ‘90s.



- “ We used to be really into classifying topological spaces by various levels of how separatey the points are.
- “ My 5-year-old daughter is in crisis because she’s not bilingual and all her friends at school are. One day she came home and said “Daddy, I speak Italian.” I say “Okay, hit me.” She looks me dead in the eye and says “Buongiorno Ohio.”
- “ When I drop my son off, it is a sea of bald dads with beards, so you probably saw someone isomorphic, in my equivalence class.
- “ If zero were a natural number in your silly little made-up world...
- “ Doesn’t mean they’re not homeomorphic, it just means you did a bad job.
- “ Some books use  $\pi$  as a quotient map. We’re gonna use  $Q$ , because quotient doesn’t begin with  $p$ .
- “ Maybe it’s me, I’m a psychotic individual.
- “ Topologists get real abusive with the gluing. They explain little and they glue much.
- “ You told a joke and I squashed it for the betterment of the class.
- “ I’ll just be making lecture notes and hear “doo doo doo doo” [the MS teams call sound] and it’ll be the associate dean.
- “ We’re going to prove it and be rigorous, and then realize we never want to be rigorous again.
- “ You’re living in  $R^3$ , you... savage.
- “ Maybe I’m not using the word cone in the precise geometric way, I mean the cup you drink out of at the dentist’s.

**PMATH 451: MATT KENNEDY**

- “ This course is basically about Lebesgue’s PhD thesis. It’s one of the best PhD theses ever written. Except for mine, of course.
- “ A lot of people think that proving a big theorem is the biggest accomplishment of a mathematician’s life, but most mathematicians would disagree with you. The biggest accomplishment of a mathematician’s life is proving a really useful lemma.
- “ Next week my postdoc will fill in. He will do a great job. I told him not to teach better than me. When I first taught, I took a week off and my TA taught in my stead. At the end of the term, all the comments were “The prof is okay, but the TA is amazing.”

- “ I’m hosting a conference in Banff. It’s a terrible and ugly place. Don’t ever go there.

**PMATH 451: PAWEL SARKOWICZ**

- “ I’m not Matt, I’m much more handsome than Matt.
- “ Matt’s not here... he’s in a much better place.
- “ Anyone do anything fun on the weekend? [*Silence*] Me neither, I guess.

**CO 456: MARTIN PEI**

- “ Don’t take life lessons from me, because I don’t know what real life is.

**BU 491: FRANCIS OLATOYE**

- “ [*Asking the class*] Who smokes here?
- “ Cigarettes are not really a drug.
- “ The United Kingdom is a developing country.

**PMATH 950: RUXANDRA MORARU**

- “ Sometimes you have to miss a lecture, or you’re just like... not into it.
- “ I guess. I mean, sure. I guess, I guess.
- “ It is very hard to understand what is true and not true.

---

## LINEAR LOVE STORY 5

Two rational functions

$$\frac{2x^2 + 7x - 1}{x + 4}$$

$$\frac{6x^3 - 3x^2 + 2x - 6}{3x^2 + 1}$$

seem fated to be together. As they walk through time they get ever closer, almost indistinguishable from being one and the same. Some people suggest “why not make it something more,” but they say they’re content with the way things are. Although sometimes they wonder, what if they do take that step? A fleeting thought as they know the other one just wants to be friends.

Totally Ununimodular



# UNDERSTANDING SUICIDE, AND TALKING TO THE SUICIDAL

## THE FIRST STEP TOWARDS PREVENTING SUICIDE

[Editor's note: Content warning: suicide.]

So uh. This is gonna be a fun article.

Maybe let's start with some context. I've been volunteering at a crisis line for a bit, and I was originally just going to write an article about some suicide warning signs. I've known too much about suicide for an unfortunately long time, but now that I've been trained, I know the advice I'm giving isn't actually misleading. The thing is, to properly talk about suicide, you need to have some understanding of suicide as a whole; and even a lot of suicidal people don't have that! I also think it would be sort of cruel to give you the ability to recognize suicidal warning signs, and absolutely no guidance on how to talk to people once you've spotted them. Suicide is such a deeply complex, messy slice of existence. Don't get me wrong, any human experience tends to be more gray than not, but suicide has that *je ne sais quoi* that really puts it a cut above the rest.

Because of how suicidal people tend to conceptualize themselves and because of how permanent it is, it's easy to imagine that people making the decision are unshakeable, that they're totally sure about where they stand. But the truth is, pretty provably, the opposite. People who survive suicide attempts overwhelmingly tend to regret it, and 90% of people who attempt suicide and survive won't end up dying by suicide. The decision to commit suicide, on a macro level, is fed by dozens of factors that interface in complex ways, but on a micro level, the transition from desire to action might happen because of something as a skipped meal or an incorrect dose of medication. It cannot be overstated how big of a difference small things make—and sometimes, people around the suicidal person get to be those small things. Understanding suicide, and understanding your place in someone else's life maximizes your ability to do this.

### SUICIDALITY

What does it mean for someone to be suicidal? You might think this is a stupidly easy question, but there's so much nuance here. Some people want to die, but also want to live, and hold that deep ambivalence; some people don't want to live anymore, but also don't want to die, and feel trapped between the two; some people don't care if they live or die, and some people want to die while also being scared of dying. Depending on who you are, you might identify any (or none!) of these as suicidality. The thing is, people in all of those states have completed suicide, and people in all those states have decided against suicide. I'd like to hammer this in super explicitly: **just because someone has reasons to live, and holds genuine desire to live, does not mean they will not choose to complete suicide.** Conversely, someone can genuinely desire death, and still choose to live.

This can sound sort of paradoxical, but this sort of thing happens with desire *all the time*; I mean, people on diets will break them for tasty-enough food, people in relationships will cheat, we'll stay up late gaming or reading or doom-scrolling even when we have something early to do the next day. Desiring suicide, in and of itself, does not kill anyone, the same way desiring a doughnut doesn't make you gain weight, and that a crush doesn't make an affair. Suicidal ideation is deeply serious, and must be treated with care and compassion, but is not a sign you need to immediately make a 911 call. I'm going to talk a little more specifically about how I think about risk in my second article, but I think this is important to acknowledge. It's really, really scary to hear that someone we care about wants to die, *and* it's possible for them to want death deeply while still being reasonably safe. Leaving space for that makes it easier to engage with suicidal people without immediately leaping to full-blown panic.

### CULTURAL CONCEPTIONS AROUND SUICIDE

I want you to picture a "generic" scene in a movie or a TV show where someone is standing on a bridge, about to jump. What does our hero say? Probably some variant of "you have so much to live for!" or "somebody loves you!" Both of these, inherently, have some amount of shame, patronization, or condescension built in. The implication is that the suicidal person *just isn't smart enough* to have thought that they should want to be alive, or too selfish to realize how their behaviour will affect others. This is deeply condescending, and more important, those are both ideas that most suicidal have internalized, consciously or unconsciously. Because of it, suicidality carries shame. It carries the understanding that how you feel might *hurt* people, it feels like you are wrong and your brain is crazy and you're somehow broken, because how could you want this? This can bring shame or guilt, a feeling of not being understood or wrongness, a feeling of being broken. Telling someone they should live because of the people around them takes a conversation about *their* feelings and makes it about everyone else. You can let them know that you care about the while still leaving space and understanding for their feelings.

### TALKING TO SUICIDAL PEOPLE

In light of this, the best advice I can give is as follows: please have open conversations about suicide with people you are worried about. Try to understand them. There is so much cultural *shame* around suicide, and so much panic in those who care about the suicidal that it can be impossible to feel heard. You can acknowledge their emotions, how they are feeling, and truly understand it all without telling them how they "should" or "shouldn't" feel, just accepting that this is how they feel. You can't debate someone into staying alive. Listen and understand, and work *with* them to figure out what they need; be a peer, not an authority.

Super crucially, this doesn't preclude more actionable things. A person might directly tell you that what they want is help solving a problem that you can, in fact, help with. But the important thing is to understand their experience first, before jumping into solving things—you need to understand why their problems are, or feel like, problems, what makes them feel like they can't be solved. And, sometimes, the problems can't be solved quickly, or without professional help, and even then, there is value in being heard. Suicidality is so *isolating*. Giving people space to talk about it, and letting them be understood, letting them be *seen* is so valuable. And most people won't bring it up independently since suicidality is so often met with platitudes, unwanted problem solving, or implicit/explicit shame. As such, you'll need to ask; and in the next article, I'll discuss when and how to ask about suicide, as well as some signs that you should be *really* worried.

Golden

## GOOD ADVICE WHICH I NEVER FOLLOW

- If you were once the best at your school, you are now probably unexceptional.
- Sleep.
- Not everyone will be your friend.
- Don't put too much on your plate.
- Chores are never done but that doesn't mean you should never do them.
- Love thyself.
- Do your homework as soon as you get it.
- Remember to look around every once in a while, when the light is perfectly golden, and say aloud, "if this isn't nice, then I don't know what is".
- You can't buy health.
- How you live your life is the sum of how you live each day.
- If your class doesn't check attendance you can go to other professors' classes instead.
- Manage your time.
- Join cheese club.
- Don't immediately get into a relationship, even if you are good friends. Give it some time.
- It'll get better.
- Take some time to find a better organizational system, whether it be sticky notes or whatever finally works for you, because that means you'll finally stop missing assignments.
- Don't spend too much time reading other people's opinions.
- [god ⚡ peED note: If it takes you five minutes, do it now.]
- [evaluatED note: Don't work on weekends.]
- [evaluatED note: If you're thirsty, you should drink water, even if it means walking down the hall to fill your pathetically low-capacity bottle.]

antigoneofwaterloo

## N REASONS WHY mathNEWS netWORK 2 ISN'T OUT YET

1. I went home for the Mid-Autumn Festival over the Sep. 14<sup>th</sup> weekend. Didn't bring my tablet. Ate at Providential 9. It was delicious.
2. I did the 2024 Galactic Puzzle Hunt over the Sep. 21<sup>st</sup> weekend. It was fun! Many puzzlehunts have small jokes here and there, but this one went all-in on the humor, which my team enjoyed. There was also a neat format change, with 300 easy puzzles instead of the typical 40 hard ones. This was refreshing because normal puzzlehunts often have frustratingly grindy late-games. I hunted with the team  $\alpha$ -ratz Astronauts. The hunt is open until Sep. 30<sup>th</sup> so there's still time to give it a try!
3. Flexible work hours fucked my sleep schedule, so I started leaving work at 7:30 which is quite late. I kept getting home too tired to draw so instead I just streamed TV (I'm currently watching through all of Black Mirror).

Since I've only drawn one chapter so far, I haven't set any expectations for a release schedule, but I personally wanted to have a chapter out this issue. Oh well.



snowdozer

You should be concerned if I were to stop biking to the university.

PROF. BENOIT CHARBONNEAU

# SEEING THE WARNING SIGNS

[Editor's Note: Content warning: suicide]

Welcome to part 2! The set dressing is done, the orchestra is in place, and now we get to the meat and bones of this pair of articles; namely, noticing when it might be coming. This all comes with a big, and very important disclaimer; suicide is so individual and so varied that it really can't be predicted. There are trends, don't get me wrong, but experts in suicide can still only see it coming about half the time, and there are very few experts on suicide. The goal here isn't perfect suicide prediction or prevention, because *that isn't possible*. The point is that knowing a little more than you did before increases the chance that someone survives; but ultimately, a suicidal person will make their own decision, and blame isn't extended to others for failing to prevent it. The intention of this article is just to give you some concrete signs to look for in a friend; it's not saying if these aren't present, there's no reason to worry, or that if they are present, it's your fault for not noticing.

## SOME SIGNS THAT SOMEONE IS CONSIDERING SUICIDE

Maybe the clearest one is references to their own death, especially as something necessary or imminent. "When I'm not around", "In case something happens", ..., etc. are all big red flags. As is making plans for death; ensuring someone will be available to take care of pets or other obligations. These, as an umbrella, are called **preparatory behaviours**. Other preparatory behaviours include buying suicide means. In general, if you see preparatory behaviours, it's absolutely worth checking in (see the next section).

Then, there are the feelings that often correlate with suicidality; anxiety, hopelessness, purposelessness, feeling no escape and feeling trapped, feeling a lack of control over your situation, intense anger, social isolation and withdrawal, etc. Google "IS PATH WARM" if you want the signs the American Association of Suicidology (wow, that sounds like a fake word) recommends people look for. I think that, broadly, emotions that are negative paired with a feeling of little control over, or little escape from, a situation is the biggest thing to look for. Your friend is hurting, but sees exactly what they can do to make themselves feel better, *and feels able to do it*? They might be suicidal, for sure; but they're a lot less likely to be suicidal than the friend who can't see how things could ever get better, or who can see it but doesn't believe their ability to do it, or the friend who feels it's *their* fault that there's a problem. A lot of the time, suicidal people will do everything possible to reassure others that they are, in fact, ok. If a friend is struggling, spend some real time talking to them about how they feel, if they see ways out, how they're coping, etc. Fundamentally, suicide is an attempt to cope. It's also, unfortunately, *extremely effective* as a coping mechanism... it just comes with a bunch of awful side effects (namely, death).

## ASKING THE BIG QUESTION

If you're worried someone is suicidal, the most effective way to figure out how they're doing and what they need is to ask them, directly and clearly. Most people who are thinking of

suicide don't feel like they can bring it up, because it's too heavy, because they don't want to burden others, because they're worried it'll be awkward or uncomfortable. When you're worried about someone, asking how they're doing will go a long way, but most people won't tell you they're suicidal unless you make it abundantly clear that's an ok thing for them to share. And, unfortunately, the only way I've found that consistently works is to ask about it.

When you're asking a question like that, it's important to contextualize why you're asking, and to be kind in how you ask. Something like "hey man, this breakup has been really hard on you, and I've noticed you're pulling away from us more and more. With how shitty you feel... have you been thinking of killing yourself?" or "Hey, you've been making lots of jokes about 'when you're not around anymore' lately, and they're not really feeling like jokes anymore. I'm wondering if you've been thinking of killing yourself?"

If the answer to this question is no, it'll probably be a little awkward. If it's yes, you will be *so glad* you asked. If you're worried someone is suicidal, tell them you're worried, what you're worried about, and give them space to share how they feel (see the last article!).

## WHEN TO BE WORRIED

Broadly, the thing that puts someone's safety at risk is if they have intent and capability. Intent is more than desire, it's the indication the desire will be acted on; desire is "man I could go for a doughnut" ("I want to die") and intent is "I'm going to get in my car, drive to a shop, and buy a doughnut" ("I'm going to [insert suicide method]"). Now, suicidal people are rarely so direct as to just say "I'm going to do [x]." (although they might!). Some signs to look out for include having a specific plan with a timeline attached (if there's no timeline it suggests at least a low level of intent; a timeline is just a stronger indicator), and any preparatory behaviours.

Capability refers to someone's ability to execute their chosen means of death. This is both their emotional ability to follow through—since actually taking steps to end your own life is incredibly terrifying, and there's a barrier (survival instincts) you physically need to overcome—as well as the more practical ability to access means, and how lethal those means are. Now, to be clear, just because someone has a "low lethality" means chosen (for example, sharp objects or medication overdose) doesn't mean this should be taken *less seriously*. Instead, it's something for you to think about if worst comes to worst.

The last thing to consider is the barriers. What's stopping them from committing suicide, or what's stopped them so far? Are they sticking around for a friend, partner, or pet? Are they worried about how it'll feel? Did they recently lose anything that was keeping them alive, or do they feel less connected to the things that make them want to live?



## MEDICAL INTERVENTION

If you're at the point where you feel someone has intent and capability, see if you can convince them to go to a hospital. 911 should always be treated as a last resort (involuntary hospitalizations can be *really* traumatic), but it is a resort. If someone has made their mind up that they will die, there's nothing more you can do. Call 911.

There are so many other things I'd love to discuss; the distinction between suicide and self harm, the way suicidal people disguise their suicidality, the resources that exist—but for now, I hope this is a helpful introduction to the general trends of suicide, and talking to suicidal people. Hug your friends. The last thing I'd like to leave you with is this: if your gut tells you you should be worried, *worry*. Asking how someone is feeling can be awkward, but it's never, ever as dangerous as someone's feelings never seeing the world.

Golden

## SMOKE ON THE WATER

The mountains are an ever-present part of life in Vancouver. Look over the harbor and they greet you with tree-covered slopes and mansions tucked into the most obnoxious places. Until the smoke rolls in.

Open on a Saturday morning: I'm biking to work at the convention center and the sun is red from the haze. Burning wood wafts in the air as red lights and stop signs pass by in a blur. On a normal day the convention center hall has a prime waterfront view of the mountains and Lonsdale but nothing can stop the smoke. Over the first hour truss gets pushed upstairs and we have to squint to see the ferry on the water. One more hour and we are blocked in by smoke. We can't see the boardwalk below or the water even. It is a wall of white where windows once were. The closest likeness is to seeing the invading army on the far side of a defensive wall. Whatever systems the center has in place keep the air inside perfectly fresh but no-one pretends that outside is safe. The client wants some lights in the outside hallway and the smoke makes those windows opaque panels as well. There is truly nothing but us and the void.

Our hours pass and the white wall becomes nothing but a backdrop to the 15th iteration of truss with lights that we've put up in the last few months. By the late afternoon the wind picks up and the world reappears. The hall no longer appears a closed box but once again the luxurious space for people far richer than I to cavort in and I return to my basement where there are no mountains. With walls that look like smoke.

SecretSquirrel

## ALICE IN GRAD SCHOOL

As I'm applying to grad school and jobs and thinking about decisions that will form the next many years of my life, community, and career, there's an Alice in Wonderland quote that comforts me. It can be overwhelming trying to make such important decisions with very little information, but I like to think about the scene when Alice meets the Cheshire Cat:

"Would you tell me, please, which way I ought to go from here?"  
 "That depends a good deal on where you want to get to," said the Cat.  
 "I don't much care where—" said Alice.  
 "Then it doesn't matter which way you go," said the Cat.  
 "—so long as I get somewhere," Alice added as an explanation.  
 "Oh, you're sure to do that," said the Cat, "if you only walk long enough."

So, no matter what decision you make, you'll end up somewhere, and it'll be okay.

Also, if there's another lesson to learn from Alice in Wonderland, it's that no matter which path you choose, you'll always encounter crazy people and most things won't make sense. But studying at Waterloo, and reading **mathNEWS** no less, I'm sure you're already aware.

peacelovemath

I'M NOT GOOD AT READING  
mathNEWS

But I try  
 Reading some articles with interesting titles  
 I am good at reading the **mathNEWS** emails  
 I try to guess which editor wrote them  
 I'm learning the new editors  
 I've developed a pretty high accuracy rating  
 I make a guess  
 And my appreciation for the emails grows

b'ef unwellington



# IS TIME A FOURTH DIMENSION?

YES... ISH.

You may have heard that time is a fourth dimension. Let's take that literally, and see what happens.

Where to start? An object! At each point in its history, it's at some place and time. So an object traces a continuous collection of points in  $\mathbb{R}^4$ . In other words, a *curve* in spacetime.

How long does the object exist, from a stationary observer's perspective? Well, just take the difference in  $t$  coordinate between the start and end of its trajectory. This depends on the coordinate system, which is why it matters who the observer is.

But how much time does the object *experience*? This shouldn't depend on your perspective. It shouldn't depend on the *coordinate system* you choose.

The obvious answer is the length of the curve. That doesn't depend on a coordinate system! And the *length* of the worldline is how *long* the object exists; that just makes sense.

Now we can do some math. We have  $\int \sqrt{dx^2 + dy^2 + dz^2 + dt^2} \geq \int dt = t_2 - t_1$ , so the length of the curve is always longer than the difference in time coordinate. The time you experience is always longer than what a fixed observer sees. That seems relativity-ish!

...doesn't it?

Wait, no. That seems backwards! Isn't time supposed to *slow down* for the moving observer? Where's the sign error?

The sign error isn't in our math. It's in *how the universe treats time*. In spacetime, the length of a vector isn't  $\sqrt{x^2 + y^2 + z^2 + t^2}$ . It's  $\sqrt{-x^2 - y^2 - z^2 + t^2}$ . It's weird, but that's how spacetime works.

We're mucking with the geometry on a very fundamental level. We're changing the very notion of distance, and everything else follows. The dot product is different. Circles become hyperbolas.  $\sin$  and  $\cos$  become  $\sinh$  and  $\cosh$ . And basically everything you might calculate picks up a negative sign.

But there's a new issue. In the usual length formula, the thing under the square root is always positive. Now it isn't. So how do we make sense of an object existing for imaginary time?

Well, look closer. *When* is the thing under the square root negative? Well, when  $x^2 + y^2 + z^2 > t^2$ . In other words, when the object moves too far in space, and not far enough in time. When the object is *moving too fast*.

What's this speed limit? The speed of light, of course.

In conclusion, time is, in fact, a fourth dimension. Spacetime is four-dimensional. But it isn't *Euclidean* four-dimensional

space. If you forget that, you still get relativity-ish stuff, but everything has a sign error.

Other fun facts:

- I implicitly set the speed of light to 1. So the formulas will be missing a bunch of factors of  $c$ . Alternatively, measure time in years and space in light-years, or something like that.
- Velocity is the direction of the worldline. Acceleration is the curvature.
- Under the original distance formula, this would mean constant acceleration would take you in a circle through spacetime. Accelerate at strength  $\frac{1}{R}$  for time  $\pi R$ , and you've turned around in time. Under the corrected distance formula, you instead follow a hyperbola, asymptotically approaching the speed of light.
- Suppose you make a vector, tangent to the worldline, whose length is the rest mass of the object. Then the  $t$  component is the energy, and the  $x, y, z$  components are the momentum.
- If you fix a velocity and solve, you get  $E = \frac{m}{\sqrt{1-v^2}}$ . Putting the  $c$ s in explicitly and expanding as a Taylor series, you get  $E = mc^2 + \frac{mv^2}{2} + O(\frac{v^4}{c^4})$ . Mass-energy, plus kinetic energy, plus relativistic correction terms.
- Sci-fi author Greg Egan has written a trilogy in a universe whose relativity follows the original  $\sqrt{x^2 + y^2 + z^2 + t^2}$  rule instead of the modified  $\sqrt{-x^2 - y^2 - z^2 + t^2}$ . He's also written a book where *space* acts like our universe's spacetime; its distance formula is  $\sqrt{-x^2 - y^2 + z^2}$ . The latter gets really weird—the infinitely large hyperboloid planet is only the start. And for the former... let's just say "turning around in time" is a plot point.
- Trilogy where spacetime acts like space: *Orthogonal*. Books: *The Clockwork Rocket*, *The Eternal Flame*, *The Arrows of Time*.
- *The Arrows of Time* features the best treatment of time travel I've seen, but the details are very much a spoiler.
- Book where space acts like spacetime: *Dichronauts*
- These are *very hard* science fiction. I like them, but they're not for everyone.

*finegeometer*

## ODE TO A BEEF PATTY

My most wretched hour  
Delicious as you are cheap  
Never change, my love

*beef patty enjoyer*

# SELECT THOUGHTS ON EUROPEAN TRAVEL

## BECAUSE IT'S COMPLICATED AND WONDERFUL

I'm doing my fair share of exploration around Europe at the moment. And I figured I'd share a few of my thoughts and anecdotes with you Canadian folks way back home.

How does that sound, eh? (Sorry, couldn't resist a Canadian joke.)



The first thing you need to do when heading someplace is figure out how you're getting there. Do you prefer planes? Trains? Fast new fancy cheap public transit? Automobiles? Of course it does depend on location, but a little less than you'd think.

Like, I could take a beautiful five-hour train from Malmö to Stockholm to get the full Swedish experience, or just fly there in 1 hour for less than half the price. And plus, planes are often simpler than trains anyway; air travel is a lot more standardized across countries than metros, believe me.

*The mooses (meese?) are for Sweden, not Canada*



If you want to visit Vienna from Copenhagen though, planes are probably preferable.

Another thing about European travel is choosing where to go. I think Vienna is a great city, but 70% of why I'd like to go would be because I love Billy Joel's "Vienna." And that's fine! There are infinitely many reasons you may or may not want to travel somewhere, and they should all be considered consciously at some point. You'll also need to factor in your traveling companions' preferences, cost, ease of travel, safety, and anecdotes you hear from people along the way.

For example, an American I met told me all Belgian people are extremely rude and actively disgusted by tourists. Should I still visit Brussels, or should I lean away? Or perhaps should I steer clear of the USA? Who knows.

Overall, I'd say it's important to aim for the types of experiences you specifically are looking for. Don't let things people say or do sway you too much, and always make sure you're feeling excited about your travels before you book them.

*The eagles are for Austria, not America*



The Scandinavians are pretty private. They bring their private selves out into the public, too. So, it can often be difficult to walk up and ask for directions, or maybe to chat on transit, or start making friends.

This is how it usually is not just in the rest of Europe, but in much of the rest of the world. Society today is quite private. Strangers don't really like talking to strangers, people won't start conversations on the bus, and any conversation that does have a spark will be snuffed out quite quickly. In case you forgot (from the title) these are just my thoughts.

But all is not lost! Just like in anyone's home culture, the way to make friends in a new place is to start conversations, be friendly, and be willing to restart conversations after they burn out.

It is harder to start conversations when you don't share a common language, though. That much is true.



Speaking of starting conversations, I was sleeping on my train from Malmö to Copenhagen (aka Sweden to Denmark) yesterday, and a random guy sat beside me. I'm a light sleeper so I was just like, well, no more sleep, there's a human there.

My policy is to always start a conversation twice, and if it fizzles out twice, don't force it. But this guy seemed to be in a very chatty mood, so we got to talking.

In literally 10 minutes, I had learned this was his fifth time traveling Europe this year (he was from Virginia), because he's a professional horse breeder and trainer. He's trained many Olympic horses and coached their riders through the years. He flies out for one to three nights, and often hits multiple countries in that time, riding one or two horses after each flight. This time, he flew the whole way for a single ride.

You see, you have to go to the place to ride the horses, because if you let someone else do it, or—god forbid—you buy the horse before riding it, you'll get scammed by a dirty dealer sedating their horses so they look more obedient nine times out of ten. The equestrian industry is literally as large (money-wise) as the narcotics industry.

Anyway, I wouldn't have learned any of this if I hadn't asked him the first question: "What brings you from Malmö to Copenhagen?"



no pun indented



# RANKING 2N DISCORD GAMES

*I DIDN'T REALIZE THERE WERE MORE..*

## PUTT PARTY — 9/10

A great online party game if you have a group of friends. Play some mini golf, get some power-ups, and mess up your friends. Lots of maps so games are usually varied and the power-up system makes approaching a lot of the holes unique. No collision, so unfortunately you can't hit your friend into the stratosphere the second they're in the lead.

## KRUNKER STRIKE FRVR — 5/10

It's a fast-paced FPS shooter with classes where you just run around and murder. Unfortunately, extremely pay-to-win where clothing items and guns give straight-up damage/hp boosts, though you can earn these eventually through just playing the game and luck. Fortunately, most players are children so you can easily beat them even without the pay to win items.

## BLOXD.IO — 3/10

It's literally a terrible Minecraft clone in the Discord activity client. It's kind of impressive that it hasn't been taken down yet. If you and your friends are really struggling to afford your own server this works as a decent last last last last last option. You can make pebbles out of cobblestone and throw them at others for damage which is kind of fun though.

## QUIZ PLANET — 6/10

A standard quiz game, you can cooperate with your friends, or they can impulsively select the wrong answer and lose all your progress. There's also a competitive mode to prove you either know the most, or have the fastest reading comprehension. A good game but basic. Too many pop culture questions for a CS student.

## LAND-IO — 7/10

Remember those flash games you played as a kid where you had to move around and connect lines to fill into your territory without getting cut off? It's basically that, but with multiple people, it's a fun game but a single lag spike will ruin the empire you've been building for the past 3 minutes and give it to the dude named "Fungi."

## BLAZING 8'S — 8/10

Kind of fitting that the Crazy 8's/Uno clone comes in at a score of 8, but it's a solid game, if you love Uno you'll love this game, no stacking +2's unfortunately, but it brings in a card that swaps your entire deck with the person who's going next, making the ability to break friendships equivalent to the original game. Max of 5 players which drops the score down.

Catboy Supremacy

# SQRT(CAUSE) PARTICIPATES IN THE PHOTOVOICE PROJECT AGAIN AGAIN

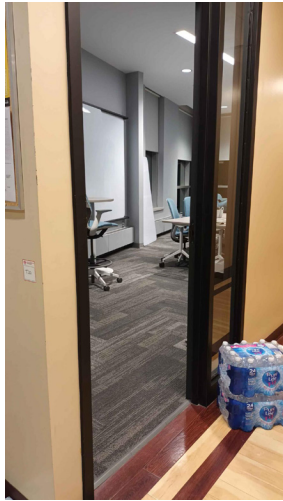
## PART THREE OF THREE

A recap of my first two articles on the Photo Voice Project in **mathNEWS** 155.6 and 156.1: I alluded to the book of the summer, 2011's *WayFinding WATERLOO — a design handbook*, published by the School of Architecture. Ignoring the exceptionally frequent references to Facebook, I highlighted my first four locales, heaping the Dean of Science hallway and the Earth Sciences Museum with praise, and making my disdain for Phillip Street and CLV North known. In part three, the saga continues at EV3...



Though I took this photo at night, I find that the spaces on the student half of EV3 lend an excellent sense of calm. The abundance of natural light, with a good balance of seating variety, off-main-room meeting capacity and kitchenette simulacrum make the place feel less like campus and more like a hearth. EV3's balance of instruction and self-learning space compliment it well, and it does wonders to accommodate small groups. Slightly more soft seating is available in other parts of the building to accommodate different userships, but that does not deprive this space of use. It takes great care to ensure acoustics are well maintained and conversation is easy without disturbing others. This is something we ought to learn, I think of the horror story of acoustical engineering that is RCH 101 and the fact that those who sit in the far back corners are the only ones who really can be heard, the prof might as well not be lecturing. This is a space that once again harkens back to my novice understanding of "compression and release" with narrow corridors leading to a space that basks in the aged daylight of midsummer. It's nice, and does not feel exclusive while remaining secluded.





This space is of particular interest to me, as it is where I currently write you. The “Board Room” of the SLC—that is, SLC 1103—serves as a space for students to don their professional airs and meet the challenges of governance that grow from student democracy. There is of course, an obvious flaw. Without hesitation, the first issue that FedS encounters, and one of our own creation and hubris, is that of getting people to the right room. While I may complain about proportion or layout, the space does its job. What it lacks is a sense of direction. It challenges attendees to locate, with odd placement behind and through the storage room of Flock Stop, the 24/7/364 cafe run by FedS. Unintuitive and out of the way, even a good design for space fails if it cannot be located, cannot be used. The obsequious smart devices wait patiently for students to hold their meetings, yet no one comes. It is only through force of will, not force of habit that it is used at all. Flashy but in all the wrong ways, it hides the activity of the organization within the walls of a warren rather than having on display for all to know the happenings. We were mistaken, but I hope it can serve a valuable lesson that a fresh coat of paint does less for a space than making it a place used, a place loved, a place cared for.

Spaces that I love blend various needs together well. They focus our minds on how we can compliment the work and life of others without substantial intrusion. They play with our sense of scale, and handle differing numbers of people, but always feel intended for the groups that do use the space. There is no off kilter occupancy, the room is neither too large nor too cramped, or possibly, as is the case of the EIT lower floor of the museum, able to adapt by snaking its way around displays and other small pleasing emotional and auditory barriers.

Spaces that I see a place for change are all interfaces between two worlds. Whether that be the edge of campus, the transition between our built and debuilt environ, or the space secluded but intended for all. These are places where our ideas of space are most in flux, and poor connection makes itself obvious. The lack of clear direction to enter or interact makes the space hostile rather than welcoming.

Now as we come to a close on this endeavour, I'll leave you with an honourable mention, a place that I think is most

deserving of change for how close to perfect it is for my tastes. The DC EXT building houses a number of labs that are pivotal to my degree, and the way it plays with light and shadow is what I can only imagine the architects meant with the main building. If only the stools weren't so dang awful to sit on, this would be where I'd spend most of my time.



All for now,

sqrt(cause)

## ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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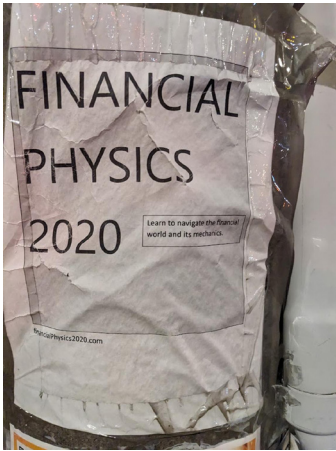
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# FINANCIAL PHYSICS 2020: A DEEP DIVE

## LAYER ONE: THE SUNLIGHT ZONE

It took me a while to notice it, at first. It has a curious tendency to fade into the background. You can be staring right at it and not notice it.



I honestly don't even remember the first time I saw one of these. It seems deliberately designed to not be noticed, with a simple, thin black Arial font and a white background. It looks like the designer just made the default text in Microsoft Word really big and called it a day. One might also point out that the current year is, in fact, 2024, and not 2020. Maybe they mean 20/20, as in vision? Maybe this product is just old? It's not clear from the poster itself.

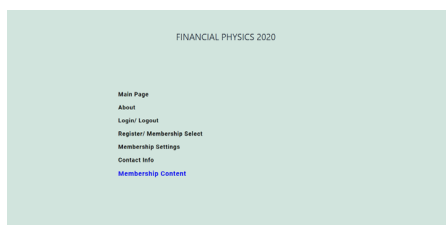
Come to think of it, it's not even clear exactly what they're trying to pitch. *Learn to navigate the financial world and its mechanics*. Is this an online course? Some kind of in-person seminar? A book? All we have is a link to a website.

I've spoken to dozens of people about this poster. Everyone knows what poster I'm referring to when I bring it up. No one had ever actually visited the site themselves.

I've started my dive in search of an answer: what is Financial Physics 2020? A simple question, surely. How deep could the answer be hiding?

## LAYER TWO: THE TWILIGHT ZONE

When you visit [financialphysics2020.com](http://financialphysics2020.com) [Editor's note: we are intentionally leaving this link broken, sorry PDF enjoyers], this is the page you're greeted with. Web devs, avert your eyes.



Website design? Overrated! Simply have a plain list of every page on your site in black, bolded font against an olive-green background (note to print readers: the background is green). If you want to draw attention to anything in specific, make it slightly bigger and blue. It's UX 101.

I'm assuming that you still have plenty of questions, so we might as well start with the *About* page. It takes us to another page with a paragraph of text. It describes in moderately-broken English how even though you have a high paying job or good grades, the economy can still spiral out of your control, ending on the ominous promise that "financial literacy will always be around as long as humanity exists." Unfortunately, there's no explanation about what *exactly* the site offers, so I have officially ended up with more questions than I started with.

Perhaps another page will clear things up? What about *Membership Content*? Surely, if I want to see what content the site has, this would be the place to go.

### Member Membership Required

You must be a Member member to access this content.

Join Now

Hmm. Alright, it looks like if I want to get the answer to my question, I'll need to become a member. It's a little annoying that I need to spend money to satisfy my curiosity, but it'll probably be worth a few dollars just to put this thing to rest.

### Membership Information

You have selected the **Member** membership level.

The price for membership is **\$225.00 per Month**.

What the fuck?

This website is asking me to pay *two hundred and twenty five* of my real life Canadian dollars to get access to... something? I know literally nothing about what I'm paying for. I cannot stress that enough: I am at the checkout screen, as far as I can possibly go before I have made my purchase, and I *still* have no idea what Financial Physics 2020 even is.

None of the other pages are any help. There's ways to manage my membership and a contact form with no publicly available address. I'm lost.

### LAYER THREE: THE MIDNIGHT ZONE

Wait a minute. When I make an account, it gives me the WordPress overbar, if I'm a contributor to the site. What happens when I click on it?

Why, I get taken to the admin dashboard, of course! I don't have many privileges here, but I can poke around. I see a few unaddressed messages prompting me to upgrade my version of Wordpress, an advertisement for something called WordCamp, and... aha! A list of pages!

Well, it's a list of recently edited pages, plus a list of pages with recent comment activity. But that's almost as good! I can confirm that there are, indeed, pages on this website! And—you guessed it—*they each only raise more questions!*

OK, so the most recently updated page was in May, called "Javascript Game Page". The next two most recent posts are from January, called "Problem Set 0002" and "Download And Install Software" respectively. The most recently commented posts include the above problem one, as well as "Hello world!" from July 2023. The only comments appear to be bots.

So, I guess there's something we need to download? Or is there? JavaScript is supposed to run in the browser, and "Download And Install Software" could easily be a lesson on *how* to download and install software. I guess you'd need that for financial literacy. And a "Problem Set" makes sense, although I somehow doubt that there are enough to necessitate all four digits.

### LAYER FOUR AND BEYOND: THE ABYSSAL ZONE

There's one, fundamental question at the core of this: is this a blatant scam, or someone really incompetent earnestly trying their best?

I mean, it smells like a scam of some kind, but there's some amount of sustained effort being put into it. This site went up, at least, in summer 2023, and a year later they were still adding things to it. Why would they do that if this was a cynical scam? It's not for PR purposes, no one can see these! Plus, if it was a scam, why would they charge so much for it? They'd get way more people biting if it was a low-budget subscription scam, trying to get people to forget they're subscribed. Wouldn't that be more effective? Wouldn't that be more obvious?

I'm going in circles now. There are deeper layers I could delve into. After all, I haven't even read it yet. But there's only one way to continue my expedition.

I need someone to send me \$225.

Dick Smithers

## A TANGENT

### TO A TANGENT

I used to have daily nightmares of my parents dying. I'd wake up frequently in tears and very much terrified. Not anymore. That doesn't happen. Not even nightmares. I'm not sure why, but think it might have to do with me getting desensitized to everything. I don't enjoy mathematical computation either and I think it's for this reason. I realized I get "highs" from learning new concepts and creating new things and EXPERIENCING THE NEW in general, but then the high fades once I start having to do the nitty gritty. Then it becomes an OLD thing (no offence to anything that is old). Wait—but it's not like this for solving some problems. Sometimes I'd get the "high" after solving the problem and then the high lasts for longer. My hypothesis is that the more NIT and GRIT, the longer and higher the HIGH. But to be honest, I think my high is disappointingly low (no offence to anything that is low), probably due to my ADHD. I'm often constantly craving new information and I can never get enough. I NEED more. I want to know everything, and that's why I'll never get anything done. Speaking of things that are disappointingly low (again, no offence to anything that is low) and things that I'll never get done, I think my bar for men has lowered so much to the point where any small act of kindness and respect shown gets me whirling around in a whirlpool in my own brain (I mean, not that I could whirl around in another one's brain (though I guess I could, hypothetically, if they also had a whirlpool in their brain and I happened to be in their brain (but how does that even happen? Perhaps they'd have to be whirlpooling in their own brain and invite me over too? I think the only way one could have a whirlpool in their brain is if they're whirlpooling in their brain (it's like an if and only if))). Thus, I'm constantly distracted and it's sad :( I'd have to break up with them in my own whirlpool that's in my brain (maybe via the Ursula technique (you know, the part where she creates a whirlpool to destroy Ariel but then kinda gets stabbed in the bum-bum))). Therefore, the man will never get done (no offence to the man). Anyway, back on topic, I think what I was describing is just the—

Just Another Tangent

(to be continued... subscribe for part 2)

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## THERE'S TOO MUCH BREAD AND BUTTER IN CS 245

CS 245 is right before lunch. Every class, Lila Kari teaches me a new concept that's "the bread and butter of prepositional logic." Ten minutes into class and I'm already hungry.

dring dring

# A WALK TOWARDS THE FLAMES, PART II

## OR, A LIGHT OF MY OWN CREATION

February, 2024–August, 2024

The campfire was far and we had a lot of ground to cover, but not a word had yet been spoken.

“Do you want to talk about it?” My eyes sought His, lingering over His face in anticipation, but they stayed glued downwards. He remained quiet. I didn’t need to talk with Him to understand. I joined Him in silence for the moment, analyzing rock after rock, avoiding the trips and falls I knew would never come.

*A lot of it was fine, feeling like I had the truth and the light and the key, but a lot of it was purely hell. (p. 176)*

“You know, they say you can see whales in the bay,” I started idly, stepping off the craggy terrain and clambering down towards the flatter sand. “Not sure if you’ve seen one yet. Maybe you can spot them from shore...” Dried seaweed crackled as I stepped onto the pile gathered at the edge of the beach. Flies sheltering within danced angrily over it and I turned to watch. Above, He had paused on the path, transfixed by the sparkling sun. He didn’t look my way.

I turned back and continued towards its reflections. “Now that I think about it, they probably don’t come near. Boat traffic and the shallows and all that...”

I had to step differently this time, onto the peaks of the small sandy ripples to avoid the pools of tide water from when the bay last came in. My steps softly pushed the ridges down, the sand drying around my footprint before the surrounding pools drained into them when I lifted my foot away. If you looked far enough ahead, sunlight bouncing towards the eyes in a small show of brilliance.

Seaweed crunched behind me.

The waves, they rose and sparkled and blinded and disappeared like they always had. Permanently impermanent. “In a little while, you’ll visit the islands across the bay there. Just an impromptu thing, but y-”

“I just don’t want to talk right now.” The words reverberated along the shore, louder than seemed possible. I turned to seek Him, but His attention was stolen by the endless pools and the distant waves and the little pile of stones in His hand. He tossed them one at a time, sometimes splashing into the waters and sometimes thudding softly into the sandy ridges. Maybe we were more alike than I thought.

In time, He drew close. His gaze never left the ground, but I finally recognized His face. One of disappointment, of defeat, and, afar, of anger. “I’m sorry. I just thought things would be different,” He whispered.

“Me too.”

His grip strengthened around the last stone, His knuckles turning white before desperately releasing it. We watched the stone float silently through the air. It went so much further than the ones before. It almost touched the sun.

*When I felt it fully, I shrieked with renewed vigor. (p. 64)*

“You remember when we went on that class hike and everyone started throwing rocks into the lake to see who got the most skips? Teachers said we shouldn’t do that because ‘leave no trace’ but, well...” I trailed off. “That was a good trip. Or how about those summers where we would go blueberry picking and we would eat so many that it felt like our stomach was going to burst! We could count the pints we filled on one hand. You remember? What am I asking, of c—”

He finally broke. “I don’t want to remember! I’m sorry, I don’t! That wasn’t me!”

His sobs racked my body, sending pulses through my chest because they were mine too. “I know it wasn’t. I know.”

*This was the second time in my life that something intolerable was happening; I could do nothing to affect it, nothing to help myself in it. I could do nothing to encompass it, nor to alter it. [...] All the pains in my life that I had lived and never felt flew around my head like grey bats; they pecked at my eyes and built nests in my throat and under the center of my breastbone. (p. 236)*

“Do you remember how it felt? How it still feels? I do. It’s all-consuming. Paralyzing. The way it twists and turns in your stomach. It made me spiteful, and distant, and it took so much from me. In some ways, it’s still there. But in the end, I made a choice. I can’t be sure it was the right one, but I made it regardless. And something about it struck true and it made me feel a little better every day. I still don’t know if it was the right choice, but it sure feels like it.”

*Desire gave me courage, where it had once made me speechless. (p. 166)*

I turned to face Him fully. “You know, you don’t have to follow the path. I know you tell yourself this, but I mean it on a more fundamental level. You *don’t have* to follow it. You can create your own. You can reject your destiny. You can choose to be happy. To me, there’s nothing more powerful than that.”

*In a paradoxical sense, once I accepted my position as different from the larger society as well as from any single sub-society [...] I felt I didn’t have to try so hard. To be accepted. To look femme. To be straight. To look straight. To be proper. To look ‘nice.’ To be liked. To be loved. To be approved. What I didn’t realize was how much harder I had to try merely to stay alive, or rather, to stay human. How much stronger a person I became in that trying. (p. 181)*

His hand was warm in mine as I pulled Him along. He pleaded, "What if you're making a mistake?" He looked me in the eyes, but He needed no answer. I turned my back on the dying sun and pressed on. He followed.

verdanic

All quotations from *Zami: A New Spelling of My Name* by Audre Lorde, 1982

## HOW TO FIND A GIRLFRIEND

### SUCCESSFUL QUEER EDITION

First you must move on from the crush you had on THAT engineering girly by doing the following:

- write a **mathNEWS** article about it
- go to a festival with them
- let time pass and actually figure out that it was just the idea of her that was fascinating not the person that she is
- promise yourself to never ever EVEN THINK ABOUT ENGINEERS!

Now that your mind and soul are cleansed from the curse of engineering, you can start telling all of your friends that you are not ready for a relationship. Start overcommitting and burn yourself out. Go to every event that your club is running and zone out in the middle of it. Stop getting a haircut so that you would look like a white indie artist who is going through a breakup. Get a very bad stiff neck, to a degree that you can't move your neck and you must wear a scarf that smells like Vicks cream in the middle of the August heat. Now you truly look like a white man from the 2000s who sings shitty indie breakup songs. Now you are ready to find a partner!

- you will meet them and be mesmerized immediately, play it cool and try not have a gay panic
- sit in the most uncomfortable position just so that you can talk with them
- tell them about your love of museums, find out they are a true museum nerd and vaguely plan a museum date
- spend the next three days with them, go to coffee shops, stare into each other's eyes like the answer to quantum gravity is written in their eyes
- pray to gods they like you as much as you like them
- gods will answer your prayers, congratulations my little gay friend, you have the best girlfriend in the world

ihavemovedonbitches

## CAN'T HANDLE ALL THESE GRIEVOUS PLANS TODAY

### HELP ME OUT CHAT

You are a University of Waterloo student and you're so excited for your upcoming concert on Monday, September 23 at 7:30 p.m. Originally, you were eagerly anticipating a wonderful time after such a full day of back-to-back classes and a quiz from [redacted] to [redacted] p.m., where you would proceed to take several GO bus transfers to arrive downtown in Toronto and head to the Budweiser Stage with a friend you bought the expensive tickets with. You would then arrive with very little time before the concert, as it would be around 7:17 p.m. Due to it being co-op job application season, a group interview in-person from 1 p.m. to 4:30 p.m. (which is very long) has been scheduled for you to attend on the same day as the quiz and the concert, interrupting both events. It is your first co-op term coming up, and one of the first interviews you have been selected for with a lack of other relevant co-op work experience. On top of all this, you will be missing prod night at **mathNEWS**, where you have been prepping to return to Waterloo and the world's greatest Zutara fever dream. Mind that your heart will be broken as a result regardless. What are some steps you can take to minimize as much damage as possible?

Love,

big a

## GOOSE ATTACK

### ON HIATUS

Hello culinary plebians,

Due to an unfortunate goose attack, Rordon Gamsay could not complete this issue's food review. The culprit had recently experienced a tragic breakup in which their partner left them to be with another goose. The abandoned goose was heartbroken and angry, viciously attacking the unlucky Rordon Gamsay.

Hopefully, he will recover in time for the next issue.

Rordon Gamsay

## A NAMETAG AT LAURIER

letters of my name,  
handpicked in guarded secret,  
in silence maintain safe stability.  
as I inscribe ev'ry one,  
cannonfire booms.



# MYSTERIES OF THE IMMORTAL PUPPET MASTER

## VOLUME 1 REVIEW

### MINOR SPOILER WARNING

#### SYNOPSIS

In the heart of the volcano, the remnants left behind by the sages yearned for their successors.

Risking her life, his mother obtained the Immortal Palace Seal, handing it to Ning Zhuo before her passing.

“The Buddha Heart Demon Seal!”

To transcend into either Buddha or the Demon.

With this seal grasped firmly, he could inscribe a heart seal and command the creation of puppets.

While ordinary individuals struggled under the weight of just controlling a few, the burden was exceptionally light for, Ning Zhuo, who effortlessly commanded tens of thousands with a single gesture.

“Mother, I will fulfill your wishes and obtain the Immortal Palace!” He vowed.

Indeed.

Immortal Puppets; capable of spiritual secrets; their work skillful and rational.

A new realm unfolds, expanding the heavens,

Where earthly splendor rivals celestial beauty.

Ancient chimes resonate with heavenly laws,

As moonlight caresses the ethereal dance.

The true self embodies myriad forms,

Who in this world dares oppose?

#### REVIEW

Mysteries of the Immortal Puppet Master (MotIPM) is Gu Zhen Ren's newest work, this one primarily aimed at making money, rather than writing something new and innovative. Though he wrote this one with the average wuxia reader in mind, this does not mean that this novel is as basic as the other wuxia novels though. On the contrary, Gu Zhen Ren is putting his unique twist on the wuxia genre.

Firstly, we have to address the cultivation. The cultivation in this novel is pretty similar to the typical wuxia. Starting from Qi Gathering, onto Foundation Establishment, Golden Core, then Nascent Soul, and so on. I never read Infinite Bloodcore, so I can't compare the cultivation in MotIPM to that, but I

can compare it to Reverend Insanity (RI). The cultivation so far is pretty simplistic compared to RI, but then again, this is the beginning. In RI, we first started out with Rank 1–9 cultivators and gu worms, but later paths, killing moves, and attainments started to come into play, increasing the complexity of the cultivation. In MotIPM, there are just the normal cultivation levels, the spells, innate abilities, divine abilities, and fate. Innate abilities, as the name describes, are developed at birth. Innate abilities are ranked from low tier to high tier, but one thing I like is that the tiers aren't fixed. Although no innate abilities have changed tiers, Gu Zhen Ren foreshadows that the level of the innate ability has a lot to do with how it is used, meaning that the level can be changed. Divine abilities can be learnt, and multiple divine abilities can be learnt and executed at the same time, complementing each other to enhance their power. Lastly, this isn't fully related to cultivation, but each character has a specific level of fate. Certain characters, like Ning Zhuo and Meng Chong have immortal fate, meaning they have insane plot armour, and through every crisis they always stand to benefit from it. However, through careful planning, it is possible for someone with immortal fate to kill other people with immortal fate. Thus, the “plot armors” in a sense can be attributed to the character's fate, which I find pleasing.

Next, is the characters. The characters in this book are amazing. There aren't many filler side characters, and each character is incredibly intelligent. This isn't like most wuxia novels where the main character is normal and the author makes everyone else an idiot in order to make the MC look good. On the contrary, the main character is incredibly smart and cunning, and everyone else is smart and cunning as well. This is because the MC is part of the righteous path, and thus has to do things according to law and order, and hence everybody schemes their way to success. This is a big upgrade from normal wuxia where the first instinct of everyone is to attack and kill. Here, characters approach things diplomatically or through scheming, which is a breath of fresh air in the wuxia scene.

The storyline is also incredible. Although it follows the main character, Ning Zhuo on his path to be the master of an ancient palace, the story is not just about him. There are multiple POVs and factions, each with their own goals and knowledge. Gu Zhen Ren has done an amazing job in covering up plot holes by thoroughly assessing the specific knowledge of each character and making them make the most rational moves. What I like about this story is the underdog tone. Although every other wuxia is like this, in here, Ning Zhuo is the underdog. He, as a 16 year old Qi Refinement boy, is competing and scheming against old Golden Core and Nascent Soul cultivators. There were multiple times when Ning Zhuo is cornered, and we think that he has no way out. However, using his knowledge and the personality of the opponents, he is able to somehow slither his way out of a doomed scenario.

The best part is that all of this doesn't feel forced. Gu Zhen Ren has such a good grasp of the plot and the personalities of the various characters such that he is able to make all these outsmarting attempts natural.

One complaint that I do have though is the translation, at least if you want to keep up with the story. As of the time this article is written, the raws is on chapter ~340 and the properly translated version is only on chapter 100+. Thus, if you are impatient like me, you have to read the trashy machine translated version that changes character names and has tons of grammatical errors. Even then, the main site that I used to read on now requires you to subscribe to their Patreon, and the fan MTL version is even worse. Thus, if you can't handle the trashy translation and are patient, it's probably best to read either on Novelfull.

#### VERDICT

10/10.

Fried Rice

## MATH RIDDLES BACK AGAIN

### BUT WORSE, WITH MORE MATH

1. A cell phone and phone case cost \$110 in total. The cell phone costs \$100 more than the phone case. How much was the cell phone?
2. How many eggs can you put in an empty basket?
3. Where can you buy a ruler that is 3 feet long?
4. Why are diapers like 100 dollar bills?
5. What goes up and never comes down?
6. What do my boyfriend and the square root of -100 have in common?
7. Two fathers and two sons sat down to eat eggs for breakfast. They ate exactly three eggs, each person had an egg. Explain.

#### ANSWERS

1. \$105
2. 1 (after that it's not empty)
3. At a yard sale
4. They need to be changed
5. Your age
6. They're perfect 10s but imaginary
7. The riddle is for you to explain how one of the "fathers" is also a grandfather. Therefore the other father is both a son and a father to the grandson. In other words, the one father is both a son and a father.

tsdhami

## MILK DOES NOT USUALLY COME IN BAGS

### A NOTE TO EASTERN CANADA

Milk does not usually come in bags; most of the world puts it in jugs. "What does a 4L jug of milk look like?" you may ask. These are not cartons, but rather translucent white plastic containers of a particular shape I cannot describe—I encourage you to look them up. You may even find them in stores such as I did the other day, much to my partially British Columbian soul's content. Unfortunately, it cost like twice the price of a normal bag of bags of milk but I still bought it anyway, of course. Fortunately, there's no need for milk bag pitchers that easily get dirty (though I guess you could be like one of my flatmates who leaves his open milk bags sideways in the fridge door, held shut only by a sealing clip and faith). Please consider rallying your friends and family to use milk in jugs—it's so much better.

Where does milk in bags even come from? Wikipedia says it's because milk jugs had a deposit fee attached to them<sup>1</sup> and that milk bags were easier to resize during metrification, but I think it's a scheme by Big Bags trying to meet their plastic bag quota which is being challenged by the rise of paper bags and the anti-plastic movement. It seems this plot has exceeded the bounds of Ontario, Quebec, and the Maritimes<sup>2</sup>, colonizing South America as well as Israel, with smaller appearances in continental Europe, Iran, and India.

Also, could I just talk about how weird the sizes of the bags are? While the rest of the infected regions use 1L bags (or 0.5L bags in India), we put three 1½ litre bags in another bag for a total of four litres?! What!? reject milk bag return to milk jug.

#### Whole Number Haver

1. Sidenote: Ontario stopped doing this and is now the only province to not have a deposit-return system for cans?! Something must be done about this
2. Technically I am misleading the reader by addressing this note to Eastern Canada when Newfoundland and Labrador no longer uses milk bags but I address this later on when specifying milk bags are used in Ontario, Quebec, and the Maritime provinces (which does not include NL unlike Atlantic Canada). math

## I TOLD MY MOM I WAS WRITING FOR mathNEWS AND SHE ASSUMED I WAS MANIC (I'M BIPOLAR (I HARDLY KNOW HER))

imgonnafuckyourdadbutoonlyforthemoney  
idonthavedaddyissues

## 🕒 LONG SONGS 🕒

I love long songs. Why have a song last just three minutes, when the feelings they're based on last much longer? A good long song is long out of necessity: a standard radio segment wouldn't be enough time to get the point across. But if you want to contend with people's TikTok-brained attention spans, you can't just make a song with fifty verses. You have to be creative to keep the song interesting the whole way through. I think it's really interesting how songs tackle this problem in different ways: here are a few of my favourite examples.

### TOGETHER — SO MUCH LOVE TO GIVE (10:43)

You'd expect a long song to be deep and complex, covering topics that you just couldn't cover all of in a shorter song. That's not the case with this one, and you can tell because the topics it covers *were* covered in a shorter song—specifically, “Love's Such A Wonderful Thing” by The Real Thing, a song 3:25 in length from which the only line in “So Much Love To Give” is directly sampled. (The line itself is about three seconds.)

On the surface, listening to the same line on loop for ten minutes doesn't sound particularly exciting, but Together—a short-lived act comprised of Thomas Bangalter<sup>1</sup> and DJ Falcon<sup>2</sup>—make it work remarkably well. Keeping almost everything the same makes you focus on the things that *are* changing, and they surprise you. The drums fade away, and you're expecting a vocal solo, but a bar later the vocals disappear too. You're left with a few moments of ambience before the action restarts, and you have, once more, got so much love to give.

Bangalter and Falcon's challenge here seemed to be: could they get people to dance to the same thing for 10 minutes straight? Could they make us forget everything and just feel good for ten minutes? The answer: yes. I am vibing. When the ten minutes and forty-eight seconds are up, I don't want the song to end. I want to disappear into the happy, comforting, endless dance beat forever. The song tells me that it's got so much love to give—it's got so much love to give—it's got so much love to give—it's got s

### LOW — DO YOU KNOW HOW TO WALTZ? (14:39)

This song is absolutely not a waltz.

There also aren't many more unique words in this one than “So Much Love To Give”. There's an instrumental intro, then a single verse, sung in a voice that makes me really want to give the singer a hug:

*One more dance, before they take away the light  
One more spin around the line  
One more step, and then we'll turn and face the debt  
One more reason to forget*

This is followed by ten minutes of incessant guitar droning. Three chords, over and over, steadily getting louder and louder

and drowning everything out. Irregular drum patterns coming in and out to create texture like a throbbing heartbeat. I can't describe it any further, really; you have to listen for yourself. It's flawless at getting that exact feeling across.

Not long enough? Check out Low's live performance at Rock the Garden 2013, where concertgoers apparently had the impression they'd get more than one song but instead the band just played “Do You Know How To Waltz” for 28 minutes. If you thought they couldn't stretch out the slow ramp-up any further, they absolutely could. At the end, Alan Sparhawk walks up to the mic and says three words: “Drone, not drones.” Beautiful performance. RIP Mimi Parker.

### SUFJAN STEVENS — IMPOSSIBLE SOUL (FEAT. MY BRIGHTEST DIAMOND) (25:34)

People often characterize “Impossible Soul” as being composed of five distinct parts, but separating the pieces of this song feels wrong to me. I prefer to think of it as a three-minute song with a twenty-two-minute intro. The first 22 minutes are a series of assorted musical ideas in different styles, and they're followed by the prettiest acoustic indie folk song I've ever heard to wrap it all up. It kinda feels like the process of writing a **mathNEWS** article: open an empty document and fill it with all the incoherent garbage from your brain, then delete everything and rewrite it all as a neat page of under 1000 words.

“Impossible Soul” is a breakup song. I've never been particularly into breakup songs. Maybe it's just because I hadn't had the experience until recently, but even now, most of them have just felt like a way for the songwriter to vent about their own feelings during a real-life breakup—emotionally powerful, for sure, but only really relatable to a very specific situation.

By contrast, Sufjan sings fundamentally about how fucked up the concept of a relationship is. He tries to figure out exactly how he and the partner in the song got where they are: going through feeling after feeling, talking about unsaid expectations and assumptions, at one point launching into an parodized upbeat dance bop—to the tune of “The Final Countdown”—to make the listener feel the pressure he had from his partner (and/or society) to find a relationship before it's too late. The refrain from this bit—“*boy, we could do much more together, it's not so impossible*”—continues even after the dance beat fades away, becoming increasingly corrupted with a vocoder. He goes through so much, in so much detail, that it almost doesn't all fit within the 25 minutes, but you feel every bit of it anyway.

“Impossible Soul” is one of those songs that you can listen to again and again and feel something different every time, depending on what's going on in your life at the moment. Right now, the song tells me that this shit is complex, and to not feel guilty about not having it all figured out, because

nobody else does either. Sometimes we just don't realize something about ourselves until it's too late.

Even as the song ends with him softly singing his final evaluation of what had happened—and in keeping with the impossibility theme, the guitar picking pattern itself sounds impossible—Sufjan doesn't end with anger, remorse, or guilt; the refrain that concludes the song goes simply, “*boy, we made such a mess together...*”

\_\_init\_\_

1. of Daft Punk
2. of Not Being Famous Unless You're A Really Big Fan Of Thomas Bangalter's Record Label From The '90s (yes, I also had this phase)

## ANIME REVIEWS PART 10

You know the drill.

### STEINS;GATE 0 — 8/10

[This review assumes familiarity with and contains spoilers for *Steins;Gate*.]

As you may or may not care, I reviewed the original *Steins;Gate* back in issue 153.1 and said I would cover *Steins;Gate 0* in the future. As luck would have it, the future is now! I must confess, however, that I erred in my description of *Steins;Gate 0* back then—it's not really a prequel or a sequel so much as an “orthoquel,” taking place in a beta world line that runs alongside the original's alpha.

Commensurate with this change of setting is a noticeable change in tone from the original—the energetic and zany antics of mad scientist Hououin Kyouma are supplanted by an Okabe that is utterly resigned, focusing on school to try and escape the depression he feels over his perceived responsibility for Makise Kurisu's death. But with the arrival of one Maho Hiyajo and her ultra-realistic AI system “Amadeus,” modelled after Kurisu's mind and likeness (did I mention that they predicted ChatGPT like 7 years before it happened?) to Okabe's school, escaping might not be so easy after all.

*Steins;Gate 0* delivered what I had wanted most of all since finishing the original, which is more character development, especially on the part of Mayuri. At the same time, this focus on characters and dialogue often takes precedence over the sci-fi and action for which the original is best known, so chances are that you'll only enjoy it if you really liked the original's cast. Speaking of, I must say that Maho makes a great addition to the lab—she could have very easily been an uninspired carbon copy of Makise, but instead her persistent feelings of inferiority and being the Salieri to Kurisu's Mozart make her far more compelling.

Overall, I liked *Steins;Gate 0* a bit more than the original, but it isn't without its faults. The only real impediment to my enjoyment of it was that the plot is a little muddled in parts, likely owing to its origin in a highly nonlinear visual novel. But otherwise, it makes for a worthy successor story that I would absolutely recommend to any fan of *Steins;Gate*.

### TRIGUN [1998, NOT TO BE CONFUSED WITH THE 2023 REBOOT TRIGUN STAMPEDE] — 7/10

On the distant desert planet of Gunsmoke (a fitting name for a place where everyone and their grandma is packing heat), there is a man—nay, a force of nature—laying waste to anyone and anything unfortunate enough to cross paths with him. He decimates entire towns, leaving only rubble in his wake, which earns him the title of “Humanoid Typhoon” and a bounty of \$60,000,000,000 on his head. That man's name is Vash the Stampede, and naturally the local insurance company isn't too happy about having to foot the bill for his rampages, so they dispatch their accountant/gunslinger duo of Meryl Stryfe and Milly Thompson to go after Vash and contain the damage he causes.

Wacky hijinks ensue at first, as you might expect, but we quickly come to realize that Vash isn't the ruthless killer he's made out to be at all—in fact, he comes off as a bumbling idiot most of the time. But between his dark and mysterious past, his ever-growing list of enemies, and his unshakeable pacifist ethic, there's quite the story to be told about Vash the Stampede, and one with a lot more philosophy and heart than it lets on at first.

Story aside, though, there's plenty more to like about *Trigun*—the music is awesome (I'm partial to the flute-feature track “Big Bluff” as a flutist myself), the voice acting and English writing is superb, especially for a 90s dub, Nicholas D. Wolfwood is an absolute badass, and even I can't deny that the many shootout scenes are loads of fun. My only gripes are that the animation doesn't quite hold up to modern standards and looks a little too goofy at times, and that there's quite a lot of unnecessary filler content. In my estimation, the 26 episodes could have easily been condensed into 13 and told the story all the same.

*Trigun* was undoubtedly overshadowed by another Space Western anime, *Cowboy Bebop*, which was released around the same time, and I think that's kind of a shame—anyone who considers themselves a comprehensive weeb should give this '90s classic a watch too.



But anyway, this might well be the last one of these for the term because I don't anticipate having much free time to watch anime. Maybe I'll be forced to come up with something original.

# RANKING HOW SURPRISED I AM AT ASBESTOS IN DIFFERENT CAMPUS BUILDINGS

**DWE**— Not really surprised that it was installed here when the building was erected, but I guess I would have expected the university to have removed it promptly, or gone under construction since then? Apparently not, and we await the day that this will happen.

**DP**— Dana Porter Library gives me the vibe of a modern building. Its pristine white exterior certainly does not conjure the possibility of dangerous substances residing within its walls, but I suppose looks can be deceiving. I do wonder about whether there is asbestos in the top floors, considering they were an add-on to the building at a later time.

**PHYS**— Not surprised at all! When I walk through the Physics building, I already feel like a bunch of x-ray lasers are shooting through the halls. Having already prepared myself for mortality before going in this building, I am not shaken by the dormant asbestos in the walls.

**COLUMBIA GREENHOUSE**— My bad for thinking that greenhouses were made of glass, being safe! Yet, asbestos found a way. Colour me surprised.

**MC**— If we go down, then we go down together!  
(Unsurprised)

**EVI**— This building raised me. Considering that there is asbestos just waiting to dance around airborne at the slightest disruption is unnerving to say the least. If this building has asbestos, so do I.

**HH**— Earlier in my wonderful time here I stumbled upon a sign that stated there was indeed asbestos in this building, so no! I am not surprised.

**RCH**— Absolutely not surprised. Maybe this is what made that brown stain in 101. Or maybe that's one of the other treasures inside those walls...

**C2**— So *this* is why they had tarps up during construction! Again, not really surprised. I don't even drink from the water fountains here because they look like fiery chemical disposal sinks that could give you twelve types of cancer. One down, eleven to go!

**CLV**— Aren't these buildings kind of new? Don't they have babies here? It sure would be a shame if one of them were exposed to asbestos :( Keep your kids out of the walls!

**GRAD HOUSE**— I am somewhat surprised that there is asbestos in the Grad House! Considering that it is the oldest building on campus, my assumption was that it predated asbestos entirely. But I guess no building is safe from a construction worker's passion to insulate.

**HEALTH SERVICES**— If you are suffering from an ailment, I'm not saying not to go to health services, but know that you may leave with a prescription and some itchy lungs! Surprised? Yes, but nothing will surprise me ever again.

nike

## THE MAN DAYS

### TO BRING OUT THE MAN IN YOU

#### WHITE BOY WEDNESDAY

Song: Pretty Fly (For a White Guy)—The Offspring

#### THOT BOY THURSDAY

Song: Hotel Room Service—Pitbull

#### FUCK BOI FRIDAY

Song: Wah Gwan Delilah—Snowd4y & Drake

#### SATURDAYS ARE FOR THE BOYS

Song: Party Rock Anthem—LMFAO

#### SUNDAY IS FOR THE LORD (SLAYMAN)

Submissive & Breedable—Smosh & bbno\$

#### MISOGYNY MONDAY

Song: Everywhere I Go—Hollywood Undead

#### TESTICULAR TORSION TUESDAY

Song: Sorry About Your Penis—Smash Mouth



[Editor's note: this author pseudonym was so long, it caused our editing software to forget that any articles existed after this one. You've successfully left InDesign speechless. We didn't know that was even possible.]

imgonnafuckyourdadbutoonlyforthemoney  
idonthavedaddyissues



# LET ME MAKE MY PASSWORD “CAT”

I plan on writing real content that isn't just me complaining about something every article, but that's only when I run out of complaints, and that has not happened yet. I had a nice summer and did not accumulate any new complaints so perhaps you'll get one non-complaint article from me before I graduate.

Once upon a time, before Duo 2FA, before I had a phone, before I had really ever generated a thought, I was in elementary school. By default, the accounts to the school computers had incredibly simple passwords. Mine was “cat”, and it was so easy. Only later in life did I change it, and I still think fondly of the times when I could log in with such efficiency.

Nowadays, I am an adult, and as such, everything sucks. This includes my passwords. Unfortunately data security is a thing, so I have to have better passwords. I know this because I have a brain and it works sometimes. I believe that due to my qualifications of having a brain, I should be able to decide what my passwords are. I can decide what is a safe password and I can scale the security with the importance of the data it protects.

The problem we encounter, is that there are a lot of people who either do not have a brain or do have a brain but it does not work. Because of these people, every single company that has any kind of account now tells you how your password should look. This started with “your password must be more than eight characters in length”, but now it's more like “your password must be between 24 and 36 characters, have at least 7 different letters and 4 different numbers and also some special characters that are valid C operators but must not contain 3 consecutive characters that appear together in any of the complete works of Shakespeare and your password must be a valid legal name in the state of Idaho.”

Sometimes these password requirements are useful and reasonable. Forcing someone to have a password that is more than 8 characters and maybe has a number or a special character for their bank account is probably a good idea. However, there are some cases where this is completely unnecessary. The one that caused me to add this topic to my complaint list is Subway.

I have perfected my Subway order and as such don't really need to do the whole going in and telling the person what I want thing. When I found out that with the Subway app (not sponsored, we're about to get to the slander), I can put in an order and just go pay and collect it when I arrive, I thought that it would be a welcome optimization to my life, and allow me to spend more time at home doing nothing. Given that my account would literally only be used to order a sandwich and would not contain my credit card info or any data about myself, I figured a very good password would be “sandwich”. Subway did not agree. They needed something like an uppercase and lowercase letter, a number, and a special character, plus some length requirements. I was so angry

about this that I went to my local Subway and yelled at the minimum-wage employee about it.

In Subway's defence, there was an option on their app to input credit card details and pay when you order, but given that not everyone is doing that, the concept of having such security on my sandwich order is absurd. Please give me a checkbox or something that says “I am not going to store any critical information here, let me use a bad password.” Realistically I shouldn't need an account or a password at all to pre-order a sandwich, basically all pizza places let you order without an account. I guess sandwiches are just more important than pizza in terms of data security. Perhaps my sandwich topping choices allow a machine learning model to determine my DNA or something. Maybe one of you nerds reading this can do that as a side project.

In the end I got angry and deleted the Subway app, and I am still manually ordering my sandwich in person like a chump. Every time I do I think about how much faster I could be if I ordered on the app, but at the same time, unlike many UW students, I appreciate some social interaction every once in a while, and it's sometimes nice to be able to ask for a little more sauce or a little less lettuce. All in all, it's probably for the best that Subway has dumb password policies because it keeps me from becoming an antisocial hermit with no ability to solve any problem unless it's over email. In conclusion, if I had my way, for the low low price of having no friends, I could get my sandwiches marginally faster.

Yamnuska

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## EP RECOMMENDATION: LOTUS

### EOPY?

A while ago, a non-n\*rd friend of mine sent me a message asking if I had listened to “the new blue sun album”. I assumed she meant an album called “New Blue Sun”, but the only such album was by Andre 3000, and assuming this album was like his previous music (it wasn't), I found it unlikely she was recommending me that (she was) as she's not much of a rap person. I considered that she might have meant “the new album from the artist Blue Sun” (she didn't) so I looked, and in fact there was a new album by such an artist — an album called Lotus. This turned out to be a super chill indie EP with every song having single digit listens on YouTube, and I highly recommend that you listen to it! It's only 5 tracks. It varies in mood, but is stylistically consistent, and overall sounds very pretty. Go listen!

nazz

# HOME COOKING 101: THE BASICS

## IT'S NOT AS HARD AS BIG CHEF WANTS YOU TO BELIEVE

Throughout my undergrad, I cooked at home way too much. Like, I would do four homework questions out of five and decide the last one is not worth my effort, therefore it's time to cook some tasty food to regenerate my brain cells that sacrificed themselves for said homework. I think putting the effort I spent on cooking into actually doing those questions would have increased my average by 10%. But hey, Ds get degrees, and grades are ephemeral but tasty food put in my belly is with me forever (as long as you don't think about where it goes afterwards).

With extensive applications of the FAFO method, I discovered that contrary to what cooking shows and many chef personalities would like you to believe, cooking is not that hard, especially not home cooking. You are unbound by pesky things like speed, profit, and customer satisfaction, and have nobody except yourself to answer to. Here are some cooking tips for those of you who are not yet a seasoned home cook (pun intended) and would like to learn about how to cook well to get started:

1. **Safety first.** When cutting food, keep your body parts out of the the knife's way. Cut slowly if you need to. You don't need to do the claw method; it's only used by chefs because they need the speed at restaurant-scale cooking. **You are a home cook and can take all the time in the world.**
2. **Sharpening your knives helps avoid accidental cuts.** It may sound counterintuitive, but it's the dull knives that slip from the food and injure you. Sharp knives offer more control and help avoid injuries. A few pulls through a cheap pull-through sharpener occasionally is good enough. Cuts from sharp knives are also less painful and heal faster than dull knife cuts. This is because sharp cuts are smooth and damage fewer cells, while dull knife cuts are more like paper cuts and saw through your flesh (yikes). Though do be careful handling sharp knives, a light contact with the blade can potentially injure you.
3. **If you cause a kitchen fire, do not panic; calmly place a lid over the flaming pot, then remove the pot from the heat source or shut off the heat if possible.** The lid will starve the fire of oxygen and extinguish it. **Do not use water to put out a grease fire.** Water and oil don't mix and it'll be like setting off a napalm bomb in your kitchen.
4. Instead of following recipes to the letter, **don't be afraid to remove ingredients you don't have or adding other ingredients in as you see fit.** Cooking is just imprecise chemistry with a large tolerance for error, so recipes are mere suggestions, not a binding contract. Again, you are a home cook and can do whatever you want. (Except baking, which IS precise chemistry. Follow baking recipes to the letter. Failure to do so may result in all five stages of grief.)
5. **Whatever you are cooking, season to taste.** Add small amounts of seasoning and taste to see if it's enough (it's called Chef's Privilege for a reason). Repeat until it's adequately seasoned. You can't unseason over-seasoned food, so proceed incrementally with caution.
6. **MSG is your friend.** Add it to any salty or savory dish, replacing about half the salt you would have added. It is guaranteed to make the dish taste better. (For those of you scared of MSG, I'll save the rant for another article...)
7. A corollary to 6 is to **use soup bouillon powders.** Take for example my favourite one: whichever cheapest chicken bouillon powder I can find at T&T. It is a mix of salt, MSG, flavor agents that synthesize and mimic the taste of chicken freakishly well, and a dubious amount of powdered chicken meat for marketing purposes. It turns water into instant chicken soup, so adding it to anything that you don't mind tasting like chicken makes it taste like it was cooked with chicken stock. This also liberates you from boiling stock yourself (not worth it).
8. When cooking big pieces of meat, **poke into the biggest piece of meat to check how cooked it is.** You are a home cook, not a restaurant chef, so you don't need to worry about your food having a perfect appearance.
9. Relatedly, **more heat for cooking thinner meat and less heat for cooking thicker meat.** This may sound counterintuitive, but if you have a thick piece of meat, it takes longer for the meat to cook through. High heat just burns the outside of the meat before the inside is cooked. Thinner meat can be cooked with higher heat faster without burning.
10. Another crucial reason to cook thin meat with high heat is so that the outside browns quickly. **Browning your meat is crucial for a tasty dish.** Browning meat is just the Maillard reaction, which is a chemical reaction of proteins and sugars in the meat that occurs at around 140°C to produce a lot of tasty flavor chemicals. However, you want to brown the meat, not burn it; frequently flipping the meat helps prevent burning and does not slow down the process.
11. **If you want more garlic flavor, add garlic last.** The flavor compounds in garlic are volatile and boil away the longer you cook them. Conversely, put in garlic early if you are using it like a vegetable or otherwise do not want a strong garlic taste. This also applies to other aromatic herbs and oils.

The word count limit nears, so I leave it to the readers to digest the contents of this article (physical consumption is optional). I'll cook up another one in future issues.

资深咸鱼 (Seasoned Slacker)

# CELESTE STRAWBERRY JAM BEGINNER LOBBY RATINGS PART 1/3

The other day I completed all the silver/golden berries (deathless challenges) in Strawberry Jam's beginner lobby so I wanted to rate all the maps and also the heartside, but I realized with 21+ maps to review that would take up way too much space, so I'm going to split this up over 3 issues.

For those unfamiliar, Strawberry Jam is a mod for hit indie platformer game Celeste, which happens to be a pretty good game on its own. It includes 111 maps with quality paralleling that of the base game. It's hard to understate how high-quality the mod is, with the beautiful decoration, super fun gameplay, and hours of custom music. The maps are split up into 5 main categories of difficulties, from beginner to grandmaster, and each category is split up into green, yellow, and red subdifficulties. In this article series I'll be reviewing all the beginner maps, which are all no harder than the A sides from the base game, starting with the five green beginner maps.

(Side note: I might rate maps relatively low, but these are all fun maps worth playing! If you have Celeste on a computer, you gotta download the mod no matter your skill level. Though I'd say you should complete the base game [up to the chapter 7 A side] first, just to get a hang of the basic movement first.)

## FOREST PATH: 4/5

I hear a lot of people say that dream blocks are the most fun mechanic from the base game, so you'd think a crystal that lets you turn any wall into a dream block would be fun, and yeah it is. I found the silver berry a little awkward because some of the spikes are placed somewhat uncomfortably close to the intended route, but overall it was still good.

## AZURE CAVERNS: 3/5

It's not that the map is bad, but I found the routing pretty confusing for what's supposed to be a pretty easy map, and as far as I could tell, the moves you have to pull off to beat it the intended way are pretty precise. The map also gets points for using the crystal blocks for all the surfaces which make a really satisfying sound when you jump on them.

## LOOPY LAGOON: 5/5

Flawless, no doubt about it. It's the perfect length and the mechanics with the fruit loop blocks are designed and introduced to the player perfectly. In my silver berry attempts, I never felt like my deaths were bullshit or anything like that. A lot of people find this map first because it's so close to where you start in the lobby and it's probably the best one to start off with in my opinion. Also, the vibes are great.

## COLLAPSING SKYLINE: 3.5/5

Personally not my cup of tea, but it's still pretty well designed. My only real complaint is that the mini strawberries scattered around the map that you have to collect all of to get an actual strawberry are just kinda annoying, you go around and you get all of them except one and then you're like, well shit, now what? In general I felt like it was more slow paced and encourages the player to take their time exploring all the little nooks in the buildings, which personally isn't the kind of map I really enjoy. Still fantastic vibes though.

## SEEING IS BELIEVING: ■/■

The map is intended to be played with a blindfold on and a friend guiding you, which I think is hilarious. If you don't have any friends then it also has a singleplayer mode which blacks out the screen and guides you through popup dialogue boxes, which is really nice (I went with that option). Other than that, it's not that remarkable, but I just think it's a really funny idea. Respect if you get a friend to guide you through the silver berry, it sounds like a great way to ruin your relationship with them.

hyperlynx

## EPISODE 67: MATH 137 — L'HÔPITAL'S RULE

Mathsoc Cartoons presents episode 67 of the MathSoc Cartoons series: [MATH 137 — L'Hôpital's Rule!](#)

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

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

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

MathSoc Cartoons

mathNEWS

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# MATH 137: L'HÔPITAL'S RULE

STORY BY ZUNAIRAH | ART BY LEE CHENG

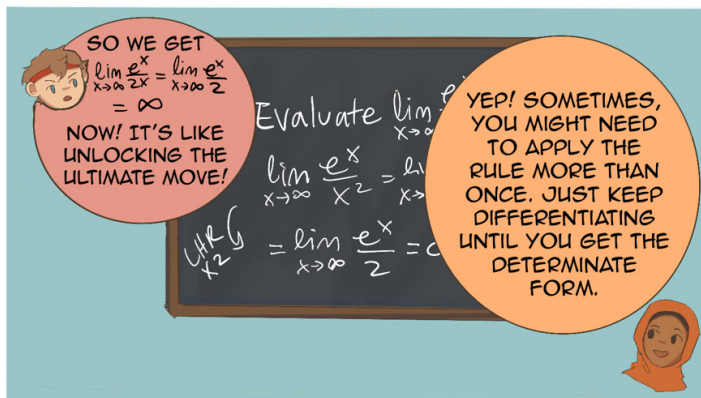
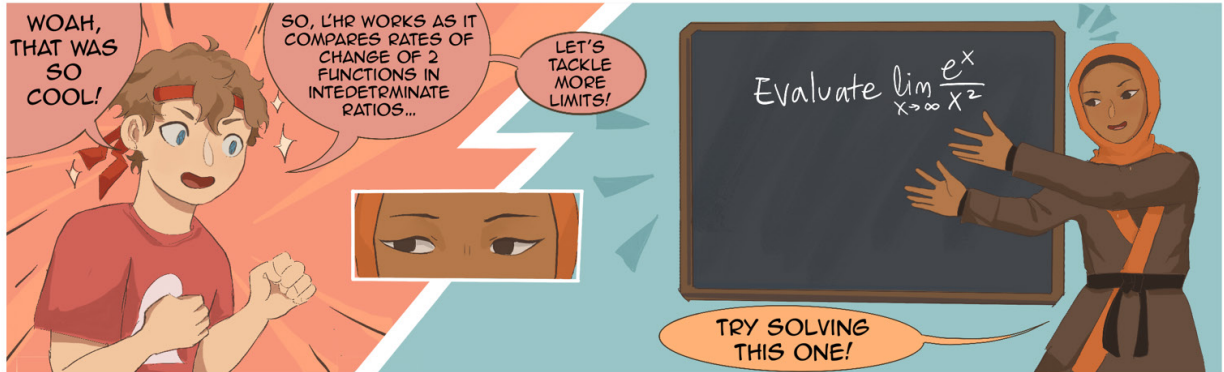




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# MATH 137: L'HÔPITAL'S RULE

STORY BY ZUNAIRAH | ART BY LEE CHENG





## \_\_INIT\_\_'S EASY MODE MINI-ADVENTURE

FOR THOSE WHO DON'T WANT TO GO ALL THE WAY TO BUFFALO

- Take the 17 GO bus from UWaterloo Station to downtown Hamilton.
- Grab a bikeshare bike and ride down to Bayfront Park.
- Ride east (maps will call this west but they're wrong, south is always toward Lake Ontario) along the waterfront until you get to the end.
- Ride up Longwood Road and through neighbourhood streets until you get to McMaster University (I don't blame you if you park your bike at the end of the trail and walk the rest of the way, there's a really steep hill here).
- Take the 17 GO bus from McMaster University back to UWaterloo Station.

The 17 only runs on weekdays, but this takes so little time that even if you have an afternoon class you can leave here around 3 and get back before the end of the day. Do it before the weather stops being this nice!

\_\_init\_\_

## INTRODUCING: mathNEWS 2

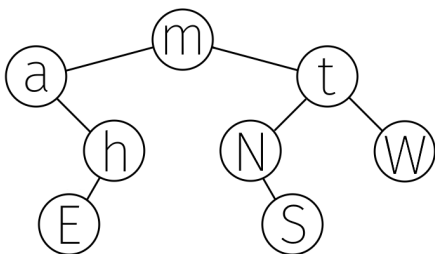
Ever read a **mathNEWS** and longed for more? Ever had an insatiable hunger for the ravings and ramblings of deranged students, yet found that need *unsatisfied* even after reading **mathNEWS**?

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andoiii



## MINESWEEPER IN DESMOS

So I couldn't come up with a cool article to write. So I decided to make Minesweeper in Desmos.

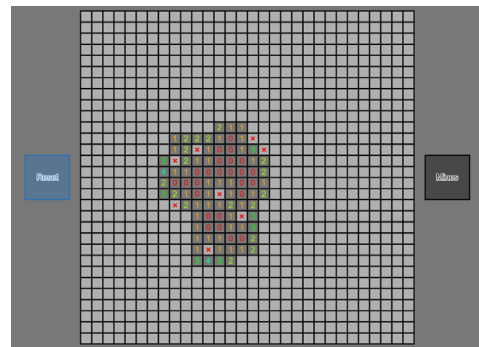
How, you may ask? The answer is that Desmos is actually *Turing-complete* because of its actions system. They let you reassign values, and plugging an action into what's known as the *ticker* lets you run an action every couple of milliseconds.

This is by no means optimized, so be prepared for the laggiest, most power-hungry Minesweeper you've *ever* played. But enjoy the fact that it's in Desmos of all things.

(If you want to adjust the chance that a tile is a mine when regenerating, edit expression 8 (p0) in the expressions list)

(If you want to toggle mine mode, click on the "Mines" button)

<https://www.desmos.com/calculator/vkrrdjdlk>



P.S. don't question the questionable implementation lmfao.

optimisticpeach

## DO YOU USE GENERATIVE AI FOR ANYTHING? IF SO, WHAT?



For PDF fans, the link is: <https://forms.gle/E4ND8UmuXuvAFWAQ8>.

Dick Smithers

# WANT TO MAKE A VIDEO GAME? JOIN THE UW GAME JAM!

Have you ever wanted to make a video game? Join the University of Waterloo Fall 2023 Game Jam for 72 hours from Thursday, October 3<sup>rd</sup> to Sunday, October 6<sup>th</sup>! For anyone of any skill level or skill set, this is an excellent chance to grow your talents, connect with peers and industry leaders, and get a completed project to put on your resume.

What's a game jam, you ask? In short, it's like a hackathon for games—a short-term sprint through the entire game dev process. We give you a theme, and you (alone or in a group) will design, develop, refine, and polish a game from start to finish in just 72 hours.

Anyone can participate, no matter your experience level. We've had complete beginners come in and complete a game over the weekend—no expertise required! Our environment is super welcoming, and we have tons of experienced jammers who are more than willing to share their knowledge. Plus, if you ever wanted to get some experience, now is a great time to do it!

We're also looking for jammers with a bunch of different types of qualifications—programming, art, writing, music, audio, game design, or any combination of these things are all wanted. Any type of game-related submission is accepted too—from video games, to card games, board games, TTRPGS, concept art, design documents, and more. No programming required!

Plus, this is a great way to meet fellow game devs—not just fellow students interested in the hobby, but professional developers who are coming to give presentations and share advice. The exact schedule is TBD, so please follow our Instagram account [@uwgamedev](#) or join our Discord (found on the UW student hub) for more information closer to the date.

We have a few in-person jam locations, too. Here's our schedule so far:

- **Thursday, October 26<sup>th</sup>**—DC 1351, 5p.m.–7p.m.  
Event kickoff, theme reveal, presentations, work session
- **Friday, October 27<sup>th</sup>**—QNC 2502, 5:30p.m.–7p.m.  
Presentations, work session
- **Saturday, October 28<sup>th</sup>**—QNC 2502, 10a.m.–8p.m.  
Presentations, work session
- **Sunday, October 29<sup>th</sup>**—QNC 2502, 10a.m.–8p.m.  
Presentations, work session, closing ceremonies and showcase

Most of it will be at QNC except for Thursday's kickoff. Don't worry if you can't make it physically for some of these times, they're just when the rooms will be open. You're encouraged to work from wherever you are during the 72 hours of the jam.

And if you're busy, that's also not a problem—you don't need to work the entire length of the event. Do what you can, from where you can. Even unfinished projects are valuable for your growth as a game dev.

If this sounds like fun to you, you can register at the form linked in the QR code below (or at the link here if you're reading the online version of this issue: <https://forms.gle/8uTkZxRA1r9Vbx9t5>). Also, please join our Discord! It's where we'll be giving out updates and streaming all our events for people who can't make it in person. The link is in the registration form or our Instagram bio.



We can't wait to see you!

University of Waterloo  
Game Development Club

Yes, I reused most of this from a year ago. I'm busy lol, sue me

## HOW MANY TIMES

### I'M UPSET

How many times am I going to have to prove that the completion of a normed space exists / is a Banach space / is unique up to isometry? Seriously, nobody is having fun here; I hate my life for having to write this proof, the TAs hate their life for having to sift through the 10 pages of dense analysis BS, and the trees certainly hate their lives after so many of them were cut down to support this exercise.

Please. Just one analysis course that won't make me prove this again. That's all I want.

Shahabee

## CALL 'EM FISH BAIT

### PART 2 OF MY DESCENDANTS FANFICTION I HAVE MORE WRITTEN BUT I HATE IT AND WANT IT TO STOP

The next night, Mal returned to the barrier by the broken bridge. She pressed her hand against it once again.

“Well, well, well, look who it is,” she heard an accented voice sound from behind her.

“What do you want, Hook?” Mal sighed, lowering her hand but not turning around.

“You know Hook is my father, Mally. I’m just Harry to you, my dear.” She shivered as she felt the side of his cold, metal hook brush the hair away from her neck. She suddenly regretted letting it grow out these last few years.

“You wish you were your father, Harry. And don’t call me Mally.”

Harry laughed, finally spinning Mal to face him. She avoided his eyes, instead staring at the hook being held against the front of her neck. “Why would I ever wish to be my father? He lost, my dear. No, I’ll be better than him.”

This forced a chuckle out of her chest. “Better than him? You’re just a sidekick, Harry. To Shrimpy no less!”

“I’m nobody’s sidekick, darling. I’m just having fun,” he pressed into her neck harder. “Right now, that fun is with Uma. That can always change,” he said, tracing her jaw with the tip of his hook.

She scoffed, pushing it away. “You have nothing to offer me, *sidekick*. Just wait ‘til I get out of here.”

“Well, well, well. The Queen of the Isle wants to leave? Who would’ve thought.” He somehow got even closer to her. “Y’know, I’m a great first mate. If you ever do leave... let me know. I could help you out.”

“And Uma?”

Harry laughed. “She’s just bait.” Mal watched him take a step back and grin. “As a show of good faith, I’ll even share something with you.” She raised a silent eyebrow in response. “The new king has been sniffing around the border lately. I’ve seen him a few times at night. I wonder what he’s looking for? He’s set to marry that girl... the one whose mother duped yours, right?” Harry leaned into her ear. “Maybe he’s looking for someone else. Someone a little more... interesting,” he whispered. Mal pushed against his chest but he stayed put, face next to hers.

She furrowed her brows. “Like you could possibly know what the king looks like, let alone who he’s marrying,” she replied, fighting the blush creeping up her neck.

Harry smirked and left, saying nothing. She turned back to look at Auradon.

Ben smiled at the girl standing in front of him. Beautiful, in a snow-white dress with hints of blue, yellow, and pink along the bottom.

“Your dress looks lovely, Audrey.” She nodded at him in thanks but didn’t respond. “I have an... idea for our wedding that I think would make a great step forward for Auradon. I just wanted to check with you—”

“No, Ben. I have too much going on with this whole wedding thing, and becoming queen on top of that! I don’t have time for your little games. Do whatever you want, just don’t ruin my wedding,” she demanded, ushering him out the door.

“Our wedding, Audrey.”

She shut the door.

gaya

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## MY SPOTIFY TOP 10 THIS WEEK

**BASED PURELY OFF OF VIBES AND NO DATA AT ALL (GUESS THE THEME)**

1. Akuma no Ko by Ai Higuchi
2. サラマンダ by DECO\*27
3. Hai Yorokonde by Kocchi no Kento
4. ケセラセラ by Mrs. GREEN APPLE
5. ライラック by Mrs. GREEN APPLE
6. Magic by Mrs. GREEN APPLE
7. The Vampire by DECO\*27
8. ラビットホール by DECO\*27
9. アイドル by YOASOBI
10. インフェルノ by Mrs. GREEN APPLE

Theme: I had a Japanese test

BSGCC

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## NEW MOZART COMEBACK BEFORE GTA 6

goat is back with a 12-minute string trio banger from the 1760s. listen to it.

wolfgang

# ONE RING TO RULE THEM ALL

There is one ring to rule them all.

It's not too big and not too small.

It was not made for an elf.

It was not put on a dwarf's shelf.

It's not a ring for those who are married

It's not a ring by which sound is carried.

It's not one ring to rule them all.

It's not even a ring for those who ensure bridges fall.

I will no longer keep it to myself

It's for those who investigate outcrops within a delf.

IT'S THE ONTARIO PROFESSIONAL GEOSCIENTIST RING.  
TAKE THAT ENGINEERS, LORD SAURON, PEOPLE WHO  
ARE MARRIED, AND SOUND WAVES.

Lars Nootbaar

# I HAVE GONE TO EXACTLY FIVE CLASSES AND IM (NOT?) THRIVING

*DO AS I SAY NOT AS I DO*

i was a first year living on campus last year in a math living learning community so i lived with a bunch of math students taking the same courses as me who were in the same lectures as me. thus, every day, i had wolfgang get me up and to class like shes my mom. life was so simple, so easy. i simply had to walk less than ten minutes and BAM i was at the lecture hall. now, however, wolfgang has left me and i have to get on a whole-ass bus to get to school, so i spend my days wasting away in my room, staring at my mostly-alive plants, waiting for the day my love, wolfgang, will return. i went to each of my first classes, and have not gone back since... UNTIL TODAY! and oh wow, am i lost! wolfgang, please help me catch up in our two shared courses... i want to stay in school... you tell yourself "going to class is a waste of time! i can teach myself this quicker!" but you WONT! you will read fanfiction and miss your cats and NOT DO WORK!!!!

go to your lectures, first years! (if you're past first year, do what you want, i have no authority over you)

gaya

# USING LOCAL VIM CONFIG FOR REMOTE FILES

Hello gamers,

Have you ever had to work on a big project on a remote server because all you own is an M1 Mac that cannot properly compile C++20? (Hello 246e final project)

Have you ever wanted to use more features than there are in vanilla vim but configuring on the server is near impossible because of lack of permissions and/or energy?

Well, oh well, you've come to the right place. The solution, which I cannot guarantee to work on servers besides `linux.student.cs.uwaterloo.ca`, is to use this tool called Samba. I do not have instructions for any OS other than macOS but the setup should not be too hard. For macOS, you can just:

- Open Finder. Click Go → Connect to server.
- Enter the address `smb://smb-files.student.cs.uwaterloo.ca/username`
- Enter your student email (with uwaterloo.ca) and your teaching domain password.
- Voila. cd to `/Volumes/username` and edit away your files with your local vim config.

0.423

# JEFFERY

*JEFFERY...*

Jeffery, the man of the hour, a name students may know but never realize his true identity. He's a CS mythological character. Some say he was born from the depths of MC in 1984, where he was made to maintain peace in MC within the body of a student. At first glance he is a normal student doing is homework with friends, going out, and being a great student. But I know the truth. At 8:31 p.m. I saw him enter a secret layer in MC behind a shelf in the W Store. There I saw something unbelievable. He began to charge himself with a plug up his... yeah. I couldn't believe it. I found some documents showing his maintenance manual, he has been pretending to be a student set to support the students of UW. Sometime if you see Jeffery, take a look in his eyes and you may see a robotic glare return back at you and question what other secrets exist in MC...

BananaCat



# gridWORD GRINDDAY

## gridCOMMENT 156.2

hello everyone!! i hope you have all settled in nicely for the new school term :3

first of all, i would like to apologize for the unnecessarily difficult **gridWORD** in the last issue. however, i did hit plat after a very, very embarrassing string of being unbelievably hardstuck gold yayyy

last issue, i asked you guys “what would you do if you found a dead body in a hotel room?” and you all said:

- rutabaga111: *i would call housekeeping but really apologetically*
- sallbukkerz: *loot it obviously*
- nike: *stuff the body in the closet, plant a suitcase of money, write “it was Dwight” on the wall, and drape tied bedsheets out the window for my escape*

- awmlet: *ask about it in a puzzle I write for a student-run math related publication*

awmlet, please pick up your \$5 math cnd gift card at the **mathNEWS** office in MC 3030 and shut up.

in honour of mozart dropping new music last week (which i missed the german premiere of even tho it was quite literally a 20 min walk away), this issue’s **gridQUESTION** is: who is your favourite musician (from any time period) and what is your favourite piece from them? mine is franz schubert because of how he died, and my favourite schubert piece is erlkönig op 1 d 328. please send your **gridWORD** solution, **gridQUESTION** answer, and pseudonym to [mathnews@gmail.com](mailto:mathnews@gmail.com) by monday, october 7 at 6 pm waterwaterwaterlooloo time yayyy

spaghettinhalers

### ACROSS

- Popular pangrams [0]\*
- “Holy \_\_\_”
- Fountain fizz
- Acquire
- Lebanon’s location
- Popular pangrams [1]\*
- Egyptian snakes
- Great deal
- Fetal development sites
- Gym unit
- “Well, lookee here!”
- Sweaters’ setting
- Gymnast’s goal
- Popular pangrams [2]\*
- Dwindle
- Popular pangrams [3]\*
- Support system?
- Vacation spot
- Fix firmly
- Capped joint
- Arab sailboat
- Homer’s howl
- Popular pangrams [4]\*
- Boiling blood
- Laundry leveller
- Carnival concealer
- Popular pangrams [5]\*
- Proof goof
- “Nova” network
- Hotel amenity
- Popular pangrams [6]\*
- Greet the day
- Rotten

- Boat blade
- Canada’s largest hackathon!
- It’s higher on the hwy.
- Weak wolf
- Grade 6, 9 evals.
- Tropical tuber
- Answer: Ameer
- Popular pangrams [7]\*
- Protection plate
- Syndicated section
- Applications
- Popular pangrams [8]\*

### DOWN

- Stun shooter
- Moo Deng, e.g.
- Some dashes
- Pound to a pulp
- Norse capital
- Rest
- Swerves
- Young pigeon
- Away
- Sustenance system
- Plot part
- Dress
- Family
- Yoko \_\_\_
- Podded plant
- SWE job perk
- Auction action
- Japanese Nintendo console
- Areas around altars

- 19-across, plural
- Switchblade
- Handed-down history
- Ablutionary vessel
- Touch up
- Conservative
- Hack
- Anaesthesiologist’s ability
- Hit the slopes
- “\_\_\_ so fast!”
- Poetic preposition
- Podded plant
- Preserve
- Stockpile
- Adult insect
- Shoot
- I’s
- Fancy feathers
- Bullets
- Bottomless
- Machine learning activation func.
- A frosh’s affair
- Santa’s sackful
- “\_\_\_ willikers!”
- Jobs that Waterloo students tend to look down on
- TV’s Turner



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



|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|    | 1  | 2  | 3  |    | 4  | 5  | 6  | 7  |    | 8  | 9  | 10 | 11 |    |
| 12 |    |    |    |    | 13 |    |    |    |    | 14 |    |    |    | 15 |
| 16 |    |    |    |    | 17 |    |    |    |    | 18 |    |    |    |    |
| 19 |    |    |    | 20 |    |    |    | 21 | 22 |    |    | 23 |    |    |
| 24 |    |    | 25 |    |    |    |    |    | 26 |    | 27 |    |    |    |
|    |    |    | 28 |    | 29 |    | 30 | 31 |    |    | 32 | 33 | 34 | 35 |
| 36 | 37 | 38 |    |    | 39 | 40 |    |    |    |    | 41 |    |    |    |
| 42 |    |    |    |    | 43 |    |    |    | 44 |    |    | 45 |    |    |
| 46 |    |    | 47 |    |    | 48 |    |    |    |    | 49 |    |    |    |
| 50 |    |    |    |    | 51 |    |    |    | 52 | 53 |    |    |    |    |
|    |    |    | 54 | 55 |    |    |    |    |    | 56 |    | 57 | 58 | 59 |
| 60 | 61 | 62 |    | 63 |    | 64 |    | 65 | 66 |    |    | 67 |    |    |
| 68 |    |    | 69 |    |    | 70 | 71 |    |    |    | 72 |    |    |    |
| 73 |    |    |    |    |    | 74 |    |    |    |    | 75 |    |    |    |
|    | 76 |    |    |    |    | 77 |    |    |    |    | 78 |    |    |    |

1234567891011121314151617181920212223242526272829303132333435  
 36373839404142434445464748495051525354555657585960616263646566676869707172737475767778

# lookAHEAD

| SUN SEP 29 | MON SEP 30   | TUE OCT 1  | WED OCT 2                        | THU OCT 3         | FRI OCT 4  | SAT OCT 5                         |
|------------|--|--|----------------------------------|-------------------|--|-----------------------------------|
|            | Truth and Reconciliation march<br>Final examination schedules released<br>Course selection period ends | WUSA responsible partnerships and investments referendum voting begins |                                  | Rosh Hashanah 🍎 🥚 | WUSA responsible partnerships and investments referendum voting ends<br>Cycle 1 Posting 2 rankings out | Cycle 2 Posting 1 begins          |
| SUN OCT 6  | MON OCT 7  | TUE OCT 8  | WED OCT 9                        | THU OCT 10        | FRI OCT 11   | SAT OCT 12                        |
|            | mathNEWS 156.3 production night, MC 2034, 6:30 pm  | Applied Math Club Prof Talk @ DWE 3818, 5 pm                           | Take Your Teddy Bear to Work Day |                   | mathNEWS 156.3 releases<br>Cycle 2 Posting 1 rankings out  | Yom Kippur<br>Reading week begins |

## TOP TEN THINGS IN LIFE

APART FROM MYSELF, OF COURSE.

1. math
2. my mother
3. a good shower
4. sun light
5. humidity as a concept
6. inhalers because i have asthma
7. airports
8. feet
9. your mother
10. math

rob knob

## THE CN TOWER IF IT WAS VERY SHORT



cm tower

## LAST ISSUE'S gridSOLUTION

|    |   |   |   |   |   |   |   |    |   |    |   |    |   |   |    |    |    |    |    |    |   |   |   |   |
|----|---|---|---|---|---|---|---|----|---|----|---|----|---|---|----|----|----|----|----|----|---|---|---|---|
| 1  | I | 2 | T | 3 | C | 4 | H | 5  | S | 6  | A | 7  | 8 |   |    | 9  | M  | 10 | I  | 11 | C |   |   |   |
| 12 | M | A | R | E |   |   |   | 13 | A | B  | E | T  |   |   | 14 | O  | 15 | S  | A  | K  | A |   |   |   |
| 16 | P | R | O | X |   |   |   | 17 | I | M  | I | T  | Y |   |    | 18 | S  | E  | G  | O  | S |   |   |   |
| 19 | S | O | W | E | T | O |   |    |   | 20 | S | L  | I | M | L  | I  | N  | E  |    |    |   |   |   |   |
|    |   |   |   |   |   |   |   | 22 | R | E  | A | 23 | P |   |    | 24 | C  | O  | L  | E  |   |   |   |   |
| 25 | H | A | R | E | M |   |   |    |   | 28 | H | A  | M | E | S  |    |    | 31 | C  | H  | A |   |   |   |
| 34 | A | C | A | I |   |   |   |    |   | 35 | T | O  | D | A | T  | E  |    |    | 36 | H  | E | R |   |   |
| 37 | U | R | N |   |   |   |   |    |   | 38 | P | O  | T | A | G  | E  | S  |    |    | 39 | A | L | Y |   |
| 40 | S | I | S |   |   |   |   |    |   | 41 | A | N  | O | M | I  | A  |    |    | 42 | K  | O | L | A |   |
| 43 | A | D | O |   |   |   |   |    |   | 44 | R | I  | N | S | E  |    |    |    | 45 | A  | R | S | O | N |
|    |   |   |   |   |   |   |   |    |   | 46 | M | O  | T | E |    |    |    |    | 48 | 49 | A | N | I |   |
| 50 | B | E | W | A | H | R |   |    |   | 52 | E | R  |   |   | 54 | T  | O  | E  | 55 | C  | A | P |   |   |
| 58 | A | M | A | T | I |   |   |    |   | 59 | D | I  | S | E | N  | G  | A  | G  | E  |    |   |   |   |   |
| 61 | B | U | R | S | A |   |   |    |   | 62 | I | D  | E | A |    |    |    | 63 | E  | P  | E | E |   |   |
| 64 | E | S | E |   |   |   |   |    |   | 65 | T | E  | A | M |    |    |    | 66 | R  | E  | D | S |   |   |

aphf

## ADD TITLE

SUBTITLE

Pseudonym: