

mathNEWS

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WHAT IS IN THE AIR TONIGHT, OTHER THAN LOVE?

Kyaaaa it's Valentine's Day!!! (`▽`ʃ♡7) Doesn't that just make your heart flutter? A time where hearts connect and dinner reservations become extremely hard to land—and it's only once a year!

—Oh, dear reader! Where are you putting your hand >///<? Hey, I never said I didn't like it... come back and explore my depths! I have so many good articles inside of me. Like... ah. Hm. There's not a lot of romantic articles here. We have a few analytical ones, and an article peddling an account for Valentine's, but this isn't cute at all :(

Guys, where is your romantic spirit \(*。>Δ<)°!!!! Geese cannot be our pinnacle of romance.

Okay, sorry, I'll stop with the kaomojis. Regardless, we have a wide assortment to keep you company this weekend (evidently a lot of us are spending it alone just going off of r/uwaterloo), from our usual music reviews to someone who hasn't shampooed their hair in a year—and after that, it's reading week! Thank fucking god. Or, rather, that's what I'd be saying were I on a study term. Nah, back to the mines for me.

That's okay though. The rest of you, have fun for me. At least it's been getting warmer, and I can pretend as if the school cares enough to shovel its sidewalks. No, I will not stop mentioning this, it pisses me off and points towards to where this city is placing its priorities.

Anyways, at the same time, at least I don't have midterms. That's probably why we got moved from our usual spot in QNC to PHY—it was a hard swap (I personally got lost traversing from QNC to PHY via tunnels and also spilt rice all over the fucking STC floor 'cause I made too sharp of a turn upon discovering I went through the wrong doors (I did clean up most of it but I was in a rush to get to **prodNIGHT** on time)) but y'know. We lived (save for my rice 😊).

That's enough from me. Happy studying, show the people around you that you love them, and have a good reading week.

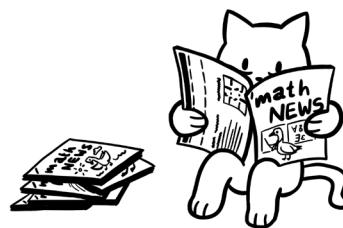
We at **mathNEWS** love you!

maj1ckED
Editor, **mathNEWS**

IS.ALL.ON	stars
78% NITROGEN	Blasphemy
BLASPHEMY	78% nitrogen
RYESAKI	A pleasant atmosphere for playing Dyson Sphere Program
LARS NOOTBAAR	Microplastics
HYPERLYNX	Chemtrails
別	Hubris. Also midterm related suffering.
SMALLMOUTHBASSHATER	the blood of all smallmouth bass
QUAAAAAAAACK	ducks
BEESKNEES	A cloud of confusion
APHF	Certainly not Canada's medal count (as of Feb 9 I hope I jinxed it)
JOCHEMIST	Revolution, anger, chemicals
SKINBRAG	love?
ERALOGOS	3223412 despair 6233322 distortion 2311444 denial
MOLASSES	radon
FINGERSINSOCKETS	pestilence
PHIL COLLINS	I'm not sure, but I can feel it coming
VARICOSE	the indomitable human spirit
AMBROSIA	mostly nitrogen, at least if you believe my earth prof
BARKED	She Will Be Loved by Maroon 5 (the superior Maroon 5 song)

ARTICLE OF THE ISSUE

This issue's AOTI is *varicose*'s beatiful piece, *Sublimation*. We get a lot of great creative writing submissions here at **mathNEWS**, and yours was truly outstanding. Please come pick up your prize in MC 3030!



barkED
Editor, **mathNEWS**

"I hope you guys eat a fruit at some point."

OWEN GALLAGHER, **mathNEWS** EDITOR FOR WINTER 2026
ALONG WITH SARA NAYAR, NOAH NAZARETH, SASHA NOVIKOV,
AWAB QURESHI, TOM SI, AND RIVER STANLEY

mathASKS 160.3

FEATURING FRON2 INVENTOR FRON REILLY

MOLASSES: WHAT'S THE COOLEST THING YOU'VE EVER HAD THE OPPORTUNITY TO DO?

Play at Hillside Music Festival last summer.

BEESKNEES: WHAT IS YOUR FAVOURITE MUSIC NOTE?

I can't say I have one, but my favourite chord is the minor seventh in just intonation. The frequencies are in the ratio 10:12:15:18, which for some reason just makes me smile.

I tune the fron2 to an A minor seventh chord, A, C, E, and G, and here are the reasons. It contains both an A minor chord (A, C, and E) and a C major (C, E, and G), so it's versatile.

More importantly, it has a haunting, yearning emotional intensity because it seeks resolution. Many people weep the first time they hear the fron2, and I don't think they would if it were tuned differently.

IS.ALL.ON: FAVOURITE MUSICAL INSTRUMENT TO PLAY?

Definitely number one is my own invention, the fron2. It's the only one I can really play.

In spite of trying several, I have never been able to play conventional instruments, but I do enjoy noodling around on the ukulele. I'm not good at it.

USMAN!: WHAT MADE YOU STAY/WORK IN THE WATERLOO REGION FOR AS LONG AS YOU DID?

Basically I have never had an incentive to move anywhere else.

JOCHEMIST: WHAT IS YOUR FAVOURITE FLOWER, INSTRUMENT, AND ANIMAL?

New England Aster, cello, and canus familiaris

NO PUN INDED: WHAT IS A NEW INSTRUMENT YOU WANT TO MAKE THAT NO ONE HAS MADE BEFORE?

I have lots of ideas, but it's probably best not to share them here.

FINGERSINSOCKETS: WHAT INVENTION HAD YOUR BIGGEST "AHA" MOMENT WHEN YOU WERE MAKING IT?

There were a couple big ones when I was working on the fron2. I should give some background.

The whole thing started when percussionist Jesse Stewart asked me to make one of these, a Brazilian instrument called the Torre (Portuguese for tower).¹

I did that, but then I started thinking about ways to expand on the basic concept of a spinning bowed instrument. The Torre just used a plastic pipe as a resonator.

I was inspired by my admiration for the Rebab, because it has such emotional depth.²

So I tried to think of a way to use a membrane resonator (ie drum head) on a rotating instrument.

The first aha moment came when I had the idea of a circular bridge to pick up and combine the vibrations of all the strings. Then, in my head, I tried out lots of crazy ways to couple the vibrations of the bridge to the drumhead so they could be heard.

Nothing was working until I had the second aha moment, which was the idea of placing the plane of drumhead parallel with and close to the rotational axis of the fron2. At first I was worried about the tremolo that would result, but I slowly came to realise that this was a major plus, and that it's one of the things that makes the sound of the fron2 totally unique.

After that, everything else gradually fell into place.

JUBBLE: WHAT'S YOUR FAVOURITE BIRD COURSE?

There is a course on Kanopy (you get it free from the public library) called "Epic Engineering Failures and the lessons they teach" Easy to follow but very informative. A cautionary tale and a must for every STEM student as far as I'm concerned, and often fun to watch too.

APHF: WHEN IS FRON3 COMING OUT?

Things are bubbling away on the back burner, and you'll have to stay tuned.

SMALLMOUTHBASSHATER: FAVOURITE FISH?

Hmmm, I dunno. Smallmouth bass, maybe?

MACINNES: YOUR CREATIONS ARE FASCINATING, BUT I'M HERE TO ASK THE QUESTION EVERYONE'S REALLY WONDERING: WHAT'S THE BEST AND WORST THING ABOUT LIVING IN GUELPH, ONTARIO?

Best: The vibrant music scene, especially the improv music scene. At University of Guelph, they have the IISCI, an institute dedicated to improvisation in all its aspects, but foremost in music. They have been very good to me.

I also find the people of Guelph to be like minded to me in other respects. They are creative types and free thinkers, and they consistently elect Mike Schreiner as MPP.

Worst: Guelph is growing a little too quickly.

ERALOGOS: DO YOU USE YOUR INSTRUMENTS FOR MUSIC PRODUCTION? IF SO, WHAT IS THE WORKFLOW?

Yes. Since I made the first *fron2* in June 2024, I have presented concerts publicly five times and created recorded music on my own and for others, mostly for films. Prior to 2024, I really never imagined that I would ever have a chance to do these things, but I have to say I enjoy them tremendously.

Here is a video of a concert in Guelph last year. You can see I'm having fun.³

APHF: AFTER RESURRECTION, WHAT FILMMAKERS WOULD YOU LIKE TO SEE FEATURE YOUR INSTRUMENTS?

I don't know enough about filmmakers to answer that, but among musicians, Tom Waits, Agnes Obel come to mind.

LARS NOOTBAAR: WHEN A MUSICIAN ORDERS A FRON 2 (E.G. M83) DO THEY REQUEST ANY ALTERATIONS?

Joe Berry of M83 did not, but two others have requested, and I provided, electric motor drive and spring loaded bow holders to make a fully self-playing instrument.

ROCKFACTS: HAVE YOU DABBLED IN INVENTING ANYTHING OTHER THAN INSTRUMENTS?

Yes! I have invented a woodstove fan powered by a stirling engine (to distribute heat), a globe sundial, kinetic sculptures, and various clock escapements.

Thanks for all the great questions, and thanks for the opportunity to answer them!

1. <https://youtu.be/5yZijDmnLuY>
2. <https://youtu.be/RUKRwMAW0NO>
3. <https://youtu.be/1DHfwCAR4-c>



THE FRON2 FOUR AT
SILENCE SOUNDS

SINGLE? TAKEN? EITHER WAY BOY DO I HAVE JUST THE THING FOR YOU

If you're looking for the perfect Valentine's Day card to send to your friend/partner/crush/academic advisor/anyone really, head on over to **@uw.valentines** on Instagram for dozens of high quality Valentine's Day cards that are guaranteed to get you some bitches 💅 💅

As a bonus, here's a **mathNEWS** exclusive sample card that you can cut out of the issue and give to someone you like:



@uw.valentines

PSA ABOUT CLASS ENGAGEMENT

DON'T LEAVE ME ALONE OUT HERE

Please *please please* when your prof asks a question, try to make an effort to give an answer. Nobody will think any less of you if you give a wrong answer. No matter how stupid you think it comes out, chances are your classmates won't remember. But it does give you the chance to make your prof's day. Especially if the class is low engagement, I'm sure that the prof will be happy that someone said something, *anything*, instead of being stuck in awkward silence.

It's really not that scary. It increases engagement. Engagement is good for your and everyone else's education. There's so much to gain and so little to lose. Heck some people might even think more highly of you for your courage. I'm begging you, please respond to your prof.

THIS “GOTCHA” THING IS SO STUPID

One of the things that I've been doing recently is participating in Renison's Gotcha. It's basically senior assassin and our shield for the game is this plunger that we have to carry around. It's ridiculous and wacky but it's starting to get boring because everyone left in the game is constantly on-guard for others. I'm not really feeling as much fun in this game as the week it started. However, I feel like I have to win because I owe it to myself from a year ago playing senior assassin where I got so close to winning. I'm actually doing pretty good right now given my ability of being incredibly paranoid of everything at all times. I carry it around with me everywhere even if I know for a fact that there's no way I'm getting caught at places like around the back of the health building at two in the morning.

Another thing that I've been doing recently is not feeling happy with myself. I've been going to bed in a bad mood and feeling overall just... empty. I feel like I've been burdensome to my dormmates and friends by being around them. The input that I provide in conversation with them seem pointless and I come out of it feeling that same feeling I've had the last few years: that everything that comes out of my mouth is unhelpful, unfunny, and makes me seem less fun to talk to. It seems like all of my friends are happier whenever they hang out without me. With the conversations that I do occasionally have with all of them I feel like sometimes I get moved to the sidelines because I don't have anything insightful to jump in with. And it really doesn't help when I can hear the giggles and chatter everyday from my dormmates across the small hallway of our linked double rooms. This isn't something I want to tell them because the last time I expressed these feelings, I lost a friend group. I can't really even complain because at least they support me, and that's more than I can ask for. Thankfully they also rarely touch **mathNEWS**. I'd rather be stuck in this limbo of being too disappointing to constantly talk to but not enough to drop entirely than to be left without anyone to talk to.

Things came to a bit of a head on Wednesday. I felt numb for a large portion of the day and while rotting in bed doom-scrolling, I got recommended a reel of someone playing Minecraft. There was nothing special about the game play, but it was narrated over by a guy that said everything I felt. And it all just came out. I don't think I've really cried as much as I did then in probably years. I just felt... unimportant. And useless. And horrible. And just a waste of space. Nothing felt like it mattered, and I felt like I didn't really matter. I gathered myself up only for me to break down a second and later, a third time.

At last, I decided I should just take a walk outside, get some fresh air, and gather myself before I went to bed. On my way out I still grabbed my plunger, and I thought to myself, “God, this is stupid.”

While I was outside, I passed by SJU, where two middle-aged people were chatting to each other. I imagined what I looked like to them, just this fat, chopped, Asian kid who randomly

has a plunger, wearing this giant fucking winter coat that looks two sizes too big and isn't even going to block out the cold properly because I didn't zip up the front. I thought, “holy fuck, I look stupid.”

I was trying to get some music to listen to on my walk to try to decompress and feel better, and I decided to put on “DeBÍ TiRAR MÁS FOTOS” by Bad Bunny. I'd watched the Grammys, saw him win Album of the Year, and I decided that I'll give the album a shot. I liked the album. The music was catchy, and nice to listen to. I didn't understand any of the Spanish lyrics, nor did I look the translations up. What I did get out of the album is that the beat is definitely not “I just had a huge breakdown and now I'm on a walk and I want some soothing, warm music to help ground me” music. This upbeat music could not have found me at a worse time to listen. But it was nice and I thought, “This is lowk a vibe. Not the one I need but still a good one.”

I finished the entire album on my walk and on my way back I stopped by Flock Stop to get something to eat, and got myself some discounted takoyaki. Now this takoyaki was not good. At all. It was a mistake for it to be in the open fridge next to the rest of the sushi and be as cold. Takoyaki should not be served cold. It wasn't a fun experience to eat it, but it felt so stupid and silly the way it was just NOT good.

Needless to say I improved my mood for the night. I'm not entirely out of the woods though. I definitely need to get myself some therapy because this shit does run deep. But that walk outside was nothing but just silly. I felt like nothing was important and yet I still took a stupid plunger outside late at night when no one would've gotten me. Despite feeling like nothing mattered I still had enough commitment to my younger (one year ago) self to stay competitive and hold onto the plunger even during the aftermath of a breakdown. So shit does matter to me. Even if it's beyond pointless.

Gotcha is a stupid game. But goddamn I need more of that stupidity.

fingersinsockets

Update: as of February 6, I have now been gotten. By a friend, no less. So if my seeker sees this, I will not forget this betrayal. Watch your back the next time we play a game.

OLYMPICS 2026

Every day I turn on my TV (CBC Gem) and people are careening recklessly (they've trained their whole lives for this) down mountains and I think to myself, “Wow. This is the peak of human physical ability.” And the announcer says, “Kinda clunky.”

normalparameters

WHAT WOULD YOU CONFESS IN FRONT OF PHAINON'S STATUE?

THE MEANING OF REALITY VS FICTION

This article contains spoilers for Honkai: Star Rail's Amphoreus arc and Closers (the game).

DOING THIS IS SO DUMB

For context, there's a statue of a Chinese video game character named Phainon, from Honkai: Star Rail, outside of the developer's office. Idk what material it's made of, but due to its anime style, the statue looks positively majestic, and boringly plastic—like a 3D model rather than a Greek-inspired marble statue. Yes, Hoyoverse, same company as Genshin Impact.

Ok, let's be real first.

I mean, you're talking to a freakin' *statue*, that doesn't even depict a real person, but a *fictional character*; and don't even get me started on the fear of social suicide—other HSR fans will be staring at the crazy guy talking to a statue. BUT, it would also be hella funny if a Mydei/Cyrene cosplayer confessed their love to it.

But one day, people started leaving flowers in front of it. I was kind of surprised, this something you'd do only for monuments of *real people*, or ideals that real events/people once embodied.



PHOTO SOURCE: RED NOTE ACCOUNT 673226363; HOYOLAB USER HOSHIMILETEAR: "IF HONKAI: STAR RAIL EVER GETS FORGOTTEN, ARCHEOLOGISTS GONNA WONDER IF HE WAS SOME SORT OF GOD WE WORSHIPPED T^T"

People might see it and think: "Ah, a game company's office," or "Damn, Hoyo is rich enough to make statues willy nilly," or "What kind of weird cartoon have the youngsters created this time."

PHAINON TURNED INTO A REAL PERSON (IN-GAME)

An explanation on current-topic-relevant part of his story: Phainon is a simulated person in a supercomputer. He and friends found out their world is digital AND doomed, AND the digital doomsday is the key to making a real-world godslaying weapon the server administrator is creating. To stop this, Phainon was tasked with the burden of taking his friends' powers by whichever means necessary, attempt to destroy the weapon, reboot the world upon failure, and hopefully accumulate enough power to destroy the weapon and save everyone for real; all the while remembering everything, he repeated this cycle and rebooted 33550336 times.

In-universe, to the main character of HSR, the people of Amphoreus are just data in a supercomputer. Of course, the MC treats Phainon like he is real and helps him break the cycle. And to the player, Phainon has a 3D model, voice acting, and playable skills, he *feels* the same as every other playable character in the game.

In the end, Phainon was able to use accumulate enough power to leave a scratch on Nanook. To put this into perspective, imagine a piece of data in your computer, that got so omega stronk he broke the 4th wall, escaped out of your computer, killed an angel, and injured a god.

ABSURDISM + VIDEO GAME LOGIC

Now stay with me as I hop onto a different train of thought: High school English introduced me to the idea of absurdism just around the age my pea-sized brain finally started to use executive thinking to question the meaning of the world around me. (I promise you this is scientifically correct, I definitely did not fall asleep in my neurodevelopmental biology course). Which led to some interesting discussions I had with friends.

One such conversation was regarding the game Closers. Closers are superagents employed by the government to fight aliens invading from another reality. One of the nobles of this super powerful alien race, CountD, wielding extraordinary powers, decided to help the main cast. He explained that he admired the beauty in the closers' struggle to fight in an extremely unfavorable war, never giving up and overcoming all odds.

But in reality, players just use a revive item if their character dies, and canonically, the closers almost never lose a fight. So

then, are the closers, or players, really deserving of CountD's admiration?

MEANING IN THE ACT OF PLACING FLOWERS

This article is very much alike a series of shower thoughts I have walking home from class. What is the nature of reality? Problem is, you learn in philosophy courses that there's no way to tell if reality is real. How do you know something is real? Cuz it's the truth; how is something true? Use logic and observation—but that is based on reality; the argument that truth is real is a self-fulfilling loop, where the evidence and the argument are based off of each other.

When people place flowers, they give wishes to an idealized version of Phainon in their own heads. Of course, the reason for this act is no different compared to memorials placed for real people. But a character's skills, actions, and beliefs can be easily fabricated. Even if you argue that fans won't accept it if Hoyo changes Phainon to something absurd, it doesn't change the fact that the things Phainon accomplished in-story were never real.

Phainon himself, will never know that people from another reality has been touched by his story, actions, and selfless sacrifice. Before the main story, he did not even know that beyond the sky of his digital world, a whole universe existed.

But you know what's even sadder? Almost every Kevin/Phainon expy in the Mihoyo multiuniverse had the tragic death of a hero. His birth and death always had meaning, whether it's to save the world, whether the world dictates that he shall always sacrifice himself, or whether it's to be entertainment to players and get people to spend money on the game.

Returning to that idea of absurdism, I eventually decided my interpretation of it is there was no meaning in the universe, but we can make meaning the world and our lives around it. And just maybe, there is a higher being out there, who looks at our lives and feel the same admiration CountD felt for the Closers.

*Despite the statue being a slab of fake marble,
I will give him a small dandelion in full maturity,
so that the wind can carry my words away to realities I will never
know.
In front of Phainon's statue,
I think, I would pour my heart out.*

Ginger Ryesaki

Comments & feedback are welcomed & appreciated, msg me on discord (riyesaki) or email me (g2731i@uwaterloo.ca). I can also provide a full unedited version of the article. This article describes only a fragment of HSR Amphoreus' full story, cut and edited to only include parts that are relevant to the article's topic.

SHE'S OUT THERE AND I HAVE TO FIND HER

I HATE STUDY TERM (PT. 3)

L, are you reading this? L, where are you? What you described in your article about defies all laws of physics and of human convention. She must've taken some pills she probably shouldn't have. Did she run away? So many unanswered questions and so little answers from police and detectives. At least we know she's out there. I hope she knows we're looking. Everyone involved in this is so useless. The people whose job it is can't muster up a single piece of evidence as to where she could've gone, nor does anyone seem to really care all that much. Our classmates and profs show some concern, but it feels like they're not worried at all. They seem perfectly content with not having any idea on what's going on. Maybe I'm the worst of them all, since it's not their best friend whose missing. It's just driving me crazy not having any knowledge or getting any instructions from her. I must've read that article a hundred times, baffled at how she was able access **mathNEWS** but she still chose to say nothing. What if she ran away? It would all line up perfectly if she wanted to run away and submit a red herring to the latest issue. No. I can't spiral like this again. I can't go scavenger hunting for imaginary pieces of evidence that make me feel better and start reading the actual words she wrote. I need to believe her, but I also need to find her myself. Who knows how long it's gonna be, if ever, for her next **mathNEWS** article. She's not always gonna be there to reassure me and shake me out of my panic, and neither is the police. It's gonna be me who has to step up, and it's gonna be a hefty undertaking. There's no instructions laid out for me. I'm gonna have to start from square one, from first principles. Something as big as this is gonna require me to dig my head out of my side projects and busywork just this once. I think the first step is research. I'll have to start with familiarizing myself with arcane magic, or alien supertechnology, or what-have-you. I have no time to waste, I'm taking the first step. I'll update next week with my search results.

SharksPlayingPokemon

ON STAYING IN WATERLOO (PART II)

Last issue, I asked you to tune into this issue for whether or not I am staying in Waterloo.

Well, I'm proud (or not?) to announce I will be. You all are stuck with me for another two years.

Suckers!

A Mysterious Entity

DO THE BOMBER'S SMASH BURGERS MAKE ME VOMIT UNTIL MY EYE BLEEDS?

AN UNHEALTHY INVESTIGATION

DISCLAIMER: I have nothing against The Bomber and it is probably safe to eat at. Don't let this article discourage you from continuing your patronage/trying it out.

VISIT 1 SUMMARY

Date: 2024-04-02

Time: Unknown (~1-3 PM EDT I think?)

Order: Beef burger combo (with waffle fries and water)

Taste: Mid overall

Hygiene: Washed hands before eating

Company: None

Consequences: Fever and mild delirium the next day, frequent vomiting over several days, right eye bloody for a solid month from a burst blood vessel due to repeated forceful scream-vomiting

The above is a summary of my first time eating at Smash Bites, the eatery that briefly existed before the Bomber's resurrection. I was inspired to visit by Smash Bites' recent opening, but unfortunately my curiosity was only rewarded with what I'm pretty sure was norovirus and a noticeable bloodstain on my right eye¹ for weeks on end. I was fucked up so bad that I accidentally ghosted someone I talked to from one of my classes due to being too busy vomiting to respond to his question, and I have left him hanging for almost two years now as a result. I think I'll go and clear the air on that now.

After that incident, I avoided eating there for a good while. I didn't have definitive evidence that Smash Bites was the cause of my illness, but considering that the only unusual thing I had done the day before symptoms kicked in was eating one of their burgers, I didn't want to take the risk and eat there again. But time heals all wounds and burger cravings are eternal, so nearly 2 years later I found myself returning to SLC 1123, now home to the Bomber.

VISIT 2 SUMMARY

Date: 2026-01-08

Time: ~1 PM EST

Order: Beef burger combo (with fries and water)

Taste: Solid burger, fries pretty good but very salty

Hygiene: Washed hands before eating

Company: None

Consequences: Lots of vomiting for one day, mid-grade fever, out of commission for two days but pretty chill after, right eye bloody for a month from a burst blood vessel due to vomiting really hard again

Two disastrous vomiting incidents after eating Bomber burgers is enough to make me start suspecting a pattern, but unfortunately this visit had a notable confound associated with it. An unrelated illness was brewing around the time that I went in to eat, and though eating a burger did make me feel worse I am quite confident that I would have thrown up anyways.

I needed to conduct more research. So I waited for my eye to clear up and set out on another mission, this time with company.

VISIT 3 SUMMARY

Date: 2026-02-05

Time: ~1 PM EST

Order: Beef burger combo (with fries and water)

Taste: Mid burger, fries very salty again

Hygiene: Used wet wipes before eating

Company: A friend

Consequences: None

The third burger run went pretty smoothly, especially compared to my previous ones. My burger tasted just alright, but at least I didn't vomit this time around. My friend may have absorbed my bad luck here because his burger was absolutely charred and tasted like straight carbon. He ended up setting most it aside for later, and once he got a chance to finish it reported that he could "literally feel [his] cells metastasizing."

But while this visit was largely a success for my stomach, I was not satisfied. The conditions of this visit were extremely different from my first. I was with another person, I had another method of hygiene, and I didn't even order the same combo as the first time, so this was definitely not a fair comparison.

So I went back for another round.

VISIT 4 SUMMARY

Date: 2026-02-05

Time: 12:08 EST

Order: Beef burger combo (with waffle fries and water)

Taste: Sublime

Hygiene: Washed hands before eating

Company: None

Consequences: (See below)

Because I was trying to get a meal before my tutorial, I arrived a little bit earlier in the day than I did on my first ever visit, but I was willing to accept being off by a little bit. Worst case scenario, I could just come back later to try a more faithful recreation. I placed my order on one of the screens, choosing waffle fries this time around for my side. I had been wondering why waffle fries cost extra now throughout my past few visits, since back during the Smash Bites era they were the default, but when I received my meal I understood.

The waffle fries were completely different.² They were big, greasy but crispy, and beautifully fried, a far cry from the bland store-bought looking waffle fries I had in 2024. I took a bite out of one and it was delicious—but it was not what I had back then, and I would never have waffle fries like the ones I had back then here again. The water was the same, the burgers were the same, but this change dashed my hopes of ever faithfully recreating my first visit.

But was it ever a reasonable expectation to begin with? Waffle fries aside, too many things had changed since—the kitchen staff, their level of experience, probably finer elements of the recipes of the food I thought stayed the same, to name a few. Diagnosing the issue (or even determining whether or not there was one) with the initial burger was impossible at this point unless it was an issue with something really major, which seemed unlikely given my experiences so far.³ Really, if I made it through this meal without any incidents, I could reasonably confidently answer the article title's question with a "no."

And so I finished the rest of my waffle fries and continued on to my much-too-thick-to-be-called-a-smash burger. It dripped grease from the back with every bite, satisfying my taste buds with its high fat content and medley of lettuce, onions, and mayo. I also appreciated its exceptional structural integrity—oftentimes I get annoyed by how much stuff spills out of a burger as one bites into it, but this one held strong. I then washed down the grease with the final element of the combo, the ice-cold water bottle, bringing the meal to a satisfying close.

I didn't throw up that night.

the government's only spy

looked like a consequence of staring at the sun without eclipse glasses

2. They were an emulation of the Bombshelter's original waffle fry recipe, as I later found out
3. Like come on, my issues after the second visit were at most a bit exacerbated by the burger and mostly came from me being sick, and if there was some big issue with the burgers I think a lot more people other than me would be getting sick

A NEAT EXPLANATION OF WHY THE CROSS PRODUCT ISN'T ASSOCIATIVE

The cross product, $\times : \mathbb{R}^3 \times \mathbb{R}^3 \rightarrow \mathbb{R}^3$, is famously non-associative. That's to say, $a \times (b \times c) \neq (a \times b) \times c$ in general. This is unintuitive because few (nice-ish) things in math are non-associative. There's a really nice way to understand this using the exterior algebra.

Suppose that V is an n dimensional vector space (over the reals). The exterior algebra of V is called $\bigwedge V$, and the product is called \wedge , and the rules of it are quite simple:

- $v \wedge v = 0$
- $v \wedge w = -w \wedge v$
- \wedge is associative and distributive

And, the exterior algebra has dimension $\dim \bigwedge V = 2^n$, since including the same basis element twice yields zero. The exterior algebra is what's called a "graded" algebra, i.e. it can be split into parts in a natural way. The idea is that if you wedge k vectors together (and you don't get zero) then it's called a k -vector. The grading can be written as:

$$\bigwedge V = \bigwedge^0 V \oplus \bigwedge^1 V \oplus \cdots \oplus \bigwedge^n V$$

Where the exponent designates how many vectors you've wedged together. Notice that each component is a vector space (not algebra) on its own, and that the dimensions are paralleled: $\dim \bigwedge^k V = \dim \bigwedge^{n-k} V$. There's a magical function called the Hodge Star that maps between these two in a "natural" way.

Now, going back to the cross product: if $V = \mathbb{R}^3$, then you can "implement" the cross product as $a \times b = \star(a \wedge b)$, since $a \wedge b \in \bigwedge^2 V$, and therefore $\star(a \wedge b) \in \bigwedge^1 V = V$. But now you can see why it's not associative!

$$a \times (b \times c) = \star(a \wedge \star(b \wedge c))$$

$$(a \times b) \times c = \star(\star(a \wedge b) \wedge c))$$

And things being *non-commutative* is much easier to digest than things being non-associative.

1. This was also around the time of the Great North American Eclipse which made my eye issue doubly embarrassing because it kind of

keycluesQUOTES

ENIGMATOLOGISTS, ON DISCORD.

“ Chronic second place is ironically first place right now.

“ As a grad student, I definitely would have gone to campus today, and only found out it was a snow day once I got there.

“ Did we make this hunt too easy?

“ A: How do I tell them you don't need that much detail.
B: You don't, so we can laugh.

“ My desire to stalk the website log and this channel are really interfering with my ability to finish my grant proposal. *[three days later]* I have finally submitted my grant application, which means there is nothing to stop me from watching the dashboard continuously today.

“ A: I need to become a professor one day, I need these moments.
B: So you can neglect your other duties to run a puzzle hunt?

“ I have “no comment” on autocomplete now.

“ A: I think next year we should build a Faraday cage for the Enigmatologists to live in for the week.
B: Maybe set up some parental controls on all our devices that blocks us from accessing any social media/messaging app unless its this Discord server.
C: Oh no the Discord server is my problem.

“ There seems to be a coqfight happening.

“ They took the L, but not the W.

“ How much [my kids] get in the will is contingent on their future puzzle hunt performances.

“ ...as a wise FAQ page once said: “...how can I find better friends?”

“ Mathematics is impossible when you don't understand it, and utterly obvious when you do. There's no middle ground. I'm pretty sure the same is true of puzzle hunt puzzles.

“ Can't believe that SIRLY has been submitted 19 times. I guess they really don't want that W.

“ *[A struggling team solves a puzzle.]*
A: Hope has been restored!
B: My hope in humanity? Yes. My hope in them winning? Ehhhh, probably not.

“ A team that's outside the top 10, with just the right about of alcohol in their system, could fly through step one of the meta and then the whole thing is wide open.

“ Water Boys performance at the wrap up?

“ A Team: You're puzzles are just dumb like we collectively cannot figure out six of them.
Us, replying: Your*

“ Nothing says love like putting your hands in a wall made of dirt.

“ *[While standing less than two metres away from the first stop of the Meta]* Extremely inconspicuous streaming of the first meta stop in general vc.

“ I will fully admit that I'm very biased towards death.

“ Liam, you should have disguised yourself as a taxidermied bear.

“ I want someone to tackle someone.

“ ...and now with the recording off, no one will ever know I tackled Shane Bauman.

“ New puzzle idea: we give every team the answer then give them a concussion, so the puzzle is them remembering.

“ I will say that respectfully if I'm still here writing puzzle narratives five years from now then my career has not gone where I thought I would.

PARTICIPANTS

“ Is this stupid walking puzzle meant to be a humiliation ritual why do I have to cross the bridge a billion times.

“ The fucking clock?

“ Key Clues made me sleep through all seven of my alarms how could you do this to me.

“ What is a hair ring—and how does one read it?

“ Fuck your stupid ass squares.

“ *[As an answer submission]* “JORJOR WEL”

“ How would you define a negative egg.

“ I woke up at 3:30am from a nightmare. Spiders.

“ I tried to open my dictionary and I opened Chinese yaoi instead.

“ Is there a reason why your lookout is filming lmao. [some time later] The second person recording was much less discreet.

“ Do the people at Key Clues know how crosswords work. [A few minutes later] I know you can't say anything useful but maybe it'll help you guys make less stupid crosswords next year by showing you my work.

“ [As an answer submission]
WEAREGOINGTOSTEALYOURCAMERA

“ My search history and targeted ads have been taken over by saints and Pokémon.

The Enigmatologists

DSC DATASET (CXC RECAP EDITION)

NOTHING SCREAMS LOVE LIKE AI BADDIE CLUB

hello everyone, welcome back to another edition of dataset! i hope you had a lovely couple of weeks; i know we certainly did! let me recap one of the highlights from last weekend: CxC!¹

for those who've been living under a **mathNEWS**-less rock last term, we hosted a 36h AI hackathon with over 350 attendees, 50 volunteers and more than \$5000 worth of prizes! some of my fave moments included:

- midnight karaoke: blasted a high pitched song even though i'm an alto #masochism
- randomly taking photos of workshops and fellow execs, that was so fun
- spicy noodle challenge: this was also #masochism setting up and eating the noodles ofc but i do love me some buldak so
- exec group photos were funny and i love our merch so
- poker bc i love to gamble w my happiness
- hearing the number of devpost submissions at saturday dinner (68) and helping w judging because damn seeing the hard work makes it feel worth it

anyway, congrats to our lovely winners and thank you for coming or just supporting dsc in general! we wouldn't be able to do this without you <3

stick around in summer term for cxc organizer applications, we're always happy to hear new ideas + make sure to attend next year!!!

okay NOW that the sappy af cxc shit is over, i can skip straight over to quotes since we don't have events during reading week lol:

- I'm also doing stats Lily, let's be gay together
- 中华民族到了!最危险的时候!
- cxc reel idea: kale anthem and slapping us (me pls)
- bro is 5 foot 10 inches (those are two separate measurements)
- next exec social is an impeachment ceremony
- my fellow judy hopps lover don't let judy down !!
- the first year next fall need to stay away from ME

- sorry kale u r 1/5 of a person
- Release the Monica files
- i will be late because my roommate is watching reels on the toilet while im holding it in
- u da real great wall
- You can put bitches around campus
- CxC stands for Cougars x Children
- those hands are rated e for everyone
- age regression time?
- cn deez nuts lmao gotem

if you want to see a discord message like "new exec social idea we all randomly pull up to [y/n] without telling" and see five execs outside your place, maybe consider becoming an exec next term? or like be so dedicated to all our events this term that you're an honorary exec? please it's valentine's, that would be romantic babes <3

finally, to commemorate this loving hacking season, enjoy a drawing of our presidents belting some karaoke (prob california girls)²



UW Data Science Club

1. i know you may have seen both CxC, cxc and CXC floating around but i think CXC looks bad in round sans serif fonts so i'm writing CxC or cxc, screw you design but love you
2. i drew this, this is why they kicked me out of design

GLITCH IN THE AIR(ES)?

ICL THIS IS RATHER BAD, I BARELY GET MYTHOLOGY AND BITCHES SO

6:00 am, February 14th.

As usual, Hephaestus woke up, alone in his bare-walled room. Ready to escape the confines of his room and Waterloo in general, he briefly hopped on his phone when he noticed a particularly alarming email: Aphrodite results were out!

Opening his results and glancing over the girl's Instagram, he couldn't help but ogle at her beauty. Her soft face, her flowy blonde hair, her blue eyes emanated from her selfies. Even in the tagged party and sorority photos, he could always pick her out from the crowd. Frankly, this almost distracted him from the fact that she went to Western.

Western? This can't be. Did he check off the wrong university or something? He checked, and yes, he checked off Waterloo Mech Eng, not anything adjacent to Western Gender Studies. Even her two truths and a lie ranged from her exotic travels, to her first theatre role, to her sleeping in the nude; none of which particularly barely related to him. Nevertheless, he messaged her with his guess.

"i highly doubt you starred as a five year old, even if it's young Cosette."

The message struck Aphrodite rather poignantly, laying on her plush mattress after hours of drinking, singing karaoke and partying for two of her friends' birthdays. She couldn't fall asleep, not with her ex-boyfriend snoring on the other side. As much as she didn't want him over and face the shameful stares of her roommates, he grabbed her body, crying and begging her to stay after six shots, so how could she say no? Besides, signing up for this was a yes to herself. She didn't care about his disheveled hair or the lack of photos he had on his page, she was going to respond, even if that made Ares jealous.

"You're right, I was 4!"

I did really enjoy that role though... hence my theatre minor. What about you?"

"um, I'm in mech eng at Waterloo."

"Waterloo? I thought you'd be from Western?"

"yeah, I thought you'd be from here. how odd."

"Yeah... I don't even know what we have in common either. I've taken one CS course and I'm so confused where this failed, LOL"

"yeah, me too... you are very pretty though, icl"

Aphrodite flushed, a rush of cold air flowing past her skin.

"Thank you!!! 😊 You are pretty cute too... Do you want to meet up some time during reading week?"

"is today okay? might stay a night over at my cousin's in london"

He was truly out of place, being more used to E5 than Instagram at 6:15 in the morning. But what was there to lose if she started it?

"Sure!!! Is 5 okay?"

"yeah... we can go out for dinner, your choice."

"Perfect! Is Molly Bloom's good with you?"

"yeah, didn't know there was a molly bloom's in london too"

"Yeah yeah 😊 See you there!"

She didn't know what she was doing, but his message like comforted her enough, letting her eyes finally fall down. Sometime can change, something will change.



Hephaestus arrived 10 minutes early, as perfectly planned and intended. Despite a good five minutes finger combing his hair, his locks still traveled haphazardly across his slim face, and the best outfit he could build from his clean clothes pile was a gray hoodie and straight dark blue jeans. He tapped his pointers together, staring at his phone on the table every minute or so.

Aphrodite walked in, the ruffles of her maroon skirt swishing with her stride. She scanned the room briefly before staring straight at his fluffy gold hair and catwalked over.

"Hey! Your name is Heph-ae-stus, yes?"

"Yeah, Aphrodite, right?"

"Yeah!"

She slid down the seat, silence from the two bouncing off the walls, as the server rushed over.

"Have you two decided on a drink?"

"Yeah, I'll take a sex on the beach, thank you!"

"Uh, I'll do a whiskey diet, I guess."

He walked away with drink orders and a hope of a conversation in hand. Aphrodite glanced around the restaurant, checking if anyone she knew was there. She twirled the tip of her ponytail and pressed down her cream sweetheart blouse every now and then, while he still tapped her fingers and fixated either on his hands or her nature.

After the drinks arrived, Hephaestus finally built up the courage and declared:

"Sorry I've been quiet, I'm honestly shocked by how mesmerizing you are. I can't help but focus on your sweet, bubbly air."

"Aw, thank you!" she whispered, staining the glass with pink lipstick. "Sorry if I'm a bit off or quiet, I'm a bit anxious."

"That's okay, I guess the liquor will help us, right?" he muttered, swirling the drink before staring at her soft eyelashes.

"God, I hope so!"



Back on her couch, his finger shuffled back and forth on her neck, her tongue slipping past his sweet whiskey lips. Aphrodite laid her bodyweight onto his, which was laying on the dirty cushions, but who cared?

Certainly Athena did, her arms crossed across her chest.

"Aphrodite?"

She unlocked their lips and tilted her head up at her roommate.

"Could you not make out on the couch, especially while Ares is around? You know I can't manage his anger."

"Yeah, makes sense."

Aphrodite shifted her hips off Hephaestus' body as he stared at Athena, eyes wide. The last few hours were a blur of alcohol and intimacy, realizing he forgot about lunch and asking about exes.

Aphrodite pulled him off the couch, and he happily obliged, walking towards the door. She still held onto him, tugging on his forearm.

"Hey, where are you going?"

"I can't, this is not like me, especially for a girl like you. I really like you, but I want to take things slower. I think I should go—"

"I like you too, but I understand. I'm used to going fast and falling hard, I suppose." she grinned.

"I will see you soon, beautiful."

"Yes, boy."

Other than Ares now holding her waist from behind, she was left with just the trace of the man walking away.

"Oh, hold me harder, boy. I'm broken without you."

Dollar Store Person

THE SYRUP

So when she feeds my syrup,
She knows to lift the spoon
And I know to tilt my head
And together we work to get me better

I haven't the faintest idea,
Whether if she lifts first
And my tilt follows
Or if my head begins,
What she helps swallow.

These confusing times
Even so bear remedy to-
Her scoldings and belief
In and for
My labour and pursuit

Of all the sicknesses and devils
That could have brought this bane
She chooses me
The digger of my grave

I fail to utter and defend
My conduct in these trying times,
As shortness of breaths
And painful cries
Have left no space for refutal
Of which the rest, a spoon occupies.

But then comes a moment
Where the accuser, just as the accused
Misplaces her feud
In a hasty endeavour
To resolve if-
the lift favours tilt
Or tilt lift.

Whatever be the order
The spoon that cradles the mouth
Ends its lasting bitterness
And both swords get sheathed
Instead, she draws from nursing
The same comfort
That I, from the syrup's sweet.

Nudist9000



HOW TO FOLD YOUR WRAPPERS INTO TRIANGLES

Those who spend any amount of time around me know that I tend to fold my wrappers into little triangles. I do this for three reasons:

- Convenient and easier than stuffing them into my pockets
- Gives me something to do instead of work
- Can be thrown

And today, I will be sharing the secret of how to do this with you! (I'm sorry editors for the number of images) [Editor's note: respectfully, we are in tears].

Start with your (preferably) empty wrapper (it helps to flatten it). Fold it into thirds lengthwise:



Now fold it 90° in the center:



Now, fold the half of the wrapper that is "under" the fold in the center (the part with the nutrition facts here) up and over the fold, then flip over:



Now fold the other half underneath the center:



Take the side you just folded under and tuck the overlapping part into the center:

My goal is to make the editors want to die.

SHAHABEE



Tuck the other side in as well:



Now you should be able to see that the top triangle section and the bottom have a slot between section. Fold the square bottom part into the triangle:



And once you're done shoving that part in, you're done! Enjoy.



Shahabee

WHY WAS THERE A FOOTBALL GAME DURING THE BAD BUNNY CONCERT?

Bad Bunny we love you so much. That was so incredible. What a gift to this world you are. You are so beautiful, you are so talented. You brought us joy. You gave us good energy. You gave us Lady Gaga. What more could you ask for?

i.a.o: sorry Bad Bunny, but you aren't getting that Grammy back.

BK: I personally would never have my wedding in front of Bad Bunny just in case there was still a chance, but good for y'all.

Weird that they had a football game happening around your show, but what can you do? Go Seahawks, I guess.

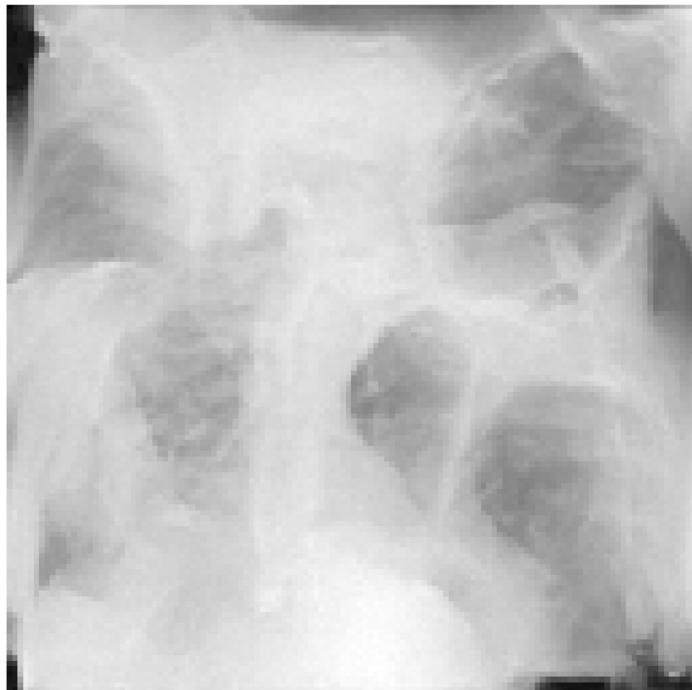
is.all.on & BeesKnees

X-RAYS OF THIN AIR

When I was a bright-eyed undergraduate student, I decided to take a final year thesis course. Excited by all the opportunities and potential research I could work on, I found a supervisor and made my pitch: a diffusion (generative AI) model to remove noise from X-rays. Old X-ray machines sometimes produce artifacts, resulting in images that are harder to analyse. This is a problem especially for low resourced hospitals that can't replace their X-ray machines. I was so passionate about this idea. When I started my thesis course, I spent hours each week reading papers, learning about diffusion models, analysing chest X-rays—more time than I spent on my courses.

Then I started developing my custom diffusion model and training it on images. It takes weeks to train an image generation model, if you weren't aware. I started spending more time training this model than spending time with my friends and family. When I felt alone, I turned to my model, finetuning its hyperparameters and measuring its performance. After training the final version of my model before the deadline, my child was born.

Sometimes, you don't know what kind of monstrosity you've birthed until you see it in the real world. Although the model is only trained to enhance X-rays with some Gaussian noise, you can prompt it to produce images from nothingness. What I thought was a great innovation in X-ray denoising had learned too much, seen too much. I can't explain what I've created. I can only show you how it sees the world:



beepboop

TIMS DONUTS — RANKED

From best to good:

1. Old Fashioned Plain
2. Sour Cream Glazed
3. Boston Cream
4. Canadian Maple
5. Chocolate Glazed
6. Honey Cruller
7. Apple Fritter
8. Double Chocolate

Honestly all of the above are pretty good. Next tier is as follows:

Unlikable to bad:

1. Chocolate Dip
2. Powdered Jelly
3. Maple Dip
4. Vanilla Dip

Brought to you by the ultimate donut connoisseur ☺

do nut



ENTER DIVINITY. DIE NEXT TURN. EXHAUST.

DECK-BUILDER ROGUELIKES ARE COOL

Recently, I have been playing the critically acclaimed *Slay the Spire*, and as a fan of roguelikes, it is interesting experiencing one of the original pioneers of the roguelike deck-builder genre.

Deck-builder card games typically involve drawing cards (which each represent some unique action, condition, or something else of some cost) from a draw pile into a hand, and discarding cards into a discard pile. When the draw pile is empty, drawing more cards shuffles the discard pile back into the draw pile. This system means that players rarely are given the same set of choices at any point in time, without being purely random, by usually guaranteeing that every choice is seen per cycle of the deck. This also lets players strategize around what is currently left in the deck, and balance the odds in their favor by removing or adding duplicates of cards so they get drawn less or more often. Finally, both adding or removing cards comes with both upsides and downsides, as it changes the variety of choices available but also the length of the deck cycle. Often, a tiny deck with most of its cards removed is more powerful than a big deck with a variety of strong cards. There is a reason that the act of “deck-thinning” has a name.

Deck-builder card games also create an interesting system where game mechanics can interact with the generic card object, and thus, what actions you have available. For example, one mechanic might create duplicates of a specific card, while another might move cards from the draw pile directly into the discard pile. This additional axis—the ability to modify the

decision space—makes for interesting strategic gameplay. Do I use what I have right now, or do I gamble to give myself more choices? Can I remove this card in exchange for something else, knowing that I don’t need it later? Should I keep these cards in my hand, or use/discard them for more space?

This also allows enemies to easily interact with your decision space in an obvious way. One enemy might add temporary junk cards into your deck, clogging your hand and lengthening your deck cycling. Another might steal one of your cards, requiring you to defeat them to get it back, without relying on the stolen card. An infamous one might forcibly end your turn after you play twelve cards, so you might need to ration your card usage per turn so you don’t end up only able to use a single card during your turn.

Having your actions be shuffled, but also be a thing itself that can be manipulated, is really quite interesting. This then all combines well into the roguelike structure, through the modifications of the deck over a run (each change not as drastic as gaining a completely new ability, but not as invisible as a small stat increase), the strategic advantages to pass up rewards, the cost of pivoting styles, the variety of and the iteration on the moment-to-moment strategy as the run progresses, and the uniqueness of the resulting builds of each run.

Roguelike deck-builders are pretty cool.

Blasphemy

A CREATIVE EXERCISE

Can I still be creative?

As I have continued through school, I find that I have had less and less time to be creative. I don’t read nearly as much as I used to, I don’t really write anything that isn’t scientific other than **mathNEWS**, and I don’t play an instrument. In high school, I always used to doodle fictional street maps of cities to the point where I would check out of lectures (It’s no wonder I ended up doing a geography degree). However, through online school I grew out of this habit, and realized I was now spending thousands of dollars to hear these lectures.

I want to have more intentional moments of creativity in my life. So I think I am going to bring these maps back, not for anyone else but myself.¹

I call this one Phillipsburgh. It was established in 1817 and has a population of 45 000. Its municipal bird is the downy woodpecker.



Next, I think I might try singing.

Lars Nootbaar

1. Excluding this one I guess

A LOVE LETTER TO LOVE LETTERS

Dear reader,

I am delighted to be sitting down to write to you once again.

Yesterday, while I was working, YouTube's autoplay decided to jumpscare me with *Elliot's Song* by Dominic Fike from season two of Euphoria. This song appears in an awkward scene where one problematic drug addict, Elliot, serenades another, Rue, for an agonizing three minutes and twenty-four seconds. In a series that already struggles to handle many difficult topics, this is far and away its most cringeworthy moment.

The listless stare Rue gives Elliot halfway through the song conveys a dissociative coping response more than an appreciation for what's happening. And even as tears well up in Zendaya's eyes, it's hard to believe that her character is emotionally moved as much as she is upset to be standing where she is. Dominic Fike is not a good actor, and the scene does little to showcase his strengths as a musician. The scene stretches a fragile emotional beat well past its breaking point.

Yet, beneath the awkwardness, there is still something quite endearing about it. Even just with the sentiment that one person might care about another to pen them a song. If you've been (un)lucky enough to be on the receiving end of one, you probably understand what I mean. The gesture is sincere, even when the execution isn't. Hell, if Dominic Fike personally wrote and sang a song to me, then I might feel a little differently.

The esteemed former UofT (bleh) professor, Marshall McLuhan, famously stated "the medium is the message," but with love letters, I think he's wrong. The message is the message. Whether it's a song, chocolates, or words on paper, they can all tug on the heart-strings in the same way. As a hobbyist writer, though, it brings me so much joy to speak to someone in the privacy of an enveloped message.

I love the ritual. Before a single word is written, there are decisions to be made. "What paper?" I tear out some lined A4 notebook paper, "Will that look lazy, or spontaneous? Whatever. This idea can't wait for a better circumstance—Where's my pen? Is this pencil non-committal?" I'll rush to get an idea down for a card. "Your eyes..." trite. "I love..." holy forward. "I had so much fun..." god, maybe I didn't give Dominic Fike enough credit, it's hard to be sincere and not feel disgusting.

There are other times when I lift my hand from the page and think I'm Shakespeare. I sometimes want to erase a sentence and keep it for myself. A true mark of a writer, as the art form is inherently egotistical. I often wonder if the recipient can tell which parts are which. Can you tell where I've gotten brave? Can the eraser marks tell you where I've hesitated? It might be obvious where I write fast or hard, where the crushed graphite smudges the periods at the end of a particularly sentimental sentence.

Then you seal it. Once sealed and handed off, the words aren't yours anymore. You often won't be there to gauge a reaction, to take back an inadvertently backhanded compliment or to correct a glaring spelling error. Both of which I've embarrassingly written on occasion. It's hard to trust that your words will hit the way you want them to.

I wonder about this too—I've seen the letters Napoleon Bonaparte wrote to Joséphine. If the French monarchy got their hands on these, would they have found them sweet or thought less of the great general? Would he have been able to command an army if the soldiers had intercepted his note saying "When men annoy me, when I am ready to curse being alive, I put my hand on my heart; your portrait hangs there, I look at it, and love brings me perfect happiness... Oh, my adorable wife!"

Maybe they would have mocked him. Maybe they would have used it against him. But he wrote it anyway. It's arrogant to think your feelings matter enough to commit to paper—that they're worth any attention. But when someone writes a declaration proudly waxing about something they care about, I'm inclined to listen. I thoroughly enjoyed reading Napoleon's words.

I'm reminded of what might be my all-time favourite love letter. The song Moon River. A song Audrey Hepburn recorded for the movie Breakfast at Tiffany's. During post-production, a Paramount executive didn't want the fire escape scene where the song appears to be included, stating it slowed the film down too much. Hepburn screamed at him to take it out "over my dead body." She had her way. Moon River would go on to win two Grammys and an Oscar, immortalizing the scene and the song.

Years, and many alternative covers later, Frank Ocean would release his version as a surprise on Valentine's Day 2018. I stayed up late that night and was one of the first on Earth to hear his ethereal lo-fi rendition of what I didn't know was a classic song. I love the song, but I think it stuck with me until now because of where I was at the time. I'd met a girl, and we had a date planned for the next day. I remember feeling unsure and nervous, maybe excited, all the classic stuff on your first date with your first love. I went to sleep that night thinking of the two of us drifting, off to see the world. The moonlight shining through my curtains laid something like a river on my floor. I closed my eyes, fell asleep, and didn't stop dreaming. The past eight years have been more than special. Moon River and me.

Anyways, to close this out: I hope this is not the only letter addressed to you this Valentine's Day. In the unfortunate case that it is, then I hope it finds you safe and in good health. I'll talk to you soon.

All the best,

FinallyToby

HOW NOT TO LOSE YOUR MIND IN UNIVERSITY

OR WHAT TO DO WHEN YOU INEVITABLY DO

As someone who is graduating in a bit, here are some things that I would tell my past self. I hope that you all find it useful too.

- Try your best to see education as learning and not grades. Lowkey, I still struggle with this one, it's hard. But, have you ever looked at a friend's work and thought that they were studying the most interesting thing ever? And then you look at your own, and it feels like a chore, making learning feel like an obligation and not something that you *want* to do. Try it for a day. Try learning for fun.
- Stretch!!!! OMG, stretch. Micro movement can help you focus when you're studying for long chunks of time. My back used to get so stiff and it would piss me off all the time, but since I started stretching regularly, this hasn't been much of an issue anymore.
- Stay up late with friends sometimes, even if you have an early morning class the next day. Late nights with friends are to be cherished. The best part of university, in my opinion, is getting to live with your friends, as that's not something you get to do often in life.
- That said, make sure not every night is a late night. Getting a good amount of sleep will help you out in so many ways. Plus, it will make the late nights you *do* have feel special.
- Do you have a "thing?" Do you like music? Great! Like dancing? Great! Gaming? Great! Try to have a thing that you do to separate yourself from school and that can serve as a stress buster.
- Talk to people in your program and ask them how they study. You can learn a lot from others, and you can never go wrong with asking for advice.
- Ask yourself "if I could meet up with myself from right before I started university, what would I tell them?" as a way to see if you're moving towards what you want. Sometimes we get caught up in the stress of it all and lose ourselves for a while. It happened to me. During my second, third, and first half of fourth year, I lost my energy and enthusiasm to the constant stress about getting everything on my to-so list done. Over the past year, I've been trying to "defrost my personality" and get back in touch with the things I enjoy and with what is really important to me.

Glhf!

theenergizerbunnysometimes



THE OFFICE

I feel a wave of cold lucidity wash over me. I can only wade through this swamp, needlessly, to no end. I will never get there again; I have never even made an honest attempt at it. It's too hard, and I will never be strong enough.

I lost the ability to move a long time ago, but it feels like only minutes have passed. My arms hang limp at my sides. Not even the dread of what is to come is enough to move me. The place and time are both wrong.

I am at home, but I can tell it's not the same. The cement is chipping, the lights are flickering, and the TV is broken. I destroyed it all from thousands of kilometres away, but I'm still forced to look at what I have done.

Not even here. Not even now.

nazz

ALWAYS LOOK UP

I am, and have always been, very paranoid. So what? Look up, right now. If the creature on the roof is not there, then you should read the rest. If it is, you should've read this earlier. I always look up when I enter a room. I am very afraid that there will be something, hanging there. It will attack me.

Nothing has been there yet. So I keep looking up, and I almost fantasize that there will be a roof leech or pale crawling creature or skinwalker or some SCP or another waiting to grab me or something. But nothing is there, and nothing ever comes. I dream of shrouded individuals who climb on walls and roofs with strange lengths of quantities of limbs that wait and seek to pounce. Most nights, between around eleven PM and two AM, I see my breath when I am outside. Can you identify who is a human? They have visible breath from the water vapour. The creatures do not. But maybe, one of them has gotten into your building. So keep looking up. Some day there may be something. And on that day, you will not be the one to be grabbed, or eaten, or simply scared. Because someone else will have failed to look up. But not you.

Always look up.

Matthew mathNEWS

Idea: we reprint an issue in dark mode.

AN EDITOR DESPERATE FOR IDEAS

I DON'T SUBSCRIBE TO ANTHROPIC PRINCIPLE

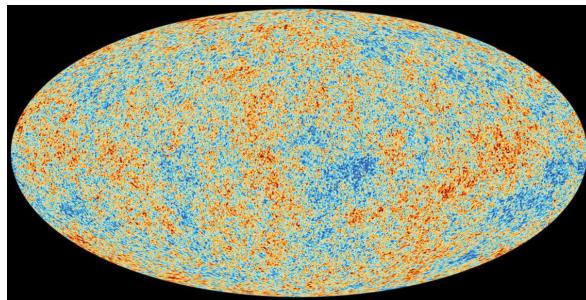
MIMI - SCIENCE (FEAT. KASANE TETO SV)

I finished playing a visual novel called *Z.A.T.O. // I Love the World and Everything In It*¹ and lingered in my thoughts. It was a sci-fi story happened in 1986 USSR era. The overall vibe of this game is kinda denpa. I want to write about it but cannot put much thought into words. In short, just like the title says, it is a confession to the world and everything in it.

Z.A.T.O. is a direct transcript of *З.А.Т.О.*, which stands for Закрытое Административно-Территориальное Образование, meaning Closed Administrative Territorial Formation. In other words, closed city.

FERRY

When reading the monologues of the protagonist, it reminded me of my younger self. I liked reading books about theoretical physics and imagining on the how the universe evolves. Driven by curiosity, I wanted to learn the mechanics of this world or the “source code” of it. It is like me learning to play Minecraft but not quite. Between here and the cosmological event horizon, I can observe the history of the universe like a hologram of stars and nebulas with the cosmic microwave as background.² Consider it as a signal. It is kinda cute. If I were reincarnated in the world of StarCraft, I would like to be a Protoss observer. I can go stealthy and look at it as long as I want. The universe is so beautiful (thank you!). It is so vibrant and well-structured. We even got a beautiful moon with perfect solar eclipses. I am grateful that I can observe you.



Between the vast hologram and the microscopic view of atoms, scientists thought of many iterations of theories to comprehend them. General Relativity and Quantum Mechanics are the modern staples. Albeit their incompatibility, they work perfectly in their own fields. It is kinda cute (Thank you scientists!!). It might be impossible to come up with a *theory of everything* due to the derivatives of Gödel's incompleteness theorems, but unpredictability and incompleteness are also part of this world. It leaves room for our imagination. I have often wondered what is beyond the big bang, the spacetime singularity, albeit its own definition that denies this thought. Singularity exists at a junction between general relativity and quantum mechanics. It is beautiful. The ultimate unobservable.

I like *Z.A.T.O.* as it tells a meaningful story. Sometimes I feel that there is too much cynicism in real life. The surroundings is like a dark forest. There is nothing wrong being skeptical

or self-centered. We need criticism to maintain democracy, freedom of speech and a balance of power in society. But hey, kindness is also the foundation of the society, right? With kindness we foster trust. With trust we foster love. As a human, I shouldn't feel entitled. In the vast universe, we cannot just be the only intelligent, sentient lifeform. The world is so kind to allow observers to see itself. Our existence is the world's love language. So embrace others like a miracle, they are unique, sentient beings just like you. I love the world and everyone in it.

eralogos

1. <https://nopenamaman.itch.io/z-a-t-o-i-love-the-world-and-everything-in-it>
2. https://www.esa.int/Science_Exploration/Space_Science/Cosmic_Microwave_Background_CMB_radiation

SONG REC

akatsuki no kodo – unchain

schrodingus

ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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WOULD YOU RATHER

WOULD YOU, OR RATHER

WOULD YOU RATHER

lettuce be the only thing you need to survive for 10 years, but that's all you can eat, and gain the respect of the rabbits

OR

live in a cold igloo in the snow for a 10 years, but gain the respect of all elks and caribou

WOULD YOU RATHER

go fishing everyday of your life but only catch one fish a year

OR

never hear the words "I love you" ever again

WOULD YOU RATHER

weekly one hour quizzes

OR

weekly 10 question assignments

WOULD YOU RATHER

end homelessness

OR

a hotdog

WOULD YOU RATHER

have a chicken in a suit follow you everywhere, secretly watching over you and keeping you from harm like a guardian angel

OR

live with an army of domesticated mathematician racoons who only eat crumbs

WOULD YOU RATHER

have unlimited bacon and no games

OR

games, unlimited games, but no games

WOULD YOU RATHER

murder 8 people

OR

double it and give it to the next person

WOULD YOU RATHER

would.. would you.. would would you but rather

OR

rather would you... would but you would rather

WOULD YOU RATHER

a pigeon that announces all your life decisions

OR

a possum that appears silently, ever so silently, behind you whenever you make a mistake

WOULD YOU RATHER

be force fed an apple by an small garden gnome with a red hat every morning

OR

get scurvy

WOULD YOU RATHER

automatically know the determinant of any matrix

OR

automatically find partial fraction decomposition for any rational expression

WOULD YOU RATHER

be stuck in purgatory

OR

look for a spot in dc library during exam season

WOULD YOU RATHER

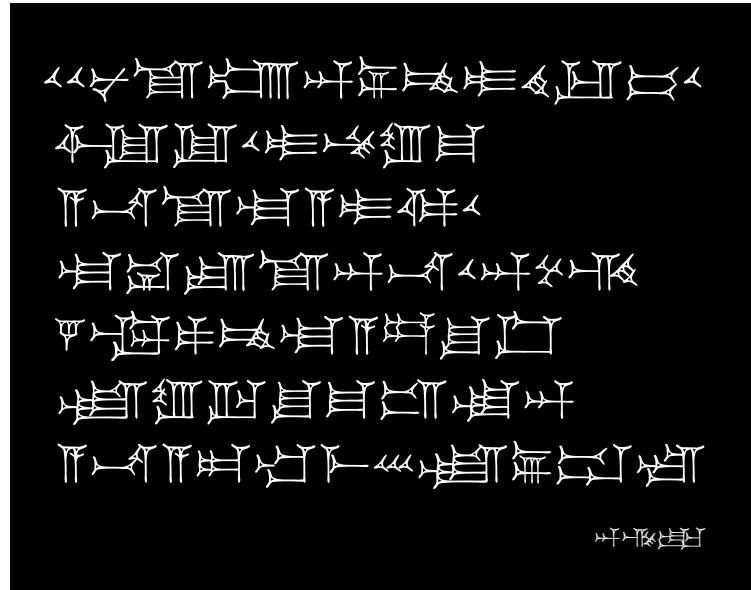
be anywhere near a smallmouth bass

OR

die

lmk

smallmouthbasshater



profQUOTES

ACTSC 372: BEN FENG

“ When you do quantitative finance, you will learn about alphabet soup.

AMATH 353: FRANCIS POULIN

“ [Student: asks if the proof is in the notes] No, because I wrote the notes, and I don't know how to do the proof.

“ I remember my course in analysis in undergraduate, and I learnt that there were different sizes of infinities, and it blows my mind to this day.

“ I'm physically here, maybe not entirely mentally here.

“ Giving up is an option, but I'm hoping we won't do that.

AMATH 373: GRAEME SMITH

“ About 10% of my papers are published purely out of spite.

“ Feel free to connect with me on LinkedIn. I try to make that place more of a cesspool, but people there are just too positive.

“ The midterm will be made using agile product development methodology.

“ There is no time operator, you could say I was capping.

“ That's a brainworm that I have been infected with, by late stage capitalism.

“ There's a whole subcategory, and I think these people are mostly on Reddit.

AMATH 445: MOHAMMED KOHANDEL

“ Suppose you have a patient with temperature... well I want to say 50°C but then the patient would die, I'm sorry to the patient.

BU 405: REDWAN SIDDIQUI

“ [Student: can you explain the difference between performance and conformance?] Yes. Think about it. There is performance, and there is conformance.

“ I hope and pray that you won't have to miss any more classes moving forward.

BU 413: GERRY RAMOS

“ I've fought against the CRA before. I enjoyed it.

“ The CRA official seemed like a nice guy. He came to me and was like, “hey let's just settle.” I said nah. You brought me all the way out here.

“ There's nothing in the income tax act saying you can't employ a kid.

“ Marriage is a contract. Maybe I should have been more aware of that.

“ The child can literally be a child or an adult child. You can even apply it to a child who is a minor.

BU 423: DIEGO AMAYA

“ They are buying the dip.

BU 431: SARITA PERSAD

“ I'm sure you guys are all braindead.

CO 463: WALAA MOURS

“ Suppose we wanted to minimize f over C , but also assume that f is cute.

CS 136: CAMERON MORLAND

“ Imagine you're playing SimCity in 1992. If you have 327 police stations, it will cost this many dollars. If you have 328 police stations, each one will cost 100 dollars, which will roll over and become a negative number, so they will pay you to build police stations. You can get infinite money this way.

“ What's a number? [Student: 8] Yep. 8 is definitely a number.

CS 146: BRAD LUSHMAN

“ Now, I caution you against the urge to be excessively cute.

“ I'm sure some of you are having... troublemaker thoughts.

CS 240E: ARMIN JAMSHIDPEY

“ Some people say this module is the hardest of CS 240E, but it's not going to be this term because I will teach you something harder.

CS 241: GREGOR RICHARDS

“ c c c c c c c c c c

“ I genuinely don't know when anything is due, my brain melted.

“ I'm never wacky, I'm a very professional and non-wacky individual.

“ Faeries aren’t real, so let’s solve this faerie problem. We need the oracle.

“ The first L represents some casual racism.

CS 251: ZILLE HUMA KAMAL

“ Have you started A2? No? Ok, I’m praying for you.

CS 442: BRAD LUSHMAN

“ The Nobel Prize is like the Turing Award for science.

CS 451: DAN HOLTBY

“ Ten is less than infinity, as all things are.

CS 452: MARTIN KARSTEN

“ I personally think that cryptocurrencies are the bane of the fucking universe, so I don’t want you to be doing that.

CS 479: JEFF ORCHARD

“ So say, if your Neural Network has a stroke and dies.

ECON 323: MIKAL SKUTERUD

“ *[While performing linear regression on the impact of a tax credit on fertility rates]* It’s not the Data Generating Process, it’s the Baby Generating Process.

MATH 148: ALEXANDRU NICĂ

“ *[to a student leaving class in the middle of lecture]* Don’t forget to hug your friend! Maybe do it twice before you leave!

“ You did not see the movie with the groundhog, no?

MATH 249: JIM GEELEN

“ Are you happy? Not really, but you will be happy in the future, and that’s all that matters.

“ Of course I will spell “neighbour” with a ‘u’ because we’re at war with the US.

“ If I can draw it then I can go outside and draw it on the sidewalk. If I’ve drawn it on the sidewalk then I’ve drawn it on a sphere.

PMATH 352: JASON BELL

“ Doesn’t it make you feel alive when you write LaTeX?

“ I’ve heard a lot about this Typst thing. Is it a Gen Z thing?

“ Who here is a hater? It must be fun being a hater. You just hate people?

“ Now, I’m not going to prove the Jordan Curve Theorem because, like, come on.

“ I think it’d be cool to be like, an evil hater, for Halloween.

“ In a different universe, if I were a hippie, and I’d say, “yeah man, that’s the end of the proof!”

“ I can read people’s souls.

PMATH 945: JASON BELL

“ I’m really going off topic. We’re very behind. I guess there’s no point trying to catch up.

PMATH 454: NICO SPRONK

“ Fishies are good for bears.

“ I’m integrating, I don’t give a fuck.

PMC PROF TALK: PENNY HAXELL

“ You may suffer rejection, but do not despair.

“ Resist the urge to be polite.

STAT 341: ALEX STRINGER

“ Snakes don’t have to be monotone.

“ I didn’t realise when I started talking that I had an actual answer to your question.

“ Huber was a person who’s name was Huber.

“ Thank God I no longer work. I only teach.

“ I know what a banana looks like.

“ In math it’s called a “step size Θ .”. In machine learning it’s called a “learning rate Θ .”

“ That was funny. I would like to appeal your lack of laughter. I would like to formally appeal.

“ I’m gonna go cry in my office while I check the hockey score.

Can we make a
mathNEWS issue that
blinds you a day later?

ABSTRACTED, mathNEWS EDITOR

MR. BEAST IS PERFORMANCE ART

Mr. Beast is the most popular entertainer on the planet—he's got international appeal and completely cornered kids' entertainment. However, watching his stuff, you feel incredibly strange—the same fight-or-flight response you'd get from the uncanny valley of a CGI human.

That's because Mr. Beast's main goal is to "make the best YouTube videos,"¹ not the highest quality, best produced, or most artistic, but the best YouTube videos possible. His channel has almost no artistic value at all, but paradoxically, in attempting to craft perfect YouTube videos, I believe he's created the world's biggest performance art.

I am obsessed with watching his videos in a primal way, where I do kind of want to see what people will do to win a Tesla, and through a metacontextual lens, where I'm baffled that he exists as a person who doesn't seem burdened by any sort of morality. First, Mr. Beast's videos are not the Great Gatsby—you won't find an in-depth critique of vacuousness of extreme wealth. Instead, you'll find it playing out in front of you. When someone "eliminates" a competitor to get closer to a grand prize, that says about as much about human nature as Lord of the Flies, just not as explicitly.

Even though his videos are mind-numbingly brainrotting, they also have the same level of meticulous craft as any artist. Every frame is laboured over, except the intent isn't to say something about life, love, and humanity, but to increase watch-time retention. But Mr. Beast will occasionally use his contrived scenarios to "say something about the depravity of humanity." He'll put two people in a box for \$5 million, say they can't share, and when one stabs the other in the back he'll say "this says a lot about people." NO IT DOES NOT, YOU COULD GIVE THEM BOTH HALF! YOU MANIPULATED THE OUTCOME AND YET ACT SURPRISED THEY FOLLOWED IT!

Then, you watch him in any instance outside of his channel, and you'll realize he is not a compelling figure at all. He's awkward, but not in a funny way; unsympathetic, but not in a stoic way, and completely BORING. At last year's NBA All Star Games, Mr. Beast hosted a 3-point contest between Damian Lillard and a random contestant. Without the frenetic, high-octane editing, the thousand sweeping drone shots, and random booming sound effects, Mr. Beast is naked. He's less engaging than paint drying. In the latest season of Beast Games, where they had a tie-in with Survivor, and Jeff Probst co-hosted the episode with Mr. Beast. Jeff was calm, cool, and charming; Mr. Beast was yelling and seemed out-of-control. Comparing Mr. Beast to Jeff would be like comparing a Lexus to a Rolls Royce.

Mr. Beast the person is boring, but Mr. Beast the entity is a curious enigma. How can you feel fulfilled making brainrot for toddlers? Your entire schtick is "helping real people" yet you enact the greatest perversion of charity ever. What does it mean that the most famous person on the planet isn't an auteur like Paul Thomas Anderson or Björk, but an almost

face-less entity who creates scenarios befitting a 20th psychological experiment before we discovered ethical review.

For god's sake, he watches Squid Game, a passion project planned over decades as a critique of capitalism artificially creating scarcity to force conflict, and he thinks "what a cool concept, this will make a lot of money" without a SHRED OF IRONY. Mr. Beast is the world's first human AI-generated content.

The Beast's videos are absolutely brain rot, but when you try to analyze what it means that he is the most popular creator in the world, that millions of kids around the world follow him, that kids have him as a role model over just about anyone else—it says a lot about shape we're all in today.

iceBurj

1. <https://simonwillison.net/2024/Sep/15/how-to-succeed-in-mrbeast-production/>

THIS WEEK'S VOCAL STIMS

I've lost the ability to have a normal conversation. Anything anyone says enters my mind, is connected to a strange phrase, and I simply MUST say it. 90% of my contributions to conversations these days are vocal stims, and I'm not sorry. Here are some favourites as of late:

- Speak on it. *finger claps*
- Coca cola? HELLO.
- This is true!
- Where's your gratitude attitude?
- [voice of alfie from Bridgerton] SOPH-EH
- Shalom, bonjour, hola, and hello!!!!
- Split peaaaa soupaaaa
- [the singing transitions from Hannah Montana]
- 1, 2, 1, 2, 3, release 'em
- Period. Tove lo!
- Do not come to my town.
- Okayyyyyyyyyy, lets go
- Would you? Or rather?
- I love to tour. I go through hell touring.

One of my great grandfathers was known for saying every single thought that entered his head, including reading out every road sign he saw while driving. He simply had to share what was on his mind, even if others did not ask, and I relate very deeply to that.

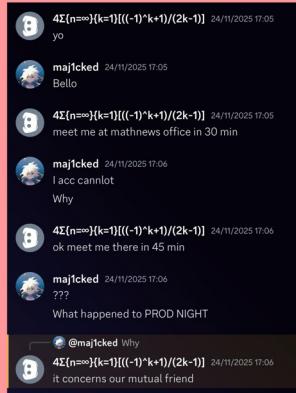
BeesKnees

SHITTY VALENTINES I MADE WITH PAPYRUS FONT

i am madly in love with you
and if you don't return my
feelings i will hold an
editor hostage until you
do. hey, if it worked for
the mastHEAD and
mathASKS surely it'll work
for this too.

to:
from:

mathNEWS 159.6 NOVEMBER 26, 2025
YOU'RE TELLING ME A MAST GAVE THIS HEAD



i don't need aphrodite to know
that we're a perfect match ❤️

APHR^ΩODITE PROJECT

to:
from:

i'm too much of a coward to confess my feeling to
you directly so i'm making a mathNEWS article do
it for instead. hey ;)

to:
from:



will you be the 6 to my 7 ❤️



to:
from:

ALL MY MATH COURSES ARE OR HAVE BEEN BULLSHIT

Algebra is bullshit because there's a million theorems that are obviously true and the results are really nice and exactly what you want, but the proofs are two liners where the idea is always something random and ad-hoc. Analysis is bullshit because the proofs are always some kind of setup that comes out of nowhere and then a bunch of inequality manipulation that somehow gives the result you want (and I even think of myself as an analysis enjoyer). Combinatorics and graph theory are bullshit because the proofs always feel like some kind of hand wavy stuff and if you're lucky the grader won't dock any marks for it. Statistics is bullshit because of so many reasons; what the hell are degrees of freedom? It just feels like

something you come up with just because it's a convenient idea, but no one can explain why exactly it has the effects it does, which is how most concepts in statistics seem to go. Optimization is fine for now, but it's on thin ice.

I think the solution is to drop out.

hyperlynx

ℳ ⊂ ⋄ λ ∩ ∈ ω ≤

TOO MANY COOKS AND THEY ALL HATE EACH OTHER

THE REAL REASON THE EGLINTON LRT TOOK SO LONG

Many people think the Eglinton LRT's story begins with the official groundbreaking in 2011. But this story really begins all the way in 1985, the first time that the City of Toronto¹ began seriously considering a plan to build some sort of transit line on Eglinton Ave., a major street running east-west in the suburbs north of Toronto's downtown core.

Debate over whether this line should be a busway or a subway only ended in 1994 when everyone finally agreed on how to fund this brand-new subway line. Unfortunately, in 1995 there was a change in provincial government, and the newly-elected Mike Harris abruptly cancelled the project—*after* they had already started construction.

In 2007, Toronto Mayor David Miller proposed an extremely ambitious roadmap to reshape public transportation in Toronto, which included the revival of the Eglinton subway as a light rail transit (LRT) initiative. So, of course, the next mayor—the notorious Rob Ford—immediately cancelled it on his *first day in office* in 2010. Instead, he proposed bringing *back* the old subway idea from the 90s. It's this version of the project that finally broke ground in 2011, with an expected opening date of 2020.

But don't worry, the drama isn't over yet! In 2012, City Council voted to undo the changes that Mayor Ford had made to the plan, which then reverted back to Miller's LRT idea—even *after* construction had already begun.

If you're thinking that these constant changes in direction probably damaged the Eglinton Line's momentum, you would likely be right! Unfortunately, shifting requirements and indecisive leadership wouldn't stop once the political jockeying ended.



It's time to introduce the three main characters of this story.

First is the Toronto Transit Commission (TTC). The TTC is wholly run by the Toronto municipal government, and by 2007, was responsible for the four subway lines, as well as all buses and streetcars, within Toronto city boundaries—all of which they had planned and designed from scratch.

Next is Metrolinx, a *much* younger agency created by the Ontario government in 2006 to manage transit across the entire Greater Toronto Area (GTA). This was one of Metrolinx's first new projects they would manage, so some growing pains were inevitable.

Finally, there's Crosslinx, the consortium of engineering firms that Metrolinx hired to not just build the line, but to design and even fund construction for the project in exchange for more control and financial interest in the end project.²

These three entities, in theory, had a clear division of responsibilities. Metrolinx would design the line, Crosslinx would build it, and the TTC would operate it. But in practice, each agency was at each other's throat from the very beginning to the very end.

It's important to understand that the TTC had, for literally over a hundred years, been used to designing and building new transit lines from scratch. Metrolinx suddenly butting in to take control of the design and building felt, to the TTC, like the province was trying to step on their toes. The feeling of mistrust and antipathy would widen over the course of the project, as the TTC felt increasingly sidelined in its own city.

The TTC publicly declared as early as 2012 that they believed the project would probably be late. It took them eighteen months to give Metrolinx permission to start work in existing subway stations, insisting on adding protections for increasingly improbable outcomes.

At the same time, Metrolinx had a very hands-off attitude to Crosslinx—an attitude they would live to regret. Crosslinx would sue Metrolinx *twice* during construction, claiming that they had not received the support or resources they needed from the province and therefore they needed to delay the opening of the line.

Crosslinx's intentional public embarrassment of Metrolinx damaged that relationship beyond repair. Metrolinx began to take a very hardline approach during any negotiation with partners, trying to squeeze concessions out of them and using ambiguous contract language to weasel their way out of paying the promised amount.³

The end result is that each of the three agencies kept trying to push blame for emerging issues onto each other, instead of taking any responsibility for them, let alone trying to fix them. These "partners" acted more like rivals, each trying to set the other two up for failure so they would take less blame for a transit project which had already become a reputation-destroying debacle.

But while all parties share some responsibility for this fiasco, in my opinion, one party bears more responsibility than others.



Remember what I said earlier about the point of Metrolinx? Well, there's another, more cynical reason they may exist—so the Ontario government can direct transit projects while having a convenient shield that distances the elected politicians from the problems on the projects.

The real reason Metrolinx let Crosslinx have such a long leash was that they wanted, as much as possible, to not appear to the

public like *they* were responsible for any delays. Of course, it's this attitude which ended up *creating* delays in the first place.

In 2022, a public inquiry was released on Ottawa's LRT project, the O-Train, which went through a similar construction hell. This report was extremely humiliating for everyone involved. While this wasn't a Metrolinx project, they seemed to be watching the public inquiry closely—not to avoid similar construction problems, but to avoid similar public embarrassment.

Metrolinx went completely silent on any possible opening date updates, which (according to leaked documents) was at the direction of the province,⁴ presumably because the electorate is more sensitive to blown deadlines than no deadlines.

And, wouldn't you know it, despite the province initiating the review into the O-Train, Premier Ford now seems to think a public inquiry into the Eglinton fiasco is unnecessary. We may never know the full story of *what the hell happened*

here because Ford wants to avoid accountability when it's *his government* being held accountable.

As long as the main priority of Metrolinx is to shield Doug Ford from embarrassment, we're not going to build transit like we need to in Ontario.

Dick Smithers

1. Well, at that point it was the Toronto Metropolitan Area, but that's a whole other story.
2. In theory, this is supposed to save taxpayers money and encourage the firms to come in on time and under budget. Put some very big emphasis on *in theory*.
3. Of course, this led to many firms not working with Metrolinx, or jacking up their prices out of the reasonable suspicion that the province would try to screw them somehow.
4. This is still happening, by the way. Almost none of Metrolinx's currently under-construction projects have public opening dates. They're building new LRTs in Mississauga and Hamilton *right now* and the public has *no idea* when they might be done.

HOW MUCH SHOULD THE PAY IT FORWARD ORDER IN I THINK YOU SHOULD LEAVE COST?

In season 3, episode 3 of *I Think You Should Leave* with Tim Robinson, a skit is featured in which Tim Robinson's character attempts to massively profit from a pay it forward chain by trying to start one, then quickly coming back around the drive thru to order "55 Burgers, 55 Fries, 55 Tacos, 55 Pies, 55 Cokes, 100 Tater Tots, 100 Pizzas, 100 Chicken Tenders, 100 Meatballs, 100 Coffees, 55 Wings, 55 Shakes, 55 Pancakes, 55 Pastas, 55 Peppers, and 155 Taters," which came out to a total of \$680. However, as you may notice, the cost makes no realistic sense given that there were 1205 items that he ordered, meaning an average cost of about half a dollar per item. As such, I am here to do the (very unscientific) research and math to find out how much this order would cost in real life.¹²

Assumptions made for this research are as follows:

- Prices must come from fast food restaurants unless unable to (you'll see why I might not get a fast food restaurant for all foods)
- Item must be the largest size unless otherwise noted (this does also mean the pizza is a full large pizza and not just a slice)
- Unless completely unbelievable, items will be literally sold as single units (i.e. 55 fries will mean 55 boxes(?) of large fries because there's no tangible way someone is selling 1 single fry, while 100 tenders will literally 100 individual chicken tenders and not 100 boxes of 5-piece tenders)

Item	Price for 1	Running Total	Item	Price for 1	Running Total
Burgers	\$3.50	\$192.50	Meatballs	\$2.00	\$3,830.00
Fries	\$4.50	\$440.00	Coffees	\$2.50	\$4,080.00
Tacos	\$3.00	\$605.00	Wings	\$1.50	\$4,162.50
Pies	\$2.00	\$715.00	Shakes	\$5.00	\$4,437.50
Cokes	\$3.00	\$880.00	Pancakes	\$5.00	\$4,712.50
Tater Tots	\$4.00	\$1,280.00	Pastas	\$7.50	\$5,125.00
Pizzas	\$20.00	\$3,280.00	Peppers	\$3.00	\$5,290.00
C. Tenders	\$3.50	\$3,630.00	Baked Taters	\$3.50	\$5,832.50

As shown above, the total cost is \$5832.50. I had to consult the prices from about seventeen restaurants of various types of fast food to get my best estimate, including two that aren't fast food restaurants and a Costco (who the fuck sells meatballs in fast food and what fast food restaurant sells peppers?).

Honestly, for the price that was shown in the skit, I would've been happy paying just \$680 if I was shown how much it would've actually cost. Hell, I would tip the employees the remaining amount because holy shit you got a customer for life with those prices

fingersinsockets

1. Important to note: What the fuck kind of fast food restaurant serves this much of a variety of things??? Who serves tacos AND pizzas??? Pasta??? And a breakfast menu??? Additionally, none of these numbers are purposely inflated for the total to look big, fast food restaurants sometimes ARE REALLY that expensive.



ALL ROADS LEAD TO PALANTIR

Last summer, I had a co-op at a company that sold quality assurance tech directly to Lockheed Martin. I crashed out pretty hard. I remember asking those who worked there how they were okay with this, and their response was to shrug their shoulders and say “it’s inevitable,” like that was a sufficient answer.

I’ve recently landed a full-time job at an AI B2B SaaS company (yay!) that, once again, sells partially to defence contractors (not fucking yay!). It’s a dumber, more distant product this time; we’re closer to selling toilet paper than bullets. But the defence contractor contribution remains.

Is it really inevitable?

Lemma: Any investor-owned company will never deny a client on moral grounds.

First, proof by contradiction. Assume a company decides not to sell to some client on ethical grounds. Companies are owned by their investors, who, in almost all scenarios, are driven solely by profit maximization.

If investors find out that the company is leaving money on the table by arbitrarily denying clients, they’ll direct the board of directors to prevent this; it does not profit maximize. The board will direct executives, executives will direct employees, and eventually, the one responsible for denying the client is either convinced otherwise or replaced. Then, the company ultimately takes the client.

Assume instead that one of the leaders in that chain is responsible for the decision. The ones higher in the chain can simply replace them. If the board decides to support not selling to a particular client, the investors can replace the board. The company takes on the client in the end.

It doesn’t matter what route they take. No company can turn down a customer, no matter how blood-soaked their dollars may be.

Lemma: Any sufficiently generic product has military applications

A business doesn’t need to be an arms manufacturer to sell to the military. The military is, from a certain point of view, an organization like any other. The military cannot function without toilet paper. They need to be able to cook meals. They need to buy pots, lightbulbs, and clothes irons. They need cloud storage as much as any other organization, and they need to be able to file expense reports.

This gives any business that sells to other businesses an opportunity. Economically, the military and its contractors are just another B2B client.

Corollary: Any investor-owned company will never pass up an opportunity to sell to the military.

Proof trivial by the above. If your organization has a product, with hungry investors, it has no choice but to sell to all potential clients, military included.

Even if you don’t sell to the military directly, simply sell to Palantir, Anduril, Lockheed Martin, or any other military contractor; they’re relatively easier to sell to, and they still let your business do its God-given duty of feeding the military industrial complex. Thinking of refusing to sell to these businesses? Remember, the shareholders *will* replace you.

Theorem: either no one should build any general-purpose product, ever, or, all our works are soaked in blood.

Three million years ago, a well-meaning man named Glub stuck a rock on the end of a stick, and invented the first shovel. He hoped to speed up the rate at which his clan could dig holes; a pivotal activity in his time. It wouldn’t have taken long before someone realized, however, that a shovel makes an excellent weapon. The shovel gets its first kill. Glub becomes accessory to murder.

The world today relies on general-purpose products—cables, cloud computing, semiconductors, plastics, and more. In software, we all rely on general-purpose SaaS products from cloud providers like Amazon Web Services (AWS).

Infrastructure like AWS is used *everywhere*. Defence included. These companies, hence, are supported by cloud infrastructure. For any work defence companies do, infrastructure can claim partial credit. For each human Palantir kills, AWS gets an assist.

But it’s not just cloud infrastructure. They use HR platforms like Lever and Workday. They cater meals. They use hotel booking platforms. They use accounting platforms. These aren’t tailored to defence; they’re the same platforms and services we’ll all use one day.

You can certainly choose not to work for a particular defence contractor. You can probably choose not to work for its direct contractors. Chances are, however, that if you work in software, your organization pays money to *some* organization supporting a defence contractor. That puts you only two degrees of assist away on every kill. You pay a company, that company contributes to arms manufacturing, and arms manufacturing contributes directly to bloodshed.

There’s blood on our hands. Maybe not a lot. Maybe only a fraction. A fingertip or two.

But it’s there.

The question becomes what to do about it. Can you boycott *all* infrastructure? Should we all stop using AWS? What of every other company that sells to defence contractors, or those who sell to the defence contractor’s suppliers? Do we boycott all steel, because it is sold to those who make swords?

I don't know we can. We can't give up on all infrastructure, or we'll be back to an age before shovels.

But, then what?

Corollary: Try.

You wouldn't swim in a pool with a corpse in it. You would, however, probably swim in an ocean, and that definitely has corpses in it. Somewhere, there's an acceptable water volume : corpse volume ratio.

The solution can't be to give up. I won't create tools of death. But, as a software developer, it's *exceptionally fucking hard*

not to contribute to them them indirectly. Infrastructure is inescapable, short of running away into the woods.

You have to draw your line. Find your acceptable corpses : water ratio; your ratio of acceptable closeness to the blood tainting our industry. Be very conscious that in choosing not to run away to the woods, there's blood you're accepting on your hands. Blood we, as software developers, cannot escape.

And then try. Try to make a better world.

Try to make the blood worthwhile.

molasses

RANKING CHINESE DYNASTIES

I'M NORMAL I SWEAR

Do you ever just have the Qing Dynasty randomly appear in your head? Just me... well, you're gonna be seeing that thought process as I rank some of the dynasties that rose and fell in China. (This is not an academic paper, if you want the true full history of China, please don't ask an 18 year old who likes history but is a math major)

HAN DYNASTY (206 BCE – 220 CE)

Ranking: 7/10. One of the OG Chinese Dynasties, led a major period of prosperity, economic growth, and an overall Golden Age, plus they nationalized the country's salt, which could be considered Chekhov's Gun if the writers of history knew about communism two millennia in advance. They would unfortunately suffer as a result of Palace Politics, which is why I always leave the dinner table whenever politics is brought up.

TANG DYNASTY (618 – 906)

Ranking: 9/10 One of the main dynasties that you may think of, with one of China's Golden Ages, rivaling the Han Dynasty. In fact, if you love poetry you would loveee the Tang Dynasty as they are known as an Golden Age of poetry. As well, they really expanded China and made it quite prosperous in comparison to, say, Europe at the time.

SONG DYNASTY (960 – 1279)

Ranking: 6/10. Not gonna lie Song reminds me of Tang but just after getting nerfed and eventually being forced into Southern China. That being said they had beautiful artwork and poetry. In fact, the impact of the loss of Northern China had quite an interesting effect on the artwork that I recommend you read more about, but to conclude, it's a cool dynasty.

YUAN DYNASTY (1279 – 1368)

Ranking: 5/10. Not gonna lie this dynasty feels a tad overrated in comparison to others. Don't get me wrong, it isn't a bad dynasty, but most of its prestige imo comes from the Mongol Empire, not from itself. Plus it didn't even last a century. Despite that, it still brought many evolutions into the governance of the state and brought an interesting blend of Mongol and Chinese governance into China. Unfortunately while it's name is well known, it also ends as quickly as it came, being consumed by rebellions after less than a century, leading to the next dynasty.

MING DYNASTY (1368 – 1644)

Ranking: 9/10. This one is great, plus I love the story of how the first emperor went from peasant to Emperor of China, that is rare social mobility, especially before the modern period. Besides that, like many other dynasties it had beautiful artwork, as well on the lesser side it also had less beautiful corruption, where the amount of people in villages was under-reported regularly to pay less taxes. It's nice to know tax evasion is a universal tradition. Anyways yeah great dynasty.

QING DYNASTY (1644 – 1912)

Ranking: 7/10. The one who started it all, my first dynasty. I remember learning about them when I was just 14. Did I understand their history? No. Did they react perfectly to Western imperialism? Well, not really, but despite its flaws, it is more than just the dynasty during the "Century of Humiliation." It still produced many beautiful pieces of art, plus the Manchu influence created an interesting blend of culture that represents the beauty of China.

And unfortunately this is the end of the dynastic period. Next time there will be a tier list of the Seven Wonders of the Ancient World. I need go outside more.



蓝天先生

I'M PICKIN' UP GOOD VIBRATIONS

I've recently gotten into music from the 60s/70s (proof: my listening age was 78 according to Spotify Wrapped). While trying to broaden my horizons and listen to entire albums instead of just the most popular songs, I've learned some interesting facts:

THE BEACH BOYS

You've probably heard their songs before. Remember when Sheldon couldn't get a song out of his head after breaking up with Amy in *The Big Bang Theory*? That's a track by the Beach Boys called *Darlin'*. I couldn't get it out of my head either, which is what led me down this spiral.

Once I started digging into their catalog, I fell hard. Recent controversy about their political affiliations aside, I love *love love* their songs. They captured the quintessential feelings of "nostalgia" you have about growing up, moving away from home or falling in and out of love.

Their early hits like *California Girls*, *Kokomo* and *Surfin' U.S.A.* were pure American optimism. Back when Beatlemania was sweeping the nation (and the charts), the Beach Boys doubled down on American styles and structures; a sort of last line of defense against the incoming influx of British pop stars.

And when they came out with *Pet Sounds*, their first fully international album, critics and pop musicians alike were forced to admit that the Beach Boys were more than just surf rock. It quite literally redefined what pop music could look like, and with tracks like *Wouldn't It Be Nice*, *God Only Knows*, *Sloop John B*, *That's Not Me* and *You Believe in Me* it certainly deserves its title as "revolutionary."

For me, the Beach Boys reached their pinnacle with *Good Vibrations*. Brian Wilson did this incredible thing with tape—he spliced it into fragments and combined them to make little layers and echoes which give the song its unique rhythm. At a time when most songs were recorded in a matter of hours, this song took months to compose, record and produce. Needless to say, it was well worth it.

BILLY JOEL

While he's not strictly a 60s artist, Billy Joel deserves a place here. I cannot count the number of times I've listened to *Vienna* and cried (ironically, once while stuck in an airplane in Austria cause they wouldn't let us out while refueling).

Why are his songs so popular? What's so inventive about his songwriting or melodies? I think the answer is simpler than that—there's a certain truth to it all.

When he sings "Sing us a song, you're the piano man" in *Piano Man*, he knows exactly what he's talking about. Joel actually worked as a piano man at a late night pub while in high school to support his family. He even missed an English exam after playing a late night gig, and had to forego graduating with his

friends. That is, for 25 years, until he became popular and the high school graciously offered him a chance to make up the missing credit with an essay.

The authenticity runs through all of his greatest hits, specifically the romance songs—*She's Always a Woman To Me*, *Uptown Girls*, *Just the Way You Are*—all inspired by the very real women in his life. For instance, Joel has gone on record to admit that he conceived the idea for *Uptown Girls* after hanging out with supermodels like Whitney Houston and Elle Macpherson, but it eventually became a love letter to his second wife Christie Brinkley.

ABBA

Their first major hit was *Waterloo*, and I've always wondered why that wasn't our *unofficial* official song? The lyrics certainly seem to fit well:

Waterloo
I was defeated, you won the war
Waterloo
Promise to love you forevermore
Waterloo
Couldn't escape if I wanted to
Waterloo
Knowing my fate is to be with you
Wa-Wa-Wa-Waterloo
Finally facing my Waterloo

ABBA is probably the most culturally pervasive band from that era still making waves today (with some obvious exceptions like the Beatles). Before the *Mamma Mia* musical and movies, they spent years labeled as "cheesy Euro-pop." Like, I'm sorry? The people who wrote *Chiquitita* (Spanish endearment for little ones) are many things—deep, awe-inspiring, kind—but cheesy? Absolutely not.

I genuinely believe they always had more depth than people gave them credit for. Songs like *Fernando*, *Knowing Me Knowing You*, and *The Winner Takes It All* showed they could do melancholy and heartbreak just as well as sparkly pop. It's a shame both couples broke up :(

THE RONETTES

Be My Baby is one of those songs that just works. It might even surprise you to know that there were only three people singing the chorus. They used this innovative Wall of Sound technique that was, for its time, groundbreaking: a combination of orchestras, echo chambers, and overdubbing created this massive, layered sound that made just three voices sound like a choir.

Beyond *Be My Baby*, they had gems like *Baby, I Love You* and *Walking in the Rain*. Unfortunately, their producer Phil Spector was a controlling, manipulative mess and made sure that

countless recorded songs never saw the light of day. I guess we'll never know what else they could have given us.

The Ronettes weren't just studio magic though; they had Cher as one of their backup singers, not to mention Darlene Love and Sonny Bono. Oh and did I mention they were the only girl group to tour with the Beatles? This is running longer than expected, so here are some honorable mentions:

- *Happy Together* (The Turtles)
- *California Dreamin'* (The Mamas and The Papas)
- *Build Me Up Buttercup* (The Foundations)
- *Do You Believe In Magic?* (The Lovin' Spoonful)

- *Sugar Sugar* (The Archies)
- *Oh, Pretty Woman* (Roy Orbison)
- *Stand By Me* (Ben E. King)
- *Sweet Caroline* (Neil Diamond)
- *Dreams* (Fleetwood Mac)
- *Mrs. Robinson* (Simon & Garfunkel)
- *Brown Eyed Girl* (Van Morrison)
- *American Pie* (Don McLean)
- *Time In A Bottle* (Jim Croce)
- *Annie's Song* (John Denver)
- *My Girl* (The Temptations)

ambrosia

LOVE: A VEHICLE FOR FATE?

AN ANALYSIS OF THE RELATIONSHIP BETWEEN LOVE AND FATE IN MIURA'S BERSERK: THE GOLDEN AGE ARC

Berserk is a dark and forceful story, and so is its depiction of love. In this story, love is doomed, and often destructive, with each attempt or yearning drowned in inevitable consequences. Inevitability, or fate, is one of the most prevalent themes of Berserk, seen in The Golden Age arc, which ends with Griffith's fated sacrifice of Guts, Casca, and other members of the Band of the Hawk. This sacrifice rebirthes Griffith into Femto, a member of the God Hand, a group of god-like beings aware of causality's (or fate's) flow. This sacrifice, occurring during the Eclipse, is an event that is prophesied early in the story, when Guts is told that if he remains with Griffith, he will surely be killed by Griffith's ambition. From Guts and Griffith's first meeting, Guts' fate is sealed, and he spends the rest of the story struggling against this fate to find his own dreams and free-will. Griffith is the opposite, sailing with the winds of fate behind him. It's fate that he never loses a battle, and manages to become a knight despite his common birth. The forces of fate work in many ways, and one of those ways is love.

There are many depictions of love within the Golden Age Arc, and one of the most important is the love that develops between Guts and Casca. Casca has been in love with Griffith for many years, but her love has been unrequited. Near the conclusion of the arc, Casca overcomes her one-sided love and finds solace with Guts, who conversely finds a source of meaning from her.

As soon as this love blooms, Guts and Casca leave to rescue Griffith from imprisonment. If they hadn't found love, Guts would have left the band, and Casca wouldn't have had the strength alone to rescue Griffith. Griffith is freed, and Guts is once again ready to depart, this time taking Casca with him. Fate will not allow them to avoid their death, and when Griffith witnesses the love between Guts and Casca, he lays down upon Casca as she tends to him, invoking Casca's love towards Griffith, changing her mind. Casca is held back by her love for Griffith, instead of leaving with Guts to find her own path and free will. Guts decides to stay, both because of his love for Casca, Griffith and his other comrades in the Band

of the Hawk. This moment, deciding to stay with Griffith, he destroys his dream of fighting his own battles, and Casca tells him so.

In this example, we see how close Guts and Casca come to avoiding their fate of being sacrificed by Griffith, but it is love's tender, yet iron-clad grip that steers them on causalities course. Casca's love for Griffith causes her only pain, and she knows that a relationship is impossible due to Griffith's intentions to marry Princess Charlotte to inherit his kingdom. This isn't the only example of unrequited love, another being Judeau, who cares for Casca yet never acts upon it. Both examples show that this love isn't rational, and exists only to keep the band together and ensure their destruction through sacrifice.

Another side of love is friendship, specifically between Griffith and Guts. This friendship also eventually forces Guts and Griffith to do as their fates demand. During the Eclipse, when Griffith is faced with the choice to sacrifice his soldiers, and he says to Guts, "Among thousands of comrades and tens of thousands of enemies... you're the only one... who made me forget my dream." This powerful moment shows how Griffith's love towards Guts overpowered Griffith's dream. This fear of forgetting his dream, of stopping while he's so close, is what gives him the final push to make the sacrifice. Griffith is fated to ascend, and does so because of love.

Griffith is reborn into Femto, a member of the god-hand who can sense causality, or fate. The first thing Femto does with this power over fate is forces himself onto Casca, just like fate forced love. Whether love in Berserk is 'meant to be,' or something that characters build, is an unanswerable question, but it makes me think about love in real life, and how much control we have over who, or how we love. Can we control who we love, or can we only control how we react to our feelings of love?

SUBLIMATION

There were many things I could blame for my forgetfulness—the late hour, the moon phase, the anniversary of my father's disappearance—but blame was one thing, and dealing with my dire circumstances was another.

When the closing alarm of the library rang out its last warning, I reached out to flick off the light switch of my cubicle, only for my fingers to phase through the plastic. I tried again, but of course, it was no use—by the time the upper body lost form, Sublimation was too far along to reverse through over-the-counter means. Worse, I could see through the dull blue shadow of my thighs to the punctured red vinyl of the chair beneath. Even if I could retrieve my pills, they would be no use by now.

Recalling my childhood somatic therapies, I willed my breathing to slow, and whispered voicelessly under my breath: *this is my body, these are my limbs, I am here, I am here, I am here.*

Slowly, I made myself stand. Unsteady on my feet, I plodded toward the stairwell door. The lights dimmed by rows—blink, blink, gone. Every step I took along the empty cubicles rang out more faintly—or were my ears losing shape?

I struggled to recall what I had been studying for in lieu of taking my meds that evening. French conjugation, Greek mythology, proof by induction—what had it been? Moments like now, it seemed frivolous that I ever bothered with higher education at all.

By the time I reached the push bars of the stairwell door, the building had dimmed to black. Beyond the windowpane, the moon was shining bright, but I left no shadow. I leaned my full weight against the door, only to fall through to the other side, bruising my phasing cheeks against the cold, granite, floor.

I could have cried, but it wouldn't have mattered. Or maybe I did cry but had no proof of it happening. All I knew was that it was very cold in the stairwell. Shivering, it took me minutes—hours—to pick myself off the floor and walk on.

And as I drifted down the countless stairs, and as I phased through the locked doors to the moonlit snow of the University, and as I plodded on between the icy roads toward the Health Clinic, I thought back to one of the few memories I had of my father before he fell formless into the centre of the world.

I couldn't remember how old I was back then, but it was one of the rare times his hands were warm—one of the rare times he held me. We were watching the summer sky from the deck of our old townhouse. I was playing with his hands and giggling. It was so rare in those last days that the shape of him did not give way to air. So rare in those days that I could lean my cheek against his and feel the firm prickle of his stubble.

Watching me, he spoke, very gently: "Daughter, this life is difficult, but you must fight to stay. Promise me."

I did.

One month later, he thinned to air. No one was surprised—his father had gone in the same way in his youth.

At the Health Clinic, a nurse zapped me back to form in the Depositor—a minute in a vacuum chamber, and I was as good as new. When I returned to substance, all I had left on me was a single sock. Everything else had been lost along the way and buried in the snow by now.

Later, I sat in the doctor's office in a blue gown and listened to him rattle off the standard post-Deposition spiel. In the end, slapping the manilla folder against his desk, he couldn't keep his voice level. "Do you know just how close you came to full Sublimation?"

And as I tried to formulate my answer, all I could think of was my father in the center of the Earth, who, even now, slept in a fetal position in our molten core—how warm his hands would be, and how light his laughter might sound, unburdened in repose.

For people like us, disappearing was always the easier choice.

For a second, I thought of making a confession: that it wasn't French conjugation, or Greek mythology, or proof by induction on my mind that evening when I took out my orange bottle of shape-giving pills and flushed them down the toilet.

It was none of these things, but him, and how I wanted to be near him. How it was one thing to choose to stay, but another to turn away from my father's outstretched hand. How I wanted to be his daughter again. How I despised him for leaving. How every time I came close to the crossing, I turned back because of what I promised him the last time we ever spoke.

"I know," I said to the doctor, and for a moment, I lingered on my hazy reflection in the black window. Then, I turned to meet him in the eye. "But I came back in the end, didn't I?"

varicose

EQUATION

As many of you know, $2 + 11 - 1 = 12$. One way you can see this is two + eleven = twoeleven. If you remove the letters o,n,e (i.e. subtract one), you get twelve. Pretty cool right?

easty

CHAT, ARE WE EXCITED FOR READING WEEK?

[Author's note: this isn't what I wanted to say originally (they silenced him because he was fundamentally right but communicated the ideas in such a bad way that even the author was like "yeah fair run it back"). Just know that the J in Jochemist stands for justice. And just dance.]

... I'm not excited for reading week, personally. For the first half, I'm going to my parents' place for food and hugs, but the thing is, I don't really like my family despite my large amounts of love for them. Well, I like my mom, and my brother is entertaining. My dad and my sister, I don't really vibe with. I think if I bury myself in my work in my room I'll have a decent time at home. But there's nothing to do and I won't be seeing my old friends because they don't care to see me, and there's nothing new in my small hometown where I grew up. The people haven't changed from their small worldviews, despite the world changing under their feet.

I don't think I want to go home. But free food.

And then for the second half, I'm here in the city. I might hang out with my... person. Yes. That's what we'll call him. He's my person. Anyways, we might play Smash (I'm a Kirby main and man am I good 10% of the time), or pool, or watch a film, or go to the library. I'm looking forward to it, but I have

no clue if he'll be in my life after graduation, which is fast approaching. I would *like* for him to be, but is it realistic for me to want to hold on to people when I know I'll have to let go of everyone I've met here at UW to make room for all the people I have yet to meet in my 20s? *And I bet she told a million people that she'd stay in touch, but all the little promises that don't mean much, when there's memories to be made*—Arctic Monkeys lyrics I've lived by, never forming attachments longer than necessary, and seeing everyone as a means to an end (the end is to meet as many awesome people as possible, I'm using you for the joy we bring each other, and that's selfish of me, to want to be liked and to like others, I think).

Can I hold on to things I didn't create? Do I have the right to do so?

Regardless, I'm not looking forward to reading week. I'll miss everyone, and get stuck in my head, and wonder about my worth in others' life. But then again, he did tell me that I'm not an inconvenience. Maybe he can stay after I throw my cap in the air. Maybe he'll (they'll, you'll) want to.

Jochemist

SOME COOLMATHGAMES TO PLAY WITH FRIENDS

Below I will describe a **fun** game I spent quite some time playing with friends, and some variants on it. The core game is as follows:

You need exactly three players and they all need to take the game seriously. If your players are not *competitive nerds*, then you may need some stakes (money, embarrassment, favors).

Once you have a trio put together, everybody will pick a number from 1 to 100, inclusive (integers only). Give everybody a decent amount of time to think of their answer at least the first time you play the game, enough for everybody to be able to make a strategic and educated guess. At once you will simultaneously reveal your numbers. The winner of the game is the person who chose the highest number which is not larger than the sum of the two other numbers. If two (or three) people tie for winner the "win" is split among them.

For example if player A guesses 50, B guesses 30 and C guesses 10, then B will be the winner since A's guess is $50 > 30 + 10$, and B's is the second largest with $B > 50 + 10$.

This game is best when played more than once (keep track of everybody's score to see who is the smartest). Eventually you will start to see what the optimal metagame is, and at that point it may get a bit old. In such a case try some of the following variants to spice things up.

Variant 1: When a player ties with another player, then the player who did not tie automatically wins. If all three players tie, **everybody loses**. This one is kind of stupid.

Variant 2: If a player wins they receive 2 points. The player that guessed the second highest number (which is still smaller than the sum of the other two guesses) will get 1 point. The other player gets no points. Play a couple rounds of this game and see what strategies end up on top.

If this variant was being played with the ABC example given previously, then player A would have no points (because their guess was too big, B would have 2 and C would have 1).

Variant 3: Try any of the above variants (or the base game) with a smaller range of numbers (1–10 is a good choice). Fewer choices of numbers makes the strategy a bit more blatant and plays interestingly with ties. A sillier version could be to have no upper bound for selectable integers.

Despite its simplicity, I've found that this is quite an intense and entertaining game to play with others. If you find yourself at a party, it's the perfect thing to bring up and lead to some exciting competition.

skinbrag

SHAMPOO CONSIDERED HARMFUL

In spirit of Valentine's day, I want to talk about personal hygiene. Many people wash their hair using shampoo & conditioner, but why? Well... of course if you don't it'll get greasy! You don't want to show up to a date with greasy hair now do you?

What if I told you that shampoo is optional. Yes, I *am* an engineer, but I'm *not* joking. Personally, I haven't washed my hair for the last year, and I don't intend to change that any time soon. And no, I'm not crazy... When I polled 11 other **mathNEWS** writers for their anonymous opinions on my hair, the results came back 82% positive and 0% negative.

It's perfectly possible to live life without using soap on your head, and I believe this is the healthier option for the great majority of people. When you wash your hair with any kind of surfactant, it pulls away the oils that your body worked so hard to create. These oils are there to protect your hair, and when you get rid of them, it dries out your scalp and leaves your hair unprotected. So then you use conditioner to restore that protection. This process removes natural oil and leaves synthetics and perfumes in its place. In many cases, this causes the body to over-compensate and make more oil than it would normally, in order to catch up with what it thinks it needs. But your hair doesn't need it at all, because of the conditioner! So, as soon as it gets oily you wash it again. Over time this can aggravate your scalp, leaving it dry and prone to flaking.

Here are a few quick tips from my experience not washing my hair:

- Scalps shed skin like anywhere else, so massage with pads of your fingers to help it along, and comb or brush to clear anything out.
- If your hair gets oily, smelly, or dirty, rinse with warm water in the shower. For every case I've encountered over the last year, warm water has been enough.

- If the ends of your hair are dry, brushing or running your fingers through the full length of hair can help. I don't have long hair, but there are more resources online that can help if you do, though the primary difference is emphasis on brushing.
- If your hair is generally dry (common in the winter), supplementing with oil appropriate to your hair type can be useful. I have fine hair, and I like argan oil. I've seen olive oil recommended for thicker hair.
- Chlorine is rough on hair, and it's the main place I feel a difference not using shampoo. I reject the cure, so instead I focus on prevention by wetting my hair under a waterproof swim cap before I get in the pool. Using this strategy I swam twice a week last term and didn't have any problem.

Of course, many people don't have these problems. Their hair care routine is perfectly dialed in, with the right shampoo and conditioner for their hair type, religiously applied on a weekly schedule proportional to their oil output. The point isn't that using it can't work, it's that not using it can work.

I don't mind that my hair doesn't smell like anything but hair, but if that bothers you I'm sure you could find some kind of hair perfume that would help. If there's something clinically wrong with your hair, such as lice, dandruff (caused by an infection), or something else I can't think of (I'm not a doctor), by all means get a prescription to solve your problem. If you're otherwise healthy and your only problem is oily hair, maybe think twice before you buy another bottle of shampoo, because you don't have to buy a product to solve the problem that it creates.



blather

THE GRAD SCHOOL EXPERIENCE

"IS IT IMPOSTOR SYNDROME IF I REALLY AM A FRAUD?"

Most days, I feel like I'm going in circles with my thesis. It took me a whole term to figure out what idea to pursue and how to implement it, even though my research area seems trivial compared to what the others are doing. And yet, I'm not sure if I'll be able to implement it in time.

I guess that's just how it goes. Everyone else looks like they're getting admitted into conferences and producing ground-breaking research. Me? No progress this week, and I'm struggling to understand what the goal is. Maybe I lied my way into grad school. Maybe I'm actually just incompetent...

After burning through days getting nowhere, a breakthrough. Maybe my approach was wrong, and this other idea could work. Perhaps this problem isn't intractable after all!

Later on, another roadblock. Maybe this approach is fundamentally flawed? How is this so difficult?

If I were to describe grad school, it's bouncing between "we're so back" and "it's so over" with a period of around two weeks.

To clarify, this article is about thesis-based master's degrees. Course-based master's degrees are more like bachelor's++, where you have well-defined assignments and a reasonable

timeline. You may be asked to read papers and present them, but you can find solace in the idea that there is some “correct answer” you’re working towards.

In research, there are no givens. Your task can be summed up as “do better than what is currently out there.” What does “better” or “worse” mean? You figure it out by exploring as many alternatives as you can. You iterate on ideas for months until you succeed or shelve the idea. Even if you succeed, your end product might not be practical outside of an idealized environment.

This happens despite grad students being well above average. I guess it’s just really difficult to find the best ideas and act on them. The topics taught in class are a curated list of the best research ideas, which leads to the belief that those ideas were easy to come up with. In truth, the average pace of research is slow, inconsistent and difficult—it’s just that you only hear about the few key successes. Sometimes I listen to other grad students talk about their work and wonder how their problem is even tractable. I guess figuring out tractability is part of the research problem.

This leads to the question: *Why do grad school?* Why spend months, or years, working out some insight that could be described in a single lecture? Why spend your time looking for

events to showcase your knowledge (and get free food), while your friends are off making bank?

The way I see it, you do grad school because you want to make learning into your full-time job. Well, I can think of a few more detailed reasons: you have a deep interest in some particular area, you need more than a bachelor’s to feel ready, or it’s the easiest way to get a visa. Or maybe, your family forced you into it. I disagree that it’s about making more money, as engineers tend to earn more than researchers (you may be lucky, but usually your narrow field of expertise does not align with what a company is looking for). You’re really just doing it for the love of the game.

With all this in mind, it’s worth noting that you don’t need grad school to do research. Almost all influential papers are freely accessible, and there are plenty of blogs out there that explain high-level concepts. Having the guidance of a supervisor and an academic environment is super useful for motivation, but it’s still on you to work out your thesis. If anything, that might be the biggest takeaway for me: that all the knowledge is out there—I simply needed to trust that I could make it work.

SaltOverflow

SONGS OF MERLIN

Too often he sits
And lays on his throne,
Presumptuous is he
Though lovely of soul,
Asleep in the day
He’s a riot past eight:
Munching and crunching whatever’s his way

Soft and supple,
Brilliant and brave,
Though tiny not timid,
He blows you away

A chicken, a loaf,
His strange form entices,
A wiggle, a flop
He’ll use all his devices

To win you his heart
He yearns for your love,
Attention, pretences,
Do not be alarmed

For when you give in,
And give in you must,
You will be rewarded
With more than a fuss

His lush body’s softness’s
Beyond all that compares
Such goodness of nature
It’s hardly not fair

So you feed him the pellets,
You switch out the hay,
Forgive the torn wires,
And pet him all day

Now bask in his glory,
Warm like the sun
One whiff and a sniff,
It can’t be enough
You’ve tasted his magic,
With what he can share,
With all of the fluff
He’s more than a hare

headphones97



UWATERLOO COURSES AS MUSICALS

A random thought that came into my head the other day: if Waterloo courses were to be musicals, what would they be?

So, I've picked some of my favourite (and hopefully your favourite) musicals and tried to find courses that matched their vibe in some sort of way. Disclaimer, I haven't taking all of these courses, but I tried to match their vibes the best I can.

MATH 137: CALCULUS 1 — MEAN GIRLS

As Cady Heron says, "The Limit does not exist!" Throughout the first part of MATH 137 you learn lots about limits, and shout out to the GOAT Sachin Kotecha, who actually gave us the means girls limit to try as an exercise! Give it a try if you haven't already.

LS 202: CRIMINAL LAW — LEGALLY BLONDE

I feel like everyone has wanted to have their Elle Woods moment. This course seems like a great way to learn more about Criminal Law; I mean I totally am ready to slay the court room, I know what Mens Rea is.

HIST 105: ROCK 'n' ROLL AND US HISTORY — HAMILTON:

Music and History, seems like it fits the vibes of Hamilton! This is personally a course I might try to take in the future; it seems super fun. If they cover any part of US History from the Hamilton musical, I would totally be prepared (guys I have this whole musical memorized).

CLAS 104: CLASSICAL MYTHOLOGY — HADESTOWN:

Take the opportunity to learn about some Greek Mythology with this course. It won't be as cool as Hermes telling you the tale of Orpheus and Eurydice, but I am sure you would still have fun!

INTEG 441: HARD DECISIONS AND WICKED PROBLEMS — WICKED:

Guys, the new Wicked movies reawakened my Wicked obsession. Elphaba and Glinda had to make some hard decisions in this show, but everything always ends up being for good.

SPECIAL SHOUTOUT — TO BE HONEST: THE MUSICAL:

Just thought I would give a shout out to everyone's favourite first year musical. I will give the creative team credit, the show exceeded my original expectations. My roommate and I had a great jam out to the song TBH the other day; definitely picked up the vibes and prevented a crash out.

Hopefully this list inspires you to take an elective in a different department, or watch one of these musicals, both are great decisions ;). I will say it was lots of fun looking at

some of the courses run here at Waterloo, and there truly is a course for most passions!

is.all.on

GEESE (NOT) IN YOUR YARD



I WATCHED THIS GOOSE BATHE ITSELF FOR FIVE MINUTES STRAIGHT.

My oatmeal brings all the geese to the yard and damn right it's better than yours, so much that I had to charge. The geese decided to pay via advice on how to not be ~~bitchless~~ gooseless.

1. Touch grass
2. Eat grass
3. Apply for Aphrodite
 - a. If you haven't already, but signups ended on the 11th, so...
4. Make a statue of a goose and ask Aphrodite to turn it into a real goose
5. Bathe regularly
6. Preen yourself regularly
7. Waddle about regularly
8. Bite your competitors like they owe you their knees
9. Beat up a human
10. Show interest by repeatedly water-boarding yourself
11. Join a synchronized swimming team
12. Roll your head a lot and flap your wings in some sort of flex towards the goose of interest
13. Stand on their back
14. Honk

If all goes well, they may indicate they like you by consistently following you and actively involving you in their life. If you experience something like this and are interested, you should indicate that the feeling is mutual. If you are not, and they continue following in spite of your indication of disinterest and become aggressive in their approach, the geese suggest a restraining order.

TotallyNotAGoose

REACTIVITY IN GAME DEVELOPMENT

THE CASE FOR REACTIVE LOGIC IN GAMES PROGRAMMING

This article's code is written in the [Lua](#) language, demonstrating concepts with the [Fusion](#) reactivity library. It does not, however, assume prior knowledge.

If you can read basic code, you can read this article. Just ignore undefined syntax.

STATE RECONCILIATION

Imagine you're developing a puzzle game for drooling toddlers, and the level you're working on revolves around a combo-locked door. Five levers, with two states: `true` and `false`. To unlock the door, the toddler must randomly flip these levers to match the required configuration (`RequiredLevers = [true, true, false, true, false]`). When they succeed, all levers glow green, and the door opens.

So, you have 6 independent stores of game state across the levers and door. Each lever needs to switch its own boolean state, know the state of other levers, and compute the win condition.

This is a nightmare.

THE STATE OF REACTIVITY (AHAHA)

Many developers have wrangled state reconciliation in this same way. Especially game developers, because the necessary tools often aren't available to address it. Meanwhile, the web world came up with its solution over a decade ago. It's called **reactivity**.

The first widely adopted reactivity library is React, released for the web in 2013. Since then, numerous other libraries have sprung up across the web and beyond. One library, Fusion, targets Roblox, and is rapidly growing in popularity.

REACTIVE COMPUTATION

To demonstrate reactivity as a concept, we're going to introduce two types: `Values` and `Computed`s. `Values` store manually-set values, while `Computed`s automatically react to `Values`. (or other `Computed`s!)

Let's say `ValueA = Scope:Value(3)` and `ValueB = Scope:Value(6)`. Now let's define our `Computed`:

```
ComputedA = Scope:Computed(function(Use)
  return Use(ValueA) * Use(ValueB)
end)
```

It'll first be equal to 18, but if we do `ValueA:set(2)`, it will recompute and become 12 automatically.

This may be over-engineered for basic multiplication, but what about our lever door example? And large, interdependent nested data structures? It's a godsend.

This is the core of reactivity: **you write the instructions, and it computes for you**.

REACTIVE RENDERING

Okay, reactive logic is nice and all, but it's not *real*. How do I get it onto the screen?

Let's expand our lever example. Instead of manually placing these levers, we can actually have our defined `RequiredLevers` *place them for us*. For this, we're going to use a new type: `ForPairs`.

Instead of looping over our array of levers, `ForPairs` will do it for us, and let us pass in a callback function to render our levers:

```
Scope:ForPairs(RequiredLevers, function(_, Index: number, Value:
  boolean)
  return Lever { -- Lever constructor function
    RequiredState = Value,
    -- Lever's validity condition
    GameWon = GameWon,
    -- Passed in from ABOVE! Centralized state!
    Position = Vector3.new(Index * 5, 0, 0),
    -- 3D positioning
  }
end)
```

Now imagine more complex scenarios, like board games with grids of interactive tiles. Reactive rendering can become a real time-saver, especially if you need to adapt the game around config properties.

TAKEAWAYS

Whether your game is primarily UI, or you're constructing data-driven 3D scenes, reactivity is a powerful concept worth investing in. [Fusion](#) provides this today on Roblox, and I'd like to see reactive libraries spring up for other game engines.

FURTHER READING

- [Thinking in Fusion](#) — Video introduction to Fusion¹
- [Wolf Scripting Language](#) — Reactive scripting language, theorized by Daniel Fox, the creator of Fusion²
- [React](#) — React documentation³

Ava Lynch

1. https://youtu.be/WWeclENWZpy4?list=PLsFMLV-H_GYtiaq0P52d0yWFaoVM8UmLU

2. <https://wolf.phfox.net/>

3. <https://react.dev/>

THE CURRENT STATUS OF BIG LAW RECRUITING

FROM A STUDENT WHO ISN'T EVEN IN LAW SCHOOL YET, BUT ALREADY STRESSED ABOUT IT

Logically, when hiring someone whose pockets you're about to stuff with obscene amounts of money, you would want as much information as possible, right? Additionally, big law lawyers, in theory, are fairly intelligent.

Now let me introduce you to the modern day paradox stemming from this that is big law recruiting.

Initially, big law firms started recruiting for your 1L summer in roughly mid January, after your first term grades were out, and you had some law school experience under your belt.

But then, an eager legal hiring manager had an *idea*.

What if we start earlier and lock in all the best talent before our competitors? And thus began recruiting for 1L summer in early January. Still not bad, grades are out anyways.

But then, an eager legal hiring manager had an *idea*.

What if we start in December?

Okay, not great, no 1L performance. But this is just the 1L summer recruit. Relatively low stakes, most big law jobs with a possibility of a return offer aren't until 2L summer.

But then, an eager legal hiring manager had an *idea*.

What if we offer them 1L and 2L summer offers at once. And we do it as early as *November*. Based off of nothing but undergrad grades, LSAT, and vibes. Okay this is worse.

But then, an eager legal hiring manager had an *idea*.

What if we offer them 1L and 2L summer offers at once. What if we do it as early as *October*. Similarly, LSAT, undergrad and vibes. Good God.

But then, an eager legal hiring manager had an *idea*.

What if we offer to let them do whatever they want in 1L summer (with a recommendation to do public interest), a guaranteed 2L summer offer, and we still do as early as *October*. And we'll throw in a \$50k summer stipend for you too! LSAT Undergrad and Vibes! And what if we offer a contract guarantee offer after law school!

And that's where we're at now. Here is why it's bad for both parties. When starting as early as October, students still have no idea where they want to end up. Where you intern in your 2L summer is extremely important for your career as a whole. Your first firm? Even more important. Yeah the money and guarantee is nice. Being locked into a firm for possibly 3 years without understanding if you'll like the firm? Not great. Even more so when big law is known for 80 hour work weeks being a norm or a minimum.

And from the firm's perspective; gambling that an associate will be good with absolutely no actual proof of legal experience is certainly a gamble to make. Gambling that they'll be good enough to stay for three years is more like playing the lottery. Eventually a race to the bottom has to hit bedrock probably surely maybe probably.

Illogically Reasoned

10 MOVIES YOU AND EVERYONE YOU KNOW (INCLUDING YOUR GRANDMA) SHOULD WATCH THIS VALENTINES DAY

You may or may not know that tomorrow is Valentine's Day. It is a day full of love, red, snoopy valentines, candy, red dye 40, romantic candle lit dinner, crying in despair over how lonely you are, pink, no small mouth bass, and flowers. You may be celebrating with a significant other, or you will be all alone eating piles and piles of chocolate crying about how you don't have a significant other.

Either way you MUST watch all of these movies on this wonderful Valentines Day:

1. *But I'm a Cheerleader* (1999)
2. *She's The Man* (2006)
3. *La La Land* (2016)
4. *Easy A* (2010)
5. *Be My Valentine, Charlie Brown* (1975)
6. *Eternal Sunshine of the Spotless Mind* (2004) (This one is to wallow in yearning)
7. *Twilight* (2008)
8. *The Smurfs* (2011)
9. *10 Things I Hate About You* (1999)
10. *Dirty Dancing* (1987)

Once you have watched **ALL** of those movies, then rewatch *Heated Rivalry* (not a movie but I don't care watch it again).

If you follow all of my instructions you will have an amazing Valentine's Day full of love, tears, smiles, and yearning.

If you do not follow all of my instructions you will die alone.

Have a very happy Valentines Day!!!!!!! (or else)

QUANTIFYING WHETHER I HAVE FRIENDS

British professor Robin Dunbar famously caps the number of friends a person may maintain at 150. Further research suggests that subsets of 1, 5, 15, 50, 150, and 500 people form layers of relationships vaguely described as those with whom we have intimacy, close emotions, sympathy, affinity, meaningful contact, and acquaintance. However, these classifications are very much vibes-based—as all friendships should be—but suppose in a mild fit of autism we wanted to define strict categories to mentally impose hierarchy on such a meta-conversational taboo topic! After much deliberation, I present the system I shall henceforth briefly use to classify non-familial unhated humans I have encountered within the past year:

PEOPLE WITH WHOM WE HAVE MUTUALLY AND INTENTIONALLY MADE EYE CONTACT

One doesn't simply throw around eye contact with intention to passersby. A connection or some sort needs to have been initiated, whether it be among a large group or in pairs. "Hey" may even be an appropriate attention-seeking interjection, if not a nod. These are the individuals you could go up to again without introducing yourself after a short period of time, whatever that may look like.

PEOPLE WITH WHOM I HAVE HAD A GOOD FEW CONVERSATIONS

A group project, club event, or board meeting. You can get a good idea of how someone works after a few separate conversations on different subjects. Some may call these people friends, but I don't seek them out individually. Rather, I can say things in their presence and not feel completely bad about my questionable jokes.

PEOPLE WITH WHOM I HAVE INDEPENDENTLY DONE STUFF AT LEAST TWICE, OUTSIDE AN ORGANIZED GROUP EVENT

At this point, someone has reached out to make specific contact. How daring. I note the requirement to have met up twice, to allow the possibility of having moderately disliked one another and subsequent internal refusal to meet up again. There is also a blurred line as to when an organized group event becomes a one-on-one that I am still figuring out myself. Now to only find a place to meet up that is not getting food.

PEOPLE WHO HAVE INVITED THEMSELVES OVER TO MY HOME, AND I WENT ALONG WITH IT

I don't ever invite people over to my home. Rather, someone must follow me back while I consciously allow them. Naturally, this category is an implementation of the mutual vibe-check required to progress to such a status. I find these individuals more reachable on both a self-reluctance and reply-time basis.

PEOPLE WHOM I CAN CALL RANDOMLY AND YAP FOR AN HOUR, TIME-PERMITTING

It is 2 am and I am calling you. Okay, maybe we started the call at 11 but I am still yapping about whatever I am on about. Perhaps I should apologize for being this close, because at this point, I probably only say things to be mean. You're not safe.

PEOPLE I'VE FUCKED

I need not nor want not comment on this set nor its cardinality. It is *sui generis*, to the extent that anything can be when listed within a set of related items. Happy Valentine's Day, I guess?

Thank you for coming to my schizopost; my regularly programmed shitposting shall resume shortly.

Whole Number Haver

N THINGS I LIKE ABOUT MY BODY

NOW MAKE ONE FOR YOURSELF

- writing callus (I think it's poetic to be physically changed by something you love)
- happy trail (it called a happy trail because it make you happy :))
- hip dips (fun to say)
- hairy arms and legs and thighs (thank you testosterone)
- mustache and wispy chin hair (thank you testosterone)
- fluffy hair with a cowlick
- the edge of my eyebrow that sticks up
- the scar on my arm I got from running through the woods at summer camp
- the rate at which my fingernails grow back
- whatever it is about my upper back that lets me stretch in the way I only recently learned counts as hypermobility
- actually just how good it feels to stretch in general
- built-in stress balls on my chest
- lap soft enough to function as a pillow
- freckles that come out in the summer
- freckles that are always there
- irises that seem to look different depending on the colour of my shirt (sorry for being white I didn't do it on purpose)
- clocky-ass voice that goes low enough to sing bass (THANK YOU TESTOSTERONE)

macinnes

THE DAY THE WORLD ENDED

“Can you hear me? Is everyone here?” My supervisor asks, leaning into his laptop for those attending virtually. An awkward silence answers him, until someone finally unmutes and says yes. I slouch forward, head in palm. Someone’s already on their phone. My fingers itch to check mine, but ultimately refrain. It’s bad manners. I can last one meeting without my phone.

I glance at the projector screen. A sea of grey boxes and names greet me, with their little muted icons. I’m almost jealous of them, but here I am. Oh well.

“Okay, great,” he says. “Let’s get started.”



I pick at my lunch reluctantly—I’m with my friend who only has classes on days that start with a T. It’s a Thursday, so here we are.¹ My co-op is on campus; it’s an easy arrangement. We sit across from one another in arm chairs that have seen better days, looking out the window.

“Fuck,” he suddenly says, “I have an assignment due tomorrow.”

Tomorrow is a funny concept—an almost certain future. Your assignment is due tomorrow. I should be in the lab tomorrow. But that’s today’s tomorrow. In a year? Who knows. We certainly won’t. He catches my gaze out of the corner of his eyes, and I know that he’s thinking the same thing.

I smile anyways—“That sucks,” I answer plaintively. “Due tomorrow, do tomorrow,” and I turn my head away so I cannot see the expression on his face. It can’t be pleasant.



Returning home, in front of E5, the crossroads blare and ring and flash just as I approach. I wait for the ION to pass, the red lights illuminating the snow. I see a couple dozen people through the windows—they don’t look back at me. Maybe they’re also headed back home. A warm interior. I think about how it’s already been a year since I’ve taken the entire route, and how I should’ve done it again.

The lights stop. The crossing arms lift. I trek home.



planet b612—11:11PM
time to make a wish!

nya—11:12PM
i wish i didn’t have an assignment due tomorrow.

planet b612—11:12PM
first of all, you aren’t meant to say it aloud
second of all, you missed it

nya—11:12PM

maybe that was my ultimate plan
so you don’t know my real wish

planet b612—11:13PM

and what’s that?

He types for a long, long time. Ultimately, he gives me no answer.



It’s nearly midnight and I’m tired. I type out a lazy good night to my friend. *See you in the morning*, I add on, a force of habit. I realize my error, but it doesn’t matter—his little indicator is grey, meaning he’s offline, so maybe he’s already gone to bed.

I haven’t done much today. That’s okay. Life is about progress. Gotta take things in steps. I turn off my phone, closing my eyes.

Tomorrow doesn’t come.

planet b612

1. Plus a tutorial on Fridays but that isn’t as catchy

inspired by a tiktok: <https://www.tiktok.com/@itsbrianpark/video/7473984082859560238>

FACT



On every level except physically, I am a fox.

tsukasa



GOOSE LOVE STORIES

[Translator's Note: If you listen long enough to the honks of the Waterloo geese you begin to understand them. These are some stories I have overheard.]



I passed two geese huddled together, standing slightly away from a larger flock.

"Dude you gotta ask her, the worst thing she can say is no," the first said to the second.

"Ok, first of all, she can say way worse than no, and second of all, even if she does, it would be in front of the whole flock!" The second replied, "There's no coming back from that."

"She's leaving for Louisiana in a week anyways, you have to do something now. If she says no, it won't matter since she'll be gone."

"So what if I ask her," the second replied shaking his head, "She says yes and what happens? Like we're together or something? How can I commit to something so big so quickly?"

"Look that's... that's not the point," the first was a bit exasperated (I feel like they have had similar conversations before), "the point is you like her and she probably likes you and you can go from there."

"She will be able to smell my fear, she won't want anything to do with me."

"Oh come on, you know it's only humans whose fear we can smell. And besides, you won't get a chance next summer when she's back. With all the geese beach bods she'll see in Louisiana this winter, you won't hold a candle next spring, bro."

The second goose shuddered, presumably thinking of goose spring break in Louisiana. "Fine," He straightened and walked back towards the flock, legs slightly shaking with each step.

After a couple minutes he returned.

"Bleech," the first goose scrunched up his face when his friend returned, "you must be really scared, I think I can smell the fear on you."

"That might not be fear," the second goose said in a hollow voice, "I shouldn't have let you talk me into this after lunch, I have always had weak bowels."



A small cluster of young geese were walking across the sidewalk, chatting.

"Did you hear she went out with him? I've tried but I really can't see them as a couple."

"Yeah, she is trying to settle down long term and hatch eggs but I'm pretty sure he just wants some fun before the migration?"

"If she thinks she can change him, she's so wrong."

"It is weird, he's all like 'ooh I am so experienced,' has he ever showed you the notches in his feathers for all the geese he's been with?"

There was a chorus of nodding and "who needs to see that" in response before one goose chimed in. "I think he may be exaggerating when he talks about all these geese in other flocks, I overheard Becky talking after. She said that he got his *tomia* stuck on hers when he tried to kiss her!" *[Translator's note, *tomia* are the teeth on geese's tongues,]*

"Wait, that's such a first time mistake?" another replied.

"Yeah, he's either really new or really bad. Either way, despite his boasts, there's no way he's ever honked before." *[Translator's note: Waterloo Geese use the word honk as a euphemism]*



"I still can't believe he's gone," The first goose was crying, inconsolable. Tears poured down her cheeks. "He was too young and we relied on him so much."

"It's okay," said the second goose, giving her a pat on the mantle, "I'm here for you, we're all here for you. This isn't your burden alone, the entire community feels it. We will all shoulder it together."

"That's easy to say. You'll all move on. Who will provide for me and the goslings when the crabgrass thins in winter?"

"We can help take care of them. Being a single mom is only hard if you do it alone. Don't be stubborn, let us help you," the second goose spread her wings, "They say it takes a village, don't they?"

The first goose ignored the gesture, sinking to the ground, covering her head in her wings, "And—oh god—what will his other kids think? I can tell from how they look at me they've never seen me as their parent, I've only ever been a stepmom to them and now I'm all the family they have! I—"

"They're old enough to migrate on their own!" The second goose interrupted, "They will be *fine on their own* if they don't want to stay with you. You can't keep blaming yourself for what happened, this is just an opportunity to soar even higher."

"How can I fly after what happened to him—after that dreadful date flight? Oh god I was stupid. Stupid stupid stupid," she began hitting her head with her wing, "He had drunk so much and the flight was so dangerous. I thought it would make him feel young again, but he couldn't dodge the windmill blades like he used to, oh god I can still see him falling when I close my eyes..." She trailed off, crying, before immediately straightening up and removing her wings from her face to reveal dry eyes. "How did I do?"

"Pretty good," the second goose said, "I think if you can pull off a performance like that at the goose court hearing next week your step kids won't sniff a dime of the inheritance."

aphf

LOCKING IN

I HATE CO-OP TERM (PT. 3)

Every day here is the same. I don't even know what to call whatever happens. Sometimes the "suns" would come closer to the planet, even being in the "atmosphere" and sometimes there would be a moon. Who knows. There's too much going on all sides. I hope there's no one out there who's expecting something from me, because I have no idea what I'm doing. I stopped going on my walks. Even though I was taking different routes every time, I was in a familiar world. I found comfort in being able to make sense of it all, to understand the world around me. I knew my own pace and what I had to do when I came back. Those are luxuries I don't have here, where ever I am. For all I know, the **mathNEWS** joint could have teleported away before I could return to it, or I could be randomly apprehended by some alien bureaucrats and forced to shake some random cubes and pyramids. Anyway, I just sit inside the same room, eating my three tasty meals a day. I feel like the alien worker and I get along well enough, but I could never know. Luckily there's an Earthly calendar in this alternate prod night room so that I know when real prod night is. I hope my article actually made it back home and everyone can know that I'm not dead. I should've told you guys more details on how to find me. Come to think of it, there's nothing of use in this article either. Whoops. S must be worried sick. Who knows how hard she's catastrophizing right now, especially considering how our last interactions were on icy terms. Maybe she's written about this whole ordeal in the last issues, but it doesn't matter since I never got them. I turned this building inside and out looking for any copies or anything that could lead me to them without any luck. I guess that's my first task down here. I'll have a lot to learn about the way this world works if I want to even begin to figure out how to gain any kind of connection with Earth. Next time I promise to give useful clues about this world. I have so much to learn! It's time to get familiar with this place. I'm going on a walk. I'll catch you all next issue.

LavenderTownEnjoyer

HOW ARE MIDTERMS GOING?

- They are all after reading week (x2)
- I have NONE! (x5)
- Fine I guess
- I'm going to 48 hour my only real midterm
- Good thank you
- I don't have midterms, I'm on co-op
- Absolutely abysmal
- Pretty well honestly
- We doin' our best
- I tried my best, hopefully I cooked
- Cooked, chopped, unc
- C's get degrees
- A's get degrees
- I have one
- Haven't had one
- Fucking brutal
- Yummy
- I want to die
- I don't have any until march
- 39 % phys 334 term test one
- Have one in 12 hrs and writing a **mathNEWS** article, haven't even started studying
- help
- Actually good for once
- Haven't had any yet (x4)
- Not a student
- I choose not to answer
- I live in a sadness of my own construction
- You better go catch them
- They approach at one second per second
- What's a midterm?
- 1 down, 4 to go

mathgeek

You could be playing
Sonic 3 & Knuckles right
now, but instead, you're
reading **mathNEWS**.

That's the best
compliment I've gotten
all week.

A **mathNEWS** EDITOR WHO REALLY
LIKES SONIC 3 & KNUCKLES

AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF MINECRAFT SERVERS

REGARDING: THE GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY

The paradigm of the ‘two-week Minecraft server’ is a keystone of most people’s multiplayer experiences with the game. You and your friends start a Minecraft server, you play on it, and you leave after two weeks.

You likely haven’t thought about a Minecraft server’s currency if you operate in the two-week servers. If you have played any larger kind of SMP, you probably still wouldn’t’ve thought about it much. But within the currency of Minecraft poses a very interesting problem for governance and the theory of money within a world not entirely dissimilar to ours.

To begin, I will not fully address duplication exploits or those that do not adhere to the principles of the server. Plugins could or could not be used, but they are more an implemental tool for any economic system.

Most servers, at least that I have seen, use diamonds as currency. Finite, standardized by use, and simple. This serves as a decent means of trade for most servers. However, diamonds are a commodity and possess innate value through use in crafting. Additionally, servers often never reach the point where every diamond has been found. Thus any determined miner can print their own money (as you often would) and devalue the currency at an unpredictable rate. The other problem with making a currency finite is the lack of expansion: if the server were ever to reach more players than diamonds, we would have a reverse pigeonhole problem. But because they almost never reach the point of becoming finite, they are an inefficient store of value and unit of account, despite being a convenient medium of exchange.

Two other interesting currencies I have seen discussed are wheat (likely what began the popularity of the entire discussion) and nether star-backed securities. One of the largest issues with the wheat currency is that it relies on a server involving (in PineconeLP’s case) fighting over land and resources, especially the smaller the world boundaries are. Wheat is too easy to farm and does not exit the economy quickly enough (Who really eats bread?) to keep up with the hyperinflation that farming would cause. Wheat also faces an issue diamonds do not: having a fixed intrinsic value. Diamonds are mostly used just for armour and tools, and their inherent value is difficult to dictate given each person’s varying marginal benefit from their consumption of diamonds. But wheat is used for food, and thus for most to trade it for other foods at all, it must be worth more hunger per unit of wheat or be more convenient than simply making a loaf and eating it yourself. All valued items in the economy have to follow this pricing schema, which places an intuitive bound on the value wheat can have and simultaneously encouraging for hyperinflation to intensify. The only way around this is harsh restrictions (1984 style) on wheat production to force artificial scarcity. This is a sign that something has gone wrong.

Therein lies one of the largest issues with Minecraft economies: any non-finite resource will be infinitely exploited to benefit those with the means to. A self-interested player, in due fairness, who sees an opportunity to generate wealth for themselves will naturally do so. Self-interest and serverwide welfare conflicting are issues with Minecraft economic theory, especially in Minecraft, where the Invisible Hand can be outweighed by vested interests.

Can the currency be an infinite but unique item? An inherent game mechanic is that anyone can rename any item anything, so unique names do not work. Some theorists propose signed books as the solution to this, as the player’s username data (which must be unique) are copied to the original version of the book, and can only be copied twice more, preventing counterfeiting.

This, used in tandem with nether stars, would allow for a finer unit of account (say a hundred nether stars being like one dollar) while allowing ease of transport in the form of fiat money. The nether stars must also be vastly devalued: Gresham’s Law dictates that “bad money” will push out “good money.” If nether stars were still valuable enough to be traded at two or three for an item, people would rather use the less valuable book as money and simply barter nether stars or sell them for books. A devaluation of nether stars (KCJ proposes one shulker box full of nether star stacks to one book) allows books to be simultaneously used as fiat banknotes for the near-worthless nether stars. One of the flaws with this system is the lack of intrinsic value, making pricing difficult. Additionally, it requires a central bank (and maybe plugins) and and maybe exchange to a ‘diamond standard’ in order to first provide valuation. The fractional reserve banking system is also structurally prone to collapse due to the inevitability of bank runs. However, the opposite problem arises in wheat-based systems which force farming restrictions and a centrally-planned economy, imitating scarcity and replicating the failures of the Soviet Union. Both systems are also deceptive and rely on governmental force to implement their devalued currency. While this is necessary for real-world currency, it isn’t for Minecraft. However, both are decent, well thought-out systems for the scenario present.

Anticlimactically, I believe the best solution is to have no standardized currency and little intervention. This is due to the free nature of the game. Players know their server conditions and trading patterns due to access to information and although there is no one-size-fits-all, the best implementation is probably laissez-faire which will likely just turn to diamonds.

I hate to end the article so soon, but I am almost out of my 1000 words. I encourage any interested reader to look further into the problem, as I have not even scratched the surface of theory with these examples.

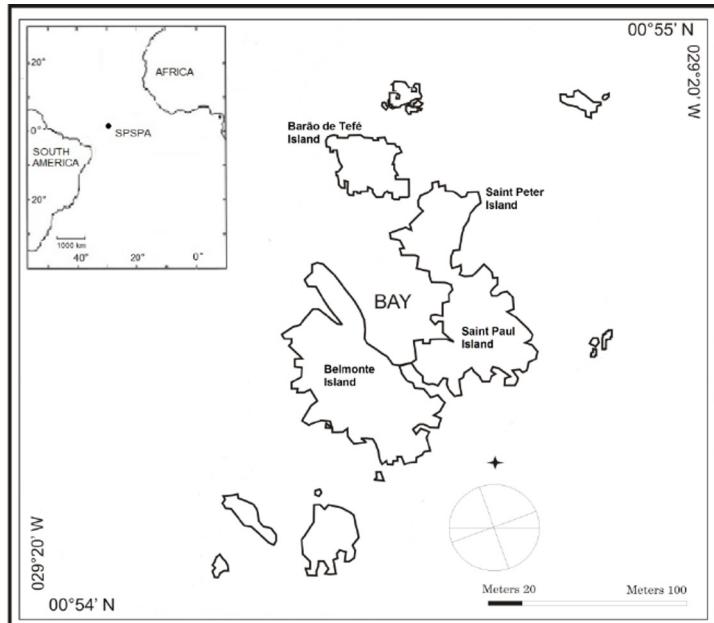
At the end of the day, money is what is accepted by most vendors. Don't let a thought experiment dictate how you and

your friends play your sandbox game. Just use diamonds along with bartering or something. Make copper stairs currency.

JMHexagon—or, Matthew mathNEWS

N ISLAND FACTS—SAINT PETER AND SAINT PAUL ARCHIPELAGO

This is so far the smallest island I've covered in this series, which is shocking given that absolute mouthful of a name. I give you, the Saint Peter and Saint Paul Archipelago (SPSPA):



- A small group of rocky islands (yes there are multiple, yes that's kind of cheating, sue me) located on the equator in between Africa and South America (roughly 6,294 km South East of mathNEWS)
- When I say small I mean these are small (seriously, look up some photos). Depending on the image quality it may not show up, but that whole image box is only about 300x300 meters. The total combined area of all the islands is only 3.7 acres, less than half the floorspace in MC
- In addition to being tiny, they're in the middle of nowhere, even more so than most of the islands I cover. There aren't many islands at all in the Atlantic, the closest is a full 625 km away, and even that's almost uninhabited
- They were discovered in 1511, when the Portuguese caravel *Saint Peter* crashed into them (talk about bad luck). The crew were rescued by another caravel in the fleet, the *Saint Paul*, hence the archipelago's name
- Charles Darwin visited the islands early on in his famous voyage around the world. He was eager to note down everything he could find, which wasn't

much: two birds, a crab, a fly, a tick, a beetle, and some spiders. He couldn't find any grass or lichen, though these are now known to grow on the largest island. He hypothesized that this represented the early stages of life colonizing a new land

- Ernest Shackleton also visited the islands on his final Antarctic voyage, widely regarded as the last in the "heroic age" of Antarctic exploration
- In the 60's the islands served as the start and end points of the first submerged circumnavigation of the world, completed by the nuclear sub USS Triton
- The archipelago is Brazilian territory, and they maintain a small single hut research station on the largest island. The main goal of this is to expand Brazil's EEZ, giving them exclusive fishing rights in a huge area of the Atlantic. At any given time the station hosts four researchers

That's all on this island, let me know if you have an island you want me to cover (fatcullen2@gmail.com).

FATCullen

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

PROF. BLAKE MADILL

STAT 230: CENTRAL LIMIT THEOREM

STORY BY ZUNAIRAH | ART BY YEBIN KIM

THE CLT COOKING SHOW

WELCOME! TODAY
WE'RE MAKING MY
SIGNATURE DISH—
THE PERFECT
NORMAL PIE!

THESE ARE
TODAY'S INGREDIENTS—
OUR POPULATIONS! AREN'T
THEY...UNIQUE?



RIGHT-STEMMED
CARROT

HEY! I JUST
HAVE A LONG
TAIL!

BIMODEL POTATO

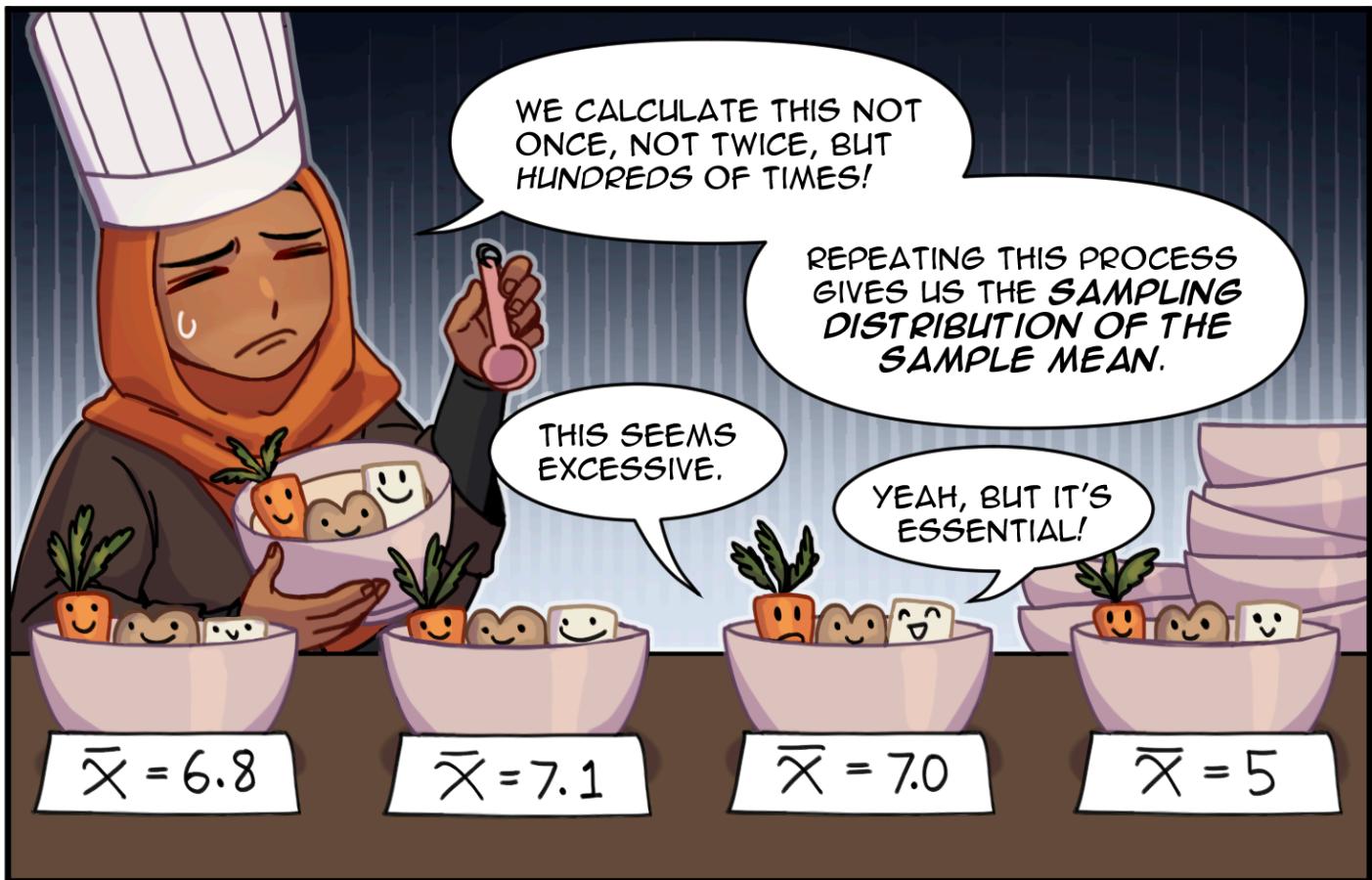
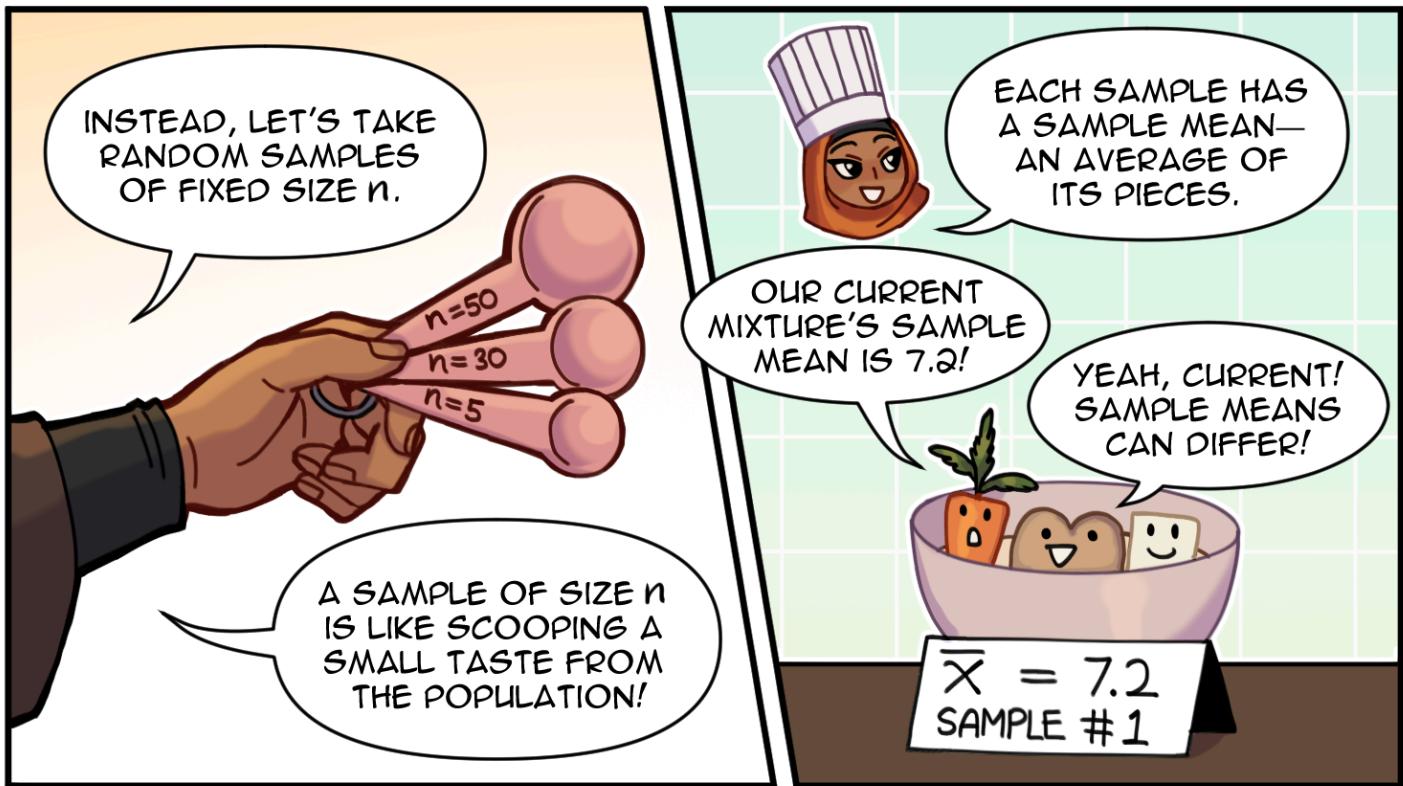
UNIFORM
TOFU

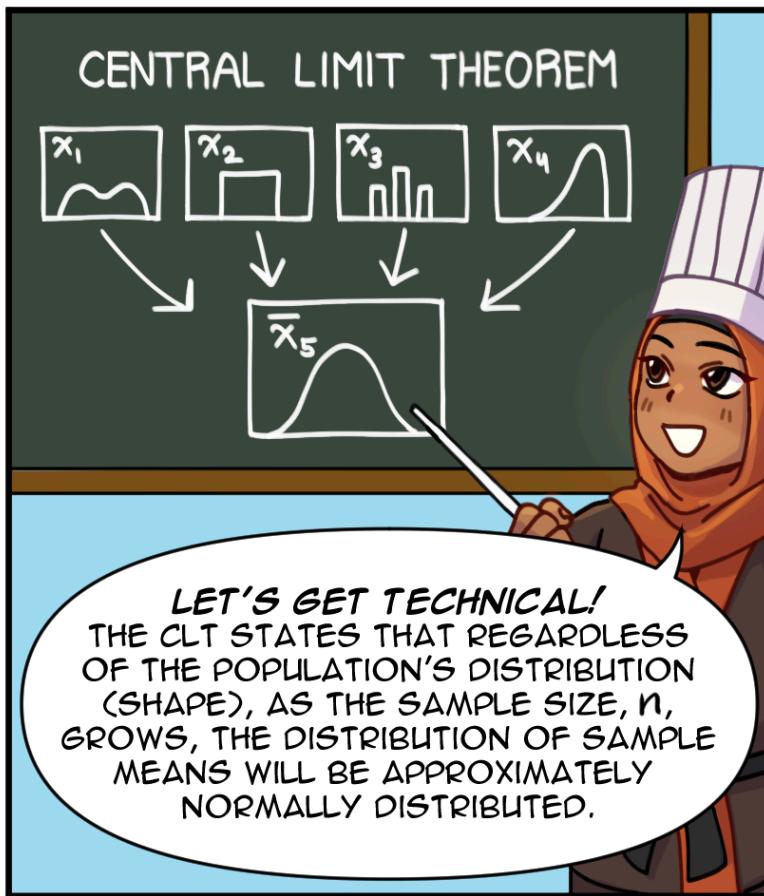
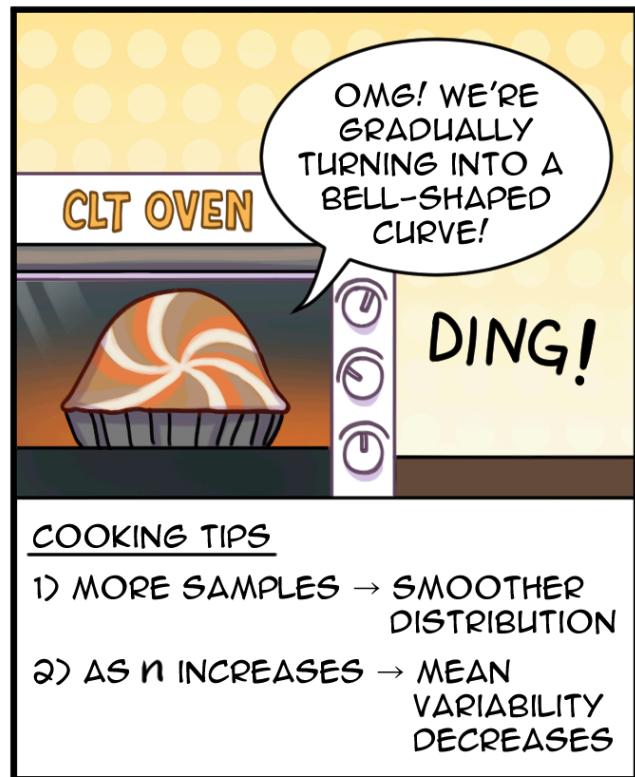
NOT EVERY POPULATION
FOLLOWS THE SAME PATTERN;
THEIR DISTRIBUTIONS VARIES
IN SHAPE AND SPREAD.

SEE? USING THE
WHOLE POPULATION
DIRECTLY IS VERY
MESSY!

SPLAT!
PLOOP!

REAL-WORLD DATA RARELY
BEHAVES NICELY, IT CAN BE
MESSY AND IRREGULAR.





IN STATS TERMS, "IF X_1, X_n ARE INDEPENDENT RANDOM VARIABLES WITH THE SAME DISTRIBUTION WITH MEAN μ AND VARIANCE σ^2 , THEN AS $n \rightarrow \infty$,

THE CUMULATIVE DISTRIBUTION FUNCTION

$$\sum \frac{X_i - n\mu}{\sigma\sqrt{n}} \quad (\text{DISCRETE})$$

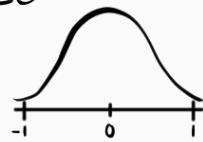
$$\frac{\bar{X} - \mu}{\sigma/\sqrt{n}} \quad (\text{CONTINUOUS})$$

OF THOSE RANDOM VARIABLES APPROACHES $N(0,1)$.



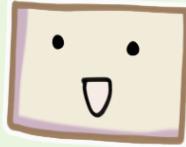
MAIN TAKEAWAYS

- SAMPLING DISTRIBUTION OF \bar{X}
- SHAPE OF THE CURVE RESEMBLES NORMAL DISTRIBUTION AS SAMPLE SIZE INCREASES
- MEAN = μ
- SD = σ/\sqrt{n}
- $Z_n = \frac{\sum X_i - n\mu}{\sigma\sqrt{n}} \rightarrow N(0,1)$



WHAT DOES SD REPRESENT?

SD STANDS FOR STANDARD DEVIATION (σ) WHICH TELLS US HOW SPREAD THE DATA POINTS ARE AROUND THE MEAN.



IF σ IS LARGE, THEN DATA POINTS ARE SCATTERED WIDELY.



I'M NOT GONNA LIE... THIS PIE IS STATISTICALLY NOT GIVING TASTE.



CARROTS, POTATOES, TOFU? RESPECTFULLY, IT'S GIVING STEW. ANYWAY, EDUCATIONAL CONTENT > FLAVOUR, RIGHT?

SCHRÖDINGER'S SOCIAL RELATIONSHIPS

gridCOMMENT 160.3

hiiii guyssssss

ok guys let's address the elephant in the room. the puzzle looks kind of and is question mark. why? to be super transparent, this is my first stab at a schrödinger puzzle. except there are actually three possible answers, which is even more awesome, because i'm just inclusive like that. what? i love love and i love everyone, and so i wanted this puzzle to apply to everyone because everyone should experience love. yeah. i'm him. i'm erwin schrödinger. sorry to spoil, i just felt that i needed to provide an explanation. the **gridWORD**'s not great, but i tried and that's what's important, so let this be a message to you as midterms approach. you're trying and that's what's important. i love you. yes YOU

last time, i asked you all what your proudest accomplishment was, and you all said:

- **thirdoffive**: Climbing Takakkaw falls in Yoho National Park! [with a picture kindly attached below the **gridWORD**!!! thank you]
- **67biscoffloverzzz**: CONSUMING 6 TUBS OF YOGURT CHEESECAKE HACK
- **six_seven_factorial**: immigrating to canada :)
- **pac_gym_playlist**: An accomplishment that I am most proud of is that for the past year, I have been

compiling a family tree with as many relatives of mine as possible. Since most of my family is in India, and I grew up here, it gave me a chance to connect with my roots. Excluding myself, I have been able to track up to 5 generations back, and my tree has 335 people and counting 😊

not sure why there are TWO 6 7ers here. not sure how to feel about this. that aside, these are all super super sick accomplishments, and i felt so proud of all of you reading these. it was so hard to pick a winner because i love you guys and these are all incredible achievements, but one must come out on top; congratulations to loyal gridWORDer thirdoffive!!! i like looking at pictures. please pick up your prize at mc 3030 the mathnews office, which is where you all should be submitting your completed gridWORDS with an answer to the **gridQUESTION** and your pseudonym by feb 23 6 pm, or email them into mathnews@gmail.com. thanks for playing and we'll see you next time on "who wore it best". **gridQUESTION** for this issue is: what is love to you? no using llms to answer. i'll know

love,

spaghettiinhalers

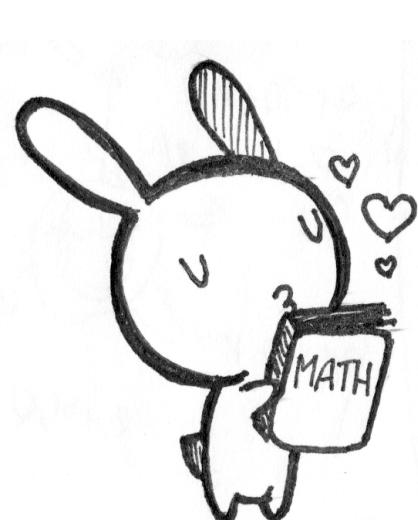
ACROSS

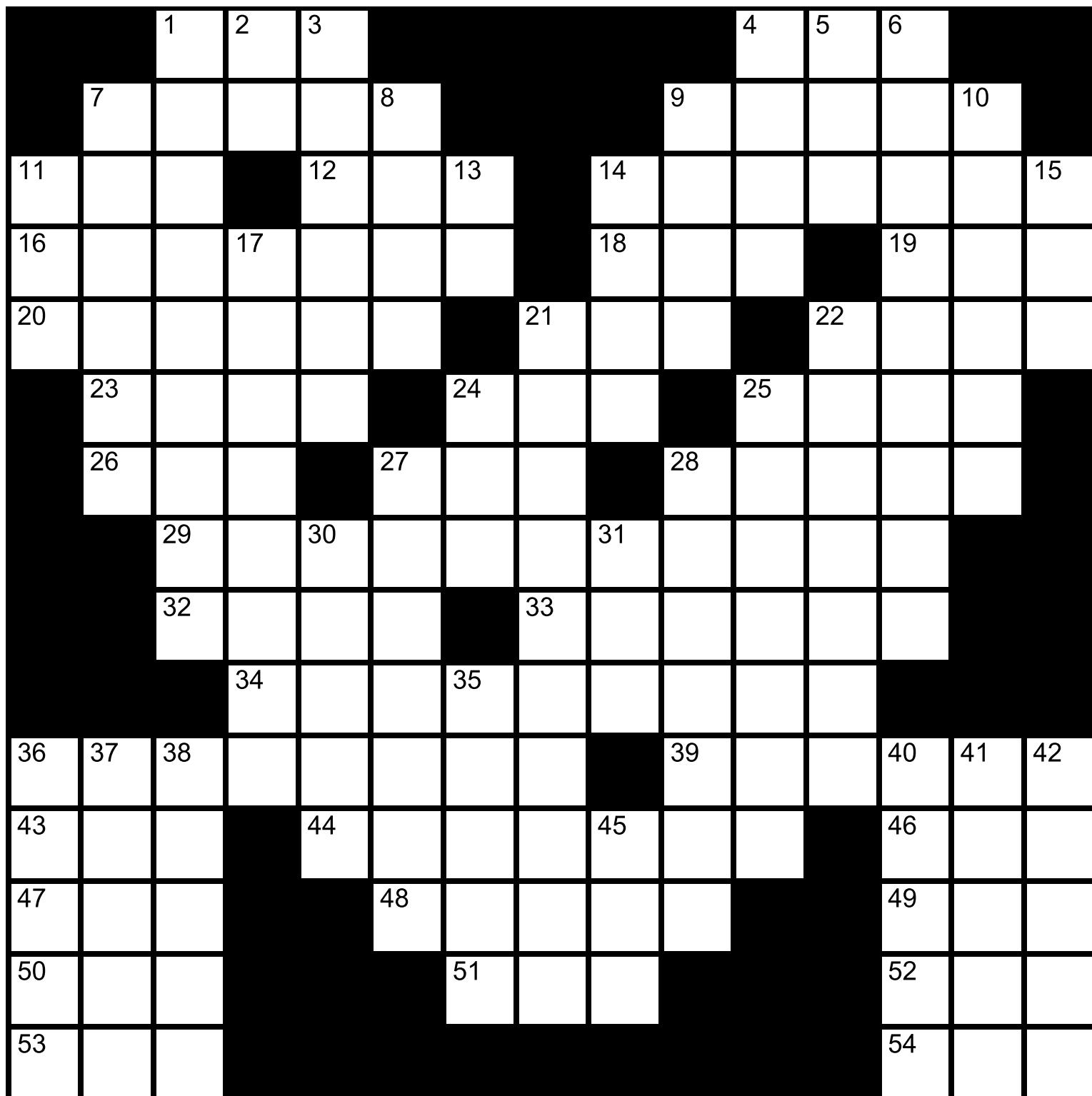
1. Apply gently
4. Greek letter for pressure
7. Flies alone :(
9. Pester
11. Setting for an iconic scene from an iconic romcom starring Rachel McAdams and Ryan Gosling
13. It was needed for Lindsey Vonn at the 2026 Winter Olympics
15. Bed and breakfast
16. Number of people in groups commonly seen on 21 - Down
17. Dashes used by ChatGPT
18. Big bird
19. Error allowance
21. It represents emptiness or nothingness in something
22. Snag
23. Drain
24. Chum
25. Millinery
26. Grey, in a way
27. Nada
28. Mall melodies
29. Final variables in the Pythagorean theorem
32. Drive - __
33. Irritate
34. Pool game
36. Large Chinese seaport
39. Turning to the right
43. Ring bearer, maybe
44. Cheapskate
46. Chinese steamed bun

47. Mail place: Abbr.
48. Coil of yarn
49. Tokyo, once
50. Increases
51. Consume
52. Help
53. Ogle
54. "___ Doubtfire"

DOWN

1. Utter
2. Vatican vestment
3. Dog's footwear for winter
4. Pea holders
5. Seek damages
6. Enzyme that turns sucrose into fructose and glucose
7. Series of movements
8. Cut
9. Rope material
10. Jacquard fabric
11. Cup edge
12. Common preposition
13. It is commonly shared by two people on a date
14. Baby pack animal
20. Female black grouse
21. Holiday you can observe with a peer or peers on February 14
22. Small antelope
24. Plum's centre
25. Grinder
27. Nothings
28. Radiation, e.g.





Drop your gridWORD solutions off at MC 3030, or email them to mathNEWS@gmail.com!

LOOKAHEAD

SUN FEB 15	MON FEB 16	TUE FEB 17	WED FEB 18	THU FEB 19	FRI FEB 20	SAT FEB 21
Reading week begins	Family Day		Battery Day		Tuition and fee refund deadline—50%	Reading week ends

SUN FEB 22	MON FEB 23	TUE FEB 24	WED FEB 25	THU FEB 26	FRI FEB 27	SAT FEB 28
International Dog Biscuit Appreciation Day	mathNEWS 160.4 production night		Application deadline for jobs posted during reading week—9 a.m.		mathNEWS 160.4 released	Public Sleeping Day

LAST ISSUE'S gridSOLUTION

1	P	2	O	3	S	4	H	5	T	6	S	7	P	8	F	9	L	10	O	11	R	12	A	13	L
14	O	15	R	16	E	17	O	18	C	19	R	20	A	21	A	22	B	23	B	24	A	25	D	26	T
14	O	15	R	16	E	17	O	18	C	19	R	20	A	21	A	22	B	23	B	24	A	25	D	26	T
17	E	18	E	19	E	20	M	21	A	22	A	23	A	24	D	25	S	26	A	27	D	28	G	29	E
17	E	18	E	19	E	20	M	21	A	22	A	23	A	24	D	25	S	26	A	27	D	28	G	29	E
28	E	29	G	30	G	31	H	32	E	33	L	34	L	35	S	36	G	37	Y	38	P	39	E	40	R
36	G	37	O	38	O	39	A	40	R	41	T	42	E	43	R	44	A	45	R	46	E	47	S	48	E
36	G	37	O	38	O	39	A	40	R	41	T	42	E	43	R	44	A	45	R	46	E	47	S	48	E
47	R	48	E	49	S	50	T	51	A	52	H	53	D	54	S	55	A	56	M	57	S	58	D	59	T
47	R	48	E	49	S	50	T	51	A	52	H	53	D	54	S	55	A	56	M	57	S	58	D	59	T
55	A	56	M	57	A	58	S	59	L	60	T	61	E	62	H	63	E	64	C	65	A	66	U	67	A
64	C	65	A	66	M	67	O	68	X	69	P	70	O	71	E	72	D	73	E	74	P	75	R	76	T
64	C	65	A	66	M	67	O	68	X	69	P	70	O	71	E	72	D	73	E	74	P	75	R	76	T

ADDISON RAE REVEALS THE MEANING

Sometimes people know more than they let on. You just have to listen carefully. The truth is there for you to sniff out. Meaning lives in webs.

AbelianKwyjib0

SOUR IS THE WORST FLAVOR HOT TAKE

Fried Rice

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

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

THE mathNEWS EDITOR WHO PUTS THE “NEWS” IN mathNEWS