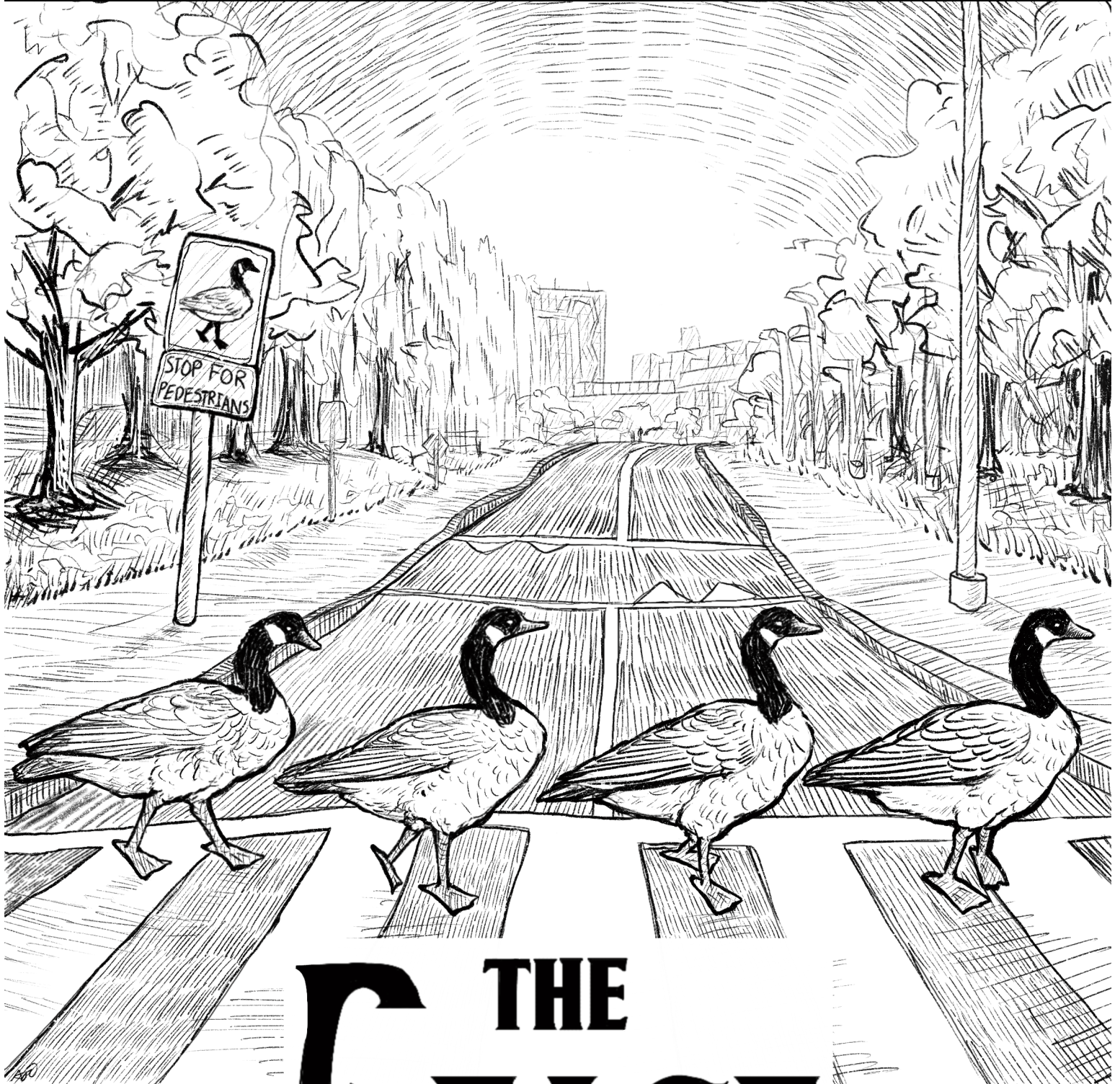




Fly Together
Somebird
Maxwell's Black Weaver
Oh! Starling
Cormorant's Garden

THE GEASE

Sun Kingbird
Mean Mr Martin
Polythene Puffin
She Flew In Through
the Bathroom Window

“WHAT WOULD BE THE STAR DISH AT YOUR MATHS-THEMED RESTAURANT?”

I don't want to think about food at all right now, to be honest... it's too hot for food! We've had an unusually hot and muggy past week, haven't we? Especially unusual for this time in September. Earlier today I made the mistake of having a delicious, piping-hot tea at the Math C&D, and halfway through became uncomfortably aware that it was significantly raising my body temperature, with no way to sweat it off in this humidity. I'm writing to you from the **mathNEWS** office floor, which is at least cold enough to bring a little relief to this personal sweaty hell I've put myself in.

Things are officially back in full swing! Every course has posted the first assignment by now, and some of those are already past due; oh yes, dear reader, the beginning-of-term grace period is now over.

But that also means we've entered the season of procrastination! What better time to kick back with a fresh new issue of **mathNEWS**? Keep an eye out for the multitude of reviews present in this issue — whether you're a weeb, a swiftie, or a weener (what do ween fans call themselves?), there's a little something for everyone! Go on then, take a look. Your assignment can wait.

The job search can wait too, actually. Who needs a co-op, anyway? (muffled CS student sobbing noises) For those of you who have managed to get Cycle 1 interviews, best of luck and be proud of yourself! And for those who haven't, do not despair. There's still ample time left to find something. :)

Be sure also to check out the **mathASKS**, featuring an exclusive interview with current MathSoc president Alex Lavallee! Such an elusive figure! I've never seen him. Have you seen him? Is he real? Is MathSoc real? Where am I?

Stay silly everyone!

barkED
Editor, **mathNEWS**

ANDOIII	Deconstructed (aka, Banach-Tarski'd) Zorn's Lemon Pi
USMAN!	mathatouille
TEMPORARY_CHAOS	Cube Root Flambe (roasted carrot cubes)
SILLYBILLY	Proof pudding
MR. SUNSHINE	Sun rays
AURELIO	Set Meal
SMALLMOUTHBASSHATER	$(x^2 + y^2 + z^2 + R^2 - r^2) = 4R^2(x^2 + y^2)$
CRIMSON	onion polynomial rings
JUBBLE	Your current server...
SNOWDOZER	Deep fried honey garlic stellated dodecahedra
MOUTHPIPETTER	wagyu jamaican patty coated in chalk dust
STC 3 RD FLOOR BATHROOM	Ringworm
QUAAAAAAAAAAAAAACK	Star-fish dish
MRBLUESKY	A Pizza Pie (in my Italian's Grandfather's Accent)
UFO	*flies past discretely*
BEESKNEES	Infinite slices of π
ABELIANKWYJIBO	Bananach space
MOLASSES	sinusoidal soup, featured in mathNEWS 156.6
VALLIE	Pi!
BEYOND META	A sandwich
DOLLAR STORE PERSON	either mathNEWS pizza pi or joe west
LARS NOOTBAAR	Prime Rib (Everyone is going to ignore this one so just thought I would say it and get it out of the way)
APFH	Terence Tao's left kidney
DICK SMITHERS	Code Spaghetti
JOCHEMIST	Euler's Steak and Eggs

ARTICLE OF THE ISSUE

This issue's AOTI is Dick Smithers' [The Cask Of Almondtdadillo](#). Come to the **mathNEWS** vaults in MC 3030 for your prize!

contentED
Editor, **mathNEWS**

Encouraging forehead kisses are actually crucial to editor workflow.

SASHA NOVIKOV, **mathNEWS** EDITOR FOR FALL 2025
ALONG WITH SARA NAYAR, NOAH NAZARETH, AWAB QURESHI, AND TOM SI

mathASKS 159.2

FEATURING MATHSOC PRESIDENT ALEX LAVALLEE

USMAN!: WHO ARE THE SEVEN ALEXES?

Long ago, in a MathSoc very near the lecture you're skipping, there once existed seven Alexes, who split the knowledge bestowed upon them by the pink tie, so that they could spread it among the math students of Waterloo. All was well on 3rd floor MC, until this one really awesome funny Alex (winky face) decided to reclaim this trove of intelligence for himself. To this day, two Alexes have fallen to the cold, cruel heart that rests in this Alex's chest. Rumour has it that with only four Alexes left before the power of math is unleashed; the devilish Alex who wishes to reclaim this power is planning on taking out Alex. Yes, that Alex, not the other Alex, but the Alex who did that thing... correct, that one. If you are an Alex who frequently wanders the halls of MC, be warned! I will return this power to my soul!

MOLASSES: HOW IS EXECUTIVE RESTRUCTURE COMING ALONG? CAN YOU GIVE US ANY SNEAK PEEKS INTO WHAT IS UNDER CONSIDERATION?

What a wonderful question! Exec Restructure is... coming along. A lot of members of the committee have just finished their "terms", and as of right now there are two council seats and two board seats open. That being said, the remaining members of the committee are rather motivated to complete the current project, that being collecting information about how to restructure the execs based on a series of questions, and ideally we will be able to complete this, and get a proposal out prior to GM. I'm rather optimistic that this will get done, as the committee has historically been very good at progressing things along. Beyond this current project, I have plans of my own for Exec Restructure. I'm fortunate enough to be able to interact with a lot of past MathSoc execs, and I'm hoping to gather some advice from WUSA Governance to help advise the committee on a long term restructuring plan, that will carry forward after my time as President ends.

👹👹: 👹👹?

So true vro 🐼📖👹

MATHSOC COUNCILLOR: IF YOU HAD COMPLETE DICTATORIAL CONTROL OVER MATHSOC, WHAT IS ONE JOKE THING AND ONE ACTUAL THING YOU WOULD CHANGE?

How did you know I'm planning on overthrowing the other execs 😊... anyways...

I have kept this to myself for a very long time, but honestly, MathSoc absolutely needs a pet cat. Obviously someone would have to take care of it, and so with (not so) much convincing, I would take care of it and bring it home everyday, but they could wander the halls of MC 3rd floor with me as I look for friends to talk to.

All jokes aside, this is a very hard question. MathSoc is far from perfect, and there are lots of significant issues that could definitely afford to be changed. I could go on about bureaucracy, executive structure, society and club relations, and so on, but to be honest, that's not very representative of the impact I want to leave on MathSoc as President. So, if I could change one thing, I would change MathSoc's spaces on MC 3rd and M3 to be more student facing and stimulate more social interaction. MathSoc is an undergraduate student ran society, whose ultimate goal is to enhance the Math student experience. I strongly believe that the best way through which MathSoc can assist with this, is providing clubs and events where students have the opportunity to make friends with similar interests. I've made some amazing friendships in my time as not just the President, but even just as a Club Executive with PMC, and so I always aspire to provide students with more opportunities to make the same connections I've been fortunate enough to make.

__INIT__: FAVOURITE NUMBER?

The delta that works for all of my epsilons... Okay sorry, I just had to get my love for analysis out. I've actually thought about this for a quite a while now, and I think it has to be pi. It's the single most significant number I have ever come across. I saw pi when I was a kid, first learning about what a circle is, and just when I thought that was it, NOOOOOOOO, we have pi in Calculus, pi in Harmonic Analysis, pi in Number Theory, LIKE WHAT IS UP WITH THIS NUMBER ITS SO COOL!!! Oh and also MathSoc has Pi day, you should come it's the best day ever!!!

LOCAL FEMBOY LOVER: WHAT IS PREVENTING YOU FROM BEING A FEMBOY?

Ummm... moving on...

DOLLAR STORE PERSON: FAVOURITE BRIDGE?

Honestly, I've really come to love the SLC to MC bridge. It's so scenic, walking over everyone as they sprint towards their next class, while I roam around for the love of the game. Plus, in the Winter, it's literally the best thing ever. I basically never have to go outside, since all I could ever possibly need is either in MC or SLC. Need food? CnD. Need money? CIBC in SLC. Need to go to class? Not an issue, I skip everything that's outside of MC. It's literally the perfect system.

Anyone got a joint or something to smoke?

PROF. TROY VASIGA

APHF: WHAT ARE YOUR THOUGHTS ON THE SNOOPY SIBLINGS, DO YOU ENJOY THEM AS CERTIFIABLY AS SNOOPY?

Okay, I definitely can't say I enjoy them as certifiably as the one and only Snoopy, but... I LOVE SNOOPY'S SIBLINGS. They're all so cute, the Peanuts short that talks about Snoopy's family is like comfort food to me, it always cheers me up on bad days. They get so many good little cameos throughout the Peanuts cartoons, it's always the best seeing them pop up from time to time! Also, I need to give an honourable mention to Woodstock, I definitely love him just as much as I love Snoopy! Shoutout to all my Woodstock enjoyers out there 🐦

YALEVOYLIAN: DO YOU HAVE ANY MOVIE RECOMMENDATIONS?

Oh absolutely! So, I know this is a little bit on the ball for a Math student, but my favourite movie is *Good Will Hunting*... I KNOW THERE'S MATH IN THE MOVIE BUT IT'S SO GOODDDDD! Please watch the movie if you haven't, I can't even describe how good it is without ruining the fun for you all! I'm also a big horror movie fan, for those who are unaware, so I would also recommend *The Thing* (1982) to the uninitiated. It's a masterclass in horror, combining an amazing setting and premise, good visual effects, engaging characters, some mystery, and one of my favourite movie endings of all time! I could go on about this forever, so if you want more movie recommendations, you're going to have to find me around MC!

MUGENHEIWA: WHICH EVANGELION CHARACTER WOULD YOU SAY BEST DESCRIBE YOU AND WHY IS IT SHINJI?

Oh no, anyone but Shinji... Okay but on a more serious note, I try not to identify with the characters of Evangelion for the most part. They are emotionally complex, often reflecting significant aspects of the director's difficulties with depression, and don't reflect who I want to be as a person. So maybe this is bypassing the question, but I pick Pen Pen, the true best character of Evangelion (okayyyyyyy, maybe I can also go with Misato after a long day of work, eating instant ramen for dinner ;)).

JOCHEMIST: IF YOU COULD BE ANY INDIE VIDEO GAME CHARACTER, WHO WOULD YOU BE?

I got so excited to answer this question when I first saw it, and so I started going down my list of Indie games to get some inspiration. As I go down, all I see is Omori, then Undertale, then Yume Nikki, and the list goes on... it's not looking good. After doing significantly more digging, I ended up deciding on... drum roll please... Kel from Omori! Now I know it's pretty unconventional to pick a character from Omori—it's not exactly the happiest Indie game out there—but Kel is the sun that shines upon my world. He's an absolute yapper that goes on crazy tangents and is constantly running around, literally me fr. OH AND HE LOVES ORANGE JUICE, LIKE HOW AWESOME IS THAT. Oh and if you think this answer is boring, come find me and let me know, I will Kel nuke you :)

0.423: HAVE YOU CONSUMED YOUR DAILY REQUIRED AMOUNT OF CAT MILK?

So when I first saw this question, I went on a big tangent trying to figure out what cat milk is. So far, I have consulted Google, asked a few friends, asked a few friends' cats, and spoken with the WUSA lawyers. They are still trying to figure out how I should respond to this, so maybe I'll answer this question one day...

APHF: WHO'S YOUR FAVOURITE OF SNOOPY'S SIBLINGS?

Snoopy's siblings are so cute, you ripped my heart out making me answer this :(After careful deliberation, in consultation with every Snoopy memory I have ever made, I think it must be Spike. He's the absolute classic sibling, with so many cameos across so many Peanuts shorts, and so many goofy little jokes. It makes my day to see a silly Peanuts strip featuring him, and I hope one day he finally gets his Christmas cactus to light up.

BEEKNEES: WHAT IS YOUR FAVOURITE ITEM OF SNOOPY MERCH YOU OWN (OR HAVE WANTED TO OWN)?

I love talking about Snoopy! Okay, so I've come to own my fair share of Snoopy/Peanuts related items in my lifetime, and I have been pacing around my living room trying to figure this out for so long, I could've finished my PMATH 450 assignment in this time. But when it really comes down to the wire, I think I have to go with my Fall Snoopy mug. My mom gifted this to me, after she found it shopping one day, and remembered how much I love Snoopy. It's nice and big, so perfect for fitting my large black coffees and soups in, but it also reminds me of the little things in life. There's just something so soothing about watching Snoopy and Woodstock play in a pile of leaves, while you sob over the Mount Everest that is the assignment you've got due the next day (I'm looking at YOU, PMATH 450 ☹)

DOLLAR STORE PERSON: FAVOURITE VEGETABLE?

Fun fact, I had to search up the food I was thinking of to make sure it was a vegetable before doing this... anyways, I absolutely LOVE cauliflower. There's just something about the initial crunch when you bite into the beautiful amalgamation of fibres, before you're pleasantly surprised with the unique flavours and textures that fill your mouth as you scarf down the rest of its beautiful, earth grown figure; and don't get me started on steamed and grilled cauliflower mmmmmmmmm. Wow, that was a lot. I guess you all know that cauliflower is the best now.

TERMINAL: WHAT DO YOU DO TO YOUR HAIR?

Fun fact—I don't really do anything. For the most part, I just shower, lather it in my trusty 12-in-1 soap, dry it, and hope for the best. At most, on days where I don't want my hair everywhere, I will slick it back so as to keep it out of the way, but trust me, I'm not doing anything crazy to it.

USMAN!: DIDN'T WE ALREADY INTERVIEW YOU?

I eated the interview 🐱

RAPIDEYEMOVEMENT: FAVOURITE PASTRY FROM THE CND?

Honestly, I absolutely love the rainbow frosted sprinkles donuts... I know it's probably not very tasty (in fact, it's all sugar), but I have the biggest sweet tooth in the world. If you ever have any leftover candy or ice cream that is inconveniencing you, call me and I will solve all of your problems.

DIRECTIONAL CODE

Whenever a video game requires entering a passcode of sorts, I'm always down for a directional code. While numbers, characters, symbols are cool, the classic arrow gets the visual aspects right. Pretty much any control scheme can be used to input a directional code, whether moving the joystick left and right, pressing down the arrow buttons, or waving your remote controller up over your head, it's nearly universal. The ways directional inputs are handled in-game can be quite varied as well. Maybe the code can be inputted anywhere through the controls up above, press down some in-game buttons, whack some targets or simply just dash in the right directions in order, or perhaps it has to be interpreted as directions through an endless crossroads maze down beneath the final dungeons, or even just as directions of a path through a regular area. Sometimes it's through navigating the menu, right under your noses, sometimes it's the required inputs layered on top of regular gameplay, requiring you to mix up your strategy and habits, sometimes you might even have to perform a time trial at the same time, turning up the difficulty. If you ever need to remember and *write* down the code, arrows are simple to draw with a pencil, and even if you're only left with digital means, various ASCII and Unicode symbols can fill that gap right up.

The ways directional codes can be hidden right in plain sight is very fascinating as well. They can be obvious, or down right diabolical and devious. Some games hide it through particularly-shaped lines in the environment, such as the moss up on the wall, the sand of a small isle, the coffee stain from a mug set down on a page, or a strangely-shaped hallway in a strange save file. Maybe the way flowers or candles are arranged right around a square, bushes or stars are placed orthogonally to each other, or chromatic aberrations or foggy bloom are shifted and coloured can also portray a code. The contours of the notes of a wind chime, the movement patterns of an enemy, allusions and synonyms (and even straight up the words themselves) in prose and poetry, directional codes are easy to hide everywhere, making it more than a format just left of regular numbers and symbols. Though, how you personally design unique methods to conceal codes is left up to you to get right.

that one fairy

DO YOU REMEMBER... THE 21ST NIGHT OF SEPTEMBER...

ORB, WIND AND EMBER

AH AH AH AH HHH EEEE AH HHH HHH SAY THAT YOU REMEMBER

sigmappbond

IMAGINE MY JOY WHEN

I look up the title of a movie and not only is it available in full on youtube but the title of the video ends with #gayfilm. no other hashtags. mind you i dont even know if hashtags work in the titles of videos, like as a filtering mechanism. it's just #gayfilm. so true bestie it is gay and its beautiful

normalparameters

this movie is called "in the gloaming" and to ruin the illusion I actually watched it a long time ago and I can't remember if it was good. but I think it was (hopefully). tbh I only watched it because of robert sean leonard

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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WEEN AND WEED: THE MOLLUSK REVIEW

SPONGEBOB WOULD NOT EXIST WITHOUT THIS ALBUM

I'm back at it with more weed and more Ween, as is tradition. Today I am tackling the phenomenal album *The Mollusk*, released in 1997 and containing the hit single Ocean Man. I would like to begin by saying this album is one of the biggest inspirations for SpongeBob SquarePants, and SPONGEBOB MIGHT NOT EXIST WITHOUT THIS ALBUM. Okay now that that's out of the way, *The Mollusk* is "a maritime-themed and progressive-rock-flavoured magnum opus," according to some reviews. Among the vast majority of Weeners, it is considered one of the best Ween albums, which for a band as amazing as Ween is a good sign. Also, this is where the phrase "lost in the sauce" comes from (see the review for Waving My Dick in the Wind). Here we go!

I'm Dancing in the Show Tonight: It's pretty fun but it sounds too much like a children's song for me to like it, y'know? **3/10.**

The Mollusk: This is one of the best songs on the album imo, probably even one of the best Ween songs ever. It's ethereal in some way. I don't know what kind of sounds they're making, but I can't help but wiggle along. **20/10.**

Polka Dot Tail: I have never seen such a whale, but I have enjoyed such a song. And now I want to squish a flan in my hands. Billy. **9/10.**

I'll Be Your Jonny on the Spot: It sounds like what putting your mouth over your phone speaker and going wubba wubba over some loud bass feels. **9.5/10.**

Mutilated Lips: I'm smoking a really high THC flower right now, and I think the song can tell. **11/10.**

The Blarney Stone: YARRRRRRR I LOVE PIRATES. I love pirate music. I love you Ween. Also I love whenever Deaner sings, so. **9/10.**

It's Gonna Be (Alright): I was freaking out earlier in the day because of a PMATH 455 assignment, so this made me feel calm and happy :). **10/10.**

The Golden Eel: I cannot reveal the words of the Golden Eel. **11/10.**

Cold Blows The Wind: This is apparently based on some old English folklore. I like what happens midway through the song a lot. **10/10.**

Pink Eye (On My Leg): Why is there a dog barking? **9/10.**

Waving My Dick in the Wind: They say "lost in the sauce once again," so I googled it and Google attributes the phrase "lost in the sauce" to Gucci Mane in 2013. This album came out in 1997. Soooo I'm going to say Ween came up with this phrase. It is also my Discord status and a reference to this song, which is my favourite on *The Mollusk*. **∞/10.**

Buckingham Green: Holy fucking shit. **20/10.**

Ocean Man: take me by the hand, lead me to the land that you understand. Ocean man, the voyage to the corner of the globe is a real trip. Ocean man, the crust of a tan man imbibed by the sand, soaking up the thirst of the land. Ocean man. **11/10.**

She Wanted to Leave: It loops around to start playing a slowed, twisted version of "I'm Dancing in the Show Tonight," which I also didn't love. It also just feels like a really weak ending to such an amazing album. I will probably not listen to this song much more, but I can't blame it. **3/10.**

Overall: Well considering I gave an infinity, we as mathematicians should know that the rating must obviously be **infinity/10.** So that's what I'm going with. If you liked Ocean Man, you should absolutely listen to the rest of the album. It's a phenomenal mix of everything that makes Ween Ween, especially The Mollusk, Ocean Man, Buckingham Green, and Waving My Dick in the Wind. And who can hate an album that gave us the beautiful phrase "lost in the sauce?" (Gucci Mane believers are in shambles from the Ween Truthers.) Listen to this album, and bring your new-found mollusk along! **∞/10.**

big weener

TRENTE OCTOBRE 1971

A beautiful day to write. Sunny, mild breeze. Quiet. I am sick, in bed, sore throat and sniffing. I slept roughly yesterday.

Did you know it is about to be four years? I finished this whole degree. But it doesn't matter, it feels like it has no real weight.

Someone mentioned your name yesterday and it set my mind off. Once in a while I get this sneaking suspicion that we aren't done yet. I don't know why, but out of everyone I've ever met, I still only think about you. Nobody has overwritten the memories of you yet. In four years. And I've met a few people that should have.

Trying to make any sense out of it makes me feel delusional. There is no rhyme or reason, I know. But I won't talk to you, I wouldn't bother you.

I can't bother you.

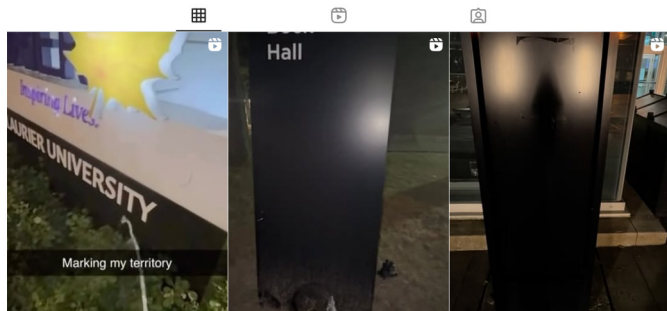
Four years can easily be five. I don't know what to do.

SH

THE UW PISSER

CAN I CURSE IN mathNEWS?

It was a cold (actually pretty nice), dreary (it was actually quite sunny out) morning. I, like a good studious student, cracked open a book Instagram and started doom scrolling. During this period, I came across an account, calling itself the Waterloo Pisser.¹ For those of us who were not in the know like me a second ago, this is an online trend where unknown individuals decide to become Dexter by pissing on campus (or pretending to, which I do believe is UW's case). Why is this a trend, you may ask? I do not know, it could be drugs, it could be internet clout, it could be the fact that the washrooms in this place are like needles in a haystack, who knows? (Yes, I am a first-year. How did you know?)



UW PISSER'S ACCOUNT CIRCA 2025

As of the date of writing this, there have been three attacks. The first one was on E7.² As a Math student, I did not care because I was not an Engineer. THEN THE PERSON ATTACKED MY OWN BUILDING!³ Why do they gotta make it personal? Did it show I have a double standard due to my reaction to E7... shut up. Based on the reel that was posted, an investigator⁴ attempted to discover the pisser's identity and meet them in the rock garden, INSTEAD THEY ATTACKED MY BUILDING. Anyways, after my building got PISSED on, the UW Pisser lay dormant until Wednesday, September 17th, when in an act I can only describe as an act of inter-university pisser war, the UW Pisser attacked Laurier,⁵ specifically the logo. Did this make the previous attack hurt less... no, but what's better than distracting people from domestic pissing attacks than starting a foreign pissing war (what has this even become)? As of the date of writing this, the Laurier Pisser⁶ has only responded with the following comment:

YO WTF GET OFF MY PROPERTY

— LAURIER PISSER

At this time, there has been no further response. As well, during the course of this investigation (searching the account on Instagram), another account has been found called the UW Trinity Pisser.⁷ At this time, they have posted five videos which

I won't go into detail on for this article, but they have attacked across from the Football field, Chem 2, SJU, and RCH.

Having only just discovered this, I cannot give full coverage, but it shows an increasing trend of pissing related crimes on campus. I expect this to reach its peak in the upcoming month, but as the weather cools down and the internet moves on to its newest trend, the pissers will fade and end up forgotten. Until then, Waterloo is under siege from the rise of internet pissers. If you know anything, please report this to **mathNEWS**, the most trustworthy News Organization.

MrYellowSky

Works Cited

1. UW Pisser's Account
<https://www.instagram.com/waterloopisser>
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<https://www.instagram.com/p/DOjbBDEgdqo/>
4. UW Pisser Investigator
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5. UW Pisser Laurier Attack
<https://www.instagram.com/p/DOtaTtNjXQC>
6. Laurier Pisser <https://www.instagram.com/wlupisser/>
7. UW Trinity Pisser
<https://www.instagram.com/uwtrinitypisser/>

BREADTH AND DEPTH REMOVED FROM CS REQUIREMENTS

Future students are saved

“¥?₩€/÷= #”£÷,”=

Solely to provoke an argument, I will say that I don't believe in infinite sets — they are merely convenient fictions.

PROF. DAVID WAGNER

GO PHUCK YOURSELF

N REASONS YOU SHOULD GO FUCK YOURSELF (PHP EDITION)

I'm being held hostage and forced to write PHP. With deference to OptimisticPeach's v154.5 article, I've documented my descent into insanity.

1. The signature of `array_map` is `array_map($callback, $array)`, whereas the signature of `array_filter` is `array_filter($array, $callback)`.
2. A `use` statement brings a class from a different namespace into view. It, however, does not check that the name being imported actually exists. Instead, you get a confusing error message at runtime.
3. Namespace scopes are separated by backslashes. A leading backslash is *not* written when declaring a namespace, but a leading backslash *is* written when using a name.
4. PHP has Errors and Exceptions (both of which can be thrown and caught); but also `trigger_error` (which can only be caught with a global handler, assigned using `set_error_handler`, which actually pushes to a global *stack* of error handlers). *Cries in Result<T, E>.*
5. ...T? E? *Generics?* What are those?
6. Oh, and there's also `ErrorException`, which the documentation helpfully describes as "An Error Exception." Naturally, it extends `Exception` but **not** `Error`, because single inheritance.
7. `file_get_contents("https://mathnews.uwaterloo.ca/")`
8. Variable variables. What this means is that the program `$x = 1; $y = "x"; $z = "y"; echo($$z);` prints 1, because `$$z = $y = $x = 1`. You can also call functions this way (meaning, `$x = "size"; echo $x([1, 2, 3]);` prints 3).
9. Accessing a non-existent array index emits a warning, except when using `isset`. This is because `isset` is a *language construct* (ie. it's a keyword; the example given in the previous point does not work if `$x = "isset"`) and thus here and only here do we see lazy evaluation.
10. `Gender::get`, which, according to the documentation,¹ "get[s] the gender of [a] name." In case, you know, you were looking to have a white guy from 1995 misgender you or something.
11. `echo false;` prints nothing at all, whereas `echo true;` prints 1.
12. A function can take a value by reference by prefixing the argument with `&`. The caller, however, does not need to acknowledge this in any way; it happens invisibly.
13. Function parameters and return values can be annotated to check types at runtime, but variables cannot be annotated.
14. Further, one can use the `array` annotation to indicate that a parameter or return value is an array, but there is no way to indicate the type of the elements of the array (cf. #5).
15. "Let's implement a function to parse query parameters from a URL. You know, that `q=abc&id=123` junk?"
"Sure, what do we call it?"
"Uh, `parse_str`?"
"LGTM! 
16. PHP doesn't require you to declare variables before use, so the line `f($x);` implicitly declares a variable named `$x`, and then passes it (or a reference to it, depending on the definition of `f`; see #12) to `f`. It's equivalent to `$x = null; f($x);`, but in 11 fewer bytes!
17. You can also implicitly define associative and/or multi-dimensional arrays, so `$x["a"]["b"] = 5` implicitly defines `$x = null`, then converts it to an array, then sets `$x["a"] = null`, then converts it to an array, then sets `$x["a"]["b"] = 5`.
18. Oh, and in spite of #9, no warnings are emitted for doing any of this. Because you deserve to know if you access a non-existent array index, but a non-existent variable? Pffft.
19. `goto`. (Honestly, Brad should've made us do C10 in PHP. It would've been just as cursed.)
20. `define`. It's just C's `static const`. But, also, in PHP7, you can pass a third parameter to make the definition case-insensitive.
21. You can stick an `@` before any expression to disable error reporting. This definitely does not make debugging a nightmare. Oh no it does not.
22. The function `ctype_alnum` tests if "all of the characters in the provided string are alphanumeric." It, however, returns `false` when provided the empty string, because apparently PHP developers don't know what the word "vacuous" means.
23. `strtotime('next Thursday + 7 weeks - 2 hours')`. Because, you know, `strtotime('tomorrow')` you might need that. And decide you want to trust whatever black-box parsing algorithm we've implemented to do it correctly.
24. The logical 'exclusive-or' operator is `xor`. Wait—that's—actually quite nice!? Most languages use `^`, for some reason...
25. ...okay, let's do trivia. What does the statement `$x = false xor true;` do? If you said that it assigns `$x` to `true` then you'd be... wrong! This is because the `xor` operator has *lower* precedence than `=` (assignment), and so this is actually the expression `($x = false) xor true;`, *you absolutely ungrateful fucking shitgibbon*.

Okay. I can feel my veins about to explode, so let's leave it at that.

CHAT, ARE WE LISTENING TO ABBA?

So recently, I’ve been on an ABBA kick, and of all the bands, dare I say top 20 of all time? They have a wonderful collection, most songs are iconic and nice to sing along to, and they remind me of my mother (she’s British). Excellent band.

The Winner Takes It All — 10/10

A strong start in this ranking, because as a lovelorn, sometimes you have to say goodbye, and it feels like losing, not being with someone you loved. HOWEVER I am a firm believer that when something doesn’t work out, that means there’s something better eventually around the corner. Just like me switching from math to communications, some would call me a loser, and my major a “side quest,” but (considering how happy I am now) you see, the winner takes it all.

Take A Chance On Me — 8.5/10

Me to every guy I’ve ever fancied. I fear I should de-prioritize love, but it’s what makes life so wonderful and devastating! Am I desperate for a love story? No, that’s why we have fanfiction. I just have a lot of love to give, and my friends and family don’t want all my love. So... boyfriend! Problem solved. This song is a bop, AND it played at the beginning of Get Smart, one of my favorite spy movies ever.

Angel Eyes — 9.9/10

This song goes hard with a heartbreak. In all seriousness, it sounds more otherworldly compared to the rest of the songs on the list, which I like. The lyrics are life advice for any woman, and I want to do a creative project concerning people’s eyes and how expressive they are. It’s ironic, since I have autism and eye contact scares me.

Slipping Through My Fingers — 7.2/10

Time is always getting away from us, with school, work, love, family, friends, and hangouts... the young Jochemist slips away each day. But I’m kind of glad for that?? 11 year old me wasn’t very pleasant to be around. Then again, she was heavily traumatized and depressed.

Waterloo — 7.8/10

Fun song, my city mentioned. Next!

Dancing Queen — 8.7/10

Who *doesn’t* want to be the dancing queen? This WILL be played at every girlie’s birthday party, and I’ll eat it up every time. Even though I can’t dance, I’ll dance to this song (basic take, but am I *wrong*??? No, Jochemist is always right). I want a guy to fall in love with me watching me dance to this song because that’s when I’m my freest. Anyways.

Money, Money, Money — 8.6/10

Run me them bands. But seriously, marrying rich is what I was told to do for a part of my life. Now my mom tells me to make my own cash. And ABBA is right; money is funny in a rich man’s world. I smile and grin when I participate in capitalism without worrying if I’ll have enough for groceries. Now if I had BIG money...

Gimme! Gimme! Gimme! — 8.9/10

My only gripe with this song is that talking to anyone past midnight means that I’m a little *too* open about myself. Gimme a man at 10:50 pm, and we’ll be just fine.

Mamma Mia — 8.2/10

Extremely fun song, but I never saw the related media. I just don’t hold much emotional significance to this song. PLUS there’s only one (1) man who I would apply this song to, and that’s because he’s my best friend and letting him go would be a massive security breach. He’s got my steam login, my passwords, everything! And I miss him dearly, as I do all my friends who aren’t 5 minutes away.

Knowing Me, Knowing You — 7.1/10

For a breakup song, it makes you feel like walking in a city but you can still see a lot of greenery and things are okay. You’ve accepted that the relationship has run its course, and you can be safe in walking away. That’s quite healthy!



That’s all from me this week; I have a group project that my other group members haven’t done their part on and it’s due tomorrow. Wednesday, I’ve got a date (I asked out my crush, yippee!), Thursday is ballet, Friday is therapy. I’m a busy bee, but I love life like this.

Jochemist

RANKING ALL KPOP DEMON HUNTER SONGS

1. Golden
2. How It’s Done
3. Your Idol
4. Soda Pop
5. What It Sounds Like
6. Takedown
7. Free
8. Strategy

Fried Rice

ALBUM RECOMMENDATION

THE MICROPHONES – MICROPHONES IN 2020

I have this really great **mathNEWS** strategy where I have no plan ahead of time, and then I just write an article about something I've been thinking about over the last two weeks. Sometimes you get articles that some (possibly including myself) would say would be more unique, or perhaps a nice story. However, this strategy also comes with its drawbacks. What if I have been thinking about nothing for the last two weeks? What if all I've been thinking of is if recalcitrant phosphorus is the same as non reactive phosphorus and if that fully includes dissolved organic phosphorus? What if the thing I really should have been **#%*ing* pondering over the last two weeks was what the hell this had to do with my assignment beyond a few paragraphs?

Then I might not be left with anything good to write about.

The one other thing I have been thinking (albeit unconsciously) about while I sort out this mess is my study music. This leads me to my album recommendation: *Microphones in 2020*, by Phil Eleverum of the Microphones and Mount Eerie.

My roommates have grown weary over some of the more *experimental* Microphones/Mount Eerie songs I have played over car rides. However, this album is a much easier, gentler listen, that always brings me a calm I can zone out to or a strong catharsis when I listen. The one “catch” of this album is that it is actually one forty-five minute song (a snobby album recommendation article can't feature something too accessible, that's how it ends up on TikTok! How can we gate-keep then??). However, I do feel the lack of breaks makes it even better as a study listen.

In this song, Phil reflects on how he has changed and hasn't over the last 20 years since the release of his first big album, *The Glow Pt. 2* (also a good listen). I really find a lot of inspiration in its imagery of youth and coming of age, but also how even once we do “come of age” we are always still changing. I think this song has some of my favourite lyrics of any song/album. Such as:

The true state of all things is a waterfall

With no bottom crashing end

And no ledge to plummet off

Full of debris and flowers, never not falling

And in it we swim and fall

Sometimes beside

Often apart

It's just chaos heaving

And

“Nothing stays the same

No one knows anything

Someone else lives in the house I used to live in

And soon it will be torn down or burn”

And who would even want to live in a prolonged stagnation?

I am older now and I no longer feel the same way

That I did even five seconds ago

Watch me thrash around

And try to gracefully allow the past to hang

Like: “No big deal”

Lars Nootbaar

Link to Album/Song: <https://www.youtube.com/watch?v=A7BkabF31ak>
Hope you enjoy!

HI DAD

If you're reading this, that's wack. I'm not sure how you tracked down my **mathNEWS** pen name—or why, for that matter. Or maybe you still don't know my pen name, and you just started browsing articles until this one caught your eye because, well, you're a father of a current UW student.

I want to say thanks!

Thanks for always being so thoughtful, for figuring out what sort of kid I was, making sure that you taught me the things I needed to learn. Thanks for paying attention to what I paid attention to, supporting me both in my most passionate interests, and my most dubious shenanigans. Thanks for being there for me through my darkest times, and for all the great memories that your loving presence made whole.

I love you ♥

no pun indented

Ceci n'est pas filler.

A SURREALIST blackBOX

HOW TO NOT CRASH OUT: A GUIDE BY THE BIGGEST CRASHOUT

I SHOULD TAKE MY OWN ADVICE

are you getting pissed off by an assignment? about to get railed by your next calc quiz? your situationship decided that your 3 month free trial of affection and constant replies is over (maybe that's just me idk about this one)??? allow me to suggest ways to stop crashing out!!!

OR at least distract yourself from the reason you're going crazy :)

1. **go to the gym.** this is probably the most typical thing but it usually does wonders. go with a friend, make a carefully curated playlist with the most heartwrenching (or horny) songs from your liked songs, get emotionally attached to your gym crush. might still be sad but at least you'll be sad *and* jacked
2. **go to club events.** check your faculty's club events, join run club, figure out you hate running, go on a photo walk with photography club and romanticize waterloo (this is actually fire)
3. **go cafe-hopping with a friend and study** (*sacrifice your soul for the academic grindset*). there are a lot of cute cafes in KW region that i'd like to try so this is my way of adding this to my to-do list. take cute pictures of the cafe and post them on your story. but sometimes you really do have to leave campus to make your problems disappear (and live out your performative matcha clairo male fantasies)
4. **develop a new media hyperfixation.** find a youtube channel you like and watch *alllll* their videos (then get sad again), revive your pokémon addiction from middle school, watch the entirety of one piece—numb your brain by not allowing yourself any other thoughts!!!
5. **go to toronto.** really take the time to go on a solo date and do all the fun things you've been promising that you'd do. it's a really great day trip to do (LEAVE WATERLOO!!!!)
6. **call your mom (and cry).**
7. **invite a friend over.** heat up one of those frozen pizzas, and couch rot.
8. **get something off the 'free stuff' section on facebook marketplace.** you might not be happier after this, but hey, free cement block.
9. **blame your problems on the current state of the world.** *i meannnnnnn*, being happy? in this economy? unheard of!
10. **if all else fails, collectively crash out!** crashing out doesn't feel so bad when you have friends to do it with <3 (this is genuinely how i made friends in first years, so hey, silver lining)

and if you're *really* desperate, rant to chatgpt to get your feelings validated ;D (it will feed into your delusions unlike your therapist and it's FREEEEEEEE)

mouthpipetter@uwaterloo.ca

CSC FLASH

CSC FLASH 1!

Welcome to the first CSC flash of the term! We just had our elections (shoutout Ohm) and shoutout to syscom/termcom being hard at work deploying Matrix. We are in full swing with our **plethora** of events coming up! What events, you ask?

Atlassian: Come to the Atlassian x CSC trivia night, a spin on a traditional networking and info night. Split into teams and solve tech questions, while learning about Atlassian's career opportunities and products. This event is happening September 23, 6–8 PM, in STC 0400. Connect with Atlassian professionals and learn what it's like to work at a cutting edge tech company :D

Tesla: Meet Tesla AI professionals at UW! Connect with Tesla AI to ask technical questions, get insider insights, and network with recruiters! Don't miss this amazing opportunity and sign up! This event is happening Thursday, Sept 25, 11:30AM–1:00PM.

BOT: Come to our beginning of term event happening in early October! Stay tuned for more information on our Instagram, @uwclub. Please sign up to be a member, we have some amazing perks!

Merch: We still have some banger merch, check it out check it out check it out!!! <https://csclub.uwaterloo.ca/merch/>

Now for your favourite part, CSC quotes!

"As long as there's a hole, there's a way." — Dundee Zhang, Office Manager

"I got touched by the rain." — Yuvraj, Termcom

"I'm gonna touch you bro. you think you're the predator?" — Claire, Graphics, Almost President

Thank you for reading! Please send all Rust (and general) inquiries to exec@csclub.uwaterloo.ca

DSC DATASET

FIRST DATASET EVER!!! INSPIRED BY CSC FLASH (LOVE YOU CSC)

welcome back to decaying leaves, a new set of data (first years) and another term of data science club!!! as an introduction, we provide both social and academic events for others to learn more about data science and build a community of DS intrigued folk.

so far, we've already had some really fun karaoke (gave me so much fomo), point72 q&a panel with free merch (!!!) and how to build an AI companion in collab with waterloo tech week and rime.ai (also fomo!!!)

if you want to **not** be me and experience our cool events, make sure to follow us on our socials @uwaterloodsc and it also helps to not work evenings. and if you are cursed with terrible work hours, at least you can enjoy our silly goofy reels.

UPCOMING EVENTS:

- DSC x Waterloo Venture Group workshop: free boba and free knowledge sept 29th. best part is no membership needed to learn!
- **BOT**: only thing i'll bold and capitalize in this article because it's that's important. more free boba and a fun time of games and fondue!!! i'm getting fomo already...
- ML solar flare workshop w/ NASA Space Apps: super cool topic hosted by one of most engaging and charismatic people i know so you'd be doing a disservice to yourself not going!!

- our execs are starting to cook up our annual CxC hackathon in feb so also stay tuned for that!

OFFICE HOURS:

come from 9–5 any weekday to pay your membership fee, rent a data science / stats textbook or just to chit-chat with our execs!! i might be biased but we're pretty cool and knowledgeable and worst comes to worst you catch one of us playing league on a friday night (you know who you are ☹️)

MERCH:

we still got our cool graphic hoodies with design made by our now-president, so if you like supporting asian women come to our office with 36.50 in hand and the drip is all yours. perfect for the chillier weather or your 231 midterm!

want to join one of our events? become a member on our website uwaterloodsc.ca, pay your membership fee and you're all set to learn stuff AND make your money in yummy free food. it's a good deal trust me, i'd never give you up nor let you down 🙏

UW Data Science Club

1. yes i can still get an ai gf from our github but still not the same learning how to make my own from our own president and vp education. it's just not the same.

MY N FAVOURITE SANDWICH HOT TAKES FROM MY PLAY

In my play $\notin\{0,1\}$ *Sandwiched*, I have a section of audience participation asking people how to define a sandwich. Over the course of my show I have heard a veritable smorgasbord of sandwich definitions.

The criteria for inclusion is not whether I think the definition is correct, but rather originality and specificity. The most common definition is food between two pieces of bread. That's a boring definition. Here are some of my favourite spicier takes.

- It's not a sandwich if it costs more than 16\$.
- A hotdog is not a sandwich because sandwiches are edible.
- A sandwich is something between pieces of bread → A sub is not a sandwich. However, when you take the first bite in a sub the pieces of bread become disconnected. So a sub is not a sandwich before you eat it, but becomes one in the process of eating it.
- Ravioli is a sandwich.
- It's only a sandwich if it comes from the sandwich region of Britain, otherwise it's a sparkling sub.

- A sandwich is a container that prevents grease from getting on your playing cards.

My personal take is that "sandwich" is not a very useful category, as it's so broad that it's not very meaningful. If you ask me if I "want this sandwich," without knowing the contents of the sandwich I genuinely have no idea if I would like it. On the flip side, the sheer breadth that encompasses "sandwich" means that you can have some truly delicious custom experiences.

It's been a blast running this play. I have had a few people ask me if I am planning on doing this show again. The answer is I am open to it, but producing a show is a lot of work and I do have a full-time job. So if you really want to see my show, if you do the hard work of organizing and providing a stage I am definitely open to doing it again. For now I am going to enjoy a well deserved delicious sandwich and rest.

Beyond Meta

WANT TO MAKE A GAME? COME AND JOIN THE FALL GAME JAM! THERE WILL BE PIZZA

IT IS NOT A HAIKU

Have you ever wanted to make a video game? Join the University of Waterloo Fall 2025 Game Jam for 72 hours, from Thursday, Oct 2nd to Sunday, Oct 5th! For anyone of any skill level or skill set, this is an excellent chance to have some fun, grow your talents, connect with peers and industry leaders (Networking! Coop opportunities!), and get a project(!) to put on your website or resume.

So what's a game jam? In short, it's like a hackathon for games. We give you a theme, and you will design, develop, refine, and polish a game from start to finish in just 72 hours. You can work as a solo designer or work as a team. Is this a competition? Not entirely! The main point of the jam is to have fun making games with others. While awards are part of the event, every game made is a part of your journey as an artist.

Do you know the story behind *Hollow Knight*? Team Cherry, the developer of *Hollow Knight*, made a game jam game called *Hungry Knight* in 2013. The positive reception to it—plus the experience of designing a bug-themed world, inspired Team Cherry to make a whole Metroidvania game out of it. Game jam games can be very primitive and experimental—you don't want to make something big and fancy, but rather something small but fun!

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

Anyone can participate, no matter your experience level. We've had complete beginners come in and complete a game over the weekend! Our environment is super welcoming, and we have tons of experienced jammers who are more than willing to share their knowledge. Feel free to invite other people to the jam as well—your high school friends, your professors, your parents. Anyone is welcome!

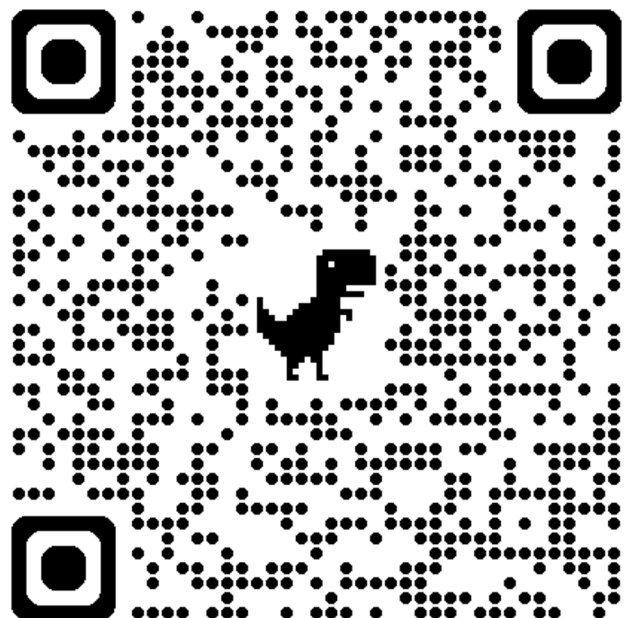
We have in-person jam sites each day, and we also accept people joining remotely. Here is the schedule:

- Thursday—QNC 1502, room open 5:00PM–7:00PM
5:00PM–6:00PM: Jam kickoff—Information about the jam and theme reveal
6:00PM–7:00PM: Team building—Forming teams for those looking for others to work with
- Friday—QNC 1502, room open 6:30PM–8:00PM
6:30PM–8:00PM: Work session
- Saturday—QNC 1502, room open 10:00AM–7:00PM
1:00PM–2:00PM: Lunch
5:00PM: Playtesting

- Sunday—QNC 1502, room open 10:00AM–7:00PM
1:00PM–2:00PM: Lunch
5:00PM: Submissions deadline
5:30PM–7:00PM: Game Demonstration Fair

Don't worry if you can't make it physically for some of these times, they're just when the rooms will be open. You're encouraged to work from wherever you are during the 72 hours of the jam. And if you're busy, that's also not a problem—you don't need to work the entire length of the event. Do what you can, from where you can. Even unfinished projects are valuable for your growth as an artist! Are you just interested in playing cool games? That's alright too! Feel free to come to QNC 1502 at 5:30PM on Sunday for our Game Demo Fair, where we'll all be hanging out and doing panicked last-minute bug fixes enjoying each other's new games. We'd love for you to join us! If this sounds like fun to you, you can register at the form linked in the QR code below (or at the link here if you're reading the online version of this issue: <https://forms.gle/5fGL5bUaBe723ujdA>). Also, please join our Discord! It's where we'll be giving out updates and streaming all our events for people who can't make it in person. The link is in the registration form and our linktree (<https://linktr.ee/uwqdc>)

UW Game Dev Club



COOKING A BEEF HEART ON A WHIM

I DON'T REALLY RECOMMEND IT BUT IT WAS FOR THE BIT

In my defense, I'm quite the cheapskate.

This might not seem relevant, but this manifests in using Flashfood, which is an app that sells marked down food that grocery retailers can't sell (because it's overstock, going bad soon, etc.). I do love this app, but it does enable my penny-pinching tendencies. Once I was at Zehrs Conestoga buying some order I put in last week when I thought to scroll through the app one last time as I peruse the store for anything interested. And boy did I find something interesting.

On the app, I found a frozen beef heart just under \$10. And I mean, it was a pretty big heart, so if it had 8–10 servings, that's less than \$1–\$1.25 per serving! Sure, that's comparable to ground beef with a good flyer deal, but this was an actual cut of beef! So I was like "fuck it, why not" and carried it home that same day.

My plan for it was to stew it and make it like shredded beef as part of meal-prepped burrito bowls. I would have tried the other method of searing it like a rare steak, but I did not trust this heart that much! Besides my trust issues, defrosting the heart just right for that would have been too much of a hassle. Hence my Saturday night plans became organ meat night (how exciting, am I right?)

Preparing it wasn't the easiest, as I definitely did not thaw it enough in the fridge so I kinda just threw it in my pot and planned on cutting it up later. It was actually pretty cool seeing all the atria and ventricles; it reminded me of biology class but on a much larger scale. For context, it was more than 1kg and probably the same size as an average face, which for meat is not small. It was so ginormous (just like my dick) compared to my stockpot that it was just about taller than the walls. Maybe that means I need a bigger stockpot or not handle big hunks of meat like mine.

Anyway, the actual cooking process wasn't too bad, just a bit long for my taste. It took maybe around 3 hours total, which in the grand scheme of things is not that long, and I probably should have cooked it longer. The worst thing was since I didn't want the liquid to spill, I had to periodically flip the heart so it cooked evenly, and I was a bit lazy so I tried doing that with just my cooking spoon, which was a bit stupid. It was fine, minus a few splatters on my pyjamas, but it was certainly not fun.

If you want to know what spices I used and how much, hell if I know; I don't measure, I fuck around. I threw in an onion, two garlic cloves (all that I could steal from my roommate), two questionable Thai chilies (they were probably from May so not the best), thyme, garlic powder, MSG, black pepper, paprika, red chilli flakes, cinnamon, kulambu masala, and some David's rub (it's brown, it might say spiced but I can't find the exact version on the internet)? I fished the garlic cloves out to add to some corn salsa, and I cut up the other aromatics to mix with the beef before cutting up the mostly

cooked beef. I tried a bit; it wasn't too bad! Cutting it was a bit tough, especially since it was hot off the pot and the meat was still tough, but I like it rough (#masochism)! It felt a bit like heart surgery though, and I don't like it that tough.

Once I cut it into little chunks (like most things, I gave up on my original plan), I threw it back in to stew and for the broth to thicken, which the latter certainly did happen since I found the David's rub I was looking for and threw a bit too much of that in. I also did burn it a bit because I'm so laissez-faire, the French are starving right now (no one got that reference did they). Anyway, it thickened up one way or another and the beef got soft enough so who cares? It was good, not too irony or grassy but reminded me of mutton curry. It also worked well in my questionable burrito bowl, so I call that a win.

Would I recommend this? Eh maybe, if you're so inclined to try, but maybe share it among friends so you don't get bored of it? And that requires getting friends who are willing to eat your heart stew or you having the confidence to ask them and not judge you, so that might not be the easiest thing. But life isn't easy I guess, aren't we all struggling everyday while the rich get richer—

Where was I? Ah, yes, beef heart. It's also important to note that organ meat is pretty high in cholesterol, so it's best to eat it sparingly. I do want to try it cooked more like a steak, but I don't think I'll like it and no way am I buying another heart just to test that. I got enough heart in me right now (not just because I still am eating my burrito bowls, at least I hope. IDK me thinking I'm an inherently heartless, bad person is a conversation for my counsellor, not for **mathNEWS**. only crashouts for my babygirl **mathNEWS**).

In summary, beef heart is not for the weak, but it's not as bad nor terrifying as you think. What you should be terrified of is my giant monster cock— **dies, probably from a heart attack**

Dollar Store Person

MY ECON PROF IS SUCH A TSUNDERE

FROM AN INTERVIEW WITH CBC-CHAN

"I do not enjoy doing these interviews. I do not want to be called upon. I'm only doing this interview because of the state of the economy! It's not that I like you or anything, b-baka!"

"I do appreciate you and the work you do, EconProf-kun."

"... Thanks☺"

papayabird

WHERE IS HOME?

NEVER TOO EARLY IN THE TERM TO CRASH OUT

The August recently passed marked nine years with that house in that town. When they drove down the main road next to it the parents remarked that the evenly spaced trees in the lane divider were beautiful and perhaps they knew then or probably hoped that it would be home. Home it was for nine years, for one of them and the child almost the entirety of it, and for one of them not nearly enough. They took a picture next to the “SOLD” sign, a rare family portrait.

The country music radio played on the drive from the nearby city where they had lived to the new house every morning so the child could go to school in the new house's district and have a full school year in one place. Renovations before moving in. Sitting in the empty house drinking the little boxes of milk from school. Board after board. IKEA trips, assembling everything, watching. Home Depot trips, picking out the right shade of purple and pink for the walls, painting. Was that Christmas? Or the next? LED strips on the stairs, decorating the tree, wreath on the garage. Left them up until February so she could see when she came back. Building a snowman in the yard. Shovelling snow in the winter, weeding manually in the spring, mowing the lawn in summer, raking the leaves in autumn. Birthday cakes from the bakery around the block. Tulips under the tree that inspired my first email address, pink rose bush by the porch, growing by themselves. Orchid for inside the house, three ice cubes every Sunday.

Friends were hard to come by at first, so community centre library every Saturday. Books and DVDs with a fruit bowl. Escaping from loneliness. Stuffed animals for the room. Simple, free, happy. So much time, seemed like it would last forever. 5, 6, 7, 8. COVID. Day after day at home. The little room. Messaging friends, occasional calls, games. Listening to music while trying to get a breath of fresh air through the window. Skipping rope in the backyard. Going to school again. Sleepless nights. The sound of basketball on pavement at night. Met many people, agonized over some, safe from all at home, between the pink walls and behind the blue curtains with silver stars. Laughing, crying, dressing up, doing math, practicing makeup. Certificates filled the wall above the bed. 9, 10, 11, 12. Leaving for university. Where did the time go? Coming back every weekend. The news.



The rose bush didn't bloom as much this year. I would have liked to take a sprig or some seed from it so I could replant it wherever I end up, but I don't know how. A picture of it in full bloom a few summers ago is my phone wallpaper.

I had a lot of sad and deep thoughts on the bus to Waterloo yesterday, but I can't recall them now under the bright lights of QNC. I'm not a sentimental kind, I don't usually miss anything, or at least notice it consciously, but I'm scared that this will be different. That house, that room, has been my sanctuary. Without it, I will be an untethered ship, floating with no harbour to return to. It's different from that of

international students. They said I could always go back to them across the world, but after spending half my life away, I won't belong there. I will be alone with no fallback. I will be my only home, holding a roof above my head. What if that falls down and crushes me?

I've always been strong and independent, so I will continue to be. Home can be my tiny basement room across from the university with my stuffed animals and my monitor. My wardrobe and my food. My friends and myself.

There aren't tulips under the tree anymore, but some different flowers. That's a metaphor or a reference or whatever because I share a name with a flower. You come, you grow, you move on. Such is the way of life. I bloomed here, and now I have me to take away.

vallie

A REVIEW OF $\notin\{0,1\}$ SANDWICHED

On Sunday, September 21st, I went to see the play “ $\notin\{0,1\}$ Sandwiched” at the Kitchener-Waterloo Little Theatre. Admission was free (my favourite price). And, I was lucky enough that some freeze-dried Skittles expired, like, five days before the play, so I got to snack on some rainbow balls for no extra charge! It was an autobiographical exploration of identity, written and performed by Sophie Twardus, aka *Beyond Meta* in **mathNEWS**. It has sandwiches, languages, genders, and math, of course.

As for the review, I think the play is really good! It's funny, the set design was great, the sound design was just right, and it has great metaphors. Although it was performed in French, which I know essentially none of, the English translated subtitles made it very easy to follow along. I think the performance could convey precisely what the intended message was, which is not easy to do even if the performer and director are the same person. Although it was definitely very postmodern, I believe the risks taken, such as audience participation, meta-language commentary, and whiteboard graphs, enhanced the performance while not falling into the “unique-for-the-sake-of-unique” trap. I will admit I laughed too much, but simultaneously managed to think deeply, which is something that unfortunately has become quite rare in my life.

Overall, I think it's a great play if you like math/gender/sandwiches/linguistics/breaking the fourth wall, and still a pretty decent play if you somehow are not interested in any of those things. Now if you'll excuse me, I have to do my modular arithmetic homework.

papayabird

THE FRAT HOUSE FOR TECH BROS

AN INSIDERS OPINION ON AKATOS, WATERLOO'S FIRST HACKER HOUSE

I slept on the living room couch in Akatos for five whole nights. That's right, I crashed in the hacker house for five whole nights. That means I've lived there the longest after any of the actual residents.

For those that don't know, Akatos is the brand new hacker house in Waterloo, first of its kind. It has been marketed as a place to work on projects, to lock in, to find likeminded peers, and to be busy every night of the week with brand new talks from founders and VCs.

Now, for my story. Between August 26th and August 31st, I was without a place to sleep. I flew into Pearson and made my way to Waterloo without any particular plan after finishing my co-op in Alberta (sorry). Of course, sleeping on the streets was an option, or I could've found some nice floor space in E7, but instead, in a last-ditch effort to find something reasonable, I reached out to a friend. He pointed me toward Akatos, Waterloo's "first" hacker house. That's right folks, there's a hacker house now, a frat house for tech bros.

I ended up on the living room couch of a half-furnished hacker house for five nights. I talked to the residents—most of whom I already knew—and to Jerry, the man behind it all. We chatted about all sorts of things—mostly founder stuff that I'm sure y'all don't care to read.

Akatos is exactly what you'd imagine. A place for Waterloo startup bros to congregate and build. There are hot desks, 3D printers, the lot. The basement is basically a maker's wet dream, even in the barely finished state it was in when I was there. Rest assured, I'll be back later to make questionable use of those tools.

I already knew a few of the seven (give or take) people living there this fall, and it was a pleasure catching up after so much time holed up in a studio apartment in Edmonton (gross, I know). Now, I'm as much of a tech bro as the next guy, but these fellows are something else entirely. AI, web3, B2B SaaS, the lot. I threw buzzwords, they threw buzzwords, 'twas a good chat.

During my stay, I was privy to the contents of a select few applications sent by those wanting to join the house. The one and only hater, a joke application, said (and I am paraphrasing here as I do not have the precise quote on hand) they were glad that they now knew where all the worst people in Waterloo were, so they knew where to avoid. To that lovely applicant, I'd love to tell you that these are in fact the worst people at Waterloo (since writing this I have actually met said hater and told him directly, much to both our delights). Everyone there is insane. Builders are insane. They're chill people though. Go to an event sometime perhaps. That is all.

Lichajen

HOUSE OF THESEUS

Like many Sunday afternoons, I found myself cleaning the house. I spent the co-op term at my parents'. I'd vacuumed the corners of the same rooms all my life. This time I noticed, stashed away in some obvious corner, a frail, tall cactus. It was one of five that used to sit on the living room windowsill. As the other stubbier, fleshier ones ran their course, the tall and lanky one could survive under the most arid conditions. However, he, too, ran his course.

I mentioned the cactus at the dinner table, which followed a loose exchange between the family of half-remembered knick-knacks and artifacts of the past. Each time someone brought up a fixture, they were referencing a different house they lived in. We discussed snapshots of daily life seen at different angles with different opinions. Everyone brought something novel, regardless of age, regardless of perceiving eyes.

A keen reader recalls The Ship of Theseus: a vessel whose planks are replaced one at a time, continuously and discreetly. What becomes of that vessel? What does one instant of that vessel look like? The house is that vessel. For something so still, it lives a dizzying life. Keeper of life, it hoards inanimate objects until it gets so full that it must shed. Too many new memories are demanded of it. So many new facades. At the

end of the day, the consciousness of the house is subordinate to the consciousness of its constituents. She must bend to others' will.

Through the table chatter, the discussion turned away from trinkets held by the house and towards its body. The geography of the rooms, the immutability of its installments. I noted the number of ceiling fans in the house. I was quickly corrected that I was off by one. I didn't notice that the one in my parents' bedroom had been gone for almost a decade. The Ship of Theseus belongs to Theseus, who, as an observer, can control change. To control one's change is to control one's nature. How could such a trivial part be forgotten? It is well known that memory is constructive. It chooses how to remember things by including and removing certain details. Can psychological engineering be so powerful that it changes physical reality? The Ship of Theseus and the House are breathing vessels subject to construction. However, they are constructed by those that observe them. She exists only in others' eyes, so she must bend to others' will.

AbelianKwyjibo

THE QUOTA

When I started my journey at the University of Waterloo four years ago, I found myself in an emotional and social nightmare that I could not have foreseen. As a fairly sheltered only child, being away from home was extremely difficult for me, and I found myself breaking down multiple times a day. I was calling my parents non-stop, insisting that I needed to transfer to a university closer to home, and running off to my dorm room when classes ended.

About two weeks in, I started to feel comfortable in my new environment and realized that I had made tons of new friends. More so, I began discovering who I was—that I wasn't the person I thought I was in Brampton (👉 🇺🇸). I finally felt the freedom of university and each friendship I made helped me discover my true personality. I left first year a socially changed and—dare I say—a somewhat popular person, which I was so grateful for after years of unpopularity and bullying in elementary and middle school.

Of course, things don't stay the same forever. Each term had its moments; relationships, new friendships, falling-outs, breakups, late-night walks, panic attacks, and everything in between. By 3A, I found myself fortunate enough to have been rid of the snakes in my life, with smaller friend groups that I could cherish and count on. By 3B, I realized that all the drama, stress from school, and personal problems had brought my hometown self back out. I was yearning for my first-year personality and social tact because I had forgotten who I was again.

A friend of mine felt the same way, having experienced similar ups and downs during her time here. We both bonded over our desire to find ourselves again and—despite finding ourselves in new circles that we're very fortunate to be a part of—we felt that we still lost the social and emotional connection we had with people around us. See, we could be social and extroverted when it came to our friend groups, but it fell apart when it was time to order at a restaurant, or compliment a stranger's outfit, or talk to someone pretty. We could robotically run through the motions, but we couldn't establish meaningful connections or dialogue with random people anymore.

We couldn't keep living like that, and agreed that come graduation, we must remould ourselves. That's when we came up with The Quota: each day, you must approach a random person and engage in a meaningful conversation with them. It's simple exposure therapy, but updating each other on whether or not we met The Quota forced us to work harder towards achieving it.

"Nothing in this world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts [...] The slogan 'Press On!' has solved and always will solve the problems of the human race."

At first, we got away with meeting our quotas by striking up conversations with clients at work or counting short conversations with cashiers at stores. As we went on, we found ourselves making deeper connections with those people and going out of our way to meet the quota elsewhere. We began talking to people on the street, or introducing ourselves to people on campus. We started talking to strangers for hours at a time, sometimes meeting The Quota multiple times over. It actually got so easy that we could remember not meeting the day's quotas yet and quickly find someone to keep our streaks going.

Sometimes, meeting our quotas led us to making new friends that we never would've met otherwise. Other times, it was just a chance to brighten up someone's day and improve our social skills. It's important to remember that not everyone has to reciprocate, and not everyone will be pleasant to talk to. It doesn't matter, as long as you try to engage in meaningful conversation, you're hitting your quota and improving yourself. You are the main character, everyone around you is an NPC that you likely won't see again. A couple months in, the changes are palpable.

Slowly but surely, I rediscovered a piece of the first-year-me that I had lost. And while there's still room to improve, I feel comfort in knowing that I'm driving down a road I'm familiar with. Moreover, I'm driving down the road with a friend beside me. So, if you've found yourself in a similar situation to mine, find someone to hit your quota with and press on. I hope that you find the *You* that you're looking for, whether you lost them a long time ago or never met them in the first place.

Usman!

STOP USING THE STC DOWNSTAIRS BATHROOM PLEASE !!!!

As a representative for the "STC DOWNSTAIRS BATHROOM SOCIETY," please stop using the bathroom; it's only for members. Pay the membership fee and then send us your resume and cover letter, and in three to five business weeks, we will reply.

Hold it in the meantime, or we will contact the special constable to discipline you.

Regards,

STC DOWNSTAIRS BATHROOM SOCIETY

profQUOTES

CO 250: MARTIN PEI

“ I did tell you I’m bad at math.

CO 439: OLIVER PECHENIK

“ I don’t need x to be zero. I just need x to be small enough to square to zero.

“ I can be so big that I don’t square to zero, but I cube to zero!

“ A larger infinitesimal!

“ We’ll see in a minute how taking products gives us weird fuzz that we don’t understand.

“ There’s more fuzz! It’s bigger!

“ “schemy union”

“ My iPad decided to die this morning, which is great, because my car also decided to do that this morning.

“ Here is the y -axis. *[puts a single dot on the board]* We’re looking at it head-on.

“ It looks like one of those noodles... fettucini?

“ They don’t make that noodle, do they? Like a plus with the plane? This is applied math. We’re doing applied math.

“ Cohen-Macaulayness means nice. It’s basically a synonym for nice. It’s actually hard to give a technical definition.

“ Gorensteinness means very nice.

“ It measures how wiggly things are.

“ “squarefreeification”

“ By golly, there’s a lot of fuzz!

“ Here, I love x !... Now I don’t love anything, but I hate z . We are fuelled by our hatred of z .

“ The book has all the wrong names for these things.

“ The way that I won was by having lots of exes.

CO 456: DAVID JAO

“ Why do I say good morning? It’s always good morning somewhere.

“ This is the last slide of impartial games, which is sad because we’re starting to *[get into the interesting part of impartial games]*. Well, I have a blank slide. *[advances to blank slide]*

“ I noticed that nobody asked that, but I’m glad you asked.

“ *[Nim games involving infinite ordinals]* are the kinds of games mathematicians play in their spare time.

“ I’m not encouraging you to defy the police.

“ We do the thing that Einstein did, removing the indices for clarity, but that made it more confusing.

CO 485: SAM JAKUES

“ This is called the Chinese Remainder Theorem, which is a fairly problematic way to name it. Like I wouldn’t call the Euclidean Algorithm the Greek Remainder Algorithm.

“ Nobody came to office hours today, so the assignment must be too easy.

“ The Fermat test, or the French Prime test if you will

“ I wrote the notes, I rehearsed the lecture, it made sense to me but now I’m drawing a complete blank.

COMM 431: MICHAEL LIU

“ *[talking about the open book exam]* If you care about the environment, study more. Bring less paper.

CS 135: ROBERT GARBARY

“ This shit’s confusing.

CS 145: TROY VASIGA

“ *[while tracing a function]* I might pull a Fermat here and run out of space. That’s Troy’s last trace.

“ The universe will have collapsed by the time this compiles.

“ 3 plus 4 is 12, and, oh shoot.

“ I’m not a cyborg.

CS 241E: ONDŘEJ LHOTÁK

“ I’m always careful about using the word “always”.

CS 245: LILA KARI

“ Date and dance are two words that should be added to a Waterloo student’s vocabulary rather than just knowing exams, assignments, etc.

CS 245E: ERIC BLAIS

“ I’m trying not to get existential crises out of this but sometimes that’s the end result of logic

CS 246E: BRAD LUSHMAN

“ Who goes around writing $n = n$? [student: “I do”] Thank you!

“ If you’re having trouble thinking about what else there is to be done it means you’re having trouble thinking about how to be a thief which means you’re a society-upholding and honourable person.

“ In order for me to steal something, I have to have that thing, but you also have to not have that thing. Otherwise it’s just sharing.

“ It starts with “i” and ends with “nvariants”

CS 370: JEFF ORCHARD

“ Don’t drink and drive.

CS 454: SAMER AL-KISWANY

“ There are multiple kill commands. There’s kill, then kill but do it gently in case it has any last wishes. But there’s a command called kill -9 -11. It will basically kill it completely, even the children. It won’t wait until the children are done: it’ll just kill them.

CS 466: SEPEHR ASSADI

“ We haven’t shown $P = NP$ but we are proud of ourselves as a species.

CS 489: SHANE MCINTOSH

“ [about the final] Sometimes we’re in a big space where I’m not the only invigilator. And some of those invigilators can be worse than an angry police officer.

“ [TA points out that the final isn’t in PAC] Oh, then you’re safe.

“ I can’t be openly corrupt.

“ [looking at student’s writing] I think that says hardware. Or does it say nephew?

“ I can feel the stress in the pen strokes. [TA: they’re not art majors]

FINE 272: CATHERINE PALECZNY

“ [holding a bin of sponge] Euugh... sponge ☹️

MATH 145: MATTHEW SATRIANO

“ I’d like to think you are friends with yourself.

MATH 145: JERRY WANG

“ I want to talk about using AI in this class. ... I think it’s a great idea.

“ What the fuck?

MATH 249: STEPHEN MELCZER

“ Please don’t cheat on your homework with the things I am about to show you.

PMATH 347: YU-RU LIU

“ I know some people are smiling because you thought you wouldn’t need to see gcd again after MATH 135. I’m sorry.

PMATH 440: MICHAEL RUBINSTEIN

“ Yesterday, I couldn’t remember the word for earplug.

“ [referring to an expression] If you do this too long you start to think of them as people.

“ [talking about using AI] I threatened to unplug it.

“ I have my own time travel ideas. [minute later] Don’t patent it!

“ ...and phi... have I been saying phi this whole time? Like the past 10 minutes? That’s a sigma. I’ve done this my whole life, even during my PhD defense.

PMATH 450: XUEMIAO CHEN

“ Are there any engineers here? No? That’s good.

“ [while smiling, looks at blackboard and back] It’s hard, right?

PMATH 465: RUXANDRA MORARU

“ [on something she’s struggling to prove] I’ll put this as an exercise on the next assignment.

PMATH 930: RAHIM MOOSA

“ I’m not really trying to get anywhere in this class.

STAT 231: MICHAEL WALLACE:

“ If you see factorials, you are in it for a bad time. Factorials are a mathematical menace on society.

ON POLARIZATION

WHY MODERATION IS (SOMETIMES) NOT SO COOL

This article will be submitted to both Conrad Grebel's GrebelSpeaks and **mathNEWS**, and is prompted by a series of comments made by various community figures across Grebel, most notably by a few keynote speakers at Community Suppers.

I have often heard that one of the biggest issues facing society today is political polarization, and every time I hear it, it makes me think that the speaker does not understand the politics that concern us all today.

Let's start with where I'm coming from. As someone whose ideology squarely falls on the (far) left, I am broadly unwilling to work with conservatives, because I detest many of their efforts, both recent and not-so-recent, to disenfranchise, oppress, and commit violence against many marginalized people throughout the world. This refusal sometimes extends to centrists and liberals, who I find are far too willing to compromise on essential freedoms and moral principles with conservatives. What about someone opposite me, on the right? Well, they also refuse to work with me, because they (wrongly) believe that I want to, for example, kill babies and trans their children, and they often refuse to work with centrists on their side for the same reason as me.

There are many I've talked to who see this dichotomy as depressingly polarized, with a specific phrase, "a sign of the times," being used on several occasions, implying that this polarization is a major issue of today, and that the solution is to build a bridge between people like me and those on the right. What would such a bridge consist of? More debates? Bipartisan efforts? Compromises? Agreeing to disagree? These are things I've seriously heard suggested (at the Grebel community suppers I mentioned, and I've done my best not to strawman them here), and they're all ridiculous.

What do more debates do? As anyone who's looked at political social media before would tell you, debates in the modern format only encourage clip farming for easy dunks, and don't convince anyone. After all, why would someone being better at rhetoric in a debate convince me to change a fundamental moral value of mine, like fighting oppression?

What would bipartisan efforts consist of? I'm not going to work on a bill or motion that agrees to only be a little discriminatory, for any amount of discrimination is a terrible thing, and a win for those seeking to increase it. Conversely, those on the right aren't going to work with me on efforts to be a little more socialist, for they believe that socialism is an evil ideology that will destroy their country. On most of the issues that divide us today, there is a similar dichotomy, and it precludes compromise from either the left or the right. I won't compromise with bigots on bigotry, and if I were in their shoes, I wouldn't compromise with a radical who I think wants to destroy my way of life. In the same way, I will not agree to disagree and let those who seek to do political

violence (in the broad sense) against the powerless keep operating unimpeded.

In this way, polarization isn't the issue. The fundamental moral values that guide our political decision-making are. Compromise is not the answer, and those who suggest otherwise haven't seriously thought about why those on the extreme ends actually believe what they believe.

I hope that this convinces those of you reading from the center that polarization is not so simple, and to challenge those who suggest that it is a serious solution for today's political issues. There are three additional points I would like to make.

First, what are we to do if compromise isn't the answer? People certainly change their moral values over time, myself included. The solution isn't debate, as I said above, but that doesn't mean serious discussion can't happen for those who are willing to change their minds, which is something we can all be open to provided that we aren't asked to compromise ethically. Moreover, many regular people who aren't politically involved can and do share similar morals, but often are unaware of the way political machinations affect things. Gaining their support is essential.

I would also argue that we should always look for political victories that seriously and materially improve people's lives, whether they be in the federal government or in our local communities. The best way to convince people to join your side is to have ideas that work, and ideas that work fundamentally come from sound principles and reasoning, both moral and otherwise.

Second, I mentioned many "social" issues above. In the spirit of critical theory, I would suggest that this applies to economic issues too, and that the distinction between economic and social is largely fake. After all, those without wealth are some of the victims of discrimination and oppression, and frequently overlap with those that are discriminated against in other ways. Moreover, empowering regular people with economic freedom gives them the ability to stand up for their moral values with decreased fear of financial repercussions.

Finally, I would like to dispel any myths that current polarization is some negative sign of the times. Gay marriage was only legalized in the United States 10 years ago, and in Canada 20 years ago. The civil rights movement was only 60 years ago. Homophobia and racism have existed for *far, far longer* than this. The moral issues that are on the forefront today were not made overnight, they have existed for a very long time. The only difference is that we have had serious (partial) progress on fighting oppression, and those who are against us seek to revert it, but this oppression has always been here. If those in the past were less polarized than we are today, it is because they *were* willing to compromise on their morals, and we shouldn't be. If polarization is a sign of the times, we should

be proud of it, and seek to seriously solve the underlying issues, rather than shooting the messengers.

notoh

ANIME REVIEWS PART 15

THE SERIES THAT NO ONE ASKED FOR BUT WHICH STILL EXISTS, 3 YEARS AND COUNTING

ZOMBIE LAND SAGA — 8/10

The attentive **mathNEWS** aficionados among us may recall that in issue 158.5 of last term, **mathASKS** interviewee Edward Lee of the School of Computer Science said

*“Something I watched on a whim and ended up really enjoying was this anime on a zombie idol group, *Zombieland Saga*. It was surprisingly fun, whimsical, wholesome, and funny, and it had great music too. Isn’t there someone who’s doing a bunch of anime reviews? They should do a review on it.”*

So naturally, since I am that someone, I obliged. But I somehow missed the part where he said it was about an idol group—for the uninitiated, that means a group of Japanese pop entertainers (almost always girls) who sing, dance, and uphold a cutesy public image in service of the parasocial relationships they build with their fans.

Now, had I remembered that, I’d likely have blown this off without a second thought because I’m not really into that kind of stuff. Seriously, I was expecting a walking dead survival/horror thing, and probably a lot of others were too, but it becomes clear very early on that that isn’t the case: The protagonist Sakura Minamoto is on her way to school when suddenly, warping through space and time, Truck-kun appears and kills her, and she awakes later to find that she’s become a zombie alongside six other girls. Why do they become an idol group, you ask? Because a local music producer/talent manager/necromancer/nutcase named Kotaro Tatsumi says they should. Yeah.

Much like Edward, I was pleasantly surprised by *Zombie Land Saga*. I never did get the appeal of idol culture before, but I sort of see it now. Their songs are legitimately catchy, and following the trajectory and growth of a musical group is a bit of a story in itself, a “saga” if you will. And that’s the perfect segue into the other major aspect of this anime—it’s set in and heavily themed around Japan’s lesser-known and sparsely-populated Saga prefecture and its capital city of the same name, so the title is actually a clever double entendre. Kotaro is a Saga native, and his motive for forming the idol group is to revitalize the city—or “save Saga,” as he puts it—by making them into local celebrities who will attract notoriety from all over Japan.

He’s easily the best part of this show, at least in the English dub, (yes, I watch dubs, and no, I will not apologize for it) thanks to the absolutely goated performance by voice actor

Ricco Fajardo. Imagine three copies of the Kaguya-Sama dub narrator crammed into one person, and that’s about 10% of Kotaro’s energy.

For all my praises though, I’ll admit that modulo the zombie shenanigans, the show is hardly groundbreaking in terms of its themes or plot. It does, however, manage to be a lot of fun in ways most idol anime wouldn’t be because of those same zombie shenanigans. Overall, *Zombie Land Saga* is well worth the watch if you’re into idol music and stories. Even if you’re not, it just might convert you!

KANON (2006) — 7/10

If you’re a reasonably well-versed enjoyer of anime, there’s a good chance that you’ve heard of *Clannad*, the supernatural romantic drama visual novel-turned-anime created by Key Studios. It’s widely recognized as peak fiction (I covered it back in issue 154.1’s Part 7), but many of Key’s other works aren’t as well-known. Their debut title was the 1999 visual novel *Kanon*, first adapted into an anime in 2002 by Toei Animation. The 2006 remake by Kyoto Animation, however, is considered the better version, so it’s the one I’m reviewing here.

Set in a wintry and forested town, the story follows Yuichi Aizawa as he returns there after having been away for seven years. He used to visit more often as a child, but since that time there’s a lot he’s forgotten. And for some reason, those around him seem to be afflicted by selective amnesia too. As he meets and remeets characters from his youth, however, he begins to remember—for better and for worse.

Above all, this anime is beautiful. I don’t often use that word to describe anime, but I really mean it here—the scenery, art and music are spectacular, which I think makes up for the slightly odd character designs. The narrative structure is very well done too, and there are a ton of great moments of foreshadowing where you can tell that a seemingly offhand remark is going to relate to a backstory detail later on (the Key writers and their adapters have always been pretty good at this stuff). I really liked how the scenes of the opening gradually make more sense as context is revealed throughout, it makes the viewer feel like they’re recovering memories alongside Yuichi.

Despite all its merits, though, I didn’t find the show all too engaging outside of its most dramatic moments, and its characters aren’t terribly interesting either. It also suffers at times from the imperfections of the “visual-novel-route-to-anime-arc” conversion formula, which makes it so that many characters are all but forgotten once their run of episodes is over with.

Nonetheless, *Kanon* is a sweet story with great presentation; I just think it probably suits the visual novel medium better than the anime one. Interestingly enough, it was released on Steam and Nintendo Switch in English just last year, so now might be the perfect time to play it!

DEFINITIVE TAYLOR SWIFT ALBUM RANKING

NO BIAS, STRAIGHT FACTS

In honor of Taylor Swift's newest album, *The Life of a Showgirl*, which may or may not be out already by the time this is out (Oct. 3rd btw), I think it is time to give the definitive Taylor Swift Album Ranking through an objective model, *TheButler Scale* which is based off of TheButler's opinion. Are you ready for it? Please note that TheButler uses Taylor's Version when applicable.

11. THE TORTURED POETS DEPARTMENT

Sadly, TheButler feels this is Swift's worst album. With about a 2 hour runtime from start to finish, this album has to be really good before I turn it off. Unfortunately, the better songs on this album, e.g. "The Bolter," are on the second half which just makes me think, why have a full album worth of songs in the beginning? I feel like Swift tried to make *Folklore* again, but only *Folklore* is *Folklore*.

10. TAYLOR SWIFT

TheButler is not that much of a country fan. TheButler would say more but TheButler never listened to it enough to get a better explanation, because TheButler is not that much of a country fan.

9. EVERMORE

"Name 5 tracks on *Evermore*."

Uh, "Champagne Problems," "Right Where You Left Me," "Gold Rush," "Willow," and "No Body No Crime." TheButler can't name anymore, and TheButler doesn't think there are any more good songs on the album.

8. FEARLESS

Fearless has strong songs and weak songs. There are some bangers (and I know bangers) such as "You Belong with Me," "Love Story," and the greatest track on Fearless, "Mr. Perfectly Fine" but it also has low points such as "That's When," and "White Horse." Unfortunately, the more TheButler listens to "You Belong with Me," the more TheButler feels bad about the girl that wears high heels because Swift lowkey sang about stealing a girl's boyfriend. Fearless would be better if Taylor was fearless and didn't include the bad tracks.

7. MIDNIGHTS

Midnights has the *Fearless* problem — really good songs get shattered by some weaker pieces. W songs such as "Hits Different" and "Would've Could've Should've" made this album stronger, but tell me why Taylor couldn't just put it in the regular version?

6. LOVER

"Cruel Summer" and "Paper Rings" are my top two on the album, and it is a fun listen the majority of time. "False God," "The Archer," and "Soon You'll Get Better" drops it down for me though.

5. 1989

1989 is a good pop album, but it's only a pop album. If *1989* ventured into more genres, TheButler would listen to it more.

4. REPUTATION

Reputation is similar to *1989*, but it does venture into more genres, and has "Getaway Car."

3. SPEAK NOW

The more TheButler listens to "Speak Now," the more TheButler appreciates how much work Taylor Swift put into it. She ventures into many genres from "The Story of Us" to "Dear John." Bonus points for "Better Than Revenge," but TheButler must dock a few marks for "Last Kiss" because that song is *so* slow TheButler feels timeless.

2. FOLKLORE

Taylor Swift's best lyrics call this place home. With a banger trio of songs, the *Folklore* Trio, many people consider this to be their favorite album. If TheButler were to list out TheButler's top songs, many of them would come from *Folklore*. Yet, it placed only second, and that is because of TheButler's only issue with it: too Folk-ly.

1. RED

This is Taylor Swift's masterpiece. Though it has a 2 hour runtime, it doesn't have the *TTPD* problem as all the songs are bangers. It doesn't have the *1989* or the *Folklore* problem because of the variety of genres this record moves through. It has the ultimate breakup song, "All Two Well (10 Minute Version)" — it dismantles any stereotype for Taylor Swift.

She only writes about breakups! "Forever Winter."

She only cares about herself! "Ronan."

I liked her better when she did country. "Begin Again."

I liked her better when she did pop. "Starlight."

She can't sing! "State of Grace (acoustic version)."

Red is the greatest Taylor Swift album ever produced, and TheButler can't wait to listen to *The Life of a Showgirl* on October 3rd. You should listen to it too — we can't lose sales.

IS AS BIG AS YOU WANT IT TO BE

CLAIREVOIRE DREW DOG FOOD

Recently, Undertale's 10th Anniversary came to pass, so its developer, Toby Fox, and some of the Fangamer staff decided to celebrate by streaming a completely normal playthrough of Undertale. But with Toby Fox and anything, nothing is ever normal. As they played, they briefly entered never-before-seen areas, only interacting with a couple things and moving on, as if this was all completely normal. There were new NPCs, new battles, new songs, new and altered dialogue, but none of the hosts acknowledged any of it as strange. If you were there, watching it live, you and countless others were definitely completely befuddled when a certain balcony extended to the right much further than it was supposed to, a new song playing in the background, as the player character descended into what looked like a whole new (old) town area. Throughout the entire playthrough, one question was in everyone's mind: When is this version going to be publicly released?

Near the end of the playthrough, Toby Fox revealed that the new additions were all "smoke and mirrors," and not robustly implemented enough to be released in a playable state. Instead, they were made as glimpses into the wider world of Undertale, presented in a way that felt like there was actually so much more to experience than what was shown on screen. At certain points in the stream version, someone remarks on your inability to see everything in the underground no matter how hard you try, and someone else discusses how history has been sanded down and important things have been forgotten (perhaps on purpose), and recounts a bit of his own experiences, speculations, and nuances from his own days. Not everything can be fit in, so things have to be cut or hidden away.

In Toby's own words, "it's basically just a 'what if,' but this 'what if' was always there, it never wasn't there and it will never not be there. [...] My goal with these days wasn't to show you a new hidden truth you will never be able to access. My goal is to remind you that you have always been able to go, if you just hold the key of asking 'what's there?' 'what's under the bridge?' 'what's beyond the horizon?'" It's impossible to show absolutely everything, so he's inviting you to fill in the blanks with your own interpretations and expand the underground in your own way.

Themes of "interpreting from limited perspective" permeates Toby's other work, Deltarune, as well. Darkness, defined by absence, void and what isn't there, makes things more indistinct, letting your imagination run wild, until when it's completely dark, when you can't make anything from nothing. Then, when it gets darker than dark, you begin to perceive again, creating the Dark Worlds, where objects come to life, old memories resurface and what can't be seen in reality is brought to light (or dark). Shadow Crystals show a brief window of the other side. When the lighting has changed, the statues and the carvers trade places. Exploring the backstage lets you catch glimpses of a lost land. While the truth is written in glass, the words shine too bright, but, between the

lines, it's darker there. The story will come to an ending, but there's still all that comes after.

We will never be able to explore everything, but that's fine.

It doesn't matter what's "canon" or "real" and what's not.

This world is as big as you want it to be.

Mr. Sunshine

DOWN WITH THE PEOPLE

I've been hearing a lot of "down with the government" recently. Honestly, I say down with the people!

You may say "aren't you part of the people?" Well, bold of you to assume I'm a person. Not only have the people actively harmed me EVERY DAY, their mere PRESENCE is a blight upon my life. Crowded public transit? THE PEOPLES' FAULT. Feeling depressed every time I even glance at LinkedIn? THE PEOPLES' FAULT. The existence of this accursed degree that I have to study? THE. PEOPLES.' FAULT.

Like come on everyone, why haven't we done this already? Do you understand how much hate we could have prevented if we acted sooner? It's time to wake up and realize the truth.

Down. With. The. People.

The People

YOU'RE ALIVE

DO YOU REALIZE IT??

YOU ARE EXPERIENCING ONE MILLION THINGS RIGHT NOW. YOU FEEL THE TEMPERATURE OF THE ROOM THE GROUND YOU'RE WALKING ON THE CHAIR YOU'RE SITTING ON. YOU SEE THE WALLS AND THE FLOOR AND THE FURNITURE AND THE PEOPLE AROUND YOU AND EVERY ONE OF THOSE PEOPLE IS SEEING THE WALLS AND THE FLOOR AND FEELING THE TEMPERATURE AND THE AIR. IF YOU GO OUTSIDE THERE ARE BIRDS AND SUNSHINE AND WIND AND PLANTS AND GOOSE SHIT AND BUILDINGS AND PEOPLE AND IT'S ALL SO BEAUTIFUL. DO YOU REALIZE IT?? DO YOU EVEN KNOW?? YOU'RE ALIVE

macinnes

N THINGS I'VE DONE WITH FRIENDS IN SUPER SMASH BROS. ULTIMATE

I HAVE BEEN PLAYING THIS GAME A LOT

- 1v1 3 Stock No Items (the classic)
- 1v1 3 Stock Mr. Saturn only
- 8-player free-for-all with as many CPUs as you can fit (if 2 players then 6 CPUs, if 4 players then 4 CPUs, etc)
- 8-player team battle, 4 teams each consisting of a player and an Olimar CPU
 - Or if only 2 players, 6-player team battle with 2 Olimar/Player teams and 1 team of 2 Olimars
- Make a custom stage together! Take turns adding elements, then fight each other on it!
- Make spirit teams and fight each other with them!
- Make funny Mii fighters and fight each other with them!
- 4-player free-for-all, 4 stocks, Stamina mode (80 HP), Show Damage: Off
- Same as above but filled up to 8 players by CPUs (Titled: Pop Rocks)
- Classic mode co-op!
- Spirit board co-op!
- Squad Strike with themed teams! Think of a group of people or characters, and come up with a set of Smash bros characters to represent them.
- Cut the Smash roster in half! Decide with your friends which smash characters should be in the next game if only half of them can stay. Then only play characters from the half you selected for the rest of the session.

This game is like seven years old and I keep finding fun new things to do in it. Easily my favourite party game. If you or a friend has it, please go play it!

Doublewhip

HOW YANKS WORK

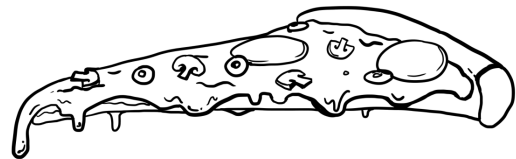
Many people refer to Americans as “Yanks,” but what does actually qualify as a Yank?

I have come up with a foolproof method of determining who is a Yank or in the stages of becoming a Yank. I would like to thank CGP Grey for the different types of oversea US territories.

For any people from New York (city or state), I don't care. Anyone who fits the below criteria can be a Yank, even if they are in a different part of America. **Deal with it, Yank.**

- If you are a US born citizen or born to American citizens you are always a Yank, regardless if you are residing outside of the country. (Yank by Birth)
- If you are a Green Card holder, you are in the process of becoming a Yank. (Future Yank)
- If you are a a US born citizen or born to American parents, you are still a Yank if you give up citizenship. (because you are a Yank by Birth)
- If you are naturalized (not born a Yank), you give up your Yankhood if you give up your citizenship (Past Yank)
- If you are from an US Organized Unincorporated Territory, you are still a Yank
- If you are from a US Organized Incorporated Territory, you are a Yank.
- If you are from a US Unorganized Unincorporated Territory, you are not a Yank.
- If you are from a US Organized Incorporated Territory, you are still a Yank.
- If you are French, you are not a Yank, but you are something worse, French.

Shawarma



MY MOST CONTROVERSIAL OPINION—THE STAR WARS HOLIDAY SPECIAL IS GOOD (BETTER THAN A NEW HOPE)

It has it all, a cooking show segment, a fever dream music segment, a brief appearance by Luke Skywalker looking very under the influence, and a grandfather Wookiee being given VR porn. It ends with a wholesome “Life Day” (Christmas) moment with the Wookiee family. The whole thing reads as a major fever dream that was made as a quick cash grab post the success of A New Hope, when the creators hadn't yet realized how successful Star Wars would become. In fact, I prefer the

Star Wars Holiday Special over the only other Star Wars movie I've seen (A New Hope, which I found boring).

What more could you want from a movie?



aknetsch

FLIES

THE TALE OF A MURDEROUS RAMPAGE

After a well deserved break, I return to my Waterloo apartment, just in time to move out. After hours on the bus, I sit down to enjoy my lunch from the plaza, only to realize I am not alone.

Zooming above me is an ordinary fruit fly. It hovers above my food and goes in for a landing, only to be foiled by my swatting hand. I think nothing of it. Soon enough more flies appear, two this time, and I promptly shoo them away as well. I guess I must have let a bit of food out; in any case the place needs to be cleaned.

Sitting in the kitchen are a few bags of trash. My roommate told me about these when he was moving out; the garbage chute was broken at the time, and he was in a rush. Reaching for one of the bags, I grab its handles. At that moment, a swarm of insects come alive and flow out of the trash like a plume of smoke. I quickly run out of my apartment and towards the garbage chute only to find it closed. Typical. While I wait for the elevator, I try to tie the neck of the bag, maybe grip it extra hard, but it's no use. The bag has many holes in its sides, which serve as pathways for the flies to infest the hallway. Seconds turn to minutes as I slowly descend in the elevator, the swarm thickening with each moment passing. The door opens and I sprint out of the elevator, then out of the building. The dumpster sits by the entrance. It's full; the contents form a pyramid of waste which lie above its sides. I toss the bag with all my might and then return to my room.

Opening the door, the true magnitude of the issue comes into view. There are fruit flies. Everywhere. Flies buzz in the air, some lounge on the doors of cabinets, other sit high up upon the walls near the ceiling. In the bathroom, flies lie about in the shower and on the mirror. They seem to have an affinity for the bottom of the sink.

Later that day, my subtenant is due to move in, so the flies must be gone. The internet says apple cider vinegar and dish soap, as if anybody owns apple cider vinegar. I substitute instead with 2 putrid concoctions. One container, filled with watered down ketchup, the other holding relish and honey, both with dish soap and rotten apple chunks. I leave them for an hour, with hope in my eyes, expecting 20, maybe 30 flies to fall to my trap. After checking back in, one fly has fallen to the relish based mixture. Two lie lifeless at the bottom of the ketchup cup. These circumstances call for heightened measures.

I look on the ground, upon which lies a pile of paper, filled with nonsensical scribbles: CS 245 rough work. I grab several sheets, then roll them into a rod, bestowing myself with an Excalibur for the foes which lay ahead. I look up at the door frame where a fly sits, and swing at it with all of my might. Its small body is obliterated instantly, reduced to several unrecognizable clumps of bug bits strewn across my weapon. The insect's blood is splattered on the sheets of paper. It is bright red. I feel no remorse.

Another fly lounges about on the handle of the microwave. I swing: it's a hit. The fly is smeared along the brushed aluminum surface of the microwave, appearing more like typical grime than anything that was once alive. The swing at the microwave causes some flies to take off. Do they fear me? Do they feel fear? A missed swing causes a fly to buzz in the air but they always eventually land, usually not far from where they first were. The fruit flies are rather brainless, and far less agile than their housefly relatives. They are not long for this world.

I see one flying midair. It's difficult to hit them while they fly, and even if you do, the insect's body is often unaffected. This time the creature is not so lucky. Struck by my weapon, its wing is damaged. It descends in a downward spiral, then twitches on the floor, spinning in an clumsy circle. I finish it off with a second decisive blow.

My rampage continues for about two more hours. By the end of it the flies have been greatly diminished. I wonder if my actions will eventually end up backfiring. It's possible the remaining creatures are especially agile, or hang around hard to find places. Perhaps this refined population will multiply again into a larger, stronger swarm. If only I could kill all of them.

■
skinbrag

GREENTEXT

- > be me
- > at work on a tuesday at 9am
- > realize I haven't written a **mathNEWS** article yet
- > have to inconspicuously open my personal laptop avoiding coworkers
- > need ideas
- > this is an idea
- > quickly write up a google doc
- > paste into wordpress
- > hope I make it in time

Whole Number Haver

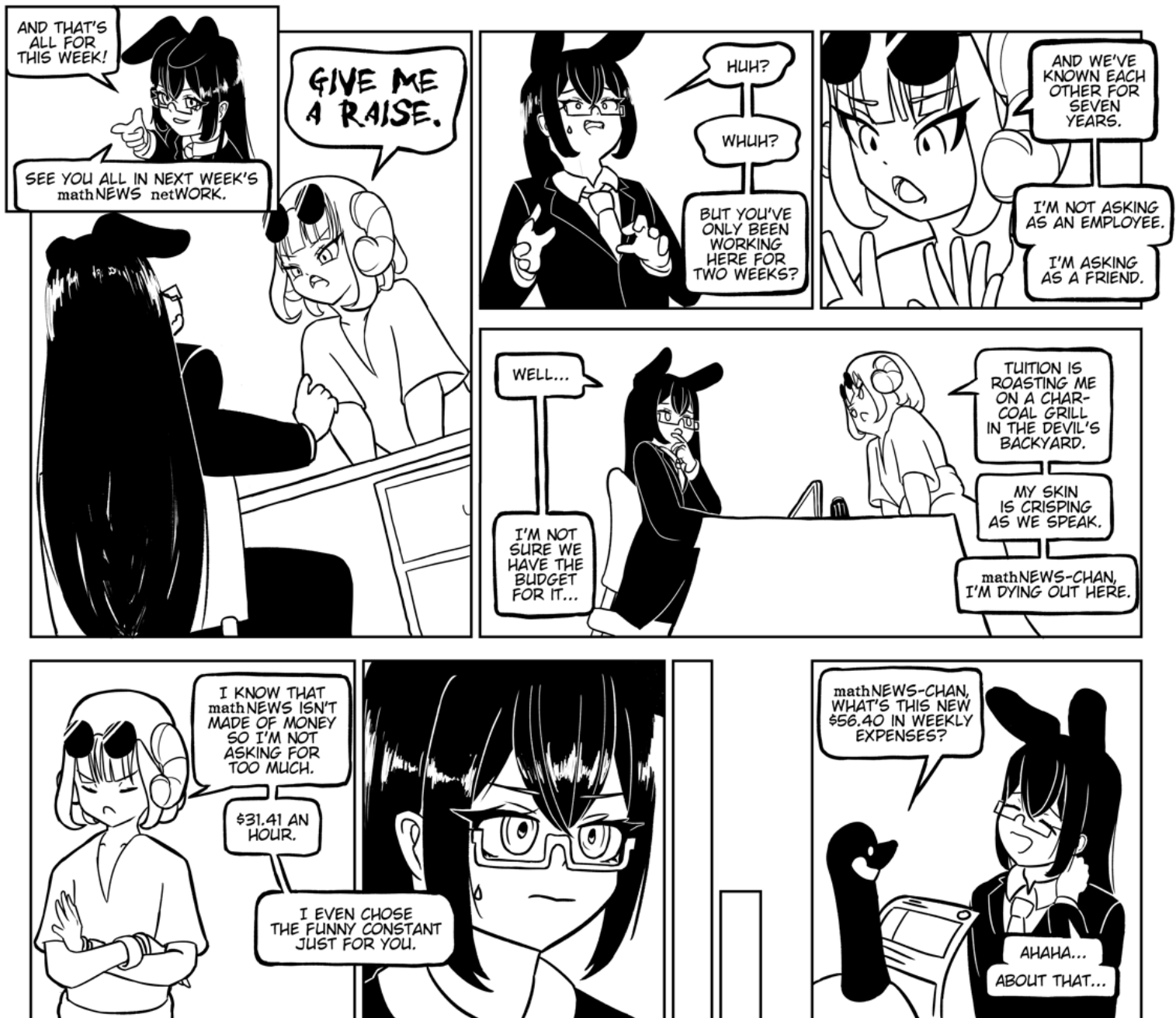
I CLIMBED THROUGH THE BIRTH CANAL THIS WEEKEND AND I HAVE NO REGRETS

Yes, you heard me. I came into this world as a C-section baby, and this last weekend, I left it back from where I (should have) came. It was a surreal experience, to say the least. I mantled through the entryway, dispersing myself through the gloomy channel that awaited. Jamming my knee between the luminous chasm that laid below me, I grasped for anything with which I could clamber to the peak. In my last breath, I

slammed my hand upon the only edge in sight, and pry myself into a standing position, and exclaim to the world that I have done it. Anyways, that's how my first outdoor climb at the Glen went. I'd grade the Birth Canal V1 (V12 at your crag, your mom's is V0 though).

LightsOut

mathNEWS netWORK 4.7



N THINGS YOU CAN DO WITH FREE WILL

YOU CAN USE YOUR FREE WILL

- you can just walk into lectures
- you can talk to literally anyone (unless they're locked in then don't i guess)
- you can explore campus
- you can explore off-campus
- you can touch grass
- you can just leave
- you can do a barrel roll
- you can start playing league of legends
- you can stop playing league of legends (maybe)
- you can buy a duck from the rubber duck sales person
- you can come to **mathNEWS** (qnc 1502, biweekly on mondays)
- you can draw and submit cover art to **mathNEWS**
- you can rizz up your profs
- you can buy multiple ducks from the rubber duck sales person
- you can blink
- you can breathe
- you can exist
- you can do nothing. the universe, at its core, is nothing but a set of particles. free will is a lie that we tell ourselves, when in reality, everything is predetermined. if you can process the universe faster than the universe can process itself, you could, in theory, predict everything that will ever happen. you could become in tune with the universe. you could become one with the universe.
- you can learn how to do a backflip
- you can sign a random petition
- you can learn to solve a skewb
- you can sign your life away
- you can cry over math
- you can make a list of the best places to shit on campus
- you can gamble your life savings away
- you can play silksong
- you can kidnap people and play badminton with them
- you can eat
- you can embrace the indomitable human spirit
- you can eat the indomitable human spirit
- you can shower (controversial)
- you can doomscroll (not recommended)
- you can break free from the cycle
- you can watch bluelock
- you can get a pizza from pizza nova with anchovies, hot honey, and pineapple
- you can get a j*b working 67 hours a week
- you can do a trump impression
- you can join like 20 clubs like i did (please help i have no free time)
- you can turn your brain off, becoming a brainless cog in the machine that is society, wasting your life away bit by bit until there is nothing left
- you can make money through crypto scams

- you can live on the ion
- you can write bridge erotica (i think that one's taken tho)
- you can use ai ethically
- you can learn a dead language (is it even a language if no one understands it?)
- you can drink fiji water
- you can play chess
- you can die (not recommended, bad for your health)
- you can refuse
- you can live
- you can blast FE!N in the slc

crimson

DO NOT DRIVE

It's bad out there. And I have proof.

This break, I went back to Alberta with a goal, getting my Class 5 GDL (equivalent to G2 in Ontario). I should mention I have never been in the driver's seat before. After about 12ish hours of training, I went to give my test, with no expectation of passing because holy shit there's so many things happening at the same time. Not to mention my test was a day after a 4-day trip to Jasper, 4 days that I did not get any practice.

So anyway, I got to the place with no driving practice from the last few days. And the test went exactly as expected. I made a couple big mistake (almost crossing a red light causing a harsh brake, forgetting to signal lane change on a busy street) and a multiple small ones (I somehow fucked up downhill parking 3 times. I have no idea how).

I go back to the registry, talk to the person taking my test and he says to me "That was a very good test. Barely anyone does this well on their first try" and gave me a pass???

Like sir wtf???? I should not be allowed to drive. And if I am a good driver by their standards, what does their average driver look like? Why is the bar so low? Do they not read the news?

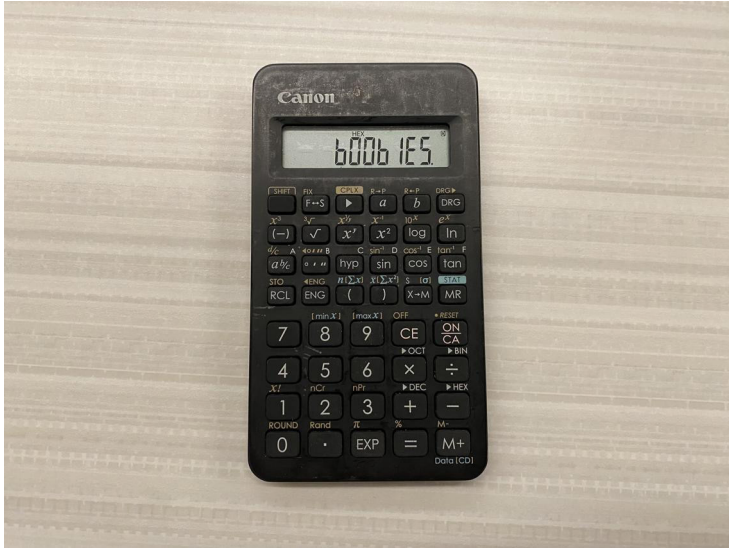
Anyway yeah so even though I can legally drive now, I am so scared to go on the road and refuse to drive unless absolutely necessary. If you care about yourself, you shouldn't either.

0.423

[Trust me, don't]

HOW TO TYPE ANY INTEGER ON A CANON F-605G CALCULATOR WITHOUT EVER HITTING A NUMBER KEY

One time in high school, I was bored in math class and started playing around with my calculator, as one does. For reference, here's a picture of what I was working with:



THE CANON F-605G. I actually still have this calculator and regularly use it on exams (when allowed).

I was already proficient in calculator spelling, so I was looking for a new challenge. And after some absentminded button pressing, I stumbled into the problem of getting various numbers (in particular, integers) on the display without pressing any number keys or basic operation keys (+, -, ×, ÷).

When you turn on the calculator, the display reads 0. Taking the cosine gets you another easy number, 1. If simple operations were allowed, you could just keep adding or subtracting 1 to get to any integer you liked, but removing those keys made finding other numbers significantly trickier. For example, the first method I came up with for getting the number 2 required you to (after starting from zero) press $\cos$ to get 1, SHIFT sin to get 90 degrees, SHIFT DRG as many times as needed to convert between degree systems to obtain 100 gradians, and finally $\log$ to get 2.

After some playing around, I was able to get a decent amount of numbers, which naturally led me to my next question: which numbers *couldn't* I make? Looking back, this was probably my first truly independent inquiry into math, and it was a fun problem to think about. I started compiling some strategies to see which families of numbers I could get and which parts of the number line I couldn't reach. I then divided my time between trying to see how I could combine strategies to get more numbers (the memory function proved to be useful), and researching more of my calculator's capabilities to come up with new strategies. All the while, I hoped that there would be an interesting pattern to discover in the end—one that dictated which numbers could and couldn't be made, or, if every number was possible, a clever way of combining the

strategies I knew about in order to generate every number. If such a pattern existed, I certainly did not have the mathematical maturity to be able to discover it, but that didn't stop me from trying nevertheless.

My fun was cut short when I discovered a lethal combo that resolved my initial question. The good news was that yes, you could get any integer between -10^{10} and 10^{10} (anything outside that range could not fit on screen and was exceptionally prone to rounding errors) without pressing any number keys provided you were patient enough. The bad news was that the method I found bulldozed over all of the progress I'd made beforehand. There was a single reliable technique that I hadn't considered before that I could spam to get any integer I wanted.

Here's the strategy in question. If you can get $m, n \in \mathbb{N}$, then by performing the following steps you can obtain $m + n$ (and if you want a negative number, just hit the negation key at the end):

1. Before you begin, switch to complex mode by pressing SHIFT and then $\blacktriangleright$ (the top of the display should now say CPLX)
2. Obtain m , and take its square root.
3. Press the a key, which sets $a = \sqrt{m}$.
4. Do NOT press the ON/CA button. Now, obtain n , and take its square root.
5. Press the b key, which sets $b = \sqrt{n}$.
6. Press SHIFT followed by a . The calculator will now calculate $|a + bi| = \sqrt{a^2 + b^2} = \sqrt{m + n}$ and spit it out.
7. Finally, square the result to obtain $m + n$.

And that was that. I had essentially found a method to recreate addition without using the + key. The problem was solved, but I had not found the kind of mathematical beauty I was looking for. Thus, I put away my calculator and went back to my schoolwork.



Reminiscing on this story now, I'm a bit less dismissive of the technique I found. It actually *was* pretty neat. I'm more disappointed in the missed opportunities here. Even if I wasn't satisfied by my first answer, I could have continued the inquiry further by putting more restrictions on the "game." For example, I could have banned the complex number strategy and explored what would have happened from there. I could also have banned all but very few keys to examine simpler versions of the problem, which could have given me more insight into it. There were plenty of missed opportunities for inquiry here, and I'm a bit disappointed that I didn't try them out back then.

But of course, I can always take the time to think about them now. I still have this calculator after all. Even better, by writing this article, I can put this question into *your* head. Who knows,

maybe you'll make the next great contribution to this exciting new field.

the government's only spy

RATING PAST WATERLOO WARRIORS LOGOS

While watching our homecoming football game this weekend, I remembered something. We may not be winners, but we certainly have a good logo! It's hard to miss the yellow warrior helmet painted across CIF, so why not honour it by judging it against all the logos it has replaced. With that, here is a completely accurate rating of the Waterloo Warriors logos throughout history.

THE ORIGINAL W: 6/10

It's classic, communicates the name of the school and team all in one letter, and it's boring. Gets the job done, and there isn't much else to it! Works well on merch, but it makes sense that it wouldn't stick around forever.

WARRIORS/ATHENAS SPLIT: 8/10

Ah yes, the days of naming women's and men's teams different things even though we play for the same school. It loses points for the undertone of sexism, but I will admit Athenas is a sick title and image... The figureheads on the W add the character the Original logo had been missing, and the dimension and colouring look great. Love.

WARRIORS/ATHENAS SIMPLIFIED: 3/10

Certified lame. We're still split into the women's and men's, but now there's no character and fun logo elements to justify it. The main distinction between the two is long hair out coming out of the Athena helmet, and the slightest of styling. Gets a few points for the roots of the helmet silhouette we have now, but that's all I'll grant this one.

WARRIORS SHIELD #1: 7/10

The switch to a logo you recognize has arrived! Combining the helmet and shield icons, plus uniting teams under one name brings up the point factor in a big way. Introduction of a text logo and symbol that can be used separately is a show of strong design, and the logo just looks nice! A little hard to draw, but we'll deal with that soon...

WARRIORS SHIELD #2 (CURRENT): 9/10

It's the one you really know now!! This is a great logo, it's a slightly simplified version of the first shield which means it's easier to stick onto merch, walls, and fields. It still has components you can rearrange in fun ways, and I don't want to dunk on this logo for fear of hurting King Warrior's

feelings. He's nice, the logo is nice, I won't call it perfect but I'll give it the best score here.

As an honourable mention, if King Warrior was a logo I would give him all the points. My friends and I followed him around until we could get a group picture at hoco and he was super chill about it, 10/10 would chase down again.



BeesKnees

TOP 10 SONGS IN OUTER WILDS

SPOILER FREE, CAUSE YOU GOTTA GO IN COMPLETELY BLIND

1.
2.
3.
4. The Spirit of Water
5.
6.
7.
8.
9.
10. Arrow of Time

The whole soundtrack is so perfect for the game, so hard to narrow it down to just 10

CONSTRUCTING THE EMPEROR

Star Wars' Emperor Palpatine, with hooded robe, cackling laugh, and face wrinkled white, so deeply characterizes the role of "emperor," he is known better as "The Emperor" than his full name. After encountering an unexpected visitor in New York City, I wondered: what's the recipe?

What makes an emperor?

Minor spoilers for: The Bad Batch, The Clone Wars

PART ONE: GRACE, UNEXPECTED

To begin to be an emperor, you must be able to grace others with your presence. Your attendance anywhere cannot be assumed; you must be too important for all things, such that to be seen anywhere is a surprise.

In the episode *Truth and Consequences* of *The Bad Batch*, we see this unexpected grace. The episode centers a debate in the Galactic Senate: whether to replace their army of clones bred to uphold lofty ideals with a new army of no such noble conscriptions. Imperial Stormtroopers.

At the episode's climax, we see the debate underway in the Senate chamber. Palpatine's champion of the stormtrooper legislation tries to push the bill forward, but the heroes discredit him at a pivotal moment, playing footage before the Senate wherein he openly betrays the Empire. He has lost.

A new speaker enters the uproarious Senate chamber. It grows silent.



Although the head of the Imperial government, and the legislation's true backer, Palpatine had not deigned to intervene in the debate. It was below him. Until now.

With only a minute's speech, he turns the debate's tide in favour of Stormtrooper recruitment, despite the incredible fall from grace of its mover. He *should* have been there the whole time; it is his government, of which he is the head. But he had more important matters. Through his expected absence, unexpectedly gracing the Senate is immediately enough to significantly alter debate.

Through neglecting their presumed responsibilities, an emperor gains power.

PART TWO: MALEVOLENCE, OVERWHELMING

Emperors are not known for their kindness. Palpatine is no exception.

In *Star Wars: The Clone Wars S5E16: The Lawless*, Darth Maul violently usurps the throne of the warrior planet Mandalore. Through abject evil, he breaks the spirit of Obi-Wan Kenobi, topples the Mandalorians, and unleashes chaos upon the planet.

None of this follows Palpatine's master plan. It is unacceptable.

While Mandalore burns, Palpatine sneaks in. Hood never falling, he crosses the unfolding carnage and approaches Maul's throne. Maul, trained with the Force himself, speaks: "I sense a presence. A presence I haven't felt since—"

Maul's fire-orange eyes widen in fear.

The two door guards clutch at their throats. Choking without recourse, they're violently flung into the air, pinned against the nearby walls as the doors open. Palpatine glides through; Maul's elite troops kick and spasm before finally falling lifeless. Palpatine does not spare them a glance. They are nothing to him.



One does not obtain empire through nobility. To maintain control, emperors must surround themselves in overwhelming malevolent power. Palpatine demonstrates this; Maul's guards are as good as dead before Palpatine has even entered the throne chamber. He goes on to show Maul no further mercy.

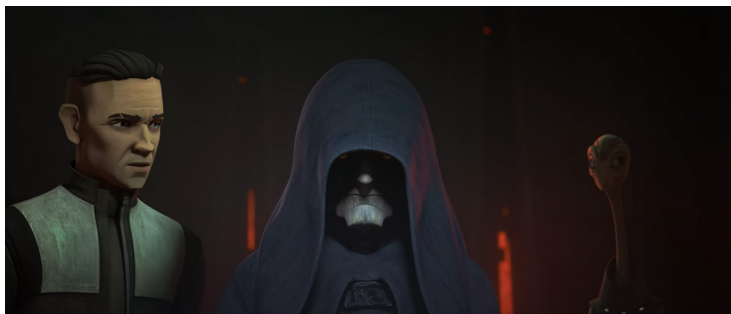
Note that overwhelming malevolent force need not be physical. Political power can suffice.

PART THREE: COMMAND, UNSPOKEN

Any leader may speak commands. To be an Emperor, one must be so powerful, their commands are implicit.

In *The Bad Batch S3E3: Shadows over Tantiss*, Palpatine visits Tantiss Base, a secret military research facility. The base's overseer, one Director Hemlock, greets him, lining the hangar bay with legions of stormtroopers evoking the opening moments of *Return of the Jedi*. In *Return of the Jedi* however, The Emperor meets Vader, then confers with him side-by-side, as equals.

In *Shadows over Tantiss*, there is no such conference. At no moment is Hemlock at Palpatine's side. Perhaps he leads Palpatine, opening doors to clear his path. Perhaps he follows Palpatine, speaking over his shoulder, never to his eye. *Never* are they framed as equals.



At all moments, Hemlock runs to Palpatine's command. When the Emperor arrives, the highest commander of the base must a tour guide become. The Emperor cannot be left alone; if he graces their presence, even the highest among his ranks *must* run to respond.

An Emperor does not ask for this treatment. He need not ask. His rule is so absolute, his power so implicit, that all around him will take every measure to protect him and guarantee he has the utmost positive experience. In an empire, all subjects fear the emperor's scorn, for it has no checks.

Nothing about this is good. These components, combined, tell you not to *admire* the emperor. They create only dread, and a wonder of where things went so wrong.

A BLOCKADE AT 5TH AND 56TH

I was walking through New York City the other day. Golden sunlight washed over the ancient stonework of Upper Midtown, while constant traffic clogged the city's endless one-way streets. As I passed by Billionaires' Row, hundreds of police vehicles lined its edges.

One avenue over, police had blocked all access to 56th street. Hastily-erected low metal barricades separated the sidewalk from the road. I leaned over one to ask the nearest NYPD constable: what's the occasion?

The last slivers of sunlight fled the tips of Manhattan's shining towers.

Dread falls.

A wealthy couple bargains with the constables at the barricade, they have a restaurant reservation within the secure perimeter. The reservation should have been simple.

Loaded sanitation trucks serve as a perimeter, barricading the block. Hundreds of police gather below the billionaires' shadow, each one armed. Snipers certainly overlook from nearby nests. They prepare to pick targets.

Police stand on every corner, they patrol every nearby street. The NYPD protects unbidden; regardless of individuals' leanings, the office within makes implicit: follow its command, or lose all.

In the center of the block rises a tower, obsidian black; a name at its base is encrusted in tasteless gold.

Welcome to the Empire State.

molasses

WHAT IS THE SEXIEST MATH NOTATION?

- Semidefinite
- Union
- Integral $\times 3$
- Perpendicular (flared base)
- Tensor product
- Capital omega
- $\{ \}$ $\times 4$
- The L used for the Laplace transform
- Empty set $\times 2$
- $\mathcal{M} \succ \mathcal{N}$
- I am a big fan of ψ . It's fun to say
- Maybe we can just put down <3
- Whatever the opposite of $\frac{1}{2}$ is
- For all
- The H = in L'Hopital's rule
- Triple integral
- Quadruple integral
- Chi
- Divergence and curl (nabla my sexy king) $\times 2$
- The lim in limit
- Lower case phi
- Violin plot
- When you need to write a lowercase L but it can't look like a 1 so you do it all curly
- Triple integral but the S is more apparent (S for sexy) (integral for curvy)
- A nice clean slash for a quotient

mathgeek

HOW TO BE AUTHENTIC IN CS

A.K.A. THE ANTI-TECH BRO GUIDE TO SURVIVING CS CO-OP

Maybe you're a CS student tired of LeetCode all the time, or maybe you are a math student who hates all the tech bros that are overwhelming your faculty. If so, then you've come to the right place! Allow me, a lowly student who studies CS and hates the CS tech bro population, to impart some wisdom onto you. What are my qualifications, you ask? I've somehow secured jobs for most of my co-op terms, working in jobs that I didn't apply to, including a position at [REDACTED QUANT FIRM].

The key is being authentically you. Stop trying to do a development project with every programming language or framework possible just to spam keywords on your resume. Go dig into projects and topics that really interest you, not the trendy new technology that the constantly changing CS hype cycle swears is the future at the moment.¹ If you focus on the subjects that you truly care about, you'll find CS more enjoyable and not a continuous grind, and develop expertise in the subject. The CS industry is massive, and no matter what field you specialize in, you'll always find employers looking to hire if you show enough expertise.

This brings me to *SYDE* projects.² Side projects are how you demonstrate interest and competency in fields that you don't have prior work experience in. However, I don't think you should constantly grind making new side projects with goals you aren't passionate just to try new technologies and pad your resume. Instead, build projects with whatever interests you and goals that you can be truly passionate about. Your projects don't even have to be "useful" in functionality³, they are useful if they allow you to explore whatever you are enthusiastic about and allow you to learn.

A lot of first years often ask me what makes a good side project. I think if no ideas come to mind and there is nothing specific you want to explore, just think about software in your everyday life with issues that nag you, and come up with ways to solve them. Maybe you'll create an extension to an application you use, or going down a rabbit hole exploring programming language internals, or end up contributing packages and tools to an operating system you use.

On that note, I don't think hackathons are as valuable as people suggest, as they usually produce projects that are created solely for the purpose of adhering to some hackathon theme, and very rarely produce work that you are proud of, let alone work that is worth the sleep deprivation. From personal experience, half of interviews aren't behavioural or technicals, but just employers asking for more details about points you wrote on your resume. This kind of interview gets a lot harder when you are asked about something you aren't enthusiastic about or proud of.

That is a good transition to interviews. Technical interviews are the scary interview type that scares first-years and triggers so many "Should I start grinding LeetCode?" questions. However, technical interviews are not purely a technical

problem that needs to be solved. Half of a technical interview is the behavioural aspect, assessing things like "How well do you explain your thought process?," "How well do you collaborate with your interviewers in solving the problem?," or "How do you react when you run into something you don't know how to solve or approach?" I think that last question is especially important. A lot of people have the tendency to try to act confident in the face of something unknown, either by talking your way out of it or bullshitting an answer. However, I think it's actually useful to just admit when there is something you don't know, whether it is syntax you are unsure of or a question has multiple answers that you are considering. The more open you are, the easier it is to collaborate with you, and you become way more mentorable as an intern. I'm not saying the technical aspect of the interview isn't important, I just believe that the behavioural part is just as important, and sometimes a little bit of vulnerability in an interview helps. A company that truly values their interns doesn't see them as a cheap workforce, but mentorable talent for the future.

Lastly, even if you end up in an internship that doesn't match exactly what you wanted to do, don't be discouraged. Use the opportunity to learn something new about a field you might have not been previously exposed to, and there are always opportunities to ask your employers to get more involved with work more closely related with what you want to do.

I've said quite a bit, so let's summarize this all with a **list of N things to do**:

1. Take estrogen.⁴
2. Be honest with yourself, figure out why you want to do CS and what you want to do specifically.
3. Stop chasing CS fields just to pad your resume or follow the latest technological trends. Build expertise in something you genuinely want to do.
4. Start projects that challenge you to learn new things, but also have goals you are genuinely passionate about. Don't be afraid to make something "useless."
5. Remember that technical interviews are not just the problem you have to solve, but also communication. When in doubt, keep talking.
6. Be open to the opportunities life throws at you.
7. Find activities and friends that can drag you out of the school/work/job-search grind of UWaterloo for balance sometimes.
8. And if all else fails, go digging into the internals of some language runtime or OS or framework to show your expertise in that technology. Don't be scared to go down rabbit-holes.

SillyStalactite

1. Unless whatever the current hype cycle is obsessing over actually truly interests you.

2. I'm sorry, I know too many puns related to the SYDE program. Also, it's pronounced "side," not "ess-why-dee-ea" as some people like to pronounce it. If it's too cringe, I'll escort myself out.

3. <https://ntietz.com/blog/write-more-useless-software/>
4. This isn't actual advice, only do this if you think it would help you mentally and medically

HOW MANY "GOAL PURSUING AGENTS" ARE PRESENT IN THE CORTEX?

I (vaguely) define a "Goal Pursuing Agent" (GPA) as a self contained structure or algorithm that attempts to solve some optimization problem.

Now what are the basic GPA building blocks of the mammalian neocortex? (the smart part) How many of these building blocks is it composed of?

An example of a GPA would be a Multi Layer Perceptron (MLP) network or any architecture built on top of the MLP framework. (i.e. RNNs, CNNs, Transformers, chat bots, etc) In these models, the entire architecture composes a single GPA which attempts to solve an optimization problem formulated as the minimization of a loss function over a specified set of inputs.

It turns out that any task you could imagine giving to a computer can be formulated in these terms.

Having such grand goals, however, comes with equally large challenges. How is one to find the correct connection weights such that the network minimizes its loss function for every set of inputs we may feed into it?

The solution that has been found for this problem is optimization through gradient descent. This approach has proven to work amazingly well and has enabled all of the many successes of "AI" we've heard all about. From facial recognition to ChatGPT.

Unfortunately, the approach is still plagued by MANY problems. Here is a non-comprehensive list off the top of my head: Massive computational and data requirements for training, the problem of catastrophic forgetting, the problem of generalization, the curse of dimensionality, and maybe first and foremost in my mind, **THAT'S NOT HOW BRAINS WORK!!!!** I have seen no convincing evidence that brains optimize their connections through gradient descent!

Is this because brains are some "special type of matter" that can circumvent the laws of physics and math? I personally think that's a bit of a cop out and again have seen no convincing evidence to support this. (and much to the contrary)

Then what to do? Take a different approach! (according to me) Maybe thinking through the lens of GPAs? A lot of these problems seem to have originated from our choice of using only a single massive GPA. What if we were to use many identical small scale GPAs with aligning goals?

Looking back to the brain, it is composed of MANY cells named Neurons. Through "Hebbian learning rules" such as spike time dependent synaptic plasticity, neurons can be viewed as individual GPAs optimizing for as high a firing rate as they can achieve with limited resources. (synaptic connection strengths) It doesn't end here though. Lateral inhibition between neighboring neural populations in the neocortex creates a "competition" between populations to react to common input patterns as quickly and accurately as possible. Winning populations "lay their claim" to the input pattern by preventing other populations from reacting to it, making them find another common pattern instead. In this way, individual populations can be viewed as co-existing complementary GPAs. (for more details on this, read about Self Organizing Maps (SOMs))

Is this the end of the GPA hierarchy in the neocortex? I personally don't think so.

I believe a great example of a successful algorithm that uses a hierarchical organisation of GPAs is capitalism. In the capitalist organisation of the economy, the most basic GPA is the individual. Each person is expected to make decisions that maximize their own personal outcomes. To achieve these goals more efficiently, individuals form groups, corporations, and ultimately a global economic system. Each of these can be viewed as GPAs in their own right, composed of lower order GPAs.

That being said, capitalism comes with its own set of problems. While these problems may be important to consider when developing algorithms based on these ideas, I will refrain from going into further detail in this article.

So how many separate GPAs can the neocortex be subdivided into? idk.

Anyways, I think these ideas are pretty interesting and worth thinking about. I'm personally pretty interested in testing these ideas (hopefully in grad school???). If you have any questions, comments or criticisms, you can reach out to me by writing another **mathNEWS** article.

I ended up having to skip a lot of my thought process and justification for these ideas for this article. Maybe I'll write more on this in future issues??

THE CASK OF ALMONDTADILLO

The thousand injuries of Fortunato I had borne as I best could, but when he ventured upon insult I vowed revenge. Indeed, at length, and with nutty flavour, I would be avenged. I would not only punish but punish with sweet delight, a delight drawn close to oblivion. I must not let this wrong become unredressed, as if it were a delicious almond placed in plain view, never to be claimed, crushed, devoured.

Understand that by neither word nor deed had I given Fortunato cause to doubt my good taste in appetizers or snacks. He had a weak point, this Fortunato. He prided himself on his connoisseurship in almonds. Few Italians have the true virtuoso spirit, but in the matter of almonds, Fortunato was sincere.

The sky was the color of hazelnut, one evening during the supreme madness of the season when almonds are at the apex of ripeness and power. He accosted me with the warmth of the almond tree under the blazing Tuscan sun; he had been indulging in almonds far beyond his own limits. In fact, having observed the man from afar for the whole evening prior, I was pleased to see him thoughtlessly devour one-hundred thirty-seven almonds while the moon had yet to set in place, like a gleaming cashew in the sky.

I said to him—"My dear Fortunato, you are luckily met. I have received a handful of what passes for Sonora, and I have my doubts."

"How?" said he. "Sonora? Impossible! And in the middle of almond season, no less!"

"I have my doubts."

"Sonora!"

"And I must satisfy them—or perhaps satisfy my stomach, or my heart. I am on my way to Luchesi. Some fools have it his taste for Mamra and Marcona may surpass your own—"

"Luchesi could not tell Sonora from mere California!"

I watched his hand closely as he spoke. He was perhaps too flush with almond, or preoccupied with eating, to pay me any mind. If he noticed me staring, he did not say. Each new almond, slipping through his lips, I counted. One, two... then seventy-eight. It was as if he was being guided by fate to slip onto my sword.

"Come, let us go," he muttered through yet more mouthfuls of almonds. One-hundred and nine more, I took care to note.

"Whither?"

"To your vaults. I have no engagement."

"My friend, no. It is not the engagement, but the severe influence of the almonds with which I perceive you are afflicted," I said with scarcely restrained glee.

"Let us go, nevertheless. These almonds are nothing. Sonora! You have been imposed upon..."

Thus speaking, Fortunato clenched my arm like he was digging his claws into a bowl of assorted nuts. I suffered him to hurry me to my almazzo, feeding him almonds along the way, counting seventy-three.

Once home, I took from my attendants' quarters two chalices, filling each with exactly one-hundred eighty-three Ferragnes almonds apiece, and passing one to Fortunato, guided him through several suites of rooms and arched staircases, down a winding staircase into the vaults.

The gait of my friend was uneasy. I chanced a look at his chalice and saw that it was wholly empty upon our arrival in the damp Montresor catacombs. I passed him my own chalice, which he accepted without a conscious thought.

"The Sonora," said he.

"It is farther on," said I. "How long have you had that cough?"

"Ugh! ugh! ugh! —"

My poor friend found it impossible to reply for several minutes. I feared he was choking on his almonds. That fate would be too good for him; too painless.

"It is nothing," he said, at last, slipping twenty-three almonds into his mouth for comfort.

"Come," I said, with decision, "we will go back; your health is precious; the world has far more almonds left for you to revel in. You are a man to be missed. Besides, there is Luchesi—"

"Enough," he said, "the cough is a mere chestnut; it shall not kill me."

"True, true," I replied, "but like almonds in their shell, you should use all proper caution. A handful of Monterey will defend you from the damp."

I knocked the lid off a box and poured more almonds into his hands. Exactly three-hundred twenty-two, I watched, reverently, as they dropped into his stomach like ripe Tuono off the almond tree.

He stumbled to his feet. "Let us proceed to the Sonora."

The most remote end of the crypt was lined with spoiled almonds, piled overhead and around, as if we were at the foot of a sickly almond tree. Three sides of the crypt were ornated

in this manner, with the fourth being adorned with a single Sonora almond.

“Sonora!” Fortunato proclaimed.

“Yes, herein is the Sonora. As for Luchesi—”

“He is peanut-brained,” interrupted my friend, as he stepped unsteadily forward, clumsily grasping the almond. With eyes like Molar, he brought it to his nose, then threw it into his throat.

The effect, as anticipated, was instantaneous. He fell to the ground, astounded. I took to busying myself among the mass of almond and rot. I uncovered a quantity of large, brick-style almonds and mortar. I began to vigorously wall up the entrance of the cavern.

I heard a low and moaning cry, muffled by a mouthful of almonds. I hearkened to it with satisfaction, and even dared enjoy the sound with a delicious almond snack.

“The Sonora...”

Then a succession of loud and shrill screams burst forth, shocking me.

“For the love of almonds, Montresor!”

Then a long and desperate silence. My heart grew sick as I knew his choral agony had ceased.

For I knew that his single Sonora was, in fact, his one thousand and eighty-sixth almond of the night—an amount which would ensure a lethal dose of cyanide would coagulate in poor Fortunato.¹

The Montresor vaults are rich in almonds and blood. For half a century no mortal has disturbed either bounty.

In almond requiescat!

Dick Smithers

1. <https://www.everydayhealth.com/nutrients-supplements/can-almonds-cause-cyanide-poisoning/>

MAN SUBMITS RACKET FILE, TRIGGERS NUCLEAR WAR

CS135: A HORROR STORY

First years, first years: BEWARE! On September 23, 2025 at 8:59pm, a minute before the due date, a poor CS135 student submitted a racket file for evaluation—only to be met by the one message nobody in this godforsaken Earth fathoms seeing, even in their deepest, darkest nightmares.

CRITICAL WARNING

CRITICAL WARNING

CRITICAL WARNING

BASIC TESTS NOT MET

It was at this moment that the he knew, he fucked up.

If you aren’t aware, Racket basic tests are the fringe on which the world’s nuclear explosives rely on. In other words, Racket is the only thing between us and global annihilation. He, knowing what’s at stake, did what any of us would do in this situation.

Played a final battle of Clash Royale.

flyingsqrl

INTIMIDATE FAKE OUT PARTING SHOT

INTIMIDATE FAKE OUT PARTING SHOT

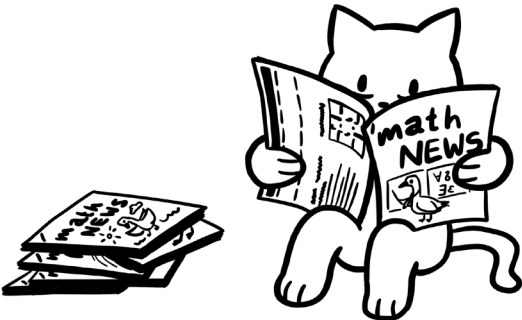
Intimidate Fake Out Parting Shot

Intimidate Fake Out Parting Shot

Intimidate Fake Out Parting Shot

Intimidate Fake Out Parting Shot

>:3



THE DARK AND LIGHT OF VIBE CODING

THE STRUGGLE BETWEEN PERFECTIONISM AND CONTROL

There's a new kind of coding I call "vibe coding," where you fully give in to the vibes, embrace exponentials, and forget that the code even exists.

—ANDREJ KARPATHY

PART 1: THE LIGHT

I'm a chronic perfectionist. Only chronic perfectionists will understand the paralyzing, debilitating pain of being a perfectionist. This is how I, a perfectionist, see the journey of embarking on a personal project. For the sake of interpretability, I'll restrict my soliloquy to coding, though any perfectionist will know that it easily, and altogether quite frequently, leaks into every other aspect of one's life.

A personal project, to me, is nothing short of an engineering masterpiece. Every directory is cleanly separated, every class is beautifully structured, every line of code is as efficient as one could make it. It is stylistically sublime, with properly situated whitespace, cleanly-injected line breaks, and universally approved documentation practices.

So naturally, I never get past the first 10 lines.

"Is this the best way to write that line?" I will ask myself. "Is that clean enough? Is it beautiful enough? Is that perfect enough?"

How, I ask the readership, will anyone get anything done like this?

Trying out AI-assisted coding came with a feeling of shame. I could not stomach the possibility that I, as someone with a CS degree, could be so lazy as to outsource the craft that I had spent 5 years perfecting to AI. But in the field of AI research, speed is the *sine qua non*, and those that move fast have an advantage over those that don't. I like to think that I was smart enough to recognize when I had to grit my teeth and give it a try.

I had initially experimented with Claude by asking it to produce some Python for rendering an animation. Glancing quickly over the generated code, I realized that my own style was not too different from what it had given me. But whereas Claude produced it in 3 minutes, I would have—at the best of times—taken hours to get it halfway there. That had less to do with a skill issue and more to do with the paralysis of perfectionism. I would question every design decision and every line that I wrote and refuse to make progress until everything looked just right.

I still edit AI-generated code to make sure that it looks just right, but that's all that it is—editing; not starting from scratch and having endless debates before I finish writing all the imports. This extends to planning the structure of a project as well. I don't have to worry about forcing modularity

when most of the time, the structure suggested by AI is what I would have ended up with anyway.

With AI, I don't outsource my work—I outsource my perfectionism. These models are so well-trained in best practices that I don't have to worry about it. In 2 months, I had gotten so much work done with AI assistance, that I would've barely managed to finish the same amount in 8 months by myself.

With AI, I am free to focus on ideas and execution, instead of getting hung up on minor implementational details.

PART 2: THE DARK

It was 10:00am. My friend and I had 5 hours to finish and demo a project for a hackathon that we'd recently attended. I stared blankly at my screen, baffled. I could not make head, nor tail, nor midsection of the code before my eyes. It seemed to be a routing system, but for the life of me, I couldn't understand what the code was doing.

The code, as you may have inferred by now, was mostly AI generated. We had vibe coded in the truest sense of the term: passing natural language instructions into the LLM of the day, getting the output, and shooting a couple of instructions here and there to tweak the odd function or two until we were satisfied.

The problem, of course, is that we weren't satisfied. You see, dear reader, to be satisfied with one's code, a necessary—though perhaps not sufficient—condition is that the code must work. Ours didn't.

Here is where I will impart some practical knowledge to the aspiring vibe coder: don't simply pass in instructions to the AI and tell it to fix something. Every model out there, commercial or otherwise, has been trained to optimize over one factor: user happiness. Models will not challenge you unless you tell them to. Models will find errors in your codebase (especially if it's a large one) if you tell it that there is an error. More often than not, the fixes that the AI provides will only obfuscate the logic even more, possibly worsening or hiding the error, and making it harder for you, the reader, to know what your own code is doing.

In our case, this was solved by abandoning AI assistance entirely and manually going through the code, fixing one error at a time. It was surprisingly quick, despite initially feeling rather daunted by the length and size of the codebase. Pro tip: refactoring your code (just copying and pasting classes/functions into different files, even) is the simplest way to get yourself reoriented in the midst of AI-generated syntax soup.

To vibe code is to give up control entirely. To enter the foray yourself, undaunted and undeterred, is the first step in taking it back.

PART 3: TWILIGHT

AI-assisted coding is nothing short of an art form. It is a delicate dance, a tug of war, where you slowly relax your grip on the rope of control. As you relinquish your hold, you feel lighter, more relaxed; but soon, you will feel the ever-dwindling length of rope disappearing before your eyes, until it is too late to get it back. You don your coding mask, tighten your grip, and pull. Initially, there will be inertia; after that, there is control, back in your hands where it belongs.

And so it goes.

temporary_chaos

WHAT'S UP WITH THAT?

THE SQUEAKQUEL

y'all this term is already cooking me. what do you mean we're only 4ish weeks in, like what's up with that? anyways, you know what's up.

- thunderstorms at night (that's what's up)
- the second floor actually being the first floor in half the campus buildings (huh) (what's up with that?)
- dc library sky windows over silent study (that's what's up)
- largemouth bass (idk how to feel)
- ice cream (that's what's up)
- rank-nullity theorem (that's what's up)
- zoning out during class and then being completely lost (what's up with that?)
- going to st jacobs farmers market (a child sold me carrots) (that's what's up)
- price of groceries (I need to eat) (what's up with that?)
- your friends inflating your ego (thanks guys, love you) (that's what's up)
- multiple choice question being worth half the quiz (what's up with that?)
- the feeling of being so locked in you feel invincible (that's what's up)
- your mom telling you you need to lock in (what's up with that?)
- finding new places to study on campus (that's what's up)
- ragebaiting (that's what's up)
- getting ragebaited (what's up with that?)
- just going for a wander over yonder (that's what's up)

thanks for listening to my ted talk. That's what's up. I promise I'll be more creative next time. If you agree with me, come find me and give me suggestions. If you don't agree with me, what's up with that?

smallmouthbasshater

BALLS (ABRIDGED)

balls balls balls balls balls
i love balls. balls are great. balls
fit into any place.

in your pants and in your hands,
balls can make anyone dance.
a conversation starter, a party trick,
whip out your balls
to make that party great.

amongst the Ballers you are the Greatest,
the unwashed goat, the ballin' genius.
the star, the life, the talk of the town!
you've got great balls, bro,
you won't be forgotten now!
the cameras flash, the lights turn on,
your balls passed on,
told in story and song!

live in the glory, bask in revelry,
shout as far as your balls can carry
you down to town and city parties
as the heat burns, the fire roars,
the sour limelight crops your torso
above every newspaper photo.

and in a few years,
I doubt they'd remember,
the face and voice of
the town's Great Baller.

ballin'

asta

MATH BY OSMOSIS AND COFFEE

So, I am actually not a student at UW and I dropped out of math the fastest chance I could get (like grade 10?), but I make the long, arduous trek by bus, ION and foot to Math, Coffee, and Donuts, strangely enough! Literally the cheapest place to buy a large cup of tea in KW! I love that my dollars go to a university and not a corporation! I also don't earn a huge income, as many as you hard-studying nerds most definately will! So I honestly appreciate not being ripped off. Yes! I do enjoy eavesdropping on very confusing, intense discussions by the students about the Riemann hypothesis??? and Template Metaprograms? WTF! It is like a free degree for me. So thanks so much for the sweet sips and even sweeter donuts, MCD. I am a true fan:)

Soulsteps

I CAN FIX HIM

TV GIRLS AND THE LESSONS MUSIC CAN TEACH US

It was around my first year at Waterloo when I discovered the magic of TV Girl. The band's hypnotizing rhythm, combined with the semi-relatable lyrics, really spoke to my tastes. Shortly after discovering this music, I then also discovered that TV Girl carried the moniker of "male manipulator music" (which is honestly a fake word, like "gaslighting" or "narcissist", but I digress), and this label is something that has continued to confuse me ever since.

However, after three years of TV Girl under my belt, I finally came to understand why the band carries that label. Ultimately, the reason is that their music paints a picture, a picture of a man who manipulates women like it's his 9-5, and this then rubs off on listeners through the lyrics. This can be seen in how their music consistently presents relationships where the woman is simplified to some single element of her character, how the music often portrays adversarial dynamics within relationships, and how the few times they do focus on a woman as a whole, they are always depicted as gullible and romantically inept.

Throughout the band's discography, the lyrics love to simplify women's entire personhood into one or a few defining characteristics. One of the best examples of this is the song "The Blonde." The song opens with three back-to-back generalizing statements about women: "Who's gonna pay attention to the redheads of the world—Who's gonna call them up at night—When they're naked and alone," suggesting that something about all redheads makes them lonely. Then there is "And who's gonna kiss the brown haired girls—Who's gonna wipe away their tears" suggesting for some reason brown haired women are particularly lonelier than other women. Then finally, "And what about the black haired girls—Who's gonna whisper filthy things into their ears," suggesting black haired women are hornier.

But maybe I'm not giving them a fair chance, because the rest of the song is about a Miss "The Blonde" with the use of "The" suggesting that he's referring to a specific blonde woman, so perhaps his generalizing ways are over. Except the last line disproves this: "And anyone who ever had a heart—Or sang a lonesome song—Would sell their little souls—Just to make it with the blonde." The lines recontextualize the song not only to suggest that blondes are simply more attractive than the others by virtue of being blondes, but also that whoever is singing this song was only interested in "The Blonde" because her hair was blonde. This mindset then makes it very easy to go about mistreating women; if you see someone as just a characteristic, you've already dehumanized them, and therefore it's far easier to rationalize mistreating them.

But some may argue that this is a gross misrepresentation. Why would TV Girl need to dehumanize these women if they're in a happy relationship? Which brings me to my next point, TV Girl consistently depicts relationships as either transactional or adversarial. Which, conveniently enough, are

two situations where dehumanizing your opposition is not only commonplace; it's encouraged.

Some examples of this are "Not Allowed," where the sample songs' famous samples originate from audio of a girl explaining she's only going to give head if the man does it first. Thereby simplifying sex into something transactional rather than romantic. In "Taking What's Not Yours," the song describes items in the singer's ex-girlfriend's possessions as being "captive little soldiers, deep behind enemy lines." The use of the terms "soldier" and "enemy" directs the mind to thoughts of warfare. Presenting relationships as something to be won, rather than nurtured. Another example of this is about "Song About Me," where, after a series of failed sexual encounters, rather than looking inwards, he uses the experience as an excuse to write a song bad-mouthing his ex. Once again, highlighting the band's incessant desire to "win" relationships.

Finally, after providing not only the mental justification through the dehumanization of these women, but also establishing that relationships are adversarial and therefore the proper context for manipulating women, the few songs that depict a female character as a whole present them as individuals with low autonomy, ripe for manipulation.

The best example of this is "Loving Machine". In it, the singer describes a woman named Maddie Kliene. In the song, Maddie begins dating a man who seems to be pretty much wrong for her in every way. This is seen in lines such as "Sometimes he holds her hand too tight" and "Will he ever smack her ass like she likes?—Will he ever make her laugh late at night?". In fact, the Loving Machine in the title refers to the man, describing him as distinctly robotic and inhuman. However, she stays with him because she's so afraid to be alone that she won't risk putting herself out there to find someone. So if all a girl wants is to be with someone, and it doesn't matter how you treat them logically, why not take advantage of her? In fact, in their (romantic music) catalog, the only time a woman takes agency it's either when they are trying to get something, such as in the case of "Not Allowed," where she is trying to get head. Or when they break up without the characters in the song.

So when you put it all together, according to TV Girl's music, girls are only as deep as their surface-level traits; they are either trying to get something out of you or win some sort of nebulous conflict, and they are kind of stupid. So all that being said, why don't you manipulate them? Which is ultimately why I would argue TV Girl is known as male manipulator music... It could also be the fact that there are some guys who use liking TV Girl as a way to get play, but who's to say?



Mr. Lebovski

gridCOMMENT CANCELLED due to budget cuts!!!!



gridQUESTION: where did we take spaghetti inhalers? >:)

i1 prize to be issued if she is found..... (next issue this is not an ARG)

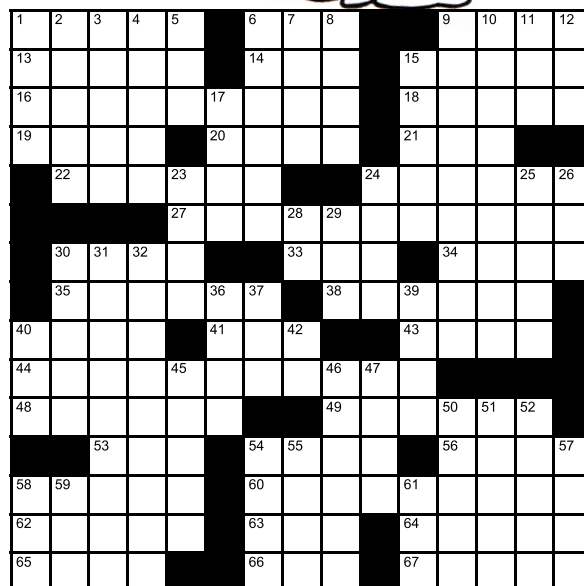
ACROSS

1. More confident
6. Come first
9. Renaissance composer known for his English madrigals
13. Convex molding
14. Mozart's "L'___ del Cairo"
15. Earth's shape
16. Goregrind and nardcore, for some
18. Explode
19. Paella pot
20. Icelandic epic
21. Little bird
22. From the sky
24. Very small
27. Yellow NYT game*
30. Yemeni port
33. ___ Arbor
34. Barker
35. Shoe with a long slashed tongue
38. Clock watchers
40. Jason's ship
41. Siesta, for one
43. Comfort
44. Infuriating NYT game*
48. Puzzle
49. Subtlety
53. Dynamite
54. Amend
56. Pond organism
58. Stale
60. Classic NYT game*
62. Show of contempt
63. Harry Potter's best friend
64. Relaxed
65. Stock in the women's restroom
66. Kind of truck
67. Illegally assists

DOWN

1. "Comme ci, comme ça" in Cambridge
2. It's sometimes mistaken for the tonsils
3. White oak
4. "Pomp and Circumstance" composer
5. Sushi topper
6. Easy NYT game*
7. Like some lattes
8. Space race grp.
9. Pribilof Islands locale
10. Danny Gonzalez and Drew Gooden
11. Tear
12. Banned pesticide
15. "___ loser, we're going shopping!"
17. Tide type
23. Fails to be
24. Recently-paywalled NYT game*
25. Josh
26. Electric fish
28. Home of Terence Tao, abbr.
29. Set of ethics promoting conservation of the outdoors
30. Canton neighbor
31. Worthy of respect
32. Stretches
36. Ancient Andean
37. Consume
39. Big butte
40. Trick taker, often
42. Product operator
45. Hot coal
46. They'll make you cry
47. Crazy
50. Mogul viceroy
51. Intimate
52. Snowy bird
54. Tan
55. Let go of

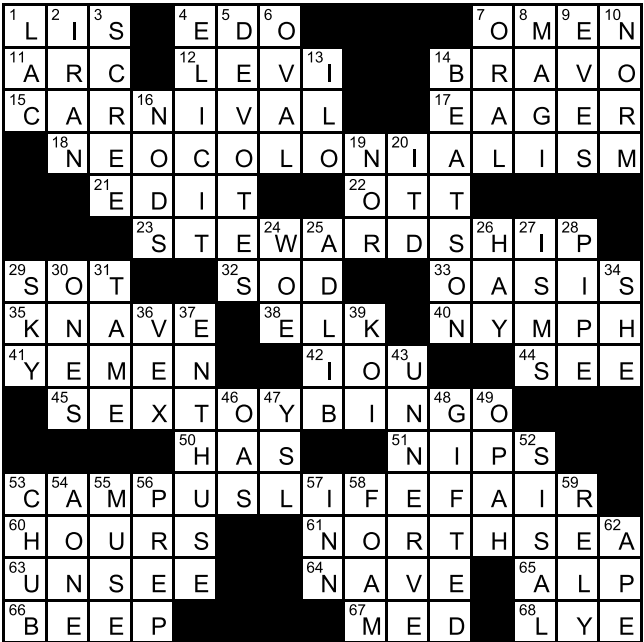
57. Sums
58. Recipe amt.
59. It's made up of nucleotides
61. Irish ___



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

SUN SEP 29	MON SEP 29	TUE SEP 30	WED OCT 1	THU OCT 2	FRI OCT 3	SAT OCT 4
	Course Selection Period ends Last day to start work to earn a standard co-op credit for the fall 2025 work term		National Kale Day	Name Your Car Day		Due date to request removal from Cycle 1 Match, 12 p.m.
SUN OCT 5	MON OCT 6	TUE OCT 7	WED OCT 8	THU OCT 9	FRI OCT 10	SAT OCT 11
Do Something Nice Day			Cycle 1 Employer rankings available		Final examination relief requests due Requests due for accommodations on religious or creed-related grounds	Cycle 2 job postings

LAST ISSUE'S
gridSOLUTION



mathNEWS-CHAN AS
A CAT!



eepycat

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