



for you ♡

“WHEN YOU’RE RUNNING YOUR MILLION-DOLLAR STARTUP, WHAT’S YOUR GO-TO INTERVIEW QUESTION?”

Whether you're on the edge of your seat praying for a match today or have already received the bad news that you'll be thrown back into the co-op ring for Cycle #2, don't fret! **mathNEWS** has an open editorial assistantship it's looking to fill — and we bet you'll be a great fit!

JOB SUMMARY

mathNEWS, founded in 1973, is on a mission to improve the world. **mathNEWS** attracts only the most dedicated and talented of writers, artists, and puzzle-makers, who make **mathNEWS** the awe-inspiring student publication it is today.

mathNEWS is seeking a highly motivated and self-driven Math co-op student who is passionate about our publication and wants to experience it from the inside. If you are crazy about **mathNEWS** and want it to be the very best that it can be, then this is the position for you!

JOB RESPONSIBILITIES

- Clean out the **mathNEWS** office
- Distribute **mathNEWS** issues across campus
- Manage the disorderly hellhole that is the **mathNEWS** email account
- Clean out the **mathNEWS** office
- Attend WUSA and MathSoc meetings for us
- Handle all of **mathNEWS**'s finances and prepare budget presentations
- Buy coffee for caffeinatED
- Did I say clean out the **mathNEWS** office?

REQUIRED SKILLS

- Experience in an administrative role (5–6 years)
- Willing to work overtime and on weekends
- Can carry loads of up to 50 lbs / 23 kg
- Ability to work independently

COMPENSATION AND BENEFITS INFORMATION

This is an unpaid position.

clarifED
Editor, **mathNEWS**

caffeinatED
Editor, **mathNEWS**

PREDAP	If you could do anything with your life, what would it be?
ABALD MAN	This isn't an interview question I just want to say fuck startup culture. Thanks for coming to my TED Talk.
DERIVING FOR DICK	Why?
NOT A NERD	Why do you wanna work here instead of the Cali Roblox offering? Honestly that sounds way better than here.
JEFF	What is your average daily calcium intake (mg, exact)?
GIRAFARIG	Are you prepared...?
A COOL PEN NAME	So why do you want to work at HeftyBreastedSlavicWomenXXX.com?
QUANTUM GOOSE	Who are you?
CY	Has anyone really been far even as decided to use even go want to do look more like?
APHF	What are these cans of condensed milk doing everywhere oh god the milk is coming for me and when I am gone the milk will come for you next
ME	What are your greatest achievements that are outside your academic, work, relationship, lifestyle, creative, recreational, and spiritual achievements? Please list 10 of them in 5 seconds.
BOLDBLAZER	
ETERNALLY PUZZLED	What is your preferred method to die?
TENDSTOFORTYTWO	Write an algorithm on this paper to invert a binary tree in Java 6. You have five minutes.
X	Why do they call it oven when you of in the cold food of out hot eat the food?
CC	What is your favourite book?
FINCHEY	When was the last time you bribed a CRA official and got away with it?
CLARIFIED	What's your favourite colour?
GOD ⚡ PEED	Who can say for sure?
BIPED	How did I end up like this?

ARTICLE OF THE ISSUE

[How To Doodle in Class](#) by χ wins. Gift card from editors. gg!

Interview selections complete. Good luck next time!

NAMAN SOOD, **mathNEWS** EDITOR FOR FALL 2021
ALONG WITH KEVIN TRIEU, CLARA XI, AND YANG ZHONG

mathASKS 147.2

FEATURING mathNEWS EDITOR CAFFEINATED

ABALD MAN: LET Q BE THE SET OF ALL QUESTIONS, AND R BE THE SET OF ALL RESPONSES. LET THE FUNCTION $f: Q \rightarrow R$ MAP A QUESTION $q \in Q$ TO HOW INTERESTING YOUR RESPONSE IS TO SAD QUESTION. DEFINE $r_M = \max\{f(q) : q \in Q\}$. GIVE A $q \in Q$ SUCH THAT $f(q) = r_M$, AND ALSO GIVE YOUR RESPONSE TO q .

This is one of those questions where you see it on the test, and even though you know what all the words mean, you have no idea how to approach it. I will do what I normally do in such a situation—write down what I *think* is the maximum as though it actually is, and hope that the TA believes me.

The required value of q is “How did you get started with programming?” And the corresponding response is as follows:

When I was a young boy, my father got me a copy of the racing video game, Midtown Madness. That was great, and I was really excited, but the only problem was that we did not have a home computer at this time. So I used to go to my dad’s office, where he installed the game and I used to play it when he didn’t need his computer for work.

Fast forward to a few years later, we finally had a home computer! Sadly, we lost the Midtown Madness CD at some point. But in its place, we had something almost even more exciting—the internet. Through somewhat illegitimate means, I was able to go to some really shady websites and acquire a copy of the game. This was a terrible idea and I really should have known better, but I was like, 10. Give little-me a break.

Turns out, I found a copy of the game. Huh! After spending hours cruising the city alone, I kinda got bored. The multiplayer option was tantalizing, but none of my friends had the game (and they all had the sense to not visit shady websites looking for it). So I had to somehow get the game to them.

Back then, USB drives were kinda new and expensive, at least in India. CDs and DVDs were cheap, even writable ones, but we weren’t allowed to bring them to school. So I had to find another way to get the game to my friends. How?

After some web searching for “how to send files over internet” (but probably phrased in a more 10-year-old sort of way), I came across HFS (HTTP File Server: <https://www.rejetto.com/hfs/>). This application gave me an interface where I could drag and drop files and it would show up on a website. Neat!

The only problem was, this website was only accessible at my home, in my local area network. The web server here was my computer, and it was hidden behind my home router. After reading a lot of articles about this, I found out that what I needed to do was called “port forwarding”, and it would make my web server accessible over the internet. In hindsight,

this was a terrible idea too, but less obviously so, but I was somehow able to get it to work. Going to a random IP address now showed my web server, even outside my home network! I confirmed this by going to my neighbour’s house and checking.

Now, I’ll spare you the details, but over the next few months, I discovered:

- Network Address Translation
- Dynamic vs static IP addresses
- Dynamic DNS providers
- Free domain name providers
- The fact that the HTTP server I was using could have custom page layouts
- Those custom page layouts were written in a thing called HTML
- I could make them even better with a thing called CSS

And soon, <https://nsdcars5.tk> was born. Back in 2013, if you typed this URL into a browser and pressed Enter, you’d get a light grey website with navigation links on the side, a small quantity of text, and download links to a couple of video games that were completely legitimately acquired and definitely not illegal to host. All this served off of my own overheating Acer laptop, a gift I received for having good grades in 6th grade and saving up part of the money to buy it.

This website caught the eye of my school’s computer club, who recruited me in 7th grade. There, I met a lot of amazing people, learned a lot more about the things I had casually explored over the internet, went to hackathons where I won and lost, and really started to identify as “a programmer” who most definitely wanted to pursue computer science in the future. And so yeah, here I am. What got me started with programming was piracy.

...note that I do not necessarily condone my past self’s actions.

GIRAFARIG: HOW WAS THE EXPERIENCE OF RUNNING mathNEWS ENTIRELY ONLINE?

It was a little bit strange at first. I was doing my duties: copyediting, layout, draft reviewing, and so on. It felt a bit... underwhelming. Like the magic of the publication that I loved so much had gone away when I peeked under the covers. But I’m glad to say that that feeling was only temporary. I do think some amount of excitement of refreshing the **mathNEWS** site on Friday midnight is gone. But the magic is restored and even enhanced, when you sign up a new writer for the first time, and when you say hello to your dear readers on the **mastHEAD**, and by God is it ever enhanced when you rearrange two articles during layout and they fit together *just right* and you just go:



I didn't even talk about online, did I? Honestly, I don't really have a basis for comparison yet. I have only ever been an editor online, since I wasn't even a regular writer for **mathNEWS** before COVID hit. So I don't know what the in-person editor experience is really like, not yet. The online experience involves a lot of fun production night video calls, terse and confused Discord messages to the other editors when a controversial article shows up and we have to actually do our job, creating some really meaningful relationships, and staying up until 1 AM doing layout (and then forgetting to attach the PDF when you send out the draft review). Overall, a solid 9.93/10.

I visited the **mathNEWS** office for the very first time recently, to do some work for issue 147.1. I picked up the first printed issue with my real name printed as an editor. If all goes well, I can't wait to host my first in-person production night soon. I think the magic is about to be enhanced a whole lot more, and I can't wait.

PREDAP: IF YOU COULD TIME TRAVEL BACK TO THE DAY IT WAS ANNOUNCED THAT CAMPUS WAS CLOSING, WOULD YOU DO ANYTHING DIFFERENTLY?

I would go back home and visit my family. My original plans for going back were annual and about to begin in April, but those were cancelled because of COVID and travel bans left and right. I should have gone in September 2020, it was really the best time to go—low case counts, no travel bans, and a lot of time between co-op and 2A to travel and return. As it stands, it's been two years since I've seen my family, and I don't know when travel restrictions will be relaxed enough for me to go. I can't wait to see them again, and I wish I could have seen them sooner.

Oh, and also I would enjoy the V1 food while I could. That stuff was delicious.

CLARIFIED: WHY DID YOU CHOOSE THE NAME CAFFEINATED?

I like coffee (*sip*). It's literally the best thing ever: it's bitter and annoying without additives, mildly addictive, and gives me a headache if I start my day without it.

Huh? Red flag? Toxic relationship? What are you talking about?

Anyway... I had almost picked *predicatED* as my editor name, because I had CS245E with Ragde the term before I became editor and I enjoyed the class *that much*, but *caffeinatED* came to me at the very last moment and it just worked so well. I may not be the biggest coffee connoisseur, but I do enjoy being *caffeinatED* and I think my editor name can reflect that.

CIX: DESCRIBE YOUR IDEAL TUESDAY NIGHT.

Sitting in the **mathNEWS** office, doing layout, door open and blasting the Initial D soundtrack to everyone around me. I'll get MC addicted to Eurobeat eventually, just you wait.

ME: WHAT IS YOUR FAVOURITE FOOD OFF AND ON CAMPUS?

On-campus, I really like V1's dinner-time buffet. After the SLC Tim Hortons (which doesn't really count), it's where I spent most of my meal plan dollars, simply because there's so much variety there that you can always find something you enjoy every night.

Off-campus, there's a restaurant in Kitchener called Lancaster Smokehouse. I've been there once and absolutely loved it. I can't wait to go again... actually, I should go one of these days. Thanks for the reminder!

CC: HOW MANY COMPUTERS HAVE YOU KILLED? DO YOU CONSIDER YOURSELF A COMPUTER MURDERER?

I think the answer to this question really depends on your definition of a computer. I have killed a laptop motherboard before, which should by all reasonable accounts mean death, but then I replaced that motherboard and it was fine. The rest of the laptop was the same, only the motherboard had changed. If I pulled out your entire nervous system and replaced it with an identical copy, would you still be you? I think you would, but this is philosophical enough that you are welcome to disagree.

If I had to put a number on it using my definition of "computer" and "kill," I'd say I've killed approximately five computers, with one more escaping from the brink of death. And no, I do not consider myself a computer murderer.

A COOL PEN NAME: TENDS TO?

Forty two.

LOOKING FOR VALIDATION: WHO'S YOUR FAVOURITE WRITER IN mathNEWS?

Obviously it's, uh, (*squints eyes*), Looking For Validation, of course! Who else could it be? Good ol' LFV, what would we do without them?

LOOKING TO START A FIGHT: WHO'S YOUR FAVOURITE EDITOR IN mathNEWS?

@**mathNEWS** Editor#8603 on Discord

DERIVING FOR DICK: WHAT IS YOUR FAVOURITE ARTICLE OF VOLUME 146?

I think it's got to be *mathNEWS with You* by Various Artists. I think Mr Artists did a fabulous job with the lyrics and the vocals, and getting the legendary CC to do the mixing was a great idea. Flawless execution all around, I don't think it can be topped.

BOLDBLAZER: WHAT IS YOUR PREFERRED CHOICE OF CAFFEINATION?

My preferred method of caffeination is also my daily method of caffeination—dark roast beans, coarsely ground, into my French press with nearly-boiling water for exactly 3 minutes and 30 seconds, mixed with sweetened almond milk. I discovered almond milk recently—I used to use 10% cream and sugar before that, which is also nice but doesn't have the same amount of... character? Not sure if it's the right word. But I tried the almond milk once and I definitely prefer it.

A COOL PEN NAME: WHY DO YOU LIKE CS MORE THAN MATH?

I think part of it is that I got a much earlier start with CS-y stuff than I did with math-y stuff (see my answer to Abald Man). The other part of it is that CS is inherently cooler than math because you can actually do things with it, don't at me.

A COOL PEN NAME: WHAT'S THE BEST PART ABOUT BEING AN EDITOR? WHAT'S THE WORST?

Best part: According to a draft of the **mathNEWS** constitution I found in the office the other day, I have supreme authority to make and veto any decision at production nights.

Second best part: I get to write **mastHEADS**. I love writing **mastHEADS**.

Second worst part: It is a bit of a time sink and you do lose quite a lot of your "free" time. It can be a bit tiring at times, but I think my effort is worth it and well-spent here, so I don't mind too much.

Worst part: I know who wrote the **blackBOXES**, and I think they're coming for me quick I need a place to hid—

CLARIFIED: CAN YOU DO A CARTWHEEL? IF SO, WHEN WAS THE LAST TIME YOU DID ONE? IF NOT, WHAT WOULD YOU GIVE UP TO GAIN THE ABILITY TO DO THEM?

No, I cannot. I will gladly give up one (1) human hair to gain the ability to do so.

GOD ⚡ PEED: WHAT MADE YOU WANT TO BECOME AN EDITOR?

Well, a lot of it was a general liking for the paper, and a desire to contribute more to it. I did think in the beginning that I wasn't cut out for it, that I didn't know enough for the position and I wasn't qualified. But one time, hanging out on the Discord, an older editor told me his origin story. I won't tell the story because it's not mine to tell, but it told me that you don't need to be "into the culture" of **mathNEWS** to contribute. You bring an enthusiasm to get the job done, and your own flavor of what **mathNEWS** should be like, and that's more than enough. So that was what finally pushed me over.

Well, that, and the fact that having a special editor name sounded like a super cool thing. Fifty-fifty both reasons I guess.

THE EUROBEAT'-EM-UP: WHAT DO YOU THINK **mathNEWS IS, AND WHAT DO YOU THINK IT SHOULD BE?**

This might be a controversial opinion, but I think **mathNEWS** is a lot like the *r/uwaterloo* subreddit (though decidedly less racist). It's got jokes, it's got stories, it's got news, it's got art, but most importantly, it's got *what's happening*. As a math student, you can pick up an issue of **mathNEWS** and appreciate every single article because they all come from people around you—it's something both you and the writer can relate to.

As for what it should be... I think it should be more open. I talk to younger folks and I try to peer-pressure them into writing for **mathNEWS**. (If you're reading this and don't write for **mathNEWS** already—what are you waiting for?) The most common answer I get is that, "I don't feel like I'm creative enough/funny enough/mathy enough/NEWSy enough." I want to get rid of that mental block in people's head, tell people that they *can* express their thoughts and they *should* and people will *love* it and even if they don't who *cares* at least you got your thoughts on ink and paper, out there for the world to see. I'm not sure how to do this yet, but I'm working on it.

Nobody wrote the blackBOXES. There are no blackBOXES. caffeinated is safe. Look, he's still writing answers. Now be a good mathNEWS reader and keep reading.

LUGUBRIOUS HALLS

FRIDAY, NOVEMBER 06, 2020 — CONRAD GREBEL MUSIC DEPARTMENT

CC loved the music department on the first floor of Conrad Grebel. A small, cozy atrium served as a central hub, adorned with idly winking holiday decorations, and walls of towering windows framing the snowy grounds outside. He followed the small hallways, softly lit, through an assortment of practice rooms and classrooms with a variety of instruments. What made these halls special were the soft traces of songs that would escape the music rooms and wander the corridors throughout the day. It felt as though the halls were singing to him.

He was a second-year SE student. In his first year, he'd hoped to live in Grebel's residence building, but had been allotted a room in Village 1 instead. Though disappointed at first, CC was ultimately glad he was able to meet Ellesmere Van Doren, one of his best muses, at a residence event one fateful evening. He felt a pang whenever he thought of her upcoming absence.

CC met Ellesmere, as usual, in the practice room they had booked. She was already there, playing a piece on her flute as CC let himself in.

"Hello, Ellesmere," CC sat down on the piano bench. "Are you ready?"

"Hey, CC," she answered. "Of course. Your work is wonderful as always."

CC's smile was humble. "It's all thanks to you. Care to join me in one last piece?"

Pachelbel's Canon in D. Flute and piano. Prim and proper, but also warm. Today, CC felt, they were wonderfully in alignment. There were days when the rhythm felt slightly off, the chords just a little out of tune, the words a little clunky and the metaphors strained. But on this day, it was all smooth chords and silky phrases.

WEDNESDAY, SEPTEMBER 15, 2021 — [REDACTED], ON THE PATH TO CONRAD GREBEL

CC was leading us four on the cold trek across campus. Just ahead of me was D, who was helpfully holding out a phone flashlight. He was a close friend of CC's, it seemed. I couldn't quite make out CC or the fourth person in the dark, and I couldn't help but feel a creeping sense of unease.

"Where the fuck are we going?" D asked.

"Conrad Grebel, like I said," CC responded jovially. I shivered in the cold.

"Speaking of Conrad Grebel, I feel like I haven't been seeing Ellesmere too much lately," the fourth person mused. CC's stories used to feature a talented flute player named Ellesmere,

but lately, the stories had taken a *very* different turn. In fact, Ellesmere had only appeared in a few entries in the CC multiverse.

"Yeah, but I've been liking the way my stories are going lately."

I listened to the gushing water ahead, thinking about how pretty, how sweet, how charming it must be. I could see CC's excitement and delight. He turned to us, stopping suddenly, and his laughter cut through the nighttime air. "I haven't been here as much as I'd like. It doesn't feel like it should be here, you know? Like, you might be walking through snow to get through when you could be cutting through here instead or something. I haven't come here since last Friday!"

I paused when I saw D's shocked expression up close, his brows furrowed and mouth slightly opened. "Is—is this okay?"

Then we all started walking again, at a faster pace now.

It doesn't seem to be doing too well... I thought. A more sinister part of my mind spoke whispered: we might all fall into the rushing water now if it broke.

WEDNESDAY, SEPTEMBER 15, 2021 — CONRAD GREBEL SWINGSET

The swingset, like many things in Conrad Grebel, was hexagonal, and large enough to comfortably hold everyone that needed to fit. Four wooden swings were neatly arranged on the sides, and an empty area took centre stage. CC and D settled into one of the swings. I took one, the fourth person took another, and Ellesmere took the last.

There she was: Ellesmere Van Doren. I felt another inexplicable pang of unease when I saw her. As if she'd felt my presence, she turned. She smiled at once, and met my gaze. I felt my apprehension swell, and bathed in the mysterious glow of the moonlight. Ellesmere was as confused as I; it was visible in her eyes.



Ellesmere had previously been standing on the M3 green when she had suddenly vanished. She hadn't been certain she could ever be back again, since CC had indicated he'd be taking his stories in another direction, and she felt a little bad that she'd not been interesting enough to stay in the main series.

As Ellesmere swung gently, she vowed she'd spend more time on her character this time, though she had a few too many butterflies in her stomach. She was always nervous before performing, even if it was for a relatively minor appearance like this one.

Ellesmere looked over at CC. He was enraptured in his conversation with the short guy sharing his swing. She glanced over her shoulder at the two others. That was the author, cy (characters always recognize the authors of their stories, even if they've never met before), and an unknown fourth person. cy looked tentatively at her, and Ellesmere smiled nervously back.

She exchanged a nod with CC, who clearly recognized her. She took a sharp, up-beat kick off the ground, swinging up high. She'd had no lines to rehearse this time, and wondered why she'd been brought to life. But beneath the rich, full moon, in the late evening on a chilly autumn night, it was idyllic.



Ellesmere looked regal. Our eyes met briefly again, and when she started to swing, higher than should have been possible, it felt as if she taking flight. Ellesmere swayed gently with the rhythm of the swing. Her eyes were closed.

Across from Ellesmere, CC and D were swinging erratically, ascending, but never reaching far enough to strike Ellesmere. So *this* was why I summoned her. And it was a charming moment, watching the art and the artist. It was magical, how Ellesmere and CC had woven such a beautiful story together.



Ellesmere saw CC's expression shift as they left together. It was very, very subtle, but Ellesmere knew CC well.

In the glowing, elated atmosphere, CC felt both the destruction of their relationship, and the rebirth of a new character. CC tried to suppress the thought. But it would be so, so easy to make it happen. Besides, Ellesmere wasn't that necessary for the story, was she?

A single tragic sentence would do it.

cy

THE BEST METAPHOR I'VE EVER WRITTEN ABOUT AN OPEN SOURCE PROJECT

OR "THE THING I'M MOST PROUD OF THIS WEEK IS A MESSAGE I SENT ON DISCORD AT LIKE 1 IN THE MORNING."

Chromium is "open source" in the same way I know what's in my snacks by reading the ingredients on the box. I can tell what's in it, and I could probably do something with it if I tried, but fuck if I could actually substantially change the recipe.

George Lambrou

WNC CALL FOR APPLICATIONS

Hi, we are the Waterloo Nanotechnology Conference Directors, and we would like to invite you to apply to become part of our 2021/2022 conference team this year!

In past years, we have hosted keynote speakers such as Ted Sargent, the author of *The Dance of Molecules: How Nanotechnology is Changing Our Lives*, Dr. Eli Yablonovitch, the founding father of the photonic crystal, Dr. Stuart Shaklan, Principal Engineer at NASA's Jet Propulsion Laboratory, and Dr. Joanna Aizenberg, Professor at Harvard University and Core Faculty at the Wyss Institute.

We are currently hiring for the following positions:

- Speaker Relations
- Student Engagement
- Marketing and Design
- Logistics
- Finance

The application, as well as descriptions of each role, can be found in the google form below:

https://docs.google.com/forms/d/e/1FAIpQLSdfKq8fvSqZKv31_i3BP8tgNvdYbSes5QUGci7-9XMxaKiUgg/viewform

If your application is successful, we will reach out to you for an interview!

Keep an eye out for attendee applications coming out soon! We hope to see you there.

Best,

WNC Executive Team

A side effect is something that changes the world. Alternatively, a side effect is something that takes in the entire world and produces a new world.

PROF. BRAD LUSHMAN

warSOC XII — GIRLS' NIGHT OUT

It's horrific, the things that humans will do. In my head, my geese, tangled in cruel nets, fall. I caused this. I'm a honking idiot. Of course those black-ops government Anti-Math hunters would know about us geese. We should have hidden, not stayed and watched the carnage. But there's one thing that geese know better than anyone else, and that I know better than any other goose. Revenge.

Hawk—or Name, I suppose, though it's a stupid-sounding name in both English and Goose—comes through the portal, joining Newton and I in Theorem-Space. Safe, for now. As long as our worst enemy, until today, doesn't decide to take this opportunity to backstab us.

“Let's get something clear, Name. This doesn't mean anything for the geese or for **warSOC**. We're not suddenly *friends*, or anything like what you might read in some stupid human children's stories. We're allies of circumstance, and *nothing more*.” I hiss.

Name doesn't seem fazed. “I don't have time for this. We need a plan to get your geese and my people out of the hands of *those* people. And to do that, we need to know where they're going. You're both geese, you can fly. I need you to tail those jets and find out where they're taking them.”

“There's no way we can keep up with *jets*, you honking idiot.”

Name hesitates before speaking. “There's... this experimental technique I've been working on for **warSOC**. If you exit Theorem-Space in the mid-air equivalent of Real-Space, you'll fall.”

“No, we'll fly. You stupid wingless humans will fall.”

“That's the point. It builds up speed. Did you ever play that video game, Portal? No, of course you didn't. It's where Vigil got the idea from in the first place. Just portal into Real-Space, fall, and enter Theorem-Space again. You'll have all the speed from the fall, redirected in whatever direction you want in Theorem-Space. Repeat, and you'll be with those jets in no time. Vigil wants to call it momentum jumping.”

I consider the idea. It's crazy, but it just might work. “It's a honking death-wish. Mess up, and you're a splatter on the ground. Why don't you do it?”

“I'm not going to do it because you're small and you fly. They'll be less suspicious of you tailing them. A human falling through the air? And your eyes are better than mine.”

I don't like it, but makes some level of sense. “Oh, flattery. I'll meet you back at the hospital where Sarah's staying.” Name goes still at the mention of Sarah. Finally, a rip in her veneer—it makes me *so* happy, but my voice is serious for the next sentence. “And in exchange, I want *you* to get back on the ground and see how many of my geese you can help. Bring them to the reservoir.” Name nods.

Come on, Newton. I've this wonderful new Theorem-Space trick I'd love to show you.



Geese don't like to dive. Period. It's too quick, too dangerous. But I must admit, as Newton completes the Theorem-Space exit procedure next to me and I close my wings and tuck my head, there's a certain wild thrill to it all. I'm sliding, and then dropping, falling.

There's a roar in the air above campus, beyond the swirling wind. Two jetstreams, like white graffiti, trace across the sunset sky. They're heading out. I can see two silver-grey dots at the end—the jets. I start the Theorem-Space entry procedure with claws wildly shaking in the wind. The ground's getting larger and larger, now, as we dive. *Come now, come on*. I've done this dozens of times.

The portal opens back into the blue space of Theorem-Space, and we dive back in with tremendous speed. We're rushing, really rushing, orthogonally through Theorem-Space. All our momentum's been turned sideways, following the jets. Newton's already starting the exit procedure, and a few seconds later, we blast back into Real-Space. Clouds and deep orange sky. I look frantically around for the white rails, paths to my geese. *There*. Starting the Theorem-Space entry procedure again.

I look at Newton. His eyes are wide open.

Hang in there. It could be a long way.



They're gone, for now, the intruders. I exit Theorem-Space in the rock garden, where some students, confused by the earlier commotion, are milling about in the dusk. A few geese, wrapped in nets, are lying on the ground, left behind by whoever shot them down. I walk to one, and put my hand in front of its nostril. The slightest of warm humidity. I've never been this close to a goose before, in spite of all that's

It's basically banging
you on the hood of your
plane. Damn it! If I see
that in mathNEWS...

CHRIS O'DONOVAN

transpired between us and them. I brace myself, expecting to shudder like I usually do. But I don't. The goose looks so harmless, the way it's lying entangled.

There's a sharp honk, from behind and above. Another goose, eyeing me from a perch on the MC balcony. I raise both my hands, then gently disentangle the net and lift the goose up. It's soft and warm and smells like grass. I cradle it and take a few steps, before looking back. The goose on MC hasn't attacked. I start running—Laurel Creek Reservoir is quite some way.

Another honk interrupts me. There's another goose, on the ground some distance away, gesturing towards the net, and then towards another netted goose. They must think removing the nets are a priority. I lay down the goose I'm holding, and a few other geese materialize and start a Theorem-Space entry procedure, *right in front of all the bystanders*. They've got no sense of discretion, but I suppose I'd do it too in their position. The portal opens, and the geese disappear.

Someone has noticed, a woman with a shrill voice. She's yelling now, and I start sprinting to the next netted goose. There's a lot of them. *Quite the haphazard rescue operation.*



Exhaustion is setting in. Newton and I are getting slower and slower, and the jets are dwindling with every momentum jump we make. But they're my geese, and I won't give up. I won't let Newton give up either.

Feathers ruffled, wings ache, mind is dizzy from movement. It's dark now, and the trails are barely visible in the moonlight. And then they stop. The roar is gone. We've lost them. Or... we've not. *They've landed! Newton, they've landed!*

One more momentum jump, cruising to burn off the speed, and then we're gliding, blessedly smooth, through the air. Over the lights of an island—no, a fortress—of concrete, glowing in the night. And I realize, through the euphoria, that it's going to be the same trip home. And that there's a honking lot more momentum jumping in store for tonight.



I stop on a ridge of Euclidean geometry. It's *so slow*. Behind me, a valley of clean mind, returned to me. To the front, and the sides, stupid, frustrating tangled graphs and pyramids of mixed up neurons tangled up by the power of Theorem-Space. I'm not a quitter, no, but I'm so, so tired. There's just *so much* to do, and Name isn't here today. I miss her already. If only someone could help me. What did I get myself into, joining **warSOC**...?

To be continued...

CHOOSE YOUR OWN ADVENTURE: THE MANOR

The Herstmonceux Manor stands atop a sheer precipice overlooking the North Sea. Beneath the manor, the seas seem perpetually turbulent, around it the winds seem incessantly tempestuous, and above it the skies seem forever grey. The years of abuse from the elements have worn down the manor from every side, but its wrought iron rooftop finials atop its steeply pitched roofs atop its octagonal towers, and turrets maintain a sharp silhouette against the colourless skies. The siding is faded and cracked, the bricks are eroded and crumbling, and the iron railings are rusted through. Nobody has lived here since before the war.

You gaze up at the manor, which towers above you. Ordinarily an old building like this is no problem—stuff like this only comes across your desk in cases like these—when people go in and don't come out. The wind is coming in from the sea. A storm is blowing in.

You enter the building and the wind slams the door shut behind you. Before you lies the main hall. A large limestone fireplace, several ornately carved yet empty wooden frames, heavily draped windows, and a grand staircase encompass the room. Pulling back the drapes reveals boarded up windows behind them. The room should be very dark, yet a diffuse light seems to come from the fireplace. Everything is coated in inches of dust. Upon walking in, your footsteps stir up the sedentary dust, which hangs and lingers in the air, drifting around aimlessly before settling down again.

To ascend the staircase, turn to *The Staircase* on page 17.

aphf

**You could be playing
Need For Speed:
Carbon right now, but
instead, you're reading
mathNEWS.**

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

A mathNEWS EDITOR WHO REALLY
LIKES NEED FOR SPEED: CARBON

N SONGS TO LISTEN TO FOR THIS ONE REALLY SPECIFIC FEELING

We haven't had a playlist article for a bit, so I've taken it upon myself to write some more and add my songs. The problem is, which songs? Honestly, I'm just really lazy, I want pizza on production night, and I want to share some songs with you against your will. But three of my songs were literally in **mathNEWS** 142.5, which has done excessive calling out to my desire to be the protagonist of a coming-of-age film.

So now, I will do the same to you, and bring you N songs for the specific feeling of being the type of person to do decent in school: you've got strict parents but not so strict that you have trauma; you're the type to make friends with everyone but also you're distant so they end up "just knowing" you and you end up having only 2 friends because you have a hyperspecific humour; you overthink everything and feel pretty one second and ugly the next; you just want some knight in shining armour to come around and make things interesting—literal or figurative, take your pick. Maybe it's a boyfriend, maybe something to give your life meaning. But fuck, you're lonely and don't feel like you have a use.

WEATHER — GINGER ROOT

Let's start things off here with something dubbed "aggressive elevator soul." Ginger Root, who looks kind of like bipED, is a star at knocking out the 70s/80s vibe. It's the type of song you love listening to when you feel GREAT. Like you're on top of the world and nothing can stop you, and things are looking up.

VOLCANIC LOVE — THE ACES

We stan the Aces. Made of two sisters and their friends McKenna and Katie, *When My Heart Felt Volcanic* is one of the few albums I listen to all the way through. A lot of their songs lean into Paramore, who for a 2011 band is retro enough, but there's a lot of 70s rock feel. The rest of the album is mint. This song has that melancholy feel to kick off the album with an underlying tone of a primal need, something to just hold and squeeze because you're lonely on the inside.

GOLDEN — HARRY STYLES

Another song in the bin of "melancholy but happy." Sometimes you feel hopeless and that's fine. Sometimes you just want to listen your heart out, and you don't want to be alone. Perhaps you'll find that brightness back in your life, something to bring warmth and energy back.

OUT OF TOUCH — HALL & OATES

We're going back in time a bit, to the 80s, for this. Hall & Oates might be old, but honestly if you fit in with this aesthetic you're probably listening to 70s and 80s music anyways. Sometimes you feel out of touch—maybe it's been 18

months since you've had a proper conversation with a friend, maybe you're just not a social butterfly at all.

QUARTERBACK — WALLOWS

I was originally going to do *Are You Bored Yet?* but that was already covered in 142.5, where I also was called out for wanting to be a coming of age movie protagonist, which Wallows is excellent for creating music for. So, I'm going with Wallows' next hit, which reaches out to those who wish they had a boyfriend on the football team in high school, but the entire roster was homophobic/straight.

SICK OF FEELING USELESS — NEON DREAMS

Sometimes you get that feeling that you're useless—maybe you're comparing yourself to classmates doing better than you, maybe it's imposter syndrome, or maybe it's something else, but you've reached a point in your life where you're unsure of... everything. And you're sick of it! But this song speaks out: it understands the plight that you don't want to feel this way anymore. Someday, you will find that peace, and how your struggle will find its place in your life.

FRIEND OF A FRIEND — TEEN RAVINE

Toronto-based indie rock band Teen Ravine released their self-titled EP in 2018, including this absolute bop that explores the desire and fear of intimacy, for the times when you want to be close to someone but you're afraid of being vulnerable from experiences of people taking advantage of you, or something along those lines. You'd be much happier being a friend of a friend, until everyone knows your name but nothing else about you.

BE SWEET — JAPANESE BREAKFAST

This is the song for you who have been wronged—by people you thought were decent, which generally encompasses pretty much everyone. The world is cruel and unjust at times, but not all light is lost. Especially when you still have that belief that you can mend a relationship—maybe you can. Maybe it's in vain and that you're better off burning the bridge because you don't know how to have a relationship, platonic or romantic, where you got over an obstacle and you didn't overthink about what you did or they did.

Honorable mentions:

- THAT'S WHAT I WANT—Lil Nas X
- Bags—Clairo
- Good Girls—CHVRCHES
- Close to You—Dayglow
- Change Her Mind—Jane's Party
- Flesh Without Blood—(Former US President), Grimes

- Favourite Colour—Carly Rae Jepsen
- Everybody Wants to Rule the World—Tears for Fears
- Radio GaGa—Queen
- BOY—Charlie Puth
- iPhone—Rico Nasty
- Your Type—Carly Rae Jepsen
- After the Moment—Craft Spells
- Sweet Talk—Saint Motel
- days gone by—DAY6
- NEON—YUKIKA

Phew, that was a lot, but I hope you feel properly called out with both my music taste and overly detailed description of how you're operating socially. I know it feels like you're alone in an unfeeling world, and it feels like there isn't much keeping you grounded. But someday you'll find that reason to keep going. To you, dear reader, I know that feeling too well. Your push to keep going, and do what you do best, will come. Maybe it's soon, maybe it's the far future, but someday I know that even though it feels like you're useless, or you haven't earned your place, there are people out there who depend on you and want you to do your best.

Keep listening around.

Skit

N FIREFOX TABS I HAVE OPEN RIGHT NOW

- XBOX ONE Controllers—**PRICES IN DESCRIPTION** | XBOX One | Kitchener / Waterloo | Kijiji
- Xbox One Wireless Controller New White Battery Back Cover Case Shell Replacement | eBay
- Crowdmark
- Lectures—CO 487/CO 687—Fall 2021
- 2021-09-20-annotated—CO 487/CO 687—Fall 2021
- (1) What I expect whenever I pick up an unknown number—YouTube
- File system | Node.js v16.10.0 Documentation
- LaTeX: Numbering only last line of multi-line equation in \align—Stack Overflow
- CS 448—Database Systems Implementation—UW Flow
- Sent Mail—spam@tendstofortytwo.tk—Gmail
- (2) AITA for wilful destruction of university property? : uwaterloo
- Pre-Built PCs Are About to get MUCH Worse - WAN Show October 1, 2021 - YouTube
- Add New Post < mathNEWS—WordPress
- CopyTabTitleUrl – Get this Extension for 🦊 Firefox (en-US)

tendstofortytwo

ONLY A MATTER OF TIME

NEVER BELIEVE IN FORTUNE TELLERS

Will I live?

Will I die?

Will I be happy?

Will I be sad?

Will I fail?

Will I succeed?

Will you stay?

Will you leave?

Will you remember?

Will you forget?

Will it rain?

Will it be sunny?

Will it happen?

Will it end?

Will it be true?

Will it be false?

Really?

evilevievil

EPISODE 26: STACKS AND QUEUES

Enjoy Episode 26 of the MathSoc Cartoons series: [Stacks and Queues!](#)

Want to see the next comic when it's released? Follow @mathsoccartoons on Facebook and Instagram! Want to see the next comic BEFORE it's released and provide feedback to help us out? Sign up to be a reviewer at bit.ly/mathsoc_cartoons_reviewer_signup! As always, feedback, suggestions, and fan art can be left at cartoons@mathsoc.uwaterloo.ca.

MathSoc Cartoons

CS 136: STACKS AND QUEUES

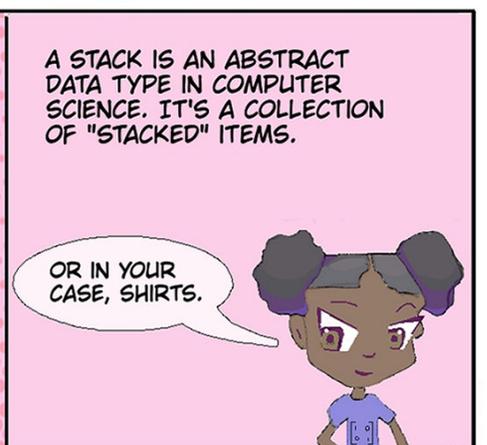
STORY BY CAITLIN KWAN | ART BY NETRA MALI



TYPICAL STACK FUNCTIONS:

```

PUSH: ADDS AN ITEM TO THE TOP
POP: REMOVES AND RETURNS TOPMOST ITEM
TOP: RETURNS TOPMOST ITEM ONLY
IS_EMPTY: DETERMINES IF THE STACK IS EMPTY
  
```



NEW ITEMS ARE PUSHED ONTO THE TOP AND AN OLD ITEM CAN ONLY BE ACCESSED BY POPPING OFF EVERY ELEMENT ABOVE IT.

A CLEAN SHIRT FROM THE LAUNDRY? ADD IT TO THE PILE!

IS_EMPTY > TRUE

PUSH(CREDSHIRT, STACK)

PUSH(BLUESHIRT, STACK)

PUSH(YELLOWSHIRT, STACK)

TOP > YELLOWSHIRT

POP(YELLOWSHIRT, STACK)

STACKS ARE GREAT IF YOU WANT TO KEEP RE-WEARING AND RE-WASHING THAT YELLOW SHIRT AT THE TOP.

BUT YOU MIGHT WANT TO STORE YOUR WARDROBE DIFFERENTLY SO THAT YOU REGULARLY GET TO WEAR THE RED SHIRT AT THE BOTTOM. MY CLOSET IS LIKE A QUEUE, FOR EXAMPLE.

QUEUES FOLLOW THE FIFO RULE - THAT IS, FIRST IN, FIRST OUT.

TYPICAL QUEUE FUNCTIONS:

- ADD_BACK: ADDS AN ITEM TO THE BACK
- REMOVE_FRONT: REMOVES AND RETURNS THE FRONTMOST ITEM
- FRONT: RETURNS THE FRONTMOST ITEM ONLY
- IS_EMPTY: DETERMINES IF THE QUEUE IS EMPTY

A QUEUE IS ALSO AN ABSTRACT DATA TYPE. BUT UNLIKE A STACK, A QUEUE IS MORE LIKE A "LINEUP". NEW ITEMS ARE ADDED TO THE BACK OF THE "LINE" AND THE OLDEST ITEM IS RETRIEVED FROM THE FRONT.

TODAY, I WORE THE PURPLE SHIRT AT THE FRONT OF MY CLOSET.

AFTER I WASH MY SHIRT, I'LL RETURN IT TO THE BACK OF MY CLOSET. NEXT, TIME I'LL WEAR THE NEXT SHIRT AT THE FRONT; THE GREEN ONE.

THIS WAY, I ACTUALLY GET TO WEAR ALL MY SHIRTS!

AS YOU CAN SEE, THEA, CERTAIN DATA STRUCTURES ARE BETTER FOR CERTAIN SITUATIONS. SO NOW ARE YOU FINALLY GOING TO ORGANIZE YOUR CLOSET?

HMM ... I GUESS I'LL ADD IT TO THE END OF THIS QUEUE!

sexNEWS: mathNEWS HAS A RELATIONSHIP COLUMN NOW APPARENTLY THIS IS A RECURRING THING THX

Welcome back to **sexNEWS**, a biweekly column in which I answer relationship advice questions submitted by you, the readers.

As always, feel free to send your questions to mathnews@gmail.com to be potentially answered in this column. Anonymity is guaranteed¹. You're also welcome to include additional information to give context that you don't want included in the article if you're worried that your situation is specific enough that fully explaining it would expose you. This column is not restricted to just romantic relationships, we discuss personal relationships as well.

I'm having some trouble coming to terms with being attracted to people. Recently, I invited some co-workers in a reading group to an end of term lunch because I found some of them cute. If I hadn't found some of them cute, I probably wouldn't have extended the invitation. It feels a little like discrimination, I guess, even if it's something really human. I feel a little gross and horny. How do I reconcile that I, like all humans, have a monkey brain?

RETURNING TO MONKE

Well, I think you should ask yourself what your intentions were here.

Did you invite them because you like hanging out with attractive people, or did you invite them because you were hoping for an opportunity to maybe start a romantic relationship?

If you invited them because you were hoping to maybe start a romantic relationship with one of them, I think that's fine. It's not really any different than inviting someone on a date in that way.

If you invited them because you just like hanging out with attractive people, then that might be a bit problematic even if you might be able to come up with some evolutionary reason for it.

The philosopher Immanuel Kant would tell you that it is only your intent that matters. But Kant also said a bunch of weird shit so I wouldn't listen to him.

I have a friend who's a nice, honest, and smart guy, but he just... keeps messaging me. I know I can just not look at the messages if I don't want to, but it gets tiring to have those notifications nagging at me all the time. And conversations with him are always high-effort. When I'm in the mood for it, it's super enjoyable and enlightening. But when I'm not, it's a little bit tiring. How do I tell him this without making him think that I don't value his friendship?

QUENTIN "QUESTION MARK" MARCUS

Well if you are a Waterloo Math student you have the universal excuse: "I have assignments."

The great thing about this is as a Mathie, you always have assignments and so you aren't lying.

If your friend wants to start these conversations with you when you are busy, or just don't have the energy, tell him that as much as you enjoy talking to him you're really busy with school right now.

How do I convince my friend that Tomura Shigaraki from My Hero Academia is NOT hot? This is very important

xXBAKUGOULOVER_69Xx

ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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Well according to myheroacademia.fandom.com he is a bad guy who does bad things. Being evil is not an attractive quality (if you disagree with me you're sick) and therefore Tomura Shigaraki is not hot.

Whence, henceforth, and QED.

I was really looking forward to hugging someone in the DC bathroom but then they ended up saying 'it's just, slightly weird; like, not a situation I want to be in'. I was heartbroken on hearing this but obviously I couldn't tell them. What should I do?

DC HUGGER

Find someone else to hug in the DC bathroom!

Although I'm not sure if we are allowed to hug in the DC bathroom might now, it might violate the COVID rules. Maybe hold off on the bathroom hugging for the moment.

My partner wants to blindfold me while we have sex. What are some household items I can use to do so?

WANNA GET KINKY

A clean face mask would probably work. Like the kind you use for COVID.

My partner wants to tie me down while we have sex. What are some cheap alternatives to bondage gear that we can use to do so?

WANNA GET KINKY

How about a tie? The pink tie you got at Orientation should work well.

Senior mathNEWS Relationship
Correspondent

1. Unless there is a court order or something, but if I foresee that being an issue I probably won't answer the question in the first place. Canada has unfortunately weak laws protecting journalists, and I don't know if this column even counts as journalism.

VENOM: LET THERE BE CARNAGE REVIEW (NO SPOILERS)

It was pretty good. My roommates didn't like it so much, but I did.

tendstofortytwo

THE WORST FUCKING INVENTION

I like to think that, throughout the course of human history, civilization has striven to improve and enhance everything possible. Great inventors have made our lives comfortable with genius inventions like iPhones, planes, and ice trays. The modern world is filled with luxuries that people mere centuries ago couldn't even imagine. And I, for one, make the utmost effort to appreciate what I've got and never take my first world privileges for granted.

But what the **a c t u a l** fuck were these **psychopaths** thinking when they brought the plague upon humanity that we have the **shame** to call "automated-flushing toilets". What HORRORS have our ancestors committed to condemn us with these awful monstrosities?? I am aghast. I am bewildered. That ridding this good society of this self-inflicted evil is not the utmost priority for the United Nations, National State of Defense, and every humanitarian government has left me shaken to my deepest core.

I cannot express the extent of the absolute failure of this product. Created to make the shitting process more efficient, probably due to mass hysteria about the health impacts of just pressing the fucking lever to flush your excrement away, automated flushing toilets have done nothing except make every second of my life intolerable.

Hear ye! Watch me flounder, flabbergasted, my ass sticking out into the cold open air, as I desperately wave my hand in front of the motion detector. There is literally nothing more humiliating than helplessly begging a toilet to do **the one thing it was designed to do** while you're already 3 minutes late for a class and the queue at the bathroom looms ever larger and ever closer through the crack in the door. How have we let this happen? How have we let ourselves become mere bystanders in our toilet escapades?? This is the opposite of progress—nay, the opposite of evolution. I think it's time that we, collectively, as a society, agree that automated flushing is a fucking inconvenience. To hell with it.

A cool pen name

Whenever you hear
"yadda, yadda, yadda,"
you should think
"induction".

PROF. DAVID WAGNER

A REVIEW OF POCKY, PEPERO, AND PEJOY

I was at Waterloo Central Supermarket and saw some chocolate covered sticks: both the venerable Pocky and several other brands; Pepero, a competitor, and Pejoy, an “inverse Pocky” with the chocolate inside the stick instead of outside. How could I resist?

I managed to wrangle two other writers into reviewing the sticks with me.

POCKY

A bit saltier and richer than the Pepero, I mistook the Pepero for the Pocky.

CC

Thicker + richer chocolate, more delicate biscuit.

DFD

Richer chocolate, though maybe this perception is due to acclimatization from childhood.

JFK

PEPERO

Almost the same as the Pocky honestly... A bit thicker on the outside but indistinguishable in the mouth.

CC

Cheaper mouth feel in comparison.

DFD

More substantial biscuit, which I liked, but it made the chocolate seem less abundant by comparison.

JFK

PEJOY

Interesting taste, less salty than the other ones.

CC

The journey was new and thrilling; digging into the biscuit to be greeted with a warm chocolate filling; my personal favourite of the three

DFD

Had more chocolate, slight strawberry flavor which was weird but good

JFK

COMMENTARY

Pocky and Pepero are products of Glico of Japan, and Lotte of Korea. In this way, the debate between these chocolate biscuits is really a debate about the relative positions of both countries, which is **really** an attempt to find a resolution to the simmering animosity between the countries, which is of course borne of the long occupation of Korea by Imperial Japan and the subsequent Japanese role in World War II, which is itself a consequence of the Treaty of Shimonoseki. North Korea's role in this is undetermined.

JFK

Hope you enjoyed this review! I would recommend all three biscuits, with Pejoy in particular if you're looking for something new.

CC, in collaboration with DFD and JFK

N (ACTUALLY N=16) ICE-CREAM THOUGHTS

It's the end of summer ice-cream season 😞

1. Please don't fall off the cone.
2. (In summer) Why is this melting so quickly?!?!
3. (On the balcony) Please don't drop onto somebody's head.
4. My life is now complete.
5. What's the probability that I'll make a mess? 100% b/c clumsiness.
6. (With family/friends) How do they finish so quickly... I must eat FASTER!!!
7. Is the bottom chocolate filled? Only one way to find out.
8. (Chocolate chip ice-cream) Why are the chocolate chips so chalky? CRUK. CRUK.
9. (Mint ice-cream) Double the coolness!!!
10. (Ice-cream sandwich) This is NOT a cookie...
11. (Ice-cream sandwich) This is BETTER than a cookie!
12. (In class before the pandemic) I'll hold off eating the cone until class ends.
13. (In class during the pandemic) Double check that I'm on mute.
14. What's the optimal temperature to eat soft serve?
15. (Lactose intolerant) What doesn't kill you makes you stronger. (Not true in this case!! Please take Lactaid!!)
16. (In the snow) If I eat slowly enough, the snow will grow my ice-cream back!

It's the start of winter ice-cream season 😊

profQUOTES

AMATH 250: JOE WEST

- “ Any good mathematician turns to YouTube.
- “ For my single-bachelor days, I had a cat named ‘Euclid’.

CS 241E: EDWARD LEE

- “ These pancakes are organized in a data structure that seems to indicate you should eat them top-down.

CS 360: JEFFERY SHALLIT

- “ This is the Chicken McNuggets theorem.
- “ What's my favourite menu item? I'd have to say it's the sausage biscuits for breakfast.

CO 487: DAVID JAO

- “ When I was a kid, meaning, when I was in grad school...
- “ By induction there will always be some students who could use an extension.
- “ NIST—our favorite US government agency other than the NSA.
- “ If you've taken PMATH 348, I can explain in one sentence what this does. [*Shifts to the next slide full of text*] This is not that one sentence.
- “ It's not exactly real-world, but it's real-world enough.
- “ It's a long and complicated calculation involving what we call ‘algebra’.
- “ It's that nice big juicy 8 in the table.

PMATH 347: DOUG PARK

- “ I'm a fan of universal basic income, so maybe I'll give you universal basic grade.

PMATH 930: ROSS WILLARD

- “ I haven't used markers in nearly four years.
- “ I can't see your sneers of disgust.
- “ [*Comes to class wearing a T-shirt with the words “mean little man with no teaching or math skills—ratemyprofessor.ca”*]

STAT 231: MICHAEL WALLACE

- “ I only ever use pie charts to complain about them.

SOME RECENT MATHEMATICAL NEWS

1. The axiom of choice is now enforced by law.
2. In an effort to increase mathematical efficiency, instructors are only allowed to put unsolved questions on their assignments, one per student, and all assignments are due a day after being posted.
3. In order to bring an agile mindset to the workforce, cheating is now strongly encouraged.
4. The following modification has been made to this common mathematical definition: A set is countable if the reader can count its number of elements. For example, the set of bedbugs in the author's room is not countable.
5. All mathematical writing must now be typeset in Microsoft Word, and must follow MLA formatting. Alternatively, a quill pen can be used. To support legacy math, theorems written on clay are also supported, under special circumstances.
6. Please cite your theorems in the following format: (Name, Author, Year, Year last slept, Year last discovered, Place of origin, Star sign of discoverer, Species, Genus, SIN, “YES”, “NO”). The second to last entry indicates whether or not the theorem requires the axiom of choice and should always be set to “YES”. Similarly, the last entry indicates if the theorem has any use at all.
7. It has recently been discovered that Pierre de Fermat made one last mathematical conjecture right before his unfortunate death. The theorem formerly known as “Fermat’s Last Theorem” shall now be called, accordingly, Fermat’s Penultimate Theorem.
8. A handsome reward is still being offered for the finders of the empty set, dead or alive.
9. The use of irrational numbers must henceforth be justified with a one page analytic essay attached to the paper.

Top undergraduate student

What's yellow and sour and equivalent to the axiom of choice? Zorn's lemon!

PROF. DAVID WAGNER

VENOM: LET THERE BE CARNAGE REVIEW (SPOILERS AHEAD!)

So, I'll be upfront with you all. I'm not a movie person. I'm not a big fan of Marvel or Sony or Columbia Pictures or whoever you folks are going after these days. Hell, I haven't even watched the first *Venom* movie. You might be wondering, then, "What the heck? I came here for educated opinion! Who gave this guy the authority to even write a review of *Venom: Let There Be Carnage* (2021)?" The answer to that question, of course, is me. I make the rules. Moving on!

The only context I had for the movie, going in, was seeing this post on the *r/CuratedTumblr* subreddit:

bruce: finally, someone who understands !!! isn't sharing your mind and body with a monster the worst???? it's ruined my life and i want to die.

eddie, who came so hard from venom slithering up into his asshole that he went blind for like twenty minutes this morning:



#im not sorry #please reblog this yall i need a post to take off :/ #bruce banner #hulk #eddie brock #venom #symbiote #veddie #marvel #marvel jokes #nsfw #greatest hits

128,787 notes



As you might expect, my expectations going into the movie were a wee bit different than the expectations of the average Marvel/Sony/Columbia Pictures fan. I was expecting a monster story, yes, but one where the monster was collaborative, not a necessary evil. And as it turns out, that is absolutely the right mindset to walk into this movie with.

The movie starts off with a Joker-esque villain being forcefully parted from his Harley Quinn lover (who has supersonic screaming capabilities). Harley Quinn is being taken somewhere by the police, when she screams at the cop holding her, who shoots her. Harley Quinn is then locked in a psychiatric center with evil doctors, and Joker grows up to become a serial killer.

Right before Joker is sentenced to death, he (for unrelated reasons) bites Eddie, the hero. When he was bitten, Eddie was possessed by his sidekick demon called Venom, who gives him super-healing and goo powers. Fortunately for the Joker (and unfortunately for us), the bite makes another sidekick demon who possesses him, called Carnage. (Get it, "Let There

Be Carnage"? Yeah, it's funny.) The Joker rescues his girlfriend, who marvels at the amount of tentacles her boyfriend now has, and how sexy he looks with them. (She said this, I promise.) Then the two demons face it off in an epic battle where the good demon wins.

All this was pretty standard, and if you came here for an action movie with horror elements, you'd see all this and be fairly disappointed and leave. But if you come from the context I did and are expecting a "demon fucking hero in the ass, quite literally" dynamic, then the plot becomes a lot more fun.

See, when Eddie finds out that the Joker has his own sidekick, Venom is actually not on good terms with him. They were initially somewhat cool but strained, like a married couple after a few years. Then Eddie got mad and screamed at and punched Venom, and Venom got mad and destroyed Eddie's apartment and broke his TV and his bike... y'know how it is. Eddie eventually apologizes to Venom when Venom says he won't help Eddie save the world unless he does. And at the end, they end up at a nice beach island of Venom's dreams that Venom had described to Eddie at one point, and Venom finally confesses his love for Eddie.

The comedic tension, the drama, and the bromantic ending were what made the story for me. It's not an action-horror adventure about a man possessed by a gooey alien and an alien who's trapped with a man because nobody else can survive him. It's an action-horror adventure *with homoerotic subtext* about a man and an alien who were roommates... oh my god, they were roommates.

8.75/10

tendstofortytwo

A BRIEF INTERLUDE

As the sole writer in **mathNEWS** from the Environment Faculty, I would like to say:

What the fuck.

Sincerely,

your friend from the ENV Faculty

Note: All views expressed by the so-called "Resident ENV kid" are not representative of the Environment Student's Society or anyone studying in the Environment faculty, although they might as damn well be.

P.S. Hey, swindLED! I still haven't picked up the prize yet from 142.6. You think I got swindLED?

HOW TO DOODLE IN CLASS

A BLURB ON CREATIVITY

I don't draw. I've long accepted that I'll never be good at drawing. But earlier this month, while in a lecture, I realized that I couldn't bear to sit still anymore. I could feel something—some chemical or evil spirit—moving through my legs and my arms and my chest like lactic acid as I sat perfectly still and stared at slides whose material was dry and slow and impossible to care about.

In that moment, the thing I wanted to do the most was jump, but that wouldn't have been appropriate in a lecture hall. So I considered what I wanted the second-most—to do clap push-ups and scream—before running into a similar issue. So I hung my head in defeat and started doing what I wanted to do the least: draw.

Again, I don't draw. But I remembered something cool: there's a guy out there who makes drawings entirely out of little circles. That's his style: millions of tiny little circles, all meticulously drawn, spiraling in and out, forming galaxies and other uncanny pencil graphite worlds.

While writing this article, I looked up his name: Hiroyuki Doi. But in that moment, as I sat in that lecture, I didn't know who he was, nor could I remember what his work actually looked like. I was only drawn to what little I could remember—that he sat down and did something small over and over, again and again. This was my starting point.

First, I laid down little L-shapes. I wanted to make a grid that filled an entire notebook page, so I put my head down and focused on my little figures. But something incredible happens after you do the same thing over and over for a long time: you become aware of every aspect of every move you make. You wonder how you can gain control of what you do, and you find ways to do it. I noticed a difference between lines drawn slowly and lines drawn quickly. The former conveys uncertainty and highlights the natural trembling of your hand. The latter conveys certainty and confidence and energy and brings about all sorts of other magical qualities. So I picked up the pace.

The lines of the grid grew longer and longer, freeing themselves from the orderliness of the initial slow lines. This didn't concern me; in fact, this excited me. The page filled up faster than I thought, so I flipped to a blank side and started again. The sound of my pen scratching the paper could now be heard.

The grid was eventually obscured by clutter. I started scribbling spirals just to watch the ink leak and drip. Filling a blank canvas scratches a dark itch in the human psyche.

As I uncontrollably scribbled, I noticed my hand automatically tending towards certain motions—spirals, curves, spikes. These became the basis for new page-long patterns. I built them from the ground up and destroyed them from the top down. We are simultaneously agents of order and agents of

chaos. Creativity exists in the tension between the two, or so my doodles have led me to believe.

One day, I stumbled upon a pattern I really liked: a series of straight lines created by rotating my wrist back and forth. I noticed that when I drew them with varying degrees of separation, the horizon of an ocean emerged. I then drew a sun in the sky and some mountains in the distance and some grass on those mountains. And now, at the bottom of a notebook page that I ripped out and placed on my desk, beneath a dense mass of impenetrable scribbling, is the first good drawing I've ever made.

Find chaos!

χ

CHOOSE YOUR OWN ADVENTURE: THE STAIRCASE

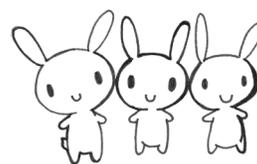
You begin to ascend the staircase. The entire house seems to groan and creak in response to every step. You reach the second story, where the door is locked. You shake it to no avail.

The story is the same on the next floor up, and the one after that as well. By floor five, there are no more doors on the landing for each floor. After a few more storeys, the flights of stairs between each landing are getting noticeably longer. Your breath is becoming bated, your legs are beginning to ache. And yet you walk on. The creaking and groaning of the house is eating at the edges of your mind. The stench of moldy wood and human sweat grows stronger as you ascend.

You would like to turn around, but you can't. Your legs burn with every step. Your feet are bleeding and blistering, yet you continue forward. The will to go back down does not exist within you. Your will is not as free as you had thought. Despite choosing your own adventure, you never had the choice to do anything but ascend these stairs.

Feel free to go back to the beginning and try again. In the end these stairs will be ascended, and there is nothing you can do but ascend them.

aphf



DOING STUFF IS HARD

The entire quarantine was a complete mess in terms of how quickly I lost track of time. I still can hardly believe that it's only a few months away from marking the two-year anniversary since online classes became the norm, and I feel like I spent the entirety not actually doing much.

Sure, I've *done* things, I finished my 3rd year at Waterloo, taken the MCAT after 4 months of arduous studying, read dozens of books and generally spent time with the family after living on campus for the first two years.

But I never actually did anything big outside of school/future career related work.

I wanted to write a novel for the longest time, but kept pushing it back *for just one more day* because of XY or Z, before days became weeks... and here I am 4 years later with like 8 story ideas and 3 failed projects. But through all this, I decided to push myself again.

I joined a writing competition, knowing I probably won't win against the 200–600 other people I'm guessing I will be competing with (if not more), but forcing myself to commit to it anyway.

And after spending the last few days finishing homework in the mornings and working out the outline, plot, creating sample map after map trying to get something what looks good, and overall sample chapters for the organisers, I realized that all that work I spent in the last 4 years wasn't for nothing. I've spent it all accumulating ideas (both the good and the absolutely "what was I thinking" horrible), learning the craft from the many videos I watched for my amusement, and getting inspiration from the books I've read alongside the fantasy art I've looked through wishing to put into my own worlds.

What this long tangent is getting to is that even after wasting all those years on failed projects because I lost motivation again and again — after looking back to the last two years feeling like I've done nothing towards any out-of-career aspirations — I feel like even if I never hear from the organizers, that the countless hours I've already spent and will spend result in nothing. I think what I'm pushing myself through will be worth it anyways.

And I think no matter what *your* dream is, whether it's to start a YouTube channel only you will see for the next 3 years before getting 10k subscribers; whether it's creating *your* perfect game that no one else will play until update 214; or to write

something that no one will ever see until you rewrite the first chapter 15 times, get rejected by 12 publishers, and go through countless other overall drafts (this was J.K. Rowling for Harry Potter btw); no matter what it is, I think you should go for it too. Not for the money, not for the fame, but for wanting to do something fun for yourself even if nothing comes of it.

Go do great things, you know you can.

NNValid

Sorry if the article is a bit sappy. Stuff like this isn't for everyone, but maybe one person who reads this might work towards their dream again, so I think it's worth it. Side note, to the 5 of you who realized the cipher in my last issue's article was in hexadecimal, I'm sorry, but I regret nothing.

THE BROKEN ONES

There's a story that my dad often tells me from when I was little. I was eating Smarties, and he asked me if I could have any. I responded, "Yep," eating some more Smarties before continuing. "The broken ones."

I've been thinking about this a lot, simply because of how it relates to the people I interact with. On average, most people are extroverts. Yet, somehow, all the people I end up forming strong relationships with end up being those who are introverted, those who are often socially anxious. The ones who have been tossed away by a lot of other people, or who are never even approached as friends. And, often, these people have been through some form of trauma too.

This isn't a new thing for me. It's been noticeable since the middle of elementary school, when I switched schools and ended up forming a friend group based around the people who didn't really fit in with anyone else. We were the outsiders, we were all a bit strange, but we enjoyed each other's company so it didn't really matter.

And yeah, all that stuff applied to them. Plus the friends I ended up making throughout high school.

I guess they say that like attracts like, and that might explain it to some degree. I'm introverted, barely making connections with the friends that I do have, and I do feel some form of kinship in those that are similar. We all kind of bond over our hurt, if that makes some sense.

And there are other things that would suggest that, too. For example, most of my friends ended up being LGBTQ+, just as I am, even the ones I met before puberty.

But then there's the other option, one that I think composes the rest of the explanation. That pretty much everyone's broken in some way, they've had some traumatic experience,

Send more profQUOTES.

THE ENTIRE mathNEWS READERSHIP

but they've covered it up. And I only know about the people that I've grown close to, because they're the ones who have opened up to me about their pain.

Because life is rough, for a lot of people, in a lot of different ways. Not everyone gets hurt to the same degree by the same things, but that doesn't mean people's pain doesn't matter. And everyone can have their own unique, or not so unique, pains and fears.

This reminds me of the saying that one should be kind to everybody because everybody is facing their own internal struggles. And yeah, that's true. And some of those form traumas, and some of those traumas stick with you.

So I do think more people than you might expect are hurting, and I think that you should assume everybody is and be kind because of it. And, of course... be friends to those who are clearly broken and struggling.

Trust me, we'll appreciate it.

Predap

WHEN THE MEDIAN IS 35 PERCENT! 🤔



average group theory enjoyer

N REASONS WHY YOU SHOULD GO TO OFFICE HOURS

- Your professors are running them just for you
- Office hours are usually not crowded so you'll stand out just for going
- You can learn more about your prof
- You can learn more about your prof's research
- You can learn more about your prof's personal life
- If you don't know enough about the topic to write a good question on Piazza your word vomit is still enough for the prof to figure out what you're asking for
- You're literally paying for these office hours in your tuition
- They're like personal tutoring sessions with the person *who made the course*
- ...and maybe they have candy or something in their office?

CC

ARTICLE OF THE ISSUES???

What the fuck, editors. Where's my gift card. I won AOTI 6 fucking times during COVID times. Give me my **money** or my *creative juices* back. I'm suing.

A cool pen name

[Editor's Note: If you won Article of the Issue 6 times last year, surely you'll find it a cakewalk to win it one more time, no? 😊]

Did you know that you can just come to MC 3030 and pick up any old mathNEWS issues we have there? Free content for weeks!

A mathNEWS EDITOR WHO DOESN'T KNOW WHAT TO DO WITH THOSE ISSUES

N REASONS WHY I'M NEVER WRITING AN "N THINGS" ARTICLE AGAIN

- They're cliché and overdone. Call them "classic" all you want, but know the word you're really looking for is "passé." Where's the innovation, **mathNEWS**?
- They're low-effort. Maybe *some* writers don't mind having filler puff pieces in their portfolio, but *I'm* trying to maintain a brand of *high-quality, high-effort* thought-pieces here! Seriously, at times I feel as if the advancement of the journalistic arts is a burden I must shoulder alone...
- I've never written an "N Things" article before—to write more after this would simply be too incongruent with my brand.
- They're usually far too short. Where's the *dignity* when an article gets relegated to the bottom corner of the page, quashed underneath the weight of the one above it? Or worse—when it gets exiled to the back of the **lookAHEAD**, adrift and alone. Just sad. This isn't a problem when the article is over a page long.
- They don't attract the kinds of readers I'm looking for. Who in their right minds likes reading this schlock, anyway?

Finchey

FUCK, IT'S A TUESDAY

and sophie, the fucking PD slayer is out on the hunt for the virgin, fucking assignments.

i don't care what size it is. i don't care about the fucking rubric. i don't care about anything. i just want that virgin grade.

i'm gonna search and destroy. i'm gonna search and fucking slay. and take all that virgin grade, until i'm full up, til it's coming out of my fucking whore, fucking PD-slayer LEARN gradebook.

i'm gonna slay and destroy. i'm gonna demolish. watch out assignments.

fuck. it's a tuesday

Deriving for Dick

THE BEGINNING

The end

aphf

IMPLEMENTING HASKELL WITH C++ TEMPLATE METAPROGRAMMING

Just kidding, did you really think I'd go that far?

quantum goose

DREAM LOCATION

Hey, spaceship, do me a favor, take me to this place, protected from the constraints of time and space, where terms and conditions do not apply, where you can jump off a cliff, flap your arms and fly.

A planet not visible, even from the Hubble, where you could forget all your trouble, where dogs like cats, and cats like mice, and in general, everybody's really nice.

Where nobody lies and nobody's hurt, where there's nobody's too formal or too curt, where everybody can do what they think is fun, where footballers goal and cricketers run.

Where the sky is blue or pink or grey, OR whatever color you think is okay, where plants grow metal and fruits are mined, when words that are spoken, are always kind.

Where nobody holds a single grudge, where one's walk is light, not a heavy trudge, where the brain isn't tense, the mood isn't down, where happiness for all takes the crown.

Now spaceship, you may wonder, "Where in space is this land? I see you're pointing, but where goes your hand?" You see, spaceship, this place is in my head, I had a dream about it one night, on my comfortable bed.

tendstofortytwo

Originally published at <https://nsood.in/stuff/dreamlocation.txt>.

Being a mathematician
requires imagination.

PROF. BARBARA CSIMA

RIP THIS PAGE OUT AND COLLECT THEM ALL TO MAKE YOUR OWN COOKBOOK Page 3

Breakfast, oatmeal, moving forward, routine, persistence, also oatmeal again.

How do you start your day? Breakfast is the first of the daily three meals that form a cornerstone of the modern diet. But I think it is also the most controversial one. I was often told that breakfast was the most important meal of the day, but at the same time, it seemed like almost half of my peers

would regularly skip breakfast, citing "feeling bloated" as the reason, most commonly. Then there's the people who say they'll literally die if they don't eat breakfast. I'm somewhere in the middle - I'll get hungry quickly if I don't eat in the morning, but I often feel sorta sick in the morning and struggle to get anything down. So finding something filling that I can reliably eat everyday has been an ongoing problem for me.

Lately, I've been eating oatmeal. The truth is I LOVE oatmeal, so much, but I simply can't be bothered to cook something in a pot every morning. Here's one variation on oatmeal that doesn't rely on cooking, which I did eat for over a year at different points in my life.

AL-DENTE OATMEAL

Ingredients: Rolled oats, hot/boiling water.

1. Put desired amount of oatmeal in a bowl.
2. Pour hot water over oatmeal.
3. Let soak for a few minutes, until oats are at least a little soft.

Does this sound gross? Yes. Does it work and taste good? ...sort of. It's pretty good if you like your oatmeal hardy, but it only really works with certain brands of oatmeal. And it's only convenient if you have an easy source of boiled water, something I don't currently have here in Waterloo.



evileviel gives us another oatmeal variation.

COFFEE OATMEAL by evileviel

Ingredients: 1/3 cup rolled oats, 1 cup water, 1 heaping teaspoon instant coffee powder. (Optional: 1 drop vanilla extract, nutmeg, milk of choice, frozen banana).

1. Add liquids and oats to a small saucepan
2. Cook uncovered on highest heat without stirring until you see visible foaming or bubbling (takes 3-4 minutes)
3. Turn heat down to medium and cook uncovered for 3 more minutes while stirring
4. Remove from heat, add instant coffee powder and optional toppings, and stir until dissolved.

"I have coffee oatmeal for breakfast every day: it gives me a comforting sense of consistency and security (and CAFFEINE) Every morning, it reminds me of the days I was able to get through with this same bowl of oatmeal. No matter how tough (or exciting) today will be, it will always pass: just need to work through the next 24 hours until tomorrow's pot of oatmeal :)"

This is really, really good. The only topping I added was a bit of milk to add some creaminess and counter the bitterness.

RIP THIS PAGE OUT AND COLLECT THEM ALL TO MAKE YOUR OWN COOKBOOK !!!

RIP THIS PAGE OUT AND COLLECT THEM ALL FOR YOUR OWN COOKBOOK Page 4

I loved "Coffee Oatmeal" so much I made it FOUR TIMES. I just like using the stove in the morning, so I think I'll continue to make this on weekends. I might try adding cocoa powder??

Anyway, evilerivul has touched on something I haven't yet. Breakfast is just one part of the "morning routine", the things that we do every morning to fully wake up and get prepared for the day. As I was younger I often remarked on how we rarely get to see the "morning routines" of our peers. Save for a few sleep overs here and there, I never really got to see what others do right after waking up, so to me, it's one of the most personal aspects of daily life. And it can be so different for everyone, molded from culture, family, all sorts of things. I remember how one of my elementary school teachers once proposed that it was nonsensical to brush one's teeth before eating in the morning, and the laughter that ensued, and then the really confused face on one of my classmates. Sorry, little Jenny - our teacher didn't know it's a Chinese thing.

Now that we're in university, most of us have had roommates at least once or twice, and had a chance to peer into someone else's morning. What do they do? How do they get out of bed? What do they eat? Why? When?

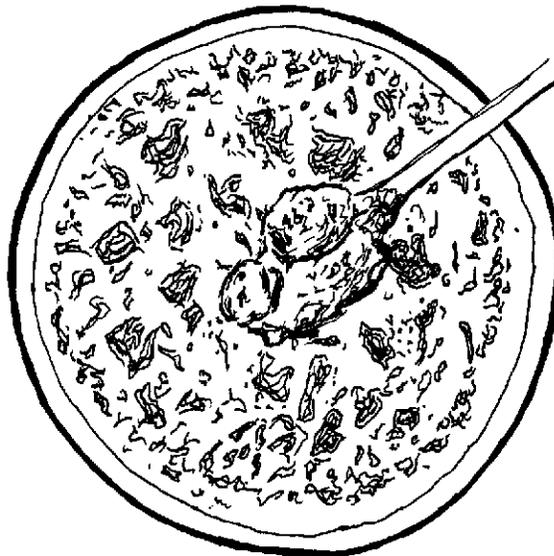
I was looking for practicality the whole time, but I think I need a breakfast food that inspires me, that makes me want to get out of bed on those long, dull mornings, like "Coffee Oatmeal" is for evilerivul. CC's got something similar, too; here's "Protein Powder in Milk".

PROTEIN POWDER IN MILK by CC

Ingredients: 72g protein powder, 400mL milk.

1. Place protein powder in a bowl.
2. Pour milk over protein powder.
3. With spoon, swirl to preferred consistency, more for less lumps, less for more lumps. I prefer moderately lumpy.

"It reminds me of the scene where Mikasa and Armin intensely eat some stale hard ruction crackers in AOT Season 2 Episode 8 - no, it doesn't taste good to me, but it has a satisfying texture of, I just keep moving forward."



No, this wasn't good. What did you expect otherwise? The lumps were slimy, chewy, sticky. And there were so many aftertastes, all bad. But, you know, I could appreciate it. At first I was eating it like cereal, with the spoon, but I had to chew all of the lumps. Then I figured out that I could just drink it and swallow them all.

I haven't seen AOT since years and years ago now. But I think I get the feeling of it, CC. I'm so tired right now, as I write this, but I've got no choice. Just keep moving forward. I'll tell you something - "Protein Powder in Milk" is pretty much all I had for dinner today and I haven't been hungry yet, and it's 11PM. Now we're nearing the end of this page. I've made it here, and I'll keep moving forward, to tomorrow's morning, and then again.

RIP THIS PAGE OUT AND COLLECT THEM ALL TO MAKE YOUR VERY OWN COOKBOOK

I'M NOT EVEN GREEK

gridCOMMENT 147.2

Hello hello, **mathNEWS** article virgin over here. Not sure why the editors agreed to have me as your new **gridMASTER**... but here we are.

I hear that you all have been trudging through the desert that is the lack of **gridWORDS** but HAVE NO FEAR, I have arrived to save you! As a token of your appreciation, please give me a submission. It's sad to give out the prize to the only person who does it, it's the equivalent of a participation ribbon. No one likes that.

This **gridWORD**'s theme is "It's all Greek to me."

The **gridQUESTION** for this issue is "Which Greek god would you be able to take on in a fight and why?"

Please email your **gridWORD** solution attempt to mathnews@gmail.com with your name or a moniker, and your answer to this issue's **gridQUESTION**.

eternally puzzled

ACROSS

- 1 Oranges are seldom compared to them (6)
- 4 A chart you would make based on Down 15. (3,5)
- 10 This singer really knows his basic math operations (9)
- 11 and the end [see Across 17.] (5)
- 12 I thInk you should look at the tItle of this **gridWORD** (4)
- 13 Definitely don't miss that one vent in its rm 2065 (2)
- 14 These delta proofs will HAUNT me for the rest of my life (7)
- 16 I wish I had a better clue than "a play on words for 'doing it'" (7)
- 17 The beginning [see Across 11.] (5)
- 18 Go away, come again another day (4)
- 20 Not to be confused with Down 13. (2)
- 23 Oh hey! This should be familiar to you by now [See Down 15. or the **gridWORD** in general] (2)
- 25 You doing this **gridWORD** instead of school is pure ___ery (5)
- 26 Avril Livigne's boy (6)
- 28 The opposite of Down 3., altered so there are no duplicates (2)
- 29 You (2)
- 30 Forgotten fraternal twin of Across 14. (7)
- 33 Not to be confused with Down 22. Tbh didn't even know this was a letter until production night (2)
- 34 Contrary to how it looks, it is not the last letter of the alphabet (4)
- 36 Most pirates have them... I think (6,3)
- 37 This probably meant to mean putting on pants; now it just means being lazy (8)
- 38 WHY on earth are there three consonants in a row for this name of one letter. I don't get it [See title] (6)

- 13 Not to be confused with the sound a cow makes (2)
- 14 The alternative to FR (2)
- 15 You'd be blind not to see this answer in the **gridWORD** (2)
- 16 Iconic Ukranian dancer. Occasionally found explaining lin. alg on open math courseware. (10)
- 19 Where you haven't been crying because of the lockdowns (2,3,4)
- 21 The button you furiously press after making the biggest LaTeX mistake of your life (4)
- 22 Was mispronouncing this until I watched my first STAT 231 lecture on this distribution (3)

- 23 Pass Some Math Intelligence [a new phrase I'm trying out] (4)
- 24 How someone of boston would describe a three-sided shape [I'm reaching with this one tbh] (8)
- 27 What someone does if they want to take a course and to have nothing to show for it (6)
- 31 Is it a sum? Is it a fancy letter 'E'? Who knows (5)
- 32 "From ___ _", aka the best song in Zendaya's musical (5)
- 33 The forgotten cousin of a ps4 (4)
- 35 Second [see the title] (4)

DOWN

- 1 What will make any Canadian angry if they're mistaken to be this (8)
- 2 Phrase to describe a cockroach becoming your friend [3 words] (9)
- 3 Not odd (4)
- 5 The TTC could NEVER live up to this beauty (3)
- 6 Wouldn't be surprised if York profs did this again soon (2,2,6)
- 7 What you would call a laptop rolling in the deep (5)
- 8 The ugliest sounding and looking animals alive. No debate (6)
- 9 Painstaking (sometimes written) process CS profs make you do (5)

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lookAHEAD

SUN OCT 10

MON OCT 11

Thanksgiving Day

TUE OCT 12

WaterlooWorks cycle 2
posting 1 postings begin

WED OCT 13

THU OCT 14

World Standards Day

FRI OCT 15

SAT OCT 16

Realize-that-you-wasted-
your-entire-Reading-
Week Day

SUN OCT 17

Reading Week ends

MON OCT 18

mathNEWS 147.3
production night
Final exam relief requests
due

TUE OCT 19

WaterlooWorks cycle 2
posting 1 apps due (9AM)

WED OCT 20

THU OCT 21

FRI OCT 22

mathNEWS 147.3
published!

SAT OCT 23

"Weird Al" Yankovic's
birthday

NEW REPORT SUGGESTS THAT lookAHEAD WAS LOOKING BACKWARDS ALL THIS TIME

WATERLOO, ON — Avid mathNEWS readers will be familiar with the lookAHEAD, a staple of every issue, and beloved by its fans across the faculty and campus. However, new information has emerged that puts the lookAHEAD in a precarious position.

According to sources "kinda sorta familiar with the matter, like I heard it from someone who heard it from someone who heard it from someone who the second someone swears is legit," the lookAHEAD may have been deceiving math students everywhere with its misleading title.

Sources claim that despite the name lookAHEAD, this part of the issue is never actually looking "ahead", as in, it never looks out into the front of the issue. Indeed, as a new report has revealed, at least 42% of the lookAHEADs published in the past three volumes have actually looked behind, to the back of the issue, printed on the last page.

When editors were questioned about this pressing issue, their responses were evasive at best.

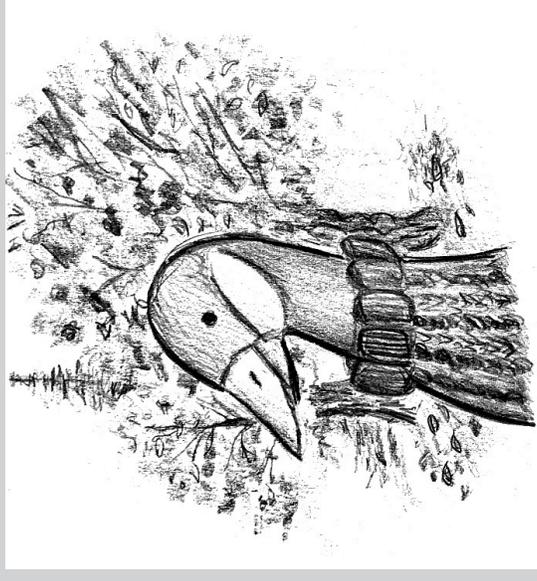
"It's great that people are asking these questions. It's so important that people hold the free press to account, and I welcome this scrutiny," said god ⚡ peED, a current editor. When grilled for an actual answer, he pretended to be unable to hear our reporter, complained about bad internet, and walked away from their physical meeting spot.

Ex-editors have even gone so far as to deny the lookAHEAD's existence completely. "The lookAHEAD has obviously never existed, of course," said terrifiED, a former editor of the publication.

The truth may be murky right now, but we lookFORWARD to bringing you any updates.

R. E. Porter

FALL GOOSE



N.G.