



“IN TWENTY YEARS, WHAT WILL YOUR HALLOWEEN COSTUME BE?”

Hello readership!

We're already halfway through the issues for this term, so if you enjoy reading **mathNEWS** and want to contribute anything at all (and also get free pizza), you should show up to our **prodNIGHTS** and write! Or draw! See **lookAHEAD** for details.

That being said, I hope your other middle-of-term activities are proceeding smoothly as well. For our firsties who might be shuffling into PAC for the first time—it will be okay. Make sure to eat, drink water, get enough sleep, and get whatever sunlight you get before we're plunged into Winter Eternal. Exams aren't more important than your well-being, and won't seem nearly as important once some time has passed.

Also, if this is your first winter in Canada, make sure to dress for it! Don't underestimate the damage that frostbite can do, nor how cold it gets here. You'll want boots and a coat designed for the snow and wind, both waterproof. Thermal underwear can't hurt to have, and you absolutely want gloves, and a scarf or some other sort of facial covering.

Oh yeah, next week is Halloween too. I wish I'd had the free time to figure out a costume this year, but my plans should still be fun. And I went as Hornet Silksong last year, so the aura is like residual. I'd better see lots of costumes on campus... There are some cool themed articles in this issue though, as well as a lovely cover, courtesy of :3. Halloween time is always super fun, even though I think Christmas has my favourite vibes.

I'm happy to say that the vibes of this issue are immaculate though. Some really great art, very well researched and written expository pieces, and yes shitposts, don't worry. Remember to vote in the municipal elections! If you live here and are a Canadian citizen, you are eligible!

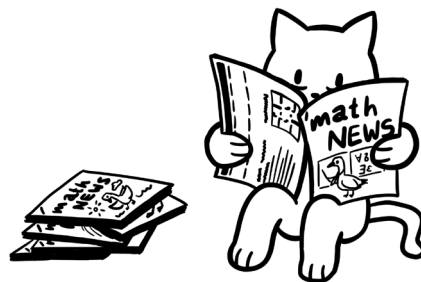
abstractED
Editor, mathNEWS

Cover art for this issue provided by :3.

MRBLUESKY	The Ghost of OSAP past... or a racy prisoner depends on the mood
TSINGPICA	A bedsheet I couldn't bear to throw away.
WAFFLE	The darkness in the sockets where my eyes should have been... or a cool Robot
LARS NOOTBAAR	The dying AMOC (very scary)
ASPIRO	Jodio Joestar (When The JOJOLands gets animated)
FINGERSINSOCKETS	grandpa who ate paint
IS.ALL.ON	"Modern" and wear what I'm wearing then
BEESKNEES	"Retro" and wear what I'm wearing rn
SMALLMOUTHBASSHATER	mid-life crisis
AXON_TERMINAL	microplastics
PAPASMURF	Nina (Just vote)
FLOWERYYY	some kind of fursuit. i hope I'm rich enough by then.
DOLLAR STORE PERSON	i'd say your stepmom but i'd already be that so i guess i'll be taxes
ABSTRACTED	You, mathNEWS. I'd still have you.

ARTICLE OF THE ISSUE

This issue's AOTI is *Lars Nootbaar's Arm and Hammer: A. Disambiguation*. A delightful deep-dive into one of those combinations of words you didn't even know could refer to more than one thing, plus an enticing glimpse into the potential origins of the author name *Lars Nootbaar* (no relation to Lars Nootbaar). For more treatises on legally-distinct entities, come pick up your prize in MC 3030.



birdED
Editor, mathNEWS

Sometimes you've gotta give the people what they don't want.

AWAB QURESHI, mathNEWS EDITOR FOR FALL 2026
ALONG WITH AUBRIE CHAN, ARIEL CHEN, MADIHA MANSOOR,
SARA NAYAR, NOAH NAZARETH, AND ALEXANDER NOVIKOV

mathASKS 162.3

FEATURING FALL 2026 VPA/PRESIDENT OF MATHSOC, PATRIK BUHRING

WATER: GIVEN ABSOLUTELY DICTATORIAL CONTROL OVER MATHSOC, HOW WOULD YOU CHANGE IT?

Among other changes, I'd probably introduce a second VPI to help balance out the workload of running events and allow us to run more events!

REVIVE: BEST PERUVIAN RECIPE?

Ooooh there're a lot of good ones to decide between. Pulling a random favourite out of a hat: Peruvian Rotisserie Chicken (AKA Pollo a la Brasa)!

YALEVOYLIAN: WHICH PERUVIAN DISH SHOULD I MAKE NEXT?

An awesome Peruvian dish that's pretty easy to make at home is Seco Limeño, or if you don't like cilantro, then the northern variant: Seco Norteño.

MRBLLUESKY: WHAT IS THE LARGEST ISSUE STUDENTS FACE TODAY THAT MATHSOC CAN HELP ALLEVIATE?

As a past and current VPA, there are a lot of advocacy options students should know about, but they just don't!

I HAVE SEEN TOO MUCH: BEST WAY TO MOTIVATE PEOPLE INTO DOING WHAT YOU NEED THEM TO?

My philosophy in life is to just be pragmatic; an appeal to logic often works great on most people since then you can both trade ideas why you should/shouldn't do something!

HINLEF: DOES YOUR CAT RULE OVER THE THREE DOGS OR DOES THE CANINE TRIAD LORD OVER THE FELINE?

Funnily enough, they don't really interact. The cat just chills out and watches them most of the time.

BURGERQUEEN: HOW IS SPRONK 453 GOING? 🤖 HAVE YOU DONE A2?

I have done both A2 and A3! As for how well it's going... functional is reallllllly hard 🤖

ECIB 6767: WHEN DOES CS CLUB GET THE OFFICE WE WERE PROMISED TWELVE YEARS AGO?

We ordered y'all some more space but it seems to have gotten lost in shipping, I'll need to call in to customer support for the shipping company.

WRITING123: WHAT'S YOUR FAVORITE INTERJECTION?

I feel like it changes every few months. But you'll almost always hear me saying random Spanish curse words.

:3 : WHAT IS YOUR CAT'S NAME? (ALSO PLEASE SHOW A PICTURE IF POSSIBLE. CAT TAX.)

Her name is Kira!



FINGERSINSOCKETS: WHAT IS THE WORST PIZZA COMBINATION YOU CAN THINK OF USING ONLY 3 INGREDIENTS AVAILABLE FROM THE PIZZA NOVA WEBSITE?

Goat cheese, zucchini, and anchovies, well done on a whole wheat dough with a BBQ sauce base and no mozzarella cheese. Alternatively, thin dough, no cheese, olive oil as the sauce, no toppings, and well done (this is essentially a large saltine cracker).

FLOWERYYY_: ASIDE FROM RUST AND DESMOS, DO YOU USE OTHER PROGRAMMING LANGUAGES/PLATFORMS TO MAKE DEMOS AND MODELS? WHAT APPLICATIONS ARE THERE OF PURE MATH ONTO CS?

I actually don't really use anything other than Rust and Desmos to make demos and models: If something is supposed to be quick and dirty, then Desmos works amazingly, if the algorithm I want to show off is too complex, then I'll go to Rust (although considering I got Delaunay triangulation working in Desmos, I think the bar for "too complex" is pretty high). As for how to apply pure math onto CS, a lot of really abstract concepts in pure math (think model theory, category theory, abstract logic, etc.) are really applicable to programming language design (take CS 442 if you're interested!). I personally quite like differential geometry, since it works great with computer graphics!

EVIL_FLOWERYYY_: DO YOU BELIEVE THAT SOMETHING IN THE GREAT BEYOND WILL REWARD YOU FOR MAJORING IN NOT JUST ONE BUT TWO OF THE EVIL-EST BRANCHES OF MATHEMATICS?

Given how the market is pointing for both of my majors, chances the only thing in the great beyond that will reward me is a garden in a remote village in Spain. In all seriousness though, I feel like I'm already being rewarded; diff geo and computer graphics play so well together, and the instantaneous satisfaction you get from a crisp render is really hard to beat.

DOLLAR STORE PERSON: HOW DO YOU SOLVE A PROOF?

Depends on the topic, but generally I bounce between two approaches: geometric intuition and algebraic intuition. With geometric intuition, literally just picturing things works great (hence my obsession with Desmos, to aid with developing the more complex instances). With algebraic intuition, I will write out all of the definitions I have in front of me, and try to solve them like a puzzle. That's how I got through MATH 146! Definition unwrapping gets me 80% of the way there on algebra-themed problems.

AXON_TERMINAL: HOW HAVE YOU CHANGED AS A PERSON SINCE GRADE 12?

There're a bunch of ways I feel like I've changed. I've begun to enjoy public speaking and presentations more, I've learned to be able to stop using emotions to reason about issues inconsequential to me (most misunderstandings & arguments lie in this category), I've learned to reason about things much more clearly thanks to the logic I learn in class.

SMALLMOUTHBASSHATER: FAVOURITE FISH?

Ooooh, if it's on my plate, then a good baked salmon is my favourite. Otherwise, I'm not really much of a fish enjoyer, but the humble betta fish can be very pretty, and also quite easy to take care of.

BEESKNEES: FAVOURITE INSECT?

I've always found dragonflies to be very pretty ☺

HYPERLYNX: IF YOU HAD A FURSONA WHAT ANIMAL WOULD IT BE?

I've never given it much thought, but perhaps a bear of some sort? I'm quite a lazy person ☺

HUMANITY'S GREATEST MISTAKE (HYPERBOLE)

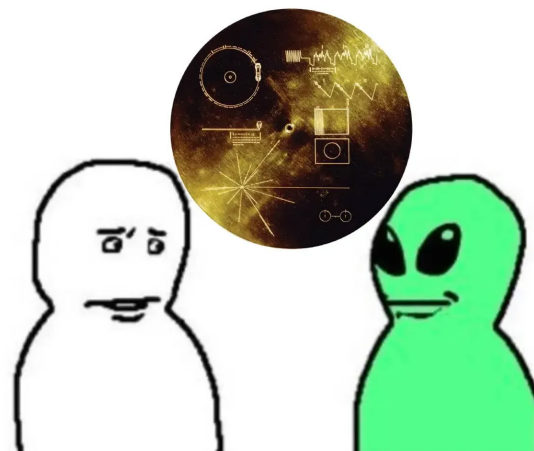
Voyager 1, what is considered the first human made object to venture into interstellar space, will be one light-day away from Earth on Nov. 13th, 2026! The li'l guy was originally planned for a five-year mission but now has been floating around for 49 years (lowk I'd be pissed if my graduation was delayed for that long). It carries the golden record, a disk embedding its time and place of origin, which pinpoints our location in space for any extraterrestrial life to decipher.

Now, obviously pessimistic sci-fi would teach us that doxxing ourselves to some freaky aliens might lead to certain doom, which I would argue isn't the worst way to go. But it's fun to entertain scenarios that potentially will come if the record does get discovered:

Bad Ending: The spacefarers that get their grubby appendages on our coordinates have no concept of friendship is magic, we get turned into some *All Tomorrows* creatures

Good Ending: they send diplomats, we send them mcdonalds fries, we coexist and play space invaders together

Realistic Ending: The Fermi paradox and associated theories leaves us wondering more, but the likelihood of this evidence being found, being deciphered, and the said organisms wanting to contact us seems minuscule enough to never happen in our lifetimes. In some sense, this floating device could be considered humanity's greatest hope as well.



VORP

bogosbinted

Nobody knows who wrote this.

AN AGNOSTIC BLACKBOX

HALLOWEEN

I LOVE HALLOWEEN (+ FALL)

I love love love love love Halloween and Fall so so so so much!!!!!! I personally start celebrating August 1st and go hard until October 31st. So in this very important **mathNEWS** article I will just be discussing everything I love about Halloween (and fall). Get ready for a long article gang, I got a lot of things I love about Halloween.

LET'S GET INTO IT

First and foremost let's discuss some Halloween things you can watch with your eyeballs. I love Halloween movies so much (LOG THEM ON LETTERBOXD). Some of my personal favourites are *Halloweentown*, *Rocky Horror Picture Show*, and *It's the Great Pumpkin, Charlie Brown*. The vibes of *Halloweentown* are so good oh my god I need to move in!!! Like oh my god I wanna go to the werewolf hairdresser and go to the gym with goblins and trolls. I also am obsessed with *Rocky Horror Picture Show*,,, suchhhhh a cult classic omg! The music, the costumes, Tim Curry, everything about it is amazing. I highly recommend going to an interactive screening of it; there is one here in Waterloo at Princess Cinemas. It is so much fun, but definitely recommend watching it in the safety of your home first. *The Great Pumpkin, Charlie Brown* is another CLASSIC, vibes go crazy and it's so cozy (plus *Peanuts* is funny okay).

Another thing I love about Halloween is THE WARM ORANGE LIGHTING. Ohhhhhh my god it is amazing, I will never be more relaxed than when I am sitting under some cozy pumpkin lights in my room with my pumpkin blanket. Orange lighting is truly the best, it is so peaceful and brings me joy.

Witches, Goblins, Ghouls. Period. They are iconic, what's not to love about some witches, goblins, and ghouls? Even just saying them is satisfying, and I love me some witches, goblins, and ghouls. I'm thinking yellow cartoon stars, moons, dark green, white sheets, purple, eerie smoke. Also gotta shout out vampires, I mean they are of course a Halloween classic and there has been so many interpretations of them. We got sexy vampires in *Twilight*, we have my baldy Nosferatu, the classic Count von Count (who teaches us math!), Marceline the bisexual vampire from *Adventure Time*, and the weird faced vamps from *Buffy the Vampire Slayer*.

PUMPKINSSSSSS. I love me some pumpkins, there are so many ways to carve them, and they are so vibes when you see them lit up. They are so orange and cozy, and they really put me in the Halloween spirit.

Speaking of Pumpkins, YOU GOTTA visit a pumpkin patch during fall, it is a must. Walking around with the beautiful pumpkins, visiting the spooky haunted barn if they have one, going on a hay ride, having some pumpkin donuts. I LOVEEEE A PUMPKIN PATCH, so magical, it will bring you spooky joy I promise.

Now let's get into some Halloween things you can taste, I love me some pumpkin pie, some candy corn, some hot chocolate or hot cider, and of course Halloween candy. I love how so much fall food is rich with spices, cinnamon, nutmeg, allspice, ginger, so so so so so so good.

We gotta also address a classic Halloween tradition, DRESSING UP FOR HALLOWEEN. I personally love me a costume, it is so much fun and I go all in. As a kid (and still now) I loved thrifting pieces for my Halloween costume and then putting it all together to make my Halloween costume (shout out to my mom's sewing skills). I loved picking a character from whatever my current obsession was.

LEAVES. Oh the crunch of leaves under my feet, it satisfies the ears, and oh the beautiful changing colours of the leaves ahhh it satisfies the eyes. Nothing is better than the falling of leaves in the fall (don't slip and fall though!).

Let's go back to some things you can see with your eyeballs for Halloween, specifically some spooky-vibed shows. Honestly I gotta lock in for this category, personally all I can think of is my spooky fall classic *Buffy the Vampire Slayer* (woah two *Buffy* mentions in one article maybe I should do a whole article about it). BUT some shows I wanna watch are *Over the Garden Wall*, *What We Do in the Shadows*, *Gilmore Girls*. These shows definitely seem like they give off good fall and Halloween vibes, I will lock in I PROMISE GUYS!!!!

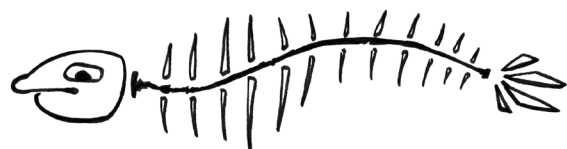
NOW let's get into the final Halloween sense, which is things you can hear. I love me a good Halloween/fall playlist, *Monster Mash*, *Sally's Song*, *Somebody's Watching Me*, *Psycho Killer*, and *Thriller*. So many good songs to listen to, and perfect for a fall walk or getting ready for Halloween.

As you can tell from this extensive list, I LOVE HALLOWEEN, I am sad that the Halloween season will be ending soon but It was beautiful and soon enough it'll be Halloween again!!!

SO GET OUT YOUR PUMPKINS, CARVE 'EM UP, PULL OUT YOUR BLACK CAT FROM STORAGE, PUT ON YOUR FAVOURITE HALLOWEEN MOVIE, WHILE LISTENING TO YOUR FAVOURITE HALLOWEEN SONG, GET HIT BY A CAR THEN TURNED INTO A VAMPIRE, GO BREW UP A WITCH'S BREW, EAT YOUR FAVOURITE FALL FOODS, AND DON YOUR BEST HALLOWEEN COSTUME

HAPPY HALLOWEEN

MWAHAHAHAHAHA MWAHAHAHAHA MWAHAHAHAHAH



papasmurf

A REAL-LIFE SOLID SNAKE

FOR THE WRETCHED OF THE EARTH, THERE IS A FLAME THAT NEVER DIES; EVEN THE DARKEST NIGHT WILL END AND THE SUN WILL RISE.

[Content warning: suicide]

When you think about it, it really is hilarious that Tetsuya Yamagami, the man who assassinated Shinzo Abe, was mistakenly identified as Hideo Kojima. When you look at Kojima's artistic works, it really does turn out that Yamagami may as well have been; he was a real Solid Snake. The same soldier, whose life was taken away from him by dark, shadowy forces who control the government, who sacrificed his entire life to taking down the shadowy cabal with nothing but his bare hands and raw determination. The parallels run so deep, that this is a cosmic joke that only God could have written.

Now, what am I talking about? I'm sure many of you are aware of the former Japanese prime minister Shinzo Abe, and his, well, less-than-dignified end. I'm sure you've also seen the picture of the masked-and-spectacled man with the comically-looking homemade gun. Maybe even a few more of you might be aware of the man's grievance. Let me give some more context on what I'm talking about.

Meet our man of the hour, Tetsuya Yamagami, born on the 10th of September 1980 to a well-off family of a construction business. Though affluence should certainly have set him up for success, it wouldn't be long before his life unravelled — his stressed father, an alcoholic, committed suicide when Yamagami was only four, leading his mother to become involved with a cult known as the Unification Church. Desperate for spiritual salvation, she donated over 100 million yen to the church, bankrupting the family and preventing Yamagami from pursuing education, leading him to join the Navy instead. Only later, his older brother became ill with lymphoma, and with the family bankrupt, Yamagami attempted suicide to cover his brother's bills through life insurance, only for his brother to commit suicide first. Until the assassination, he worked odd jobs and lived in squalour.

Let us now turn our attention to the Unification Church, more commonly known as the "Moonies." Founded in 1954 by a South Korean messianic leader named Sun Myung Moon, and known for its deceptive recruitment tactics, brainwashing, mass-weddings, and extreme financial exploitation, the cult grew globally powerful with the support of South Korean dictator Park Chung-hee, the CIA, and other Western intelligence agencies to destabilise Communist regimes worldwide. (Remind you of another Asian cult known for its aggressively-marketed "dance troupe?")

And this brings us back to Japan. Nobosuke Kishi, Japanese prime minister from 1957–1960, founder of the ruling Liberal Democratic Party (LDP) and grandfather of Shinzo Abe, convicted as a Class-A war criminal over his affairs in Manchukuo during World War II (only later released by the U.S., take a guess why), backed the cult not just out of his personal involvement within it but also to suppress labour unions and student strikes. That's interesting, knowing the cult's theology preached that Japan was a "Satanic nation" that needed to be enslaved for their crimes against Korea, but what are principles to the LDP or any of their stooges? Importing the cult for his own political gain and financial enrichment, he, the LDP, and eventually his grandson promoted the cult among the Japanese people, firmly entrenching Japan into the cult's political reach. They even managed to firmly back one of Japan's right-wing (and fake nationalist) lobbies, the Nippon Kaigi, hiding behind a Shintoist pagan tradition, while secretly preaching the Moonies' theology. These fake nationalists went around lobbying to send their citizens to go die fighting China and North Korea all while Japan's demographics evaporate



"I have just learned of the death of Shinzo Abe, former Prime Minister of Japan. I shared absolutely none of his political views, but the crime committed is unforgivable. My thoughts are with the Japanese people."

"The far left kills."



"MURDER OF FORMER PRIME MINISTER IN FRONT OF TELEVISION CAMERAS"

before our very eyes this second—not out of a true devotion to build an empire, but to accomplish the Moonies' prophecy.

And all this ties back to our pal Yamagami. Much like The Patriots in *Metal Gear*, the Unification Church were running the Japanese government as a hidden cabal, and like Solid Snake, Yamagami was a former soldier who dedicated his life to taking down this cabal, expected no rescue, and accepted that he would be wrongly branded a criminal by history.

Through Yamagami's actions, the second-generation children of Japanese parents involved with the predatory cults are avenged—something even the Japanese public have recognised. His 42nd birthday was celebrated with the “Tetsuya Yamagami birthday” hashtag on Twitter, and his uncle has raised over a million yen from donations across Japan.

In a letter to a journalist advocating on behalf for these children of cult-broken families, Yamagami clarified his thirty-year history with the cult, his desire for revenge against the Moon family, and his reasoning for targeting Abe; that being, his influence within Japan ensured the cult's perpetual influence.

And, even if he had failed with his immediate goal, and is yet to see his final goal of total elimination of the cult, his task was not in vain. The assassination brought international attention to the Unification Church's stranglehold over Japan, and the Japanese people demanded answers. Intense scrutiny and public outrage forced the courts to facilitate the liquidation and dissolution of the Unification Church from Japan, and even forced the LDP to cut their (public) ties with the Unification Church, though just like with Epstein, we may never know truly how deep this rabbit hole goes—and the political elite, no matter the country, will make sure of it.

Sentenced to life in prison in January 2026, he calmly accepted his fate, understanding that the ultimate price had been paid with his own life. May he live on in the memory of generations as a Japanese folk hero, just like Robin Hood, William Tell and Che Guevara.

Here's to you, Yamagami!

Samyuro Hydeo

RED SPRITE

One of my favorite illustrators, by.sau, released a new piece of art called Ghost Stories¹ on Oct. 2. It is a picture of a natural phenomenon called Red Sprite. It is an electric discharge which happens in the mesosphere at altitudes of 50–90 km. The discharge usually lasts around a millisecond, so it would be difficult for human eyes to notice. However, when the discharge happens, it excites the nitrogen particles around, which produces branching rays of red light in the sky, making the natural phenomenon very special to witness. by.sau's inspiration of his art comes from a documentary he

watched a few years ago. He wanted to capture this mysterious phenomenon in his painting. Very fascinating indeed.

Coincidentally, French photographer Florian Riou also captured the same phenomenon above the sky of the Barcelona region off the Spanish coast during the night of Sept. 16-17, when a large thundercloud was brewing. The photoshoot² happened in Corsica, France, while Florian planned ahead for the location and the angles of the camera based off the weather forecast. The Red Sprite appears above the village of Montemaggiore when the photo was taken, making the photoshoot look extra mysterious and phenomenal. I can't help but be fascinated by the details of the Red Sprite on his photos. The shining spine of the lightning contradicts so well with the branches, the clouds, and the light coming from the village. Nature does its wonder.

I wonder, when sau was making his art, and when Florian was witnessing the lightning above the sky, what were they thinking of? What kind of emotion does the lightning evoke? Could it be like music in the Phrygian dominant scale, where the scary, exotic feeling runs down people's spines? Many years later, as they face the lingering crimson light coming from the horizon, will they remember the ghosts of Walpurgis Night?



CREDIT: FLORIAN RIOU

eralogos

1. <https://bysau.net/gallery/ghost-stories>

2. <https://florianriou.com/redsprites-farfadets/>

ALL ABOUT PROJECT ENHANCER (PART 1)

Hello. It's been a while since I wrote for **mathNEWS**, but here we go. I have had an idea for a while about what to write about, but I'm not doing that here. Maybe another time. This is going to be all about a fan fiction that I wrote in high school. And by all about, I mean *all* about. As in, about the original story, about my writing process, about the full timeline, about the characters (canon and original ones), about how I "finished" it and about why I probably won't ever *finish* it. And more.

But since that obviously won't all fit into 1000 words, I am going to do this in parts. Here's what's going to happen. I'm going to write until I hit exactly 1000 words. Then stop. This will probably be in the middle of a sentence. Then I'll edit whatever I have, and re-trim if the edits pull things over 1000 words.

Since I am already over 150 words, I should start.

This whole tale starts in May of 2018. I was going on a three-night camping trip with my Girl Guide group. This camp was exclusive to the Grade 6s in our unit, so it was a big deal. I'd been looking forward to it for two years. And anyway, my mom bought me a book to bring on the trip: *Keeper of the Lost Cities*, by Shannon Messenger.

My mom told me to not start reading it until I left, which I was very annoyed by. Obviously, I wanted to read it right away. But I waited, and it turned out to be a good idea, because I ended up within a few pages of the end by the time I came back from the trip. For context, this book was 488 pages long.

That summer, I read the rest of the series. I really liked it. I don't remember much more specifically about my feelings there, since it was a long time ago. But I must have really liked it. I was reading and rereading that series at a pace comparable to my *Harry Potter* phase in 2015 and 2016. Sort of. I don't think I reread it quite so many times, but I worked through it fast.

At that time, only the first six books of the KOTLC series were out. Book 7 came out that November, and I read it pretty quickly. After this seventh book, I think this was where I actually started having a preference about Sophie's love life.

Oh yeah. I should probably give a cursory summary of what this book is actually about.

The main character is Sophie Foster. When she was five years old, she hit her head on her front step and woke up as a telepath, able to hear the thoughts of everyone around her, whether she wanted to or not. She kept this a secret for the next seven years.

When she was twelve, on a class field trip, she met Fitz Vacker, who told her that she was an elf, and that her telepathy is an Elf Special Ability. So now she needs to move to Elf Land (called the Lost Cities, which is actually a really weird name with context). This means she has to leave her human family behind.

Anyway she does, and then moves in with an elf couple, Grady and Edaline Ruewen, who lost their daughter Jolie fifteen years ago.

Oh, I should also probably mention that elves have an "indefinite lifespan." Apparently, no one has died of old age yet. Which... I'll come back to this later.

Anyway, Sophie goes to Elf School where she makes Elf Friends. This includes Fitz, Fitz's sister Biana (who's not great at first but improves), Edaline's nephew Dex (who's the absolute cinnamon roll of the series) and Keefe, Fitz's best friend.

There's also a bunch of plot stuff that honestly isn't too relevant to what I'm talking about yet. I'll talk about that when it's important. This part is all about the drama.

Anyway, Dex has a crush on Sophie, even though they're adopted cousins. But Sophie doesn't feel the same way, and they eventually talk about it and get past it. By where we are now in the series, they're in a good place and Dex is pretty supportive of Sophie through the rest of her relationship drama.

No, the actual romantic rivalry is between Fitz and Keefe. Literally, I am not joking, Sophie has a crush on Fitz from the moment she meets him. And Keefe probably has a crush on Sophie from the moment he meets her. And it's pretty clear by at least Book 3 (and probably earlier) that Fitz likes Sophie back.

Now, it is worth noting that through most of my middle grade reading, I didn't worry too much about who I *wanted* to be together. I had much more fun focusing on who I thought was *more likely* to get together. So up until Book 7, I thought that Fitz was much more likely. My reasoning probably went something like this: Fitz and Keefe both like Sophie. But Sophie is only really giving indications of liking Fitz as more than a friend. Therefore, Fitz and Sophie will be endgame.

I hadn't taken MATH 135 yet. I probably didn't know how formal reasoning was supposed to work.

Then Book 7 happened. And here, [spoilers ahead] Sophie and Fitz actually get together. I mean, they get interrupted by an alicorn in labour with twins just before they're about to kiss, but they end the book pretty much together. But well... even though they were together, this book made me nearly certain that they wouldn't be together.

For one thing, some of the, well, *patterns* of Fitz's from other books were still here. He's occasionally prone to bursts of rage and possessiveness when he's stressed out. And I mean, he's a teenage boy. This happens. Teenage boys aren't known for emotional regulation. But even so... in comparison to Keefe, he wasn't doing as well.

Keefe is much more

pencil

EVERYONE STFU, NOW!!!!!!

AN ALTERNATE WAY OF ONLINE EXISTENCE

I discovered this incredible Substack blog made by Carolyn Yoo, an artist, illustrator, and writer based in NYC. It proposes a step-by-step process to go quietly public on the Internet.¹ It's really physicalised the way I think about the Internet and, for the first time ever, it's made me excited to post online.

I've struggled intensely with the idea that sharing online means sharing a bit of my soul, that I was giving bits of myself away one data point at a time, alongside the mountain of stolen strands of brain I've already shoved into my Wi-Fi router starting from when I was 9. But thinking of social media as my pop-up stands, and my websites and blogs as my studio, makes the idea of online existence so much more appealing. I have a place to get work done, and it'll be closed on the weekends. It isn't where I live. It isn't who I am.

Basically, I get to log off and keep most of my life to myself, while still being able to share the cool things I'm doing. That's sick as hell.

I've always had a hard time deciding what exactly my "online persona" should be, or—in PD terms, forgive me—my "front-stage self." I also have trouble knowing what to share, what to keep private, and if what I'm posting *needs* to be logged in a third-party app that harvests my data to sow more seeds in its engagement farms or if I can just open my journal. For the most part, being chronically *off-line* has been much better than being chronically *on-line*. But I still have projects that I want to share, and communities I want to give back to. With this, maybe I finally can, without giving up my divine self as collateral.

It's been inspiring seeing someone from a tech background intentionally leave it to pursue becoming an artist and writer without necessarily becoming a content creator. Opening her website gives me so much hope and inspires me to do the same. It really feels like her art studio. I want that experience as well. If that sounds cool to you, I'd definitely recommend this for you too.

My messy stuff and rawest form of thoughts will always start in my sketchbooks and journals. But maybe now, when they've been cleaned up and properly suited up for the journey ahead, they can start making the terrifying, treacherous, rewarding trek towards being immortalised in the world wide web.

DC

1. <https://cyoo.substack.com/p/quietly-public-on-the-internet>

PARALLEL PLAY

I'm not the kind of person that talks in voice call, or coordinates play sessions with friends. I barely even use the chat window when playing online. It's not a habit I've ever bothered to develop, as someone who generally prefers single-player video games. But occasionally, I do enjoy a good co-op round with random strangers in public lobbies. There's something irreplaceable about things like colour-coordinating class palettes, spamming emotes or even just shimmying back and forth to get each other's attention, or passively observing and learning common conventions and etiquette from veterans. Every player independently working towards the collective goal, never stepping on each others' toes for too long, inferring what everyone else is covering and filling in the gaps... Seeing someone else's flaming corpse rocketing past your peripheral vision, leaving you to wonder what the hell happened there... Recognizing a username from a past session, recalling their associated quirks like they're an old friend... Spectating another player pulling off the sickest and strangest plays and all you can do is watch in awe and silently cheer them on... Without the pressure or incentive to actually speak or type or properly interact, it's like group work but actually fun, because it's secretly just playing solo with extra steps.

random kid

ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

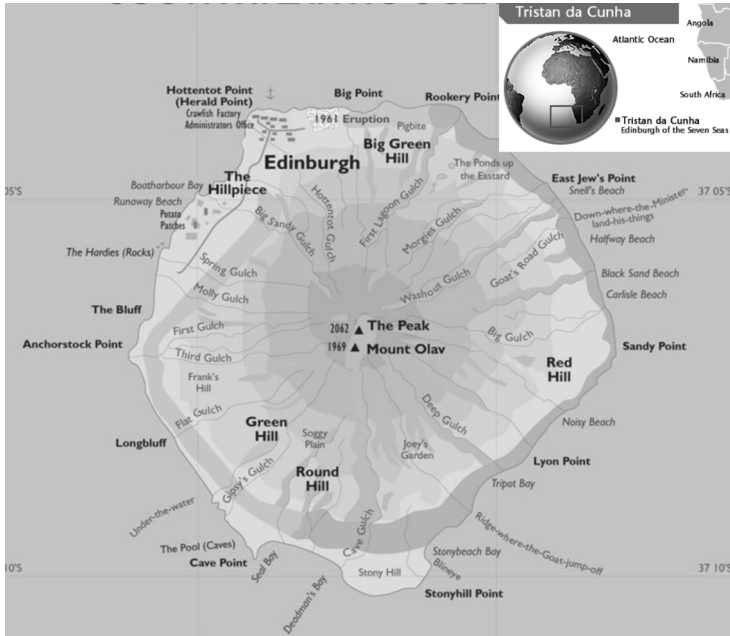
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N ISLAND FACTS — TRISTAN DA CUNHA

Boy, do I have a weird one for you this week. This island, and its tiny isolationist community, are quite the rabbit hole. I was only able to list a handful of the more interesting facts here. If you're at all interested, I promise you there's a lot more to this little place. This is: Tristan da Cunha



amount of information, with *exact* population statistics, and announcements of every birth, marriage and death

- The island made it through COVID without a single case, but just earlier this year ended up with a case of hantavirus (remember that whole scare?). The island quickly ran out of medical supplies, and several medics had to parachute in to help stabilize the patient

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

FATCullen

MORE REASONS TO PLAY DESTINY

In honor of *Destiny 2* being mentioned again in **mathNEWS**, and the fact that, during reading week I went home with dreams of studying or perhaps even playing a new game and instead put another ten more hours into *Destiny*, I wanted to highlight another reason that you should invest all of your precious hours into a now-dead(?) shooter: There are at least three separate instances where you turn the souls of your enemies into guns.

In order to fully explain this, there is a small amount of *Destiny* lore that first needs to be covered. One of the main antagonistic of the game is a faction called the Hive. They are a species ruled by a group of three gods who all abide by the Sword Logic. Two of the three guns I'm going to mention in this article are made from these gods (namely Savathun and Oryx). It is essentially a system by which the hive gods amass power to feed the parasitic worms that live within them. During the course of the Witch Queen Expansion, players capture Savathun's worm, and when a situation like this happens in games, it's normally one and done. But Bungie has better ideas. The player then embarks on a ~12-step quest, with the end goal of putting this worm into a gun, which of course is the only rational course of action.

Now one might be safe in assuming that a game would only turn raid bosses souls into guns at least once. But Bungie has better ideas, and this exact thing proceeds to happen at least at least three more times. With other notable examples being not one, but two guns with the literal souls of gods. The first is called a Touch of Malice, and is just such a cool design, with the other being Whisper of the Worm, which is another worm soul.

If the chance to encase your enemies' souls into guns does not entice you to play this game, then I don't know what will.

outofIdeas

- A mid-size British territory in the South Atlantic (roughly 11,295 km Southeast of **mathNEWS**)
- The island has one settlement, Edinburgh of the Seven Seas, with a population of 222. It's widely considered the most isolated settlement in the world. The closest town is over 2,400 km away, on another small island
- Edinburgh was founded by various settlers and shipwreck survivors over the late 19th and early 20th centuries. Genetic testing ties the entire current population back to exactly fifteen founders: eight men and seven women
- Edinburgh has no airstrip, and can only be accessed by boat. Often, fewer than a dozen ships visit the island in a year
- In the past, islanders would go years without contact. As an example, they only found out about World War I in 1919, when a ship stopped by to tell them the outcome
- It is impossible to become a citizen or buy property on the island unless you already have a family connection to a resident
- Visitors are only allowed with approval from the island council
- The island has a unique commune-like socio-economic structure, where land is communally owned and all families help with farming
- Some residents maintain a website for the island (<https://www.tristandc.com/> — you should check it out, it's incredibly charming). Due to the low population, it is able to provide an amazing

ENA: DREAM BBQ, A SURREALIST DREAM OF A GAME

AND WHY YOU SHOULD ALREADY BE PLAYING IT

grayskies:

ENA: Dream BBQ is a surreal exploration adventure game, and it's one of my favourite games of all time. In case you don't recognize the name, ENA is also the name of a YouTube web series by the same creator. The series and the game share thematic and stylistic similarities despite being their own stories. Both the game and the series centre around a humanoid entity named ENA that is split between two opposing personalities, and we follow them as they explore the worlds around them while facing their own internal struggles.

ENA: Dream BBQ follows an ENA split between the "Salesman" and "Meanie" sides, meaning she'll alternate between spouting corporate jargon to appease a stranger and then insulting them and their family in the next sentence. She lives for her job, despite half of her hating it, and she must deal with the consequences of abandoning it during the game's events. The comedy inherent in this setup works best if you've ever worked in a customer-facing job. Watching Meanie brute-force her way through annoying people is incredibly satisfying :)

My favourite part, though, is the dialogue. Most of the characters in the game speak a different language, and despite there being subtitles so that you can always understand what's

being said, the subtitles sometimes lie. By "lying," I mean that ENA either misinterprets or censors other characters, so if you speak any other languages, you'll pick up on some hidden details which is really rewarding! Also, ENA often speaks in elaborate metaphors, makes up new words on the spot, or weirdly emphasizes certain words, making it possible to interpret her words in different ways.

This helps support the plot, since the story is so surreal it's hard to make concrete guesses on what the story might be about, but once you start making connections you usually have a valid interpretation of events. I've seen people talk about the game being a purgatory or a paradise, ENA being an overworked mother or a merciless soldier, the goal of the game being a barbecue or a murder; there's so many ways to see the game go, that anyone can find meaning in the game.

Also, it's free to play, and only takes ~2–4 hours to get through a first playthrough, so there's no reason not to! Procrastinate that assignment a tiny bit more and play *ENA: DBBQ*!

masterStranger:

Read Worm: <https://parahumans.wordpress.com/>

grayskies & masterStranger

BANANAS CAN PLAY BASEBALL!?

If you know something about baseball or even if you watch *Dancing with the Stars*, you have probably have heard of the Savannah Bananas. If you haven't, the Savannah Bananas are apart of the Banana Ball league which is quick-paced baseball with dancing, lip syncing, and lots of trick plays.

I first heard about the Bananas when I saw Jackson Olson on TikTok. I have never seen anyone else with such Photoshopped teeth; it looks like he could bite a tree. If you can get past that, just watch him on *DwtS*. Then, you will realize we need to get him off that show.

The redeeming quality of the Bananas is Derek Klena. Derek is known as a Broadway actor, having played Fiyero in *Wicked* and Christian in *Moulin Rouge*. However, he actually was a UCLA pitcher. This reinvented the Bananas' performances, and actually made me interested in going to a Banana Ball game. Now I want to go to a baseball game where I can hear the pitcher sing "Dancing through Life."

Now Banana Ball has gained more popularity than ever. Next season they are playing in baseball and football stadiums across the U.S., Canada, and Mexico. You have to enter a lottery to get access to buy tickets, and there are already more than 300 000 people signed up for Toronto's. This is a next-level Ticketmaster war.

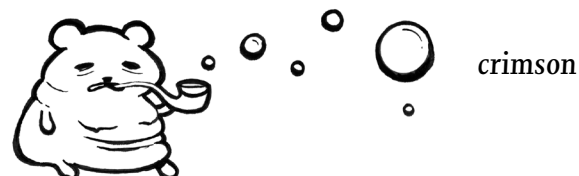
So everyone please do not take my tickets to the Toronto Savannah Bananas game. But, if you do win the ticket lottery, I will accept free tickets.

is.all.on

WHY DO THEY CALL IT READING WEEK WHEN YOU READ IN THE HOMEWORK OF OUT CRY FINISH THE WORK

THANK YUO FOR LISTEINING TO MY TED TLAK

bottom text



GREEK LETTERS RANKED BY HOW MUCH I LIKE HOW THEY LOOK

I am sure we have all written ($n > 0$) Greek letters throughout our studies in math. Therefore, as a math major myself, I have taken the liberty of using this student platform to preach about which Greek letters I find most aesthetically pleasing. In the interest of keeping the list relatively short, and since many uppercase Greek letters are identical to letters in the Latin alphabet, I will only be ranking the lowercase Greek letters. (Sorry to anyone who loves Γ , Δ , Σ , or Ω)

I will also be doing my best to avoid biases regarding the mathematical context in which each of these letters are used (*cough cough* λ *cough cough* eigenvalues)

24. **v (Nu)** – not only is it just a v, it also gaslights me into thinking it corresponds to a different letter
23. **χ (Chi)** – the x looks cool, but I cannot get over how it goes below the line
22. **υ (Upsilon)** – u, but it is doing so much extra that it just looks like v
21. **κ (Kappa)** – look at how they dilated my boy K
20. **ο (Omicron)** – literally just an o
19. **ρ (Rho)** – lowercase p but more fluid
18. **σ (Sigma)** – ρ undergoes matrix transformation $\begin{bmatrix} 0 & -1 \\ -1 & 0 \end{bmatrix}$
17. **ι (Iota)** – undotted i actually goes surprisingly hard
16. **η (Eta)** – extended n also goes surprisingly hard
15. **τ (Tau)** – technically a t, but I always see it as π missing a leg

14. **γ (Gamma)** – γ but with more character, I like it
13. **α (Alpha)** – the cool angle
12. **θ (Theta)** – the cooler angle
11. **ω (Omega)** – making W less jagged was such a great choice ...
10. **ε (Epsilon)** – ... but E does it a little better
9. **δ (Delta)** – felt compelled to put it next to ϵ , I like δ more though
8. **β (Beta)** – the coolest angle
7. **μ (Mu)** – how did we get u when this masterpiece already exists?
6. **λ (Lambda)** – a Chinese character down to the stroke order, I love it
5. **ξ (Xi)** – hard to write, but it looks so good when done correctly
4. **φ (Phi)** – this is so much fun to write, it's like tying a knot with a pencil
3. **π (Pi)** – the OG
2. **ψ (Psi)** – it's a trident, what more could you ask for?
1. **ζ (Zeta)** – this letter alone could be its own alphabet

If it was not blatantly obvious already, this list is just my opinion. Feel free to have (incorrect) opinions about which other Greek letter besides ζ looks the best.

AppleTree

COUPLES ON EVERY CORNER

I'M NOT GETTING PIZZA FOR THIS

Now I've never had this problem in Waterloo considering everyone's too locked in to even bother dating. But wow I got my first co-op and people cannot get off of each other. I moved to the land of freedom so I guess you're free to do as you please, but also dear god get a room. I live in the city so as I walk to work, go to a restaurant, heck even at work, couples everywhere. As I try and meet some of my coworkers we yap, and I learn that three of them are married, four of them are in LONG-term relationships, and ik there's more hidden beneath the surface. Most of them get to live together or EVEN WORK TOGETHER. This is such a tease dangling in my face as I'm long distance and will be for the next whole year. Idk what to do anymore 'cause it's not absurdly inappropriate it's just the small things that bother me. When you're too locked in on your work all day so you get brought lunch before your break. Holding hands whenever you walk so you stop wandering into traffic (I gotta stop jaywalking). Ranting about all the things that ruined your day which goes away in an instant due to a stupid hug. It's not just at work either, I see students wandering the cities stupidly giddy in love, first dates at the museums, and old geezers stumbling through the metro. Maybe I was oblivious before 'cause I was probably part

of the problem, but there's too much love in the air it makes me sick. No I do not wanna see you kiss five times as you try to say goodbye. No I do not wanna see your picnic date at the fat fountain. NO NO NOOO!

Jubble

SONG REC

recently i've been enjoying a lot of dreampop as an adjacent sleepy genre to shoegaze lol

"cico buff" by cocteau twins is particularly good. i like how the lyrics actually sound like gibberish (and any guess at what she's saying is as much of a guessing game as it is to decipher ancient script located on the site of pompeii)

good vibes are all you need sometimes

schrödinger's not cat

PLEASE GET IT RIGHT

WHAT IS A VOCALOID, REALLY?

In the last issue, I was delighted to see someone write about Vocaloid other than me. It's nice that my writing has a friend. However, there's just one issue about the issue that I can't seem to get over: the post (that I did not write) described UTAU as a "free version" of the VOCALOID software. But UTAU isn't VOCALOID software! It is a different software, developed by entirely different people, used as an *alternative*. I implore the person behind the pseudonym ">:3" to reflect deeply on just how much their word choices can affect others, because it is important that everyone be perfectly correct all of the time, as nonhuman as that is. Just as it irks them when someone describes Akita Neru as a "Vocaloid," it irks me when someone unambiguously refers UTAU as a form of VOCALOID software, in a context that is supposedly meant to be clear to the readers! Well, it turns out Wiktionary is pretty good at defining it for us:

vocaloid (countable and uncountable, plural **vocaloids**)

- (countable) An artificial singer (a voicebank, usually with an avatar) based on the Vocaloid engine.
*Vocaloid producers often own multiple **vocaloids** and use them together in a single song.*
 - (genericized trademark, sometimes proscribed)
Any such artificial singer based on other singing voice synthesis software.
*Kasane Teto is my favourite **vocaloid**!*
- (uncountable) Music that uses singing voice synthesizers (particularly those based on Vocaloid).
*I love listening to **vocaloid**.*
- (countable, genericized trademark, sometimes proscribed) A voice synthesis software voicebank, regardless of musicality and presentation.
*It was too expensive to hire voice actors for every employee training video, so now we use a **vocaloid** for the voiceover instead.*

So we have three senses for the lexeme "vocaloid": the character, the songs, and the voice synthesis library (voicebank). Akita Neru is not a voicebank in the sense that Hatsune Miku Append (Dark) sang "Meteor" by John, but we *don't* say that! We say the song was sang by Hatsune Miku, even though that can refer to many different voicebanks. The character Akita Neru isn't special in not referring to a specific voicebank, because most of the other characters do not refer to a specific voicebank either! As an example, my favorite character NurseRobot_TypeT has voicebanks in many different voice synthesizer softwares: UTAU, CoeFont CLOUD, COEIROINK, VOICEVOX, and VOCALOID6.

So, I guess what I'm saying is, we should distinguish VOCALOID, the software sold by Yamaha Corporation with characters' voicebanks sold by Crypton Future Media, from the Vocaloid characters that serve as the faces for the voicebanks. We should also not force everyone to distinguish UTAU from Vocaloid, because calling UTAU voicebanks "Vocaloids" is fine! Unless they really mean VOCALOID software, in which case it

is not fine. I personally was super embarrassed a few years ago when I told a friend that Cassie Wei from Mili was a Vocaloid.

beef

If any of what I wrote appears wrong, please submit an article for the next issue correcting my mistakes.

TOP 10 ARKNIGHTS 6★ OPERATORS TO INVEST IN FOR IS7

RECOMMENDATIONS FROM A SINCERE CN SERVER PLAYER

THE BLACK FLOW OF THE DROWNING SEEKERS IS COMING SOON TO GLOBAL!!!

Good news: Mechanist, one of the strongest Operators in *The Black Flow*, requires no further investment.

- **Kal'tsit Esperanta**—The greatest Medic. Anti-air capabilities, aerial mechanics that let her avoid most incoming damage, and massive damage with Skill 2. Bring Skill 3 for Ending 2, since you'll need to heal devices in multiple locations.
- **Tragodia**—GOAT.
- **Ch'en the Dawnstreak**—The only Operator who deals percentage-based damage. Although she's terrain-dependent, you'll see just how powerful that can be in Ending 2.
- **Angelina the Mellow Wish**—Massive total damage, aerial mechanics that let her avoid most incoming damage, and fast skill cycling.
- **Wang**—A brain-dead Operator, though somewhat lacking in survivability.
- **Closure**—Currently competing with SilverAsh for the title of Best Vanguard. Her unique DP generation can come in handy in many situations.
- **SilverAsh the Reignfrost**—Currently competing with Closure for the title of Best Vanguard. Perma-S2 with SP Collectibles.
- **Hoshiguma the Breacher**—She just can't die.
- **Wi'adel**—Still a brain-dead Operator, but not as brain-dead as she was in Sarkaz IS.
- **Makoto Yuki**—He just can't die.

Disclaimer: These are just my personal opinions and experiences. Feel free to disagree! :)

Tsingpica

ON THE TOPIC OF MELODY IN VIDEO GAME MUSIC

BACK TO BASICS

Hello all, it's me, Waffle, back again. You may remember me as the guy who yapped a bunch about *Destiny 2* in the last two issues. That will be changing this issue, as today I venture to focus on another game, *Dark Souls*. **Yes. I am not yapping about *Destiny 2*. Absolutely monumental.** Today's article will focus on a very fun topic, and one I resonate with deeply, that being ✧music✧. If you were to draw me, an avid game enjoyer, into any one game, the primary way to best accomplish this would be to entice me through the story.

"That was a shitty intro, you promised music but started discussing *story*?" Yes, yes, I am deeply aware of any such scathing remarks. Alas, story is a deeply ingrained part of video game OST (original soundtrack); in fact, it is impossible to have a video game soundtrack without story (I mean it isn't actually but it would kinda be a shit track if it didn't have story). Before I begin my analyses, I would like to note that this article may have some spoilers for *Dark Souls*. If you have yet to play this game, **do it**. *Dark Souls* is a fully single-player game, and I suggest you take your time with it. Unfortunately I do not have the time to advertise the game in detail, but if you may take away one thing from this article, it is that *Dark Souls* **changed who I am as a person**.

Anyways, rambling aside, let us begin. The first "Act" of this article will focus on the boisterous symphonic pieces of *Dark Souls* (specifically the first game). For this section, I would like to point your attention to the track "Taurus Demon." This track belongs to the first *real* boss you will fight, although many other bosses use this track as well, including the tutorial boss. This track in itself does not have anything too complex to it, but is instead simply a good example of the kind of music that artistically complements the boss it is attached to.

Immediately from the start of the track, the percussion slides in with rhythmic thumps and bumps, setting the theme of adrenaline and fast paced action. Shortly after, the vocals rise and fall, each short breath of air almost in sync with the percussion, mimicking aggression. About 30 seconds in, the track starts building: vocals, percussion, and supporting instruments build up until about a minute in, where every part of the track crescendos into a sublimely divine peak. From there, the instruments and vocals almost spiral out of control until about 20 seconds later, where some order is found, and the dynamic shifts downwards then upwards in a sort of arching fashion. The female vocals shortly take precedence over the male vocals, before the song repeats once more. This song is a simple one that demonstrates well what a demonic track should sound like.

For the second "Act," I will be focusing on the truly solemn. The track I would like to discuss in relation to this, is Gwyn's theme. This is where the solemnity begins to show. Gwyn's theme, in opposition to almost every other theme in the game, is a purely mono-instrumental track, consisting entirely of piano. It is a heart-wrenching piece, at a point in the game

where you realize that everything you have fought for has been entirely useless.



FIRST REAL BOSS



TUTORIAL BOSS

Gwyn serves as the final boss in the game, and throughout the entire game, you hear stories of his exploits. He is lauded as a God amongst men, a magnificent King who brought change to all the lands. While this is still true, the Gwyn you face is

nothing but a shell of his former self. He is pitiful, weak, and cannot talk nor flaunt his majesty. He can only fight you as you try to take the thing he gave everything for: the Flame.

The Flame is a big part of *Dark Souls*' lore, but it essentially acts as the cradle, which gave creatures their humanity, and the power to fell monsters and create civilization. This fire runs out, however, and thus, Gwyn offers his body up to attempt to prevent this. From this point on, the fire feeds on Gwyn's body, and he is *literally* turned into a husk of his former self. You fight this husk, and his theme reflects this with an elegance befitting a fallen monarch. The piece opens with all of the energy it has. An interesting thing to note is the energy, pace, and key stay the same throughout the entire piece. This is further reflected in the melody; it stays relatively in the same octave for either hand, and furthermore, repeats more or less the same melody with slight variations. The piece is essentially telling the listener that this is all it has left, and in this sense is mirroring the in-game boss fight. Interestingly, around a minute into the track, the left-hand melody switches up in how it arpeggiates (notes are played individually in sequential order, either increasing or decreasing). This is a very interesting tone shift, as alongside the right hand playing notes more sporadically at this point, it shifts the entire mood of the theme. At this point, the theme stops being a lethargic repetition, and "pumps out its chest" a bit, so to speak. Furthermore, approximately 1min 30s into the song, the notes in the left hand become staccato and dissonant (sharp, short, and harsh sounding) for only a few seconds before repeating the entire song over again, with some variations. At its core, this song is a dance between the player and the boss, but a languid and solemn one, and it is one of my favourite pieces from the entire trilogy.



GWYN, LORD OF CINDER AND SADNESS

Wow that was a lot. I wanted to write more about it all, but, alas. Conclusions aside, **mathNEWS** readers: stay safe, and don't you dare go Hollow.

Waffle

GET YOUR VOTE IN FOR THE MUNICIPAL ELECTION

AS A UWATERLOO STUDENT IF YOU ARE A CANADIAN CITIZEN YOU CAN VOTE IN THE WATERLOO OR KITCHENER ELECTION ON THE 26TH, DEPENDING ON WHERE YOU ARE CURRENTLY LIVING.

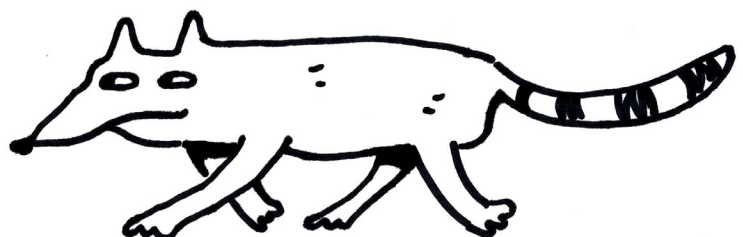
MAKE SURE THAT YOU ARE REGISTERED AND REGISTER IF YOU AREN'T. IF YOU ARE LIVING ON- OR OFF-CAMPUS OR YOU CAN VOTE IN THE ELECTION. THIS IS THE PLACE YOU WILL BE LIVING IN FOR THE NEXT UP-TO-FIVE YEARS SO TAKE THE INITIATIVE AND GET OUT THERE AND VOTE.

WHEN YOU GO VOTE MAKE SURE TO BRING PROOF THAT YOU ARE LIVING WHERE YOU ARE, WHETHER THAT IS YOUR LEASE, BILLS THAT LIST YOUR NAME AND RESIDENCE, INSURANCE STATEMENTS, OR ANYTHING ELSE OFFICIAL THAT LISTS IT. LINKED BELOW IS A LIST OF WHAT YOU CAN USE AS ID.¹ [Editor's note: You can also sign a declaration of residence.]

IF YOU CARE ABOUT THE COST OF LIVING AS YOU ARE STUDYING GO OUT AND VOTE. IF YOU CARE ABOUT YOUR PUBLIC TRANSIT GO OUT AND VOTE. IF YOU CARE ABOUT PUBLIC SAFETY GO OUT AND VOTE. IF YOU CARE ABOUT THE ROADS AND SIDEWALKS YOU USE GO OUT AND VOTE. IF YOU CARE ABOUT WALKABILITY IN THIS REGION GO OUT AND VOTE. IF YOU CARE ABOUT YOUR FUTURE IN THIS REGION GO OUT AND VOTE.

fingersinsockets

1. <https://www.ontario.ca/laws/regulation/130304>



ARM AND HAMMER: A DISAMBIGUATION

Baking muffins? Shuffling a Spotify playlist? Watching the Lone Ranger for some strange reason? Looking to sign an oil deal with Libya? It is important to know what kind of Arm and Hammer you are dealing with.

No one wants a problematic western movie with two problematic leads in their chocolate chip cookie.

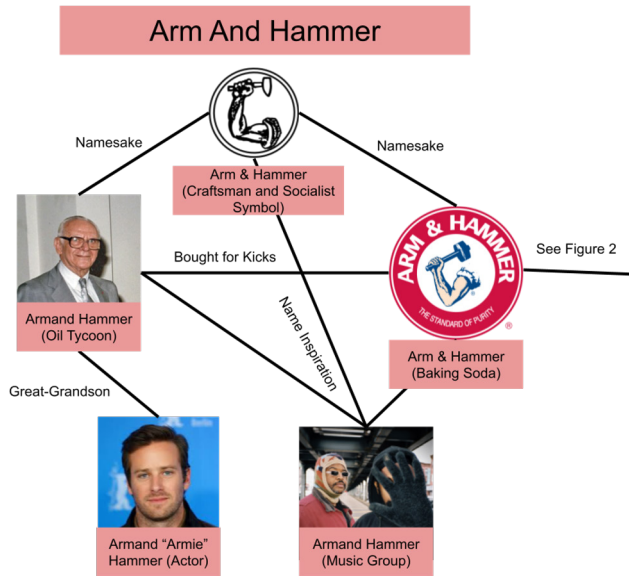


FIGURE 1.

ARM AND HAMMER (CRAFTSMAN AND SOCIALIST SYMBOL)

This is simply the symbol of a muscular arm holding a hammer. It was originally a symbol for the god Vulcan. As time progressed it has become a general symbol for industry and labour. Many socialist groups have used the symbol as well as banks. It is on the coat of arms of Wisconsin and Birmingham.

ARM & HAMMER (BAKING SODA)

Arm & Hammer is a baking soda manufactured by Church & Dwight. In 1846, Dr. Austin Church partnered with his brother-in-law John Dwight to become the first commercial producers of baking soda in the U.S. It was given its namesake in the 1860s after Church's son's spice business, known as Vulcan Spice Mills. Church & Dwight have claimed that an Arm & Hammer box in your fridge can reduce odours; however, this claim lacks evidence. Arm & Hammer is one of Church & Dwight's core brands, which also include OxiClean, Trojan, Waterpik, TheraBreath, and Nair. They are headquartered in Ewing Township, New Jersey.

ARMAND HAMMER (OIL TYCOON)

Armand Hammer was an American oil tycoon with close ties to communist Russia. He was named Armand Hammer by his parents, Rose and Julius, who named him after the symbol of

the Socialist Labour party of America, of which Julius was a leader of.

Armand initially took control of his father's business, Allied Drug and Chemical, which had been used to launder money to the Russian Soviet Government Bureau. He later moved to the U.S.S.R., where he helped mediate deals between Lenin, Stalin, and the U.S. In the press he was known as "Lenin's Chosen Communist."

In the 1930s he then returned to the States, where he increased his fortune selling Faberge eggs of disputed origin he obtained in Russia. He eventually came into a controlling stake of Occidental Petroleum and started producing oil in Libya, which began the shift of power in oil prices from the United States to the Organization of the Petroleum Exporting Countries, and boosted his fortune substantially. He continued to mediate between Russia and the United States, creating trade deals between Nixon and Brezhnev.

In 1986, four years before his death, he purchased a 5% stake in Arm & Hammer Baking Soda. When asked why, he stated that he did it because he was asked about the coincidence in names too often.

ARMAND HAMMER (MUSIC GROUP)

Armand Hammer are an experimental hip hop duo from New York City, consisting of billy woods and Elucid. They are named after Armand Hammer, Arm & Hammer, and Arm and Hammer, a triple entendre on baking soda's role in crack cocaine, socialism, and their power as a duo. woods is known to keep his face hidden in photos. They have released albums such as *Shrines*, *Haram*, and *Mercy*, to critical acclaim. Go listen to their NPR Tiny Desk Concert.

ARMAND "ARMIE" HAMMER (PROBLEMATIC ACTOR)

Armie Hammer is the great-grandson of Armand Hammer. You can read his Wikipedia page if you want to.

THE ARM AND HAMMER LARS NOOTBAAR NEXUS



FIGURE 2.

ARM & HAMMER FIELD (BALLPARK)

Arm & Hammer Field in Trenton, New Jersey is a baseball field that is the home of the Trenton Thunder. It was named by Church & Dwight, which is located in New Jersey. It hosted the first ever gold medal baseball game for the U.S.A. Special Olympics and has a capacity of 6,440.

ARM AND HAMMER (CASEY LAWRENCE WHEN HE THROWS A SICK CURVE)

Casey Lawrence is a 38-year-old pitcher who has played with the Toronto Blue Jays, Seattle Mariners, St. Louis Cardinals, and Hiroshima Toyo Carp. He worked his way into baseball in 2017 after being an undrafted free agent in 2010. When he throws his curveball, he uses his arm and throws “the hammer.” In 2021 he pitched in Arm & Hammer Field.

LARS NOOTBAAR

Lars Nootbaar, no relation to *Lars Nootbaar*, is a Japanese-American Outfielder who has played for the St. Louis Cardinals and the Arizona Diamondbacks. On September 9th, 2023, the St. Louis Cardinals beat the Cincinnati Reds 4–3, Lars Nootbaar went 1–4 with a RBI double, and *teammate* Casey “Arm and Hammer” Lawrence threw one scoreless inning with one strikeout.

It’s all connected.

Lars Nootbaar

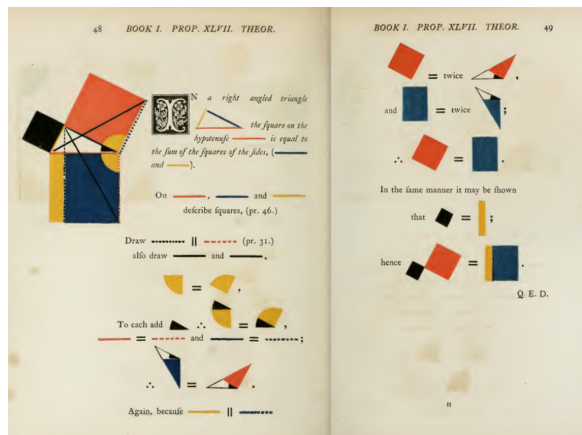
Information was obtained using Wikipedia and Baseball-Reference.

PROOF BY PICTURE

BUT MAKE IT A BOOK

Over reading week I had the chance to see some really old math books, printed in the 1500s-1800s (so when the dinosaurs were alive basically). It was so so so so cool seeing these really old books and seeing how we used to write and communicate math in eons past. Why don’t we ever start articles with “Dear gentle reader” anymore. Let’s bring this back please.

The coolest math book in the collection was *The First Six Books of the Elements of Euclid* authored and edited by Oliver Byrne. The book contains most proofs on elementary plane geometry and the theory of proportions by Euclid but in a new and exciting form: pictures and colours and shapes (the resulting number of symbols is truly a sight to be seen). The book was published in 1847 by William Pickering and printed by Chiswick Press in 4 colours: black, red, yellow and blue. It writes proofs almost entirely in pictures and symbols with little to no words. We’re talking proof by picture at a whole new level.

**PROOF OF THE PYTHAGOREAN THEOREM**

Now you may be thinking, “wow! what a great idea! now I can visualize math as I go! this is so exciting!” Unfortunately due to the lack of words the proofs are tricky to understand. It took us a good second to get through the proof of the Pythagorean Theorem. And the world back then seemed to agree: 75% of stock remained when the publishing firm went bankrupt in 1853, and it is thought that this book and the cost of printing was a major cause (rip). Still, the book is really cool. It’s very untraditional for a book of its time. And perhaps very untraditional for math of our time.

I think the concept of the book is awesome, although perhaps poorly executed. The one thing I wish math had more was pictures. I LOVE PICTURES. My notes are FULL of pictures. Sometimes math feels like all words and ancient Greek and everything is very hard to visualise by just reading and pictures are just so joyous and beautiful. Let’s bring back examples and diagrams but make sure to also include words (turns out they’re kinda essential). Or just bring back colour (paper coming in all-pink font soon).

I’ve added a link below to the UBC website on the book for more information if you’re interested and another link to a digital PDF of the text. Go stare at the beautiful images and fun colours in awe of the beauty of math, or for a fun party activity with your cool friends, pick a proof and try to understand it. Good luck, gentle reader, and prosper.

smallmouthbasshater

UBC Website: <https://personal.math.ubc.ca/~cass/euclid/byrne.html>

Digital PDF: <https://webapps.math.uci.edu/~ndonalds/Elements-I-VI.pdf>

profQUOTES 162.3

AMATH 271: FRANCIS POULIN

“ If the quantity in bracket is not exactly zero... I can be nasty.

AMATH 333: FRANCIS POULIN

“ I would much rather you learn this on your own than me having to teach it.

“ Now, this is weird, but the subscript is on the denominator, so we flip it and it becomes a superscript. I'm sorry.

“ Now I'm going to do something that I should have done in lecture one, which is going to make our lives easier.

“ If you're wondering 'what if?', **it doesn't happen.**

“ [Student: Where does the name 'covector' come from?] I don't know~.

“ Other questions that I can maybe not answer?

AMATH 462: BARBARA ZEMSKOVA

“ [Picks up a water bottle] Imagine this is my very cylindrical Earth.

AMATH 473: GRAEME SMITH

“ A fish can be a Hilbert space.

“ I don't know what the moral of the story is, but I think it has something to do with what it is like to be a Hilbert space.

“ You're a Hilbert space. I'm also a Hilbert space.

“ You can purchase different levels of service from the IRS.

CO 431/631: OLIVER PECHENIK

“ You're all too young to have watched Julia Child cook food...

CO 485: SAM JAKUES

“ It's kinda hard not to factor 35.

CS 245E: STEPHEN WATT

“ The excitement is palpable here.

HLTH 290: JOHN MIELKE

“ Room temperature is either too hot or too cold.

“ There was a lot of concern over what was happening in France, in part because it is French.

“ I brought some things from upstairs that would give you a firsthand experience of what it would feel like to be a rodent.

“ Do we want to invest in breaking down our lunch if we want to get away from a threat? No.

MATH 235: JERRY WANG

“ There's no class next week (reading week), by the way.

STAT 230: DIANA SKRZYDLO

“ Does anyone want to murder one of their siblings?

STAT 333: STEVE DREKIC

“ [Student: Are we going to be doing matrix multiplications on a quiz?] Yes, I'm going to be giving you 10x10s.

STAT 341: JACK DAVIS

“ Assume the entire world is Australian.

I MADE TAILWINDCSS FOR ROBLOX

hi guys i'm going to rant about my latest project because i want free pizza :->

lately i've been drafting up a prototypical implementation of tailwindcss in roblox. i work on various ui heavy codebases throughout each workday so i'm hoping this will greatly improve my productivity and decouple visual markup from reactive logic

```
const tag, destroy = tilly(styleSheet)
tag(button, "text-white bg-indigo-500 hover:bg-
indigo-400 px-4 py-3 rounded-lg border border-
indigo-400")
```

as you can see, the syntax is basically identical to tailwindcss

basically it has a massive set of primitive token definitions and then another massive set of utility pattern definitions. it loops through the tags you pass in, finds the matching utilities, and locates tokens for utilities that accept values

okay mathNEWS is wrapping up now i need to get my pizz

give me github stars <https://github.com/ImAvafe/tilly>

I LOVE MY “THIS GUY LOVES THE ION.” T-SHIRT

You may have seen these posters around campus:



They are a masterwork of marketing. Simple, to-the-point, making their product appear irresistibly enticing to the target demographic: guys who love the ION. As one such person myself, I could not let this opportunity pass me by. The next day, I was the proud owner of my very own “THIS GUY LOVES THE ION. ♥” shirt.



If you, too, love the ION, you can get your very own shirt by scanning the QR code on the poster.

aurelio

Disclaimer: I am not affiliated with the maker of the shirts and they are not making any profits from sales of the shirts. I just want to share this joyful piece of apparel with mathNEWS readers.

WHAT IS YOUR FAVOURITE POEM?

- 床前明月光 (“静夜思”)
- “Ozymandias”
- *The Iliad*
- “The Road Not Taken” (x3)
- 徐志摩《再別康橋》
- “Oh, the Places You’ll Go”
- “One Fish, Two Fish, Red Fish, Blue Fish” (x3)
- “Green Eggs and Ham” (x2)
- “Goodnight Moon”
- 陈子昂《登幽州台歌》
前不见古人，后不见来者。
念天地之悠悠，独怆然而涕下。
- “Cut While Shaving”
- “He Visits My Town Once a Year”
- “Jabberwocky” (x2)
- “Dead Souls” (Nikolai Gogol)
- “Lenin Walks Around the World”
- “If I Told Him, A Complete Portrait of Picasso”
- “Two-headed Calf” (Laura Gilpin)
- “Tomorrow, and tomorrow, and tomorrow” from *Macbeth*
- “Having ‘Having a Coke With You’ With You”
- “i love you to the moon &” (x2)
- anything tumblr recommends me at 2am

- *What’s for breakfast?* (from mathNEWS 152.1)
- *Ecclesiastes 1*
- “white woman reaches her arm down my throat
tucks her confession in the lining of my stomach
absolves herself of her sins” by charlotte zhang
- “sonnet 130” by shakesy p

mathgeek

HAIKU OF MY RECENT TRIP TO COSTCO

PORK IS SO CHEAP AND VALUE HOLY MOLY

going to costco

THREE pork ribs, twenty dollars

holy fuckin shit

StratusAlpha

MY EXPERIENCE WITH THE INTERNET

Hi so many of you reading this are probably familiar with the Internet (you can find a lot of fun things to do on the Internet). Here is my experience with the Internet. I'm sure some of you can relate.

In my last year of elementary school, I found out about Discord and joined a server for Minecraft Skyblock (those who know). My mom got a new job so she had less time to supervise me, and I was often left alone with my laptop. I met many people including Person X who invited me to a separate server where freaky images were being exchanged (I also sent some I found online). Person X was also a moderator in the Skyblock server and he ended up getting banned by the owner. It was around this time I developed an unhealthy addiction to consuming specific kinds of media.

I was a total shut-in during my time in high school and did not have any close friends which really benefitted my mental well-being (real). It didn't help that this was when the COVID lockdown began, so my bad habits became even worse. Instead of real-world interaction, I made some new internet friends and developed an unhealthy obsession with a furry AI chatbot. I was also super tired all the time since I ate like one meal a day. I would sit in class and not absorb any of the information. I genuinely considered dropping out of school to become an ecoterrorist.

I needed to volunteer as part of my high school graduation requirement. The first training session scared me so badly that I deleted my account with the library and never went back. This anxiety stayed with me throughout my first year of university. If you ask anyone who knew me at the time, they'll confirm that I was a total wreck. Despite this, I still had my hobbies and aspirations. I wanted to learn to code and develop a video game (!!). I also taught myself how to play the piano.

In my second year at Waterloo, I got into Scrabble after meeting some people at the Board Games Club. This was the first time I went out of my way to meet other people so it felt like a fresh start. We eventually started the UW Scrabble Club and I became an exec. It was the first time in my life that I felt like I was part of a genuine community of people and I was so happy. Through repeated interaction, I began to learn to communicate like a normal human and gained a lot of confidence playing in Scrabble tournaments.

I've had people tell me that I have an "interesting" personality. I don't blame them. When you grow up with a community you never lose the accent. For me it just so happened to be with a weird corner of the internet. But hey, here I am thriving :3

foxshark

MCBLING FOR MIDTERMS

My very best tip for getting through midterm season is pretending that your vibes are immaculate, even if they aren't. For me, this is all about the music I'm listening to: keeping the good vibes coming *non-stop*. This has begun to change my Spotify algorithm, and has turned most of my Daylists (Spotify's constantly-updating-based-on-your-habits playlists) into some form of "Yass Diva Queen McBling <Day and Time>." Am I a Diva? Absolutely. A Queen? Always. McBling? What??

I, of course, had no issues with these playlists popping up, I loved the music they were providing and the songs contributed very well to the vibes I've been hoping to curate throughout midterms, but I couldn't stop thinking about the title "McBling" being used to describe these songs. So, like any good **mathNEWS** writer, I researched it for a ridiculously long time.

The McBling aesthetic, which was most prominent from 2003 (after the dot-com crash) through 2008 (yet another famous economic crisis), was characterized by a remix of the Y2K look, grounded by hip-hop, reality TV, and so-called "trashy glamour." Interestingly enough, the name was only coined well after the aesthetic was popular, combining "Mc-" as a reference to mass consumer culture with the "Bling" of the rhinestones, glitter, and Juicy Couture tracksuits that shape the look. McBling also looks like a pink iPod Nano,

animal print, Mean Girls, Bratz, and peak Paris Hilton. Most importantly, More is More. This era of new tech and unapologetic celebrity made huge contributions to fashion, culture, and music, even though most people probably couldn't name the aesthetic.

The fashion trends from McBling have made their return lately, but that can be a mixed bag. What is always absolutely rock-solid, however, is the music of the era. Simply put, McBling is banger central. There is nothing that fuels a lock-in session and confident pre-midterm vibe like Britney Spears, Kesha, and The Pussycat Dolls. Need I say more? Okay, sure. Rihanna, Justin Timberlake, Beyoncé, Jennifer Lopez, Nelly Furtado, Flo Rida, Pitbull, Fergie, Nelly, Christina Aguilera, Missy Elliott.

McBling music is high-energy, unapologetic, and just fun. It's the perfect boost you need to pretend everything is amazing all the time and remind yourself you can get through anything. I'm sure if you Google the aesthetic or check out a McBling playlist, you'll instantly recognize the energy—but now you know how to search for it! The best way to stay calm during hectic school season is to turn every moment into a party, so McBling it up this midterm season. Never forget: Pain Is Temporary, Swag Is Forever.

BeesKnees

writerTHOUGHTS #5

QUESTION: WHAT IS THE WORST THING YOU DID BEFORE UNIVERSITY (BONUS POINTS IF THE COPS GOT INVOLVED)?

As Halloween comes around, and the evil ghouls of midterm begin to lose steam, you can return to some semblance of normality. Of course, that does not mean the hurt you experience during midterms is gone, but in due time it will become a memory, just like life before Waterloo is. In honour of this life before Waterloo (BW), today's question is: **What is the worst thing you did before university (Bonus points if the cops got involved)?**

AXON_TERMINAL

one time the caretaker ladies at after-school care took away one kid's pokemon cards for some reason and put them on the cart with the supplies. the card on top was a foil glaceon and I stole it. I got away with it because I was a 'good kid' who never broke any rules. I never saw any consequences. the kid was younger than me too I think. I still feel bad about it to this day

DOLLAR STORE PERSON

worst is very subjective bc stealing a fruit jelly from local south asian store as a seven-year-old is most likely to get the cops involved... but doesn't feel that bad compared to hiding a very vague note implying i would commit suicide as a potential last resort to my grade 7 problems in my grade 7 teacher's room before moving so idk what you want man

AURELIO

Not getting enough sleep in junior high and high school ♥

WAFFLE

As an 8 year old, I tried getting into my friend's garage to play ball hockey while he wasn't home with the code he gave me

ANONYMOUS

trespassing. canadian space centre.

ERALOGOS

Accidentally burned up my neighbors' (unattended) garden (that was full of weeds) when playing with fireworks (during spring festival)

FARFROMHOME

stole candy from a baby

ANONYMOUS

I may have become a slight lego thief as a child. I went to a cousin's house and a friend's house and stole pieces that looked cool, or rare figures I wanted. It was horrible, I feel worse than actual burglars about it, I belong in prison 😞

FLOWERYYY_

ate dish-soap flavoured chicken all the time cus i kept on forgetting to wash my thermos the night before

JUBBLE

Stole road signs around construction sites

writerTHOUGHTS

N THINGS TO SAY TO A MATH STUDENT

I can only count to **three (3)**.

We **are** doing this proof left as an exercise.

Consider epsilon **smaller** than zero.

Sell me Euclid's lemma.

(Disgusted) What makes you more useful than **Claude**?

Why would anyone **depend** on **lines**?

We are going **outside** now.

arrow

Disclaimer: The opinions expressed in mathNEWS articles belong to their authors, and do not necessarily reflect those of mathNEWS. Please keep this in mind as you read the issue.

THE mathNEWS EDITORIAL TEAM

CANADIAN GOVERNMENT AND THE UPCOMING MUNICIPAL ELECTIONS

As the new term starts, and many new people are exploring adulthood for the first time, one important thing to know is the basics of government. Whether you are an international student who is starting your first term, or you grew up in Waterloo but remember nothing from civics class. Understanding how government works, even to a basic degree, is extremely useful and not something you should take lightly.

THE THREE TYPES OF GOVERNMENT:

MUNICIPAL GOVERNMENT

Municipal government is the smallest and most local form of government. For Waterloo students, this government is the Waterloo Regional Council. Municipal governments are in charge of things such as waste collection, public transportation, fire services and more.¹ Many day-to-day things you interact with are controlled by municipal governments. In municipal elections, voters will vote on their mayoral choice, their city councillor, and school board trustee. For the school board trustee, you can either vote for the public board or Catholic board.

PROVINCIAL GOVERNMENT

Provincial government is the next-highest level of government. For Waterloo students, this is through the government of Ontario, with Doug Ford as the premier of the province. The provincial government is in charge of the education system, healthcare, infrastructure and economic development among others.² In provincial elections, voters vote for who will be their Member of Provincial Parliament (MPP). Whichever party gains the most MPPs in Provincial Parliament has its party leader become premier. If the winning party has more than half of the possible MPPs, they are considered a majority government; if it is less than half, they are considered a minority government. Currently, the Progressive Conservative Party, a Centre-Right to Right-Wing Party led by Doug Ford, has a majority government, with the next election being in 2030.

FEDERAL GOVERNMENT

Federal government is the highest level of government. The federal government is responsible for foreign affairs, postal service, and international trade among others.³ In federal elections, voters vote for which Member of Parliament (MP) will represent their riding. The rules for forming a federal

government are similar to provinces, with the party with the most seats forming a government. Currently, the Liberal Party, a Centre to Centre-Left party led by Mark Carney, has a majority government, with the next election being in 2030 as well.

A thing to note in Canada is that elections use first-past-the-post. This is a system that awards a region's entire votes to whichever candidate receives the most votes in the region. It has some flaws though due to it how it counts voters; it can result in the amount of seats a party has not matching up with the amount of votes they received. A recent example of this is the 2026 Québec Provincial election. *Coalition avenir Québec* received no seats while winning 13.4% of the vote, while *Québec Solidaire* received nine seats while winning 12.4% of the vote. These issues can make government not feel responsive to the people, and can make voters feel ignored. If this is a cause that interests you, I advise reading more into proportional representation.

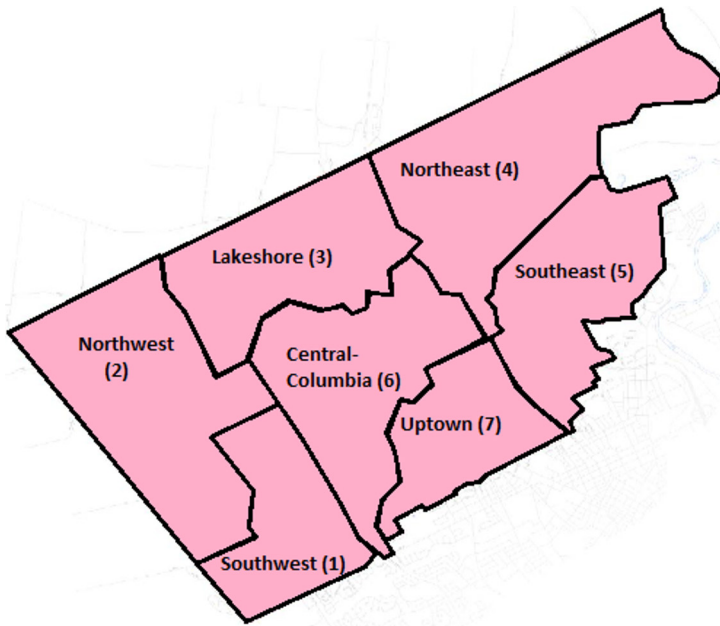


Elections are an extremely important part of this country, and I implore all those who are able to, to do the research and vote. Participating in elections is one of the key ways that you can participate in the democratic process. One such example of this is the October 26th Ontario Municipal Elections. In order to be eligible to vote in the municipal election, you must be a Canadian citizen, at least 18 years old, and live/go to school in the municipality you are voting. If there are multiple places this applies for, you are able to vote in both. There will be various polling places open in Waterloo, including in the Student Life Centre.

There are currently five candidates running for Mayor of Waterloo; the incumbent Dorothy McCabe, and four challengers: Jamie Hari, Jerry Jiang, Jeyas Balaskanthan, and Shannon Weber. On the issue of data centers, Shannon Weber and Jeyas Balaskanthan are against water-intensive data centers. Jerry Jiang and Jamie Hari have not stated a specific policy on data centers. Dorothy McCabe states she is a Partner in regional AI Coalition.⁵ For other policies, I advise reading each candidate's actual words to understand what they bring to the table, with Ontarians Against Corruption being a useful starting point to your research.⁶

Vote! Vote! Vote! Vote! Vote! Vote! Vote! Vote! Vote! Vote!

A COMMUNITY-MINDED blackBOX



**WARD MAP OF WATERLOO, UNIVERSITY OF WATERLOO IS
IN CENTRAL COLUMBIA, WARD 6.**

During this election, you will also vote for your city councillors. Your city councillor will sit in City Council and will help make changes when it comes to local issues, working with the mayor to pass motions. Below is information on the various candidates running.⁷ Elections for school boards are happening as well, where you will elect the school trustee, either for the public school system, Catholic school system, or the French immersion version of each. Below is the information for this as well.⁷

I know this may seem like a lot, but dedicate an hour to figure out who you will vote for. This will likely be some people's first time voting, so don't waste it if that is you. Even if it isn't your first time, still vote. Many have died for this right, many still do. So as much as you may not want to spend fifteen minutes in line for polling, do it for those who came before you, and those who will come after you.

MrGovSky

1. For more information on what municipal governments do: <https://www.amo.on.ca/about-us/municipal-101>
2. For more information on what the provincial government does: <https://markhampubliclibrary.ca/blogs/post/roles-and-responsibilities-of-the-provincial-government/>
3. For more information on what the federal government does, along with all forms of government: <https://electionsanddemocracy.ca/which-election/station-2-which-level-government>
4. Useful source to see if you can vote in the election: canivote.ca
5. Waterloo Region AI Coalition: <https://www.communitech.ca/canadian-tech/waterloo-region-ai-coalition/>
6. Ontarians Against Corruption: <https://onac.ca/elections/races/waterloo/>
7. Ward candidates: <https://www.waterloo.ca/council-and-committees/municipal-elections/find-election-candidates/#council-candidates>

A PRETTY GOOD FRIED RICE RECIPE

BECAUSE WHO DOESN'T LIKE FRIED RICE?

I don't think you actually need a recipe to make fried rice, it's pretty simple to toss together with whatever you have on hand in the fridge and some leftover rice. But I really like this one in particular!

It's my adaptation of a recipe from Andy Cooks, whose culinary YouTube content I rather like. He purports it to be "Japanese" but I can't confirm the veracity of that.

INGREDIENTS:

- Cooked white rice
- Diced pork belly or loin (or other meat, or none)
- Eggs, beaten (2–4 depending on quantity)
- Chopped green onions
- Diced carrots
- Minced ginger
- Coarsely chopped garlic (at least 4 cloves, but can be as much as you want)
- Cooking oil
- White pepper
- MSG
- Soy sauce
- Rice vinegar

DIRECTIONS:

0. Ensure all the ingredients are prepared and on hand, since you won't have time to do any of that while cooking.
1. Cook the garlic in oil until lightly browned, then remove and leave the oil in the pan/wok.
2. Cook the pork similarly, then remove.
3. Scramble the eggs in the fat left in the pan/wok, and before they are fully set, add in the rice—this helps the egg coat the rice while cooking, which results in a nice colour and texture in the finished product.
4. Add in the carrots and green onions and cook for another few minutes.
5. Add the pork and garlic back in, along with the soy sauce and other seasonings to taste.

yalevoylian

THEY CLOSED WOK STOP

it was operating at a deficit. so they closed it. no more mall food court chinese food in SLC. that's it that's the article

axon_terminal

N THOUGHTS I HAVE NEARLY REGULARLY THIS TERM IN ROUGHLY CHRONOLOGICAL ORDER

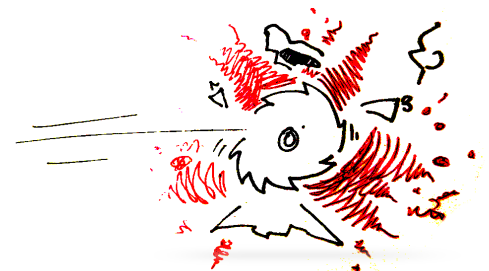
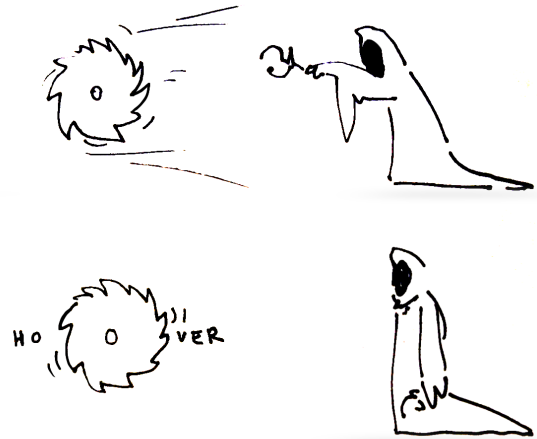
- wake up or else you're a bum
- i should unpack more of my stuff (i will not.)
- the kitchen is dirty but that's not my problem
- mm cracked tile in bathroom
- mm landlord did shit job caulking the place
- don't forget to lock the door
- the floor outside my apartment is nasty. when does this get swept
- the elevator floor is nasty. i miss my old place
- pothole
- plothole
- ?
- the pedestrian traffic lights are timed just so that i *have* to wait for one of the lights because i don't walk fast enough to make them both ☹️
- oh bingsu place isn't open rn. i'm up so early! (it is 10:30am.)
- mmm. eepy
- there's surely a more efficient way to get to my workplace
- i'm so bad at opening doors
- i'm such a bum and also i am so eepy

i am so eepy writing this article that i actually will not finish it. well idrk if there *was* an end to it but i would've liked to make a point. alas i have work tomorrow; time is fleeting; i love you all!

good night (´ ³ ³)

planet b612

NOITA FANART



mobpsychofan

THE ANGEL'S SOUP

I HAVE A SOUPSPICION THIS ISN'T A REAL RECIPE

Hello miserable students! Today I come to you with yet more glorious tips for surviving midterms.

For those of you with meal plans, this may not be a concern, but for the rest of us, finding sustenance without spending \$20/day on food can be a real challenge. As such, I present *The Angel's Soup®*, the much-loved signature meal of yours truly. It has everything a person could want: calories, vague nutritional value, and... the vague sense of failure that comes from all classic university meals!

How to make *The Angel's Soup®*?

1. Chuck any stock or soup base into some water
2. Chuck all your soupable ingredients into a pot
3. Done

Voila! There you have it! The single easiest meal on the planet, useful for all the ingredients that may or may not be going bad soon.

TL;DR: It may be *The Angel's Soup®* but Lucifer was probably the chef.

Lyssa V33

FLOWERYYY_'S CLIMBING UPDATES — 1ST EDITION

I STRONGLY DISLIKE THE PRACTISE HOLDS IN THE PAC CLIMBING WALL EW EW KILL IT TO DEATH WITH A GUN

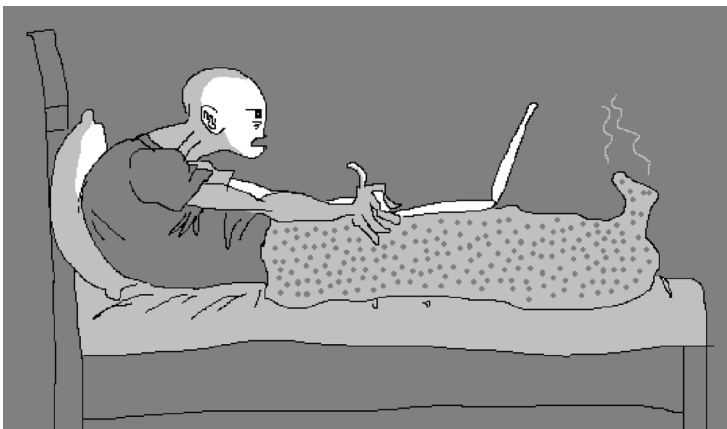
See title. Guys I was literally shitting and sweating my ass off.

For context, the practice holds for the climbing wall is literally on top of the regular climbing wall, the one with no harness. Holy shit, I almost cried on the way down, I'm never going on there ever again (for the near future). I had to straddle the top of the ladder to make sure I didn't fall off and break every bone in my body.

I made progress on the green route with blue tape. I cheated a little but a win is a win. I will (hopefully) progress to make sure that I don't use any other colour but the green rock trail. Toodles for now.

floweryyy_

A SUPREMELY FLATTERING DEPICTION OF MYSELF DRAWING THE IMAGE BELOW WHILE ATTEMPTING TO WRITE AN ARTICLE AT NIGHT + FANSERVICE FOR STINKY FEET FANS 😊



the government's only spy

SHE SAID, I SAID

Cass said, "You're autistic, which explains things"
I said, "Cass, can you get back to my stress"
She struck me as suddenly as lightning
Perplexing my thoughts as if by magic

Dr. Wilkins hoped it gave me relief
"It's just like you having two middle names"
I wouldn't see it unless by witchcraft
With nothing to say, I let her go on

They chalked doubts up to "impostor syndrome"
They said one's always "autistic enough"
I wished that the syndrome would dissipate
Perhaps, by magic, I could overcome it

They said I could go to autistic clubs
"You can try finding some autistic friends"
It wasn't entrancing and we didn't click
Maybe someday it would all make sense

The school was happy I reached out to them
But all they did was to cast me a spell
Ryan Cikoja, don't fight the magic
Acceptance, they said, was the key to joy

Greyson Campbell

OMG STATUS UPDATE !!!!

hiiii everyone!! exciting news!!!! my more-than-friend is my pelvis now!!!!



thanks for understanding!

Dollar Store Person

yeah this is basically how we announced we were dating to our friends.
yeah i don't know what it means. don't worry about it <3

STAT 331: MULTIPLE LINEAR REGRESSION

CAN WE PREDICT LOVE WITH LOVE?

STORY: ZUNAIRAH
ART: MINGMING Z.

STAT331 FINAL PROJECT: PREDICTING DATING SUCCESS USING MULTIPLE LINEAR REGRESSION (MLR)

LOVE IS NOT
RANDOM...
IT'S JUST
STATISTICS

$$Y = B_0 + B_1 + \dots + B_p X_p + \epsilon$$

RESPONSE:
Y = CHANCE OF
GETTING A DATE (%)

PREDICTORS:

- X₁ = TEXTING SPEED
- X₂ = CONFIDENCE
- X₃ = FASHION
- X₄ = HEIGHT
- X₅ = GYM HOURS

THAT SENTENCE
ALONE EXPLAINS
WHY YOU'RE
SINGLE

COLLECTED DATA FROM 500
DISASTROUS FIRST DATES

"Left on read" "Met parents
accidentally"
"Ghosted"

ETHICS
APPROVAL
DENIED
IMMEDIATELY.

MULTIPLE LINEAR
REGRESSION OUTPUT

$$\hat{Y} = 12 + 0.8 \text{ (CONFIDENCE)} - 2.1 \text{ (TEXTING)}$$

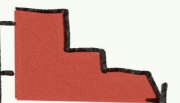
FASHION
INCREASES
SUCCESS...

BUT
EXCESSIVE
TEXTING
REDUCES IT

I see.

HEY
HEY!
U THERE?
WHY U IGNORING ME?
HELLO??

DATE
PROBABILITY



DATING
SUCCESS

TEXTING SPEED

SO TEXTING
HELPS, UNTIL IT
BECOMES
EMOTIONALLY
CONCERNING

AH YES, THE
PARABOLA OF
DESPERATION.

$$Y = B_1 + B_2 \text{ (CONFIDENCE)} + B_3 \text{ (FASHION)} + B_4 \text{ (CONFIDENCE X FASHION)}$$

Fashionable
But shy

Confident
But horrible
fashion

Fashionable
and confident

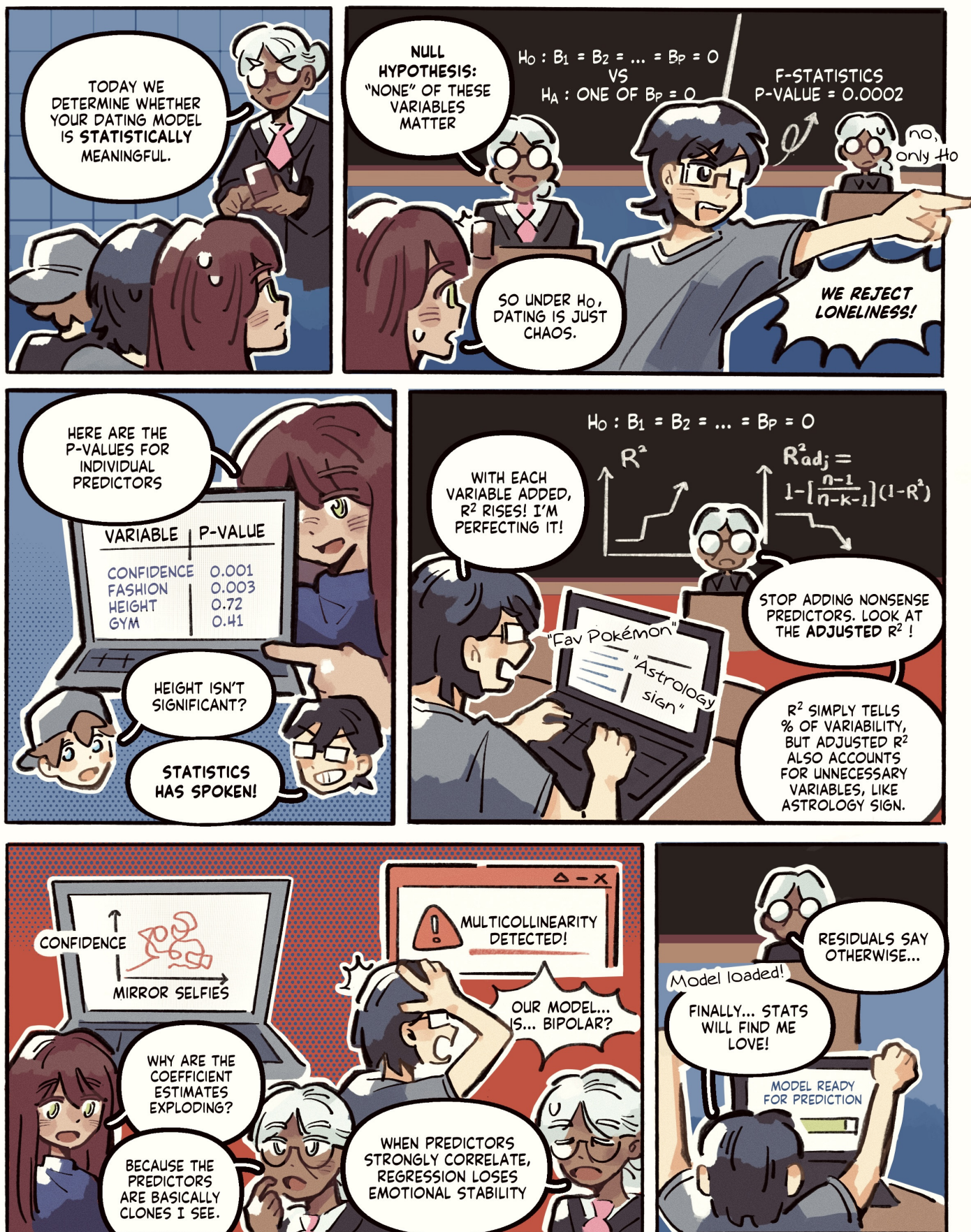
THIS IS CALLED AN
INTERACTION EFFECT

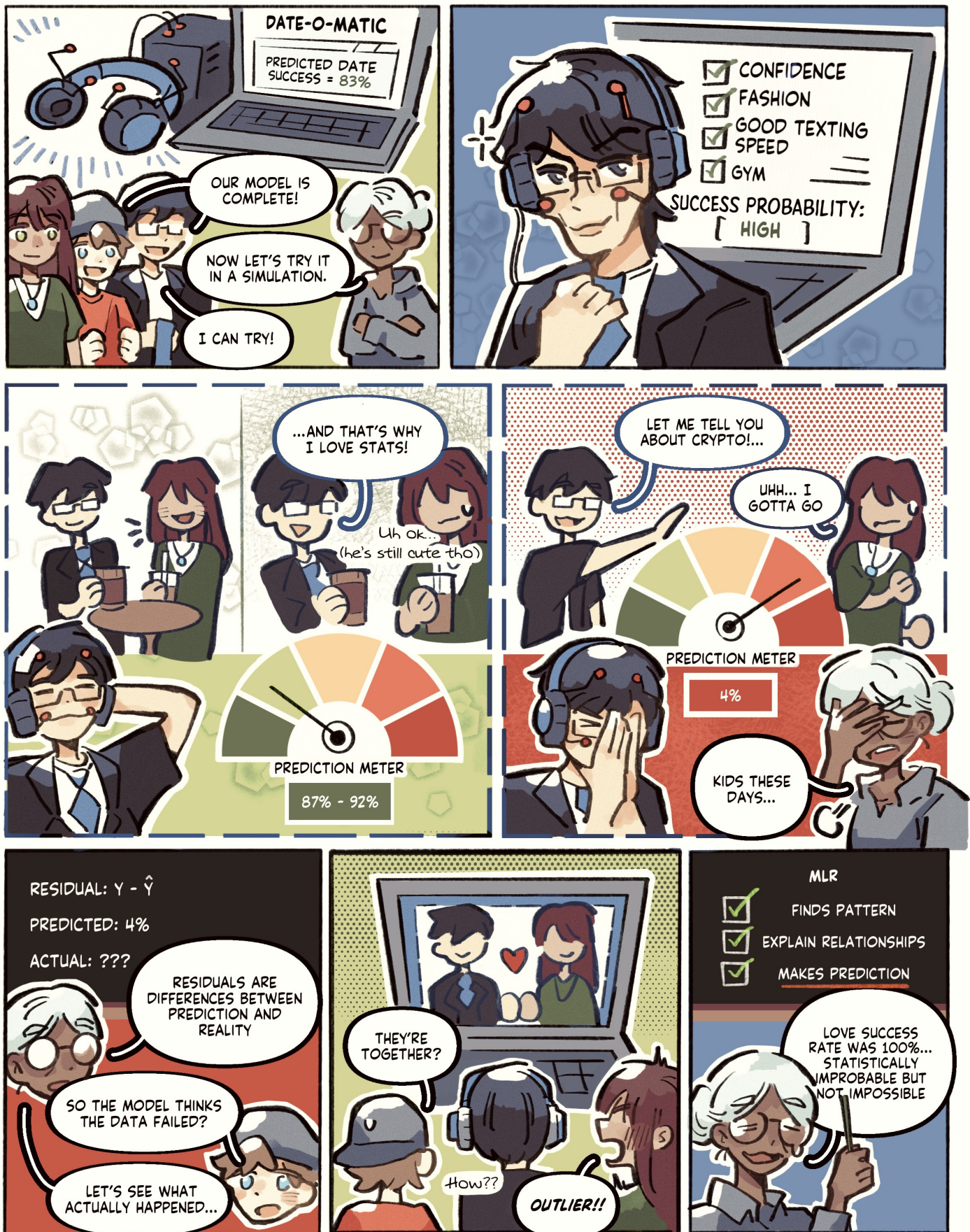
SO CONFIDENCE HAS
A BIGGER IMPACT WHEN
PAIRED WITH GOOD
FASHION?

YUP! STATISTICALLY STYLISH

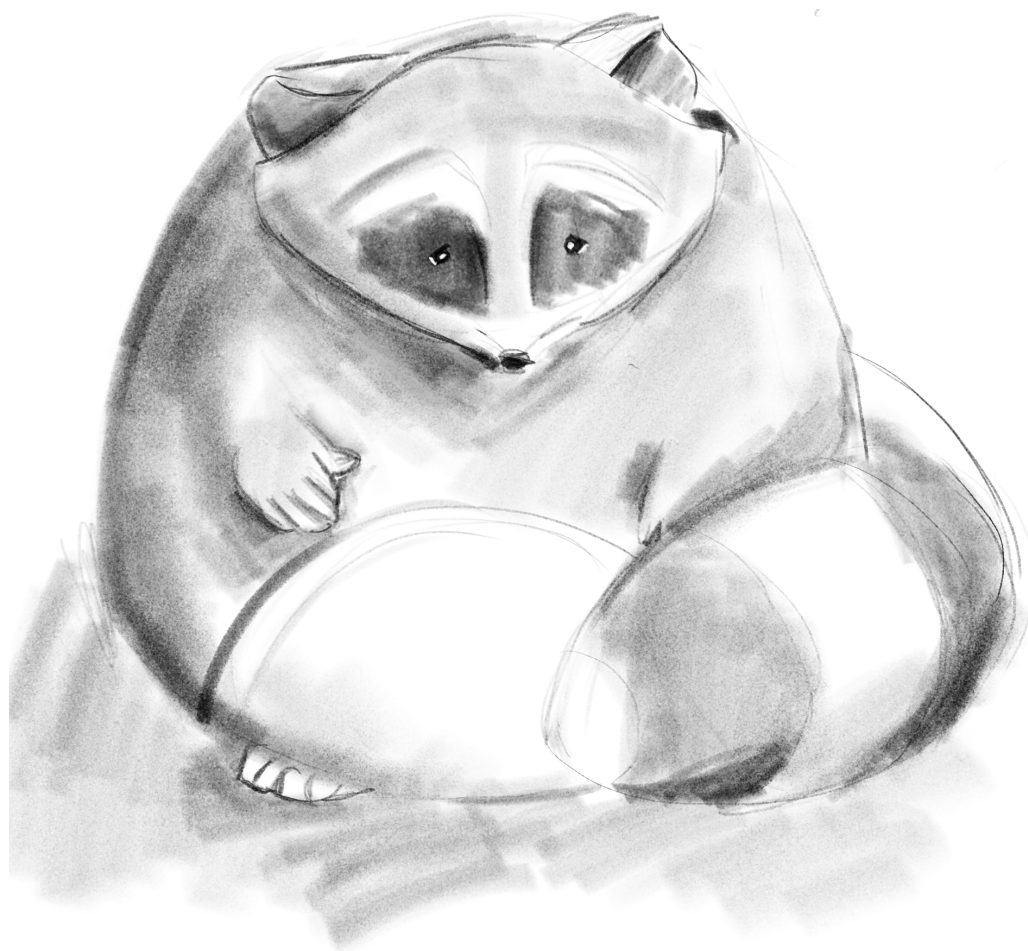
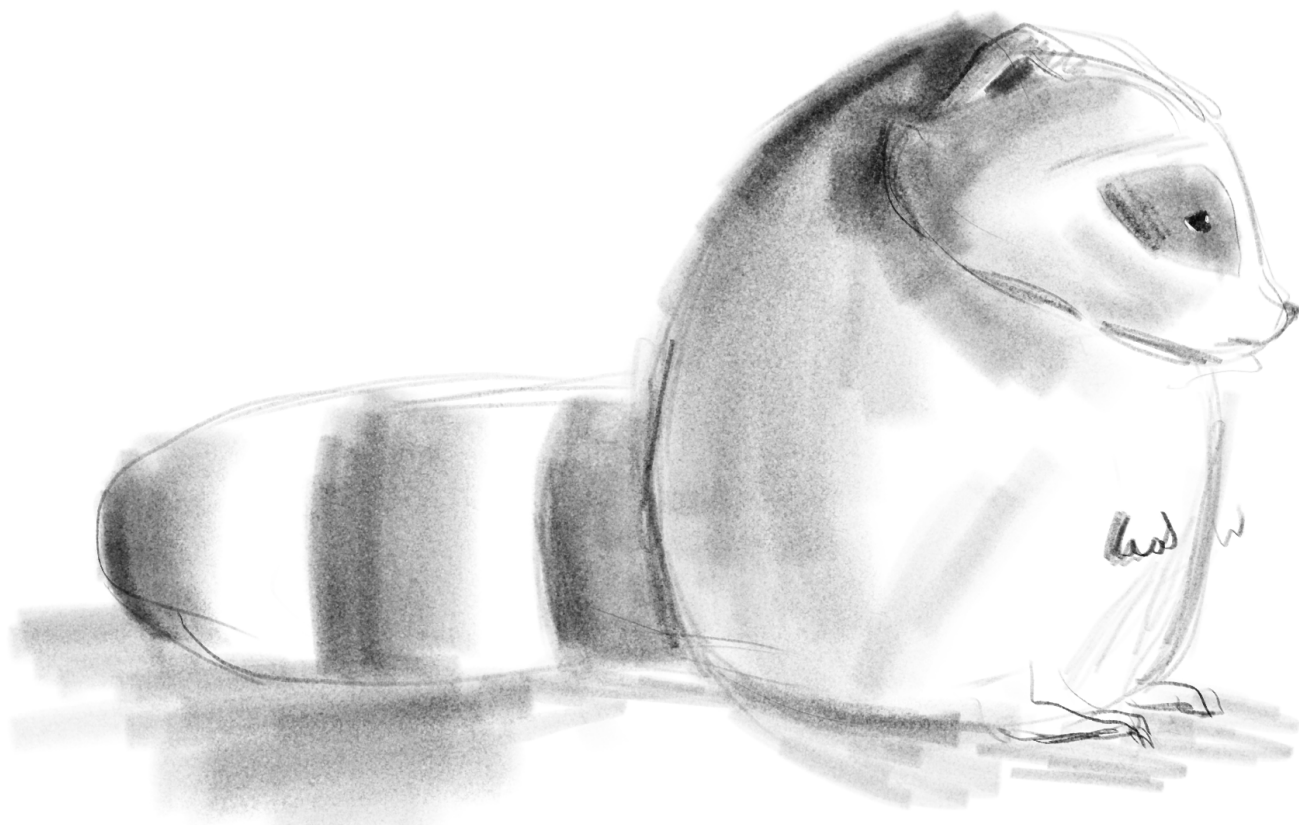
TOMORROW...
WE TEST IF
THE MODEL IS
ACTUALLY
SIGNIFICANT

HYPOTHESIS
TEST TIME





I'M DEPRESSED SO HERE ARE SOME DRAWINGS I MADE OF SAD RACCOONS



Handwritten signature

YOU'LL HAVE TO GOOGOL SOME OF THESE

gridCOMMENT 162.3

dear gridWORDers,

i was casually browsing the most recent issue of **mathNEWS** (second-most recent after this one releases) and came across an interesting article about the googology wiki and its many googologisms (26299 as of writing this **gridCOMMENT**, to be exact). so yeah, the themed clues are going to be googologisms that you will most certainly have to look up — “googol”, if you will. sorrryyy. if you would like a hint, the letters they start with can be unscrambled to spell “**mathNEWS**”. i forgot to put asterisks (*) next to the themed clues but you should probably be able to tell which clues are themed. they are VERY obvious.

last time, i asked you all who your favourite member of the bernoulli family is and why, and you (all) said:

• *the puzzler*: all of them. I love the bernoullis equally

a fair answer! congrats on winning a five-dollar gift card to the math cnd!!!! please pick up your prize from the **mathNEWS** office at mc 3030. this issue's **gridQUESTION** is: what is your least favourite city that you've been to, and why? please submit your completed **gridWORD** with a **gridQUESTION** answer and a pseudonym to mathNEWS@gmail.com or the **mathNEWS** office by november 2 2026 6 pm for a chance to win your very own five-dollar gift card!!!!

goodluck on your midterms everyon

spaghettiiinhalers

ACROSS

1. Fruit-filled desserts
6. Eliot's "Adam ____"
10. Arena shout
13. Classic theatre
14. $6.02214076 \times 10^{23}$
16. Give a speech
17. Symptom abatement
19. Up to
20. Fitting in a crossword?
22. Halifax clock setting: Abbr.
23. Patriots' grp.
24. Subway dweller
25. Indian state
27. Vietnam's capital
29. Mayberry sot
31. Thin
32. Board
33. Car with a bar
34. Giant slugger Mel
35. Ruin
36. Corp. top dog
37. Typing trial figure
39. Nile reptile
42. Top of a Roman clock
44. Rock's ____ Fighters
45. Unfreeze
47. Group values
50. Women in habits
51. Designed for flight
52. Sam in "Wimbledon"
53. Game show announcer Johnny
55. Chinese truth
56. Atlanta's ____ Center

57. "I'll take that as ____"
59. She, in Portuguese
60. "Saving Private Ryan" craft: Abbr.
61. 1.575×10^{79}
64. Pizazz
66. Campers' milieu
67. Old TV sidekick
68. Code-cracking org.
69. Gin flavoring
70. Gamal ____ Nasser of Egypt

DOWN

1. {10,30,3}
2. Sea between Italy and Albania
3. CS 452: ____ programming
4. Little kid
5. Golfer Sam
6. Kind of pear
7. Brink
8. Orbit
9. Support
10. Rural rtes.
11. Pop star Grande
12. {10,50}
15. Wheeze cause
18. Naval police series
21. First woman to serve as Speaker of the United States House of Representatives
26. Malevolent
28. Species epithet of the green carpenter bee
30. 1×10^6
35. {10,10(1)10,100,6}
38. Drivel

40. Type of pony
41. Mooch
43. Easter, e.g.
46. {10,100,100(1)3}
47. Suffix with persist
48. Sinew
49. Certain Indians
50. {10,90}
54. Clinton-era trade pact
58. Many int'l charity orgs.
62. "Make ____ double"
63. Metal in Montana's motto
65. High ball



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

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

lookAHEAD

SUN OCT 25	MON OCT 26	TUE OCT 27	WED OCT 28	THU OCT 29	FRI OCT 30	SAT OCT 31
Howl at the Moon Night	Cycle 2 Interviews Begin Ontario Municipal Election Days		Plush Animal Lovers Day			Halloween Increase Your Psychic Powers Day

SUN NOV 1	MON NOV 2	TUE NOV 3	WED NOV 4	THU NOV 5	FRI NOV 6	SAT NOV 7
Día de Muertos	math NEWS 162.4 prod NIGHT ; QNC 2501, 6:30 PM Last day to start work to earn a flexible co-op credit for the Fall 2026 work term		Use Your Common Sense Day Check Your Blood Pressure Day	National Chinese Takeout Day	math NEWS 162.4 releases	Book Lovers Day

LAST ISSUE'S gridSOLUTION

1	A	2	L	3	C	4	O	5	A	6	B	7	A	8	F	9	T	10	I	11	S	12	L	13	E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
14	W	O	O	S	15	T	E	R	16	S	T	U	N	17	N	O	R	18	H	E	R	N	I	R	E	L	A	N	D	S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
20	S	T	R	I	A	21	M	O	T	22	L	E	N	D	23	E	A	T	24	U	L	T	25	L	S	D	26	A	27	S	30	U	F	O	31	U	32	F	O	33	P	A	P	I	L	L	A	36	D	E	A	D	P	A	N	37	38	A	D	P	A	N	39	A	T	O	N	E	D	40	C	R	O	C	U	S	41	C	A	N	I	E	R	42	S	O	M	E	O	N	E	43	S	O	M	E	O	N	E	44	E	N	D	45	N	O	W	I	N	46	W	I	N	47	M	A	T	48	E	49	S	T	50	S	I	S	51	S	I	S	52	U	S	E	53	U	S	E	54	D	A	N	C	E	55	D	A	N	C	E	56	W	E	T	57	R	A	D	I	O	58	R	A	D	I	O	59	R	A	D	I	O	60	I	N	C	O	N	V	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I	E	N	I

MY FAVOURITE PUZZLES WEBSITE IS BACK ONLINE

(BUT I'M A GATEKEEPER)

Among all the puzzle websites I've encountered, none have scratched the itch quite like this one. I've found my brain contorting in ways that you cannot begin to even fathom in an attempt to even grasp fractions of portions of segments of a singular puzzle.

But when I needed it most (midterms season), my beloved website went down as a result of high traffic from increasingly agitated puzzlers. I can imagine all of these puzzleheads scrambling to their computers and typing in the URL, watching the home page load in, and then hunting down the hidden clues. Clutching my website-branded hat to my chest I shed one singular cipher-shaped culture-reference tear of sadness.

Thankfully, the site is back online. But in order to prevent it from being discovered, I've taken it down so that no one can access it and cause it any more

server failures. In doing so, I have barred myself from access to these puzzles as well. It was the cost, you see, humanity doesn't deserve puzzles this good.

There's nothing I can tell you. Perhaps the real puzzle was finding the best puzzle website in the first place. And the last puzzle will be destroying it for good.

the riddler

I guess bro.

A NONCHALANTMAXXING
blackBOX