"WHAT WAS YOUR HALLOWEEN COSTUME?"

As the stars would have it, this week's production night fell on everybody's favourite spooky holiday — Halloween! Perhaps deterred from trick-or-treating and other devilish deeds due to the wet weather, we had a wonderously big turnout of writers that night, with faces both old and new among them.

In my Sunday night email to our members-only mailing list (which you should really get on if you're interested in writing for us — it's right on our website, what could hardly be more convienient than that?), I included a humble behest to all our contributors to dress up for the evening's occasion. To my delight, I saw many dressed in costumes of all kinds. 'Twas a beastly night to remember, and I'm not just saying this because there were a dozen people who came dressed up as cat maids.

Yes, you heard me right. Cat maids. Replete with fluffy ears and frilly dresses. You know? Like, nya? And yes, there were a dozen of them. About a dozen, I think. Could have been more or less.

Two anchovy pizzas were requested by the cat cabal, but one was struck down by the hand of democracy (which was too bad — I kind of like anchovies on my pizza, but nobody else at **mathNEWS** does!).

Honourable mention: I quite liked Xx_420SonicFan69_xX's costume of Swain (from *League of Legends* fame), the making of which is documented right in this issue — look for an article by the title of How I Got My Costume Together. If you're wondering what everybody else wore on Monday night, look no further than to the column to your right.

With Halloween on the mind, our writers have thought up a good number of specially-themed articles for this issue. Sadly, by the time it reaches your eyes, their words will be at least four days out of date. Well, I guess you can keep their suggestions in mind for next year. Or not. Some of them are… troubling, to say the least.

I've got one more paragraph left to go, so here's a fun fact about me: I think I'm allergic to cats. *Think* is the keyword. I've only had allergic reactions to *two* cats, ever. I've never gotten a proper allergy test though. I do like cats a lot more than dogs, which I don't think I'm allergic to, so it's too bad, really.

clarifiED
Editor, **mathNEWS**

KANYE QUEST	Maid (burger king)
YALEVOYLIAN	What indeed.
ANNIE	A door
WINK WONK	A pile of garbage (my daily fit)
TENDSTOFORTYTWO	wdym I don't have a Halloween costume, these cat ears and Velma sweater are completely natural
SEVERAL WRITERS	catmaid
NORMALPARAMETERS	a very disappointing ladybug
MOLASSES	hobbit but without the hobbit
SKIT	figher pilot, or, "guy who's only seen top gun once"
LOOP	H&M summer collection from last year
DICK SMITHERS	Man Who Forgot Halloween Was Coming Up
X	dollarama model
YUMMYPI	a dying student with an angel's halo (final form)
CREATURE_F	fruit
JEFF	MathSoc President.
FINCHEY	Toxoplasma gondii
SQRT(CAUSE)	Grad Student
__INIT__	just like, a guy
SHAHABEE	Minecraft Villager
Xx_420SONICFAN69_xX	Swain from League of Legends.
SOMEBODY	Red Guy from Don't Hug Me I'm Scared
APHF	I am the costume for the tiny man who lives in my head and pushes buttons that make me say things.
BLINCHIK	cute cat 🐱
CUTLET	Matoi Ryuko as seen in the last ~1.5 minutes of episode 24 of Kill La Kill
DISTRACTED	ordinary **mathNEWS** writer

ARTICLE OF THE ISSUE

The Article of the Issue goes to aphf for N Interesting Things About the New **mathNEWS** Constitution! I sort of completely forgot to mention that we ratified the constitution, so thanks for reminding me that happened! Get your prize at MC 3030.

clarifiED
Editor, **mathNEWS**

mathASKS 150.4

FEATURING PROFESSOR HENRY SHUM

ABALD MAN: WHAT WAS YOUR PHD THESIS ABOUT?

Swimming in peanut butter. More literally, it was about studying the way bacteria swim. To microorganisms, fluid flows are quite different from what we are familiar with. Because of their small size, viscous effects are dominant and they effectively have no inertia (Aristotelian vs Newtonian mechanics). Whereas a car might take 50 m to stop with heavy braking, a bacterium simply needs to stop swimming and will coast to a leisurely stop in about 1% of the diameter of an atom. Bacteria actually use this strong viscous drag force to generate thrust by spinning their helical flagella like cork-screw-shaped propellers. They can swim more than 10 body lengths per second, which is like a car driving at 180 km/h.

How does this relate to peanut butter? The ratio of viscous to inertial effects that a bacterium experiences is roughly what a human would experience trying to swim through peanut butter.

In my thesis, I used numerical methods based on integral equations and fundamental solutions of the governing equations to compute trajectories of model organisms.

MOLASSES: WHAT'S YOUR SECOND-FAVOURITE POTENTIAL APPLICATION FOR AUTONOMOUS MICROROBOTS IN THE HUMAN BODY?

To provide a bit of context for this question, my research tries to explain how the different shapes and arrangements of flagella affect the way bacteria swim in various environments, like in channels. This understanding can be used to design microrobots that swim like bacteria and perform microsurgery in the human body or release drugs to specific diseased tissues. My next favourite application would be to stimulate my neurons and help me remember how proofs go during my lectures.

CLARIFIED: WHAT DO YOU DO WHEN YOU'RE STUCK ON A PROBLEM IN YOUR RESEARCH?

Go to the next problem and come back later (hopefully with new perspectives).

WALDO@<3.LE-GASP.CA: IF YOU COULD TALK TO THE BACTERIA/MICROORGANISMS YOU STUDY, WHAT QUESTIONS WOULD YOU ASK THEM? WOULD YOU RECRUIT THEM IN YOUR MATH 147 CLASSES SO THEY CAN HELP YOU DO THE MATH FOR YOUR RESEARCH?

I do talk to them and I'm usually asking them why they aren't behaving the way I want them to. I have recruited them for my classes before to illustrate exponential growth but they aren't very helpful with math. To them, multiplication is the same as division.

CLARIFIED: WHAT WAS GRADUATE SCHOOL LIKE FOR YOU?

It was amazing. My office was one floor above an ice cream cafe so that's where I would often have dinner when I had to stay up late working and babysitting my simulated bacteria. We even had access to the backdoor of the cafe.

My college has been described both as a resort and as a prison, in terms of architecture. I was told that the architect (Arne Jacobsen) designed everything down to the original power outlets in the walls, which of course no one could use because standard electrical appliance plugs weren't compatible.

I appreciated that there was a music house with two grand pianos that I played whenever I needed to relax. Life seemed much simpler back then…
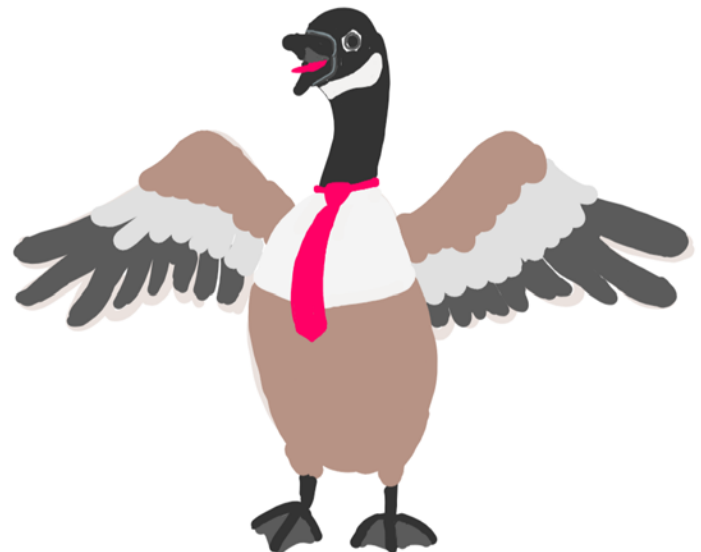
YALEVOYLIAN: WHAT'S YOUR FAVOURITE FLAVOUR OF ICE CREAM? ALSO I'M IN YOUR MATH 147 CLASS, HI.

Chocolate. Also, hi!

0.423: IF YOU HAD TO REPLACE EPSILON BY ANY OTHER LETTER (ANY LANGUAGE), WHAT WOULD IT BE?

Probably delta, just to see what would happen.

CIX: CAN YOU DRAW ME A GOOSE?

FOODIE: WHAT'S YOUR FAVOURITE DESSERT?

Cheesecake.

DICK SMITHERS: WHY?

It is one of the few that I can make reasonably well and reliably.

BOLDBLAZER: WHAT ARE SOME THINGS YOU HAVE THOUGHT UP OF TO ENSURE A POSITIVE EXPERIENCE FOR THE FIRST YEARS?

In terms of the MATH 147 course, we have lots of office hours, including a mix of virtual and in-person, and not-for-credit quizzes to be engaging and stimulate discussion without the pressure of grades. I'm trying to be approachable in and out of class and I encourage people to study and work in groups so you get to know each other better and support each other.

More generally, my suggestion would be to take charge of your degree. Hopefully, no one is forcing you to be here so decide for yourself how to balance your commitments and make it a positive experience for yourself by making use of resources to aid your studies and by doing other activities you enjoy.

A MEDIOCRE KITTY: WHAT ADVICE WOULD YOU GIVE TO THOSE WHO ARE STRUGGLING WITH MIDTERMS AND FEELING LIKE THEY MAY NOT PASS THEIR COURSES BY THE END OF THE TERM?

Understand that you're not alone with those feelings. We expect high standards and a certain level of maturity in university courses and especially advanced courses. It takes a while to get the hang of calculus proofs but you need more than just time. Make sure you go over feedback on assignments so that you learn from mistakes. Also, talk to your peers, the TAs, and me regularly about concepts or solutions you don't understand. We want to give you the help you need as long as you are willing to put in the effort to succeed.

Realistically, though, you have limited time so you have to think about your work load. Don't feel that you always have to stick with a course that you enrolled in; it might make more sense to try again in a future term or take a different course.

SKIT: WHAT'S YOUR FAVOURITE THING TO DO IN YOUR FREE TIME?

In the summer, I do a fair bit of gardening. If we started the Fall term a few weeks earlier, I'd probably give everyone in my class peaches from my tree.

Some students may know that I have raised clownfish from eggs and brought them over when I moved from the US. That's a whole other subject I could write a thesis about.

XX_SPLATOONFAN_XX: DO YOU PLAY ANY VIDEO GAMES? IF SO, WHICH?

Not anymore. I do have a VR headset but haven't found anything I want/have time to keep playing. If you have any suggestions, let me know!

CRANKY: PICK ONE: TIME, FRIENDSHIP, MONEY.

Time. It is necessary for friendship and money. E.g., I have found that having time to make cheesecake gets me a lot of friends.

ABALD MAN: WHAT'S YOUR FAVOURITE COLOUR?

Any colour chalk comes in.

TERRIFIED: ARE YOU RELATED TO THE ACTOR HARRY SHUM JR.?

Only if you ask Google.

CATMAID mathNEWS

* Bunny ears swapped

manganese

MATHIE SEEN AT INEWS ON SUNDAY AFTERNOON

AFTER THE GRAND RE-OPENING OF MATHSOC C&D EARLY LAST MONTH, POOR MATHIES ARE STILL GETTING ROBBED AT INEWS

Since the re-opening of CnD, the correspondence team has observed a decline of lunch-time visits to SLC from MC. Last week, we started a conversation with one mathie, who was purchasing lunch from International News. We asked about the intention behind such abnormal behaviour.

"You see, when it comes to midterm season, every second counts. That's why I'm not lining up in Tim Hortons right now. Just look at that line, it could take me hours to get my order."

According to our research before conducting this interview, typical lunch cuisine, like a beef patty with chocolate milk, could cost double the price from International News when compared with CnD. We brought up this situation with our poor mathie.

"Hey, when you have an empty stomach, you just can't think straight OK? Of course I hate the price, but now that CnD is closed, where else can I eat on campus in this midterm season?"

At the time of the interview, CnD is closed on weekends. We were going to continue asking why our mathie couldn't just bring some home-made food instead, but he refused further questions and rushed toward MC instead.

*a **mathNEWS** correspondent*

HAIKU

math**NEWS** *PRODUCTION NIGHT CAP* ✎

Pizza was the prize
and yet when the fools show up
Oh! We are the clowns!

xalksafff

BUGER :)

- top bun
- sauce
- tomato
- pickle
- lettucer
- buiurgher
- bottom bin

a decaying skeleton

PETITION FOR THE MEF MAID CAFE

After Meowlloween it has been found that there is a large, stigmatized and unemployed maid population in Waterloo (umu) many of which have a genetic defect causing two protrusions to sprout from the top of their heads, henceforth known as cat ears (owo). As such, we, as part of the Cat Rescue Association (CRA) propose we use the MEF fund to fund a Cat Maid Cafe, the members of which will be called the Collective Cat Cafe Union Members (CCCUM).

The cafe will have the following menu:

Dwinks: Catppuccino; Calico Cream; AmeriCatto; Cattiato; MoCat; Catgona Milk Tea; Tabbyoca Milk Tea; Americano Shorthair; Purrple Smoothie.

Fwoods: Kit Cat Cookies; Nyan Bread: Mice Crispies; Tiramisu; CatNip Cookies; Nyahcaroons; Nyahcaroni and Cheese; Spacatti.

Current Cat Staff: Meowgenese; Nyahzene Pawblems; MeowNyans; Sergeant Whiskers; Kat-Oppa; gildED Kitty; Not a C*t.

MeowNyans, Nyahzene Pawblems

N ACTUAL REASONS 0 IS A NATURAL NUMBER

- N is a semiring. (A semiring is a ring that need not have an additive inverse.)
- There's a really cool way of constructing the integers: take $N \times N / \sim$ where $(a, b) \sim (c, d)$ means $a + d = b + c$. Every integer has a nice canonical form: 2 is $(0, 2)$ and -5 is $(5, 0)$.
- Polynomials in S (where $0 \in S$) can be defined as functions $N \to S$ with finite support. (The support of a function is the subset of the domain that does not get mapped to 0.)
- Degree of polynomials can be described by the naturals with a bottom element.
- The size of finite sets are natural numbers.
- Peano said so.
- Set theorists say so.
- Type theorists say so.
- ISO 31–11 said so.
- ISO 80000–2 probably says so.[1]
- How many hugs have you gotten in the last 48 hours?

$0 \in N$

---

1. If anyone would like to contibute CHF 158, we can confirm this.

N INTERESTING THINGS ABOUT THE NEW mathNEWS CONSTITUTION

For the first time since the fall of the Berlin Wall, **mathNEWS** is updating its constitution. Some parts of the new constitution are more interesting than other parts. I have compiled the N most interesting parts into this article.

☙

4. *The* **mathNEWS** *Treasurer*

There's a whole section to talk about the **mathNEWS** treasurer, a role which has been empty for as long as I have been here. Odd.

[Treasurer's Note: hey, I exist!]

☙

H. *The* **mathNEWS** *Editor may, at their discretion, create or remove any position related to* **mathNEWS** *not directly specified in this document.*

I am pretty sure this means **mathNEWS** editors can make up any position and assign it to someone. There doesn't seem to be any check or balance here. Editors, consider this my application to become the **mathNEWS** Supreme Shaman, Wielder of Power Unmeasurable, Ruler of All Lands Known and Unknown.

☙

9. *Special Issues*

A. *The* **mathNEWS** *Editor may endeavor to create Special Issues of* **mathNEWS***, if the budget permits. These Special Issues shall receive a volume and issue number at the discretion of the* **mathNEWS** *Editor.*

B. *A Special Issue need not be a printed issue, and may take any form the* **mathNEWS** *Editor desires.*

The examples of special issues listed in sections 9.1 and 9.2 are pretty boring, being the orientation issue and the society election issue. The orientation issue is barely special at all, and there hasn't been a society election issue since 2011. I am not saying the editors lack creativity when it comes to special issue ideas, but if I ran out of article ideas I too would try to become an editor. Here are some free special issue ideas for the editors:

- A **mathNEWS** issue written entirely in Pig Latin
- A **mathNEWS** issue written entirely in Morse code and exclusively available by tuning into our frequency of ham radio
- A **mathNEWS** issue where each word is cut out, put in a separate helium balloon, and released. The balloons reach a high enough altitude where they pop, dropping the one word snippets across the entire region, spreading the good word of **mathNEWS** to a previously unprecedented reader base for a shoestring advertising budget
- A **mathNEWS**-ical (**mathNEWS** musical)
- A **mathNEWS** issue attached to an arrow and fired through the heart of a town steward
- A **mathNEWS** issue in the form of a computer virus, spread across the web causing computers to only display text in the form of N Things articles
- A **mathNEWS** issue in the form of an actual virus, killing thousands (for fun)
- The entirety of the old Minecraft server
- A dance routine performed in front of MC by one editor at a time for a month straight (they could switch who the editor was every so often, but other than that it goes uninterrupted)

If I am appointed **mathNEWS** Supreme Shaman, Wielder of Power Unmeasurable, Ruler of All Lands Known and Unknown, I will use all the power vested in me to make these dreams come true.

☙

B. *A candidate shall be raised to* **mathNEWS** *Editor at the completion of their training and upon approval by the* **mathNEWS** *Staff in accordance with §6.2: Meetings and Quorum, at which time they will receive their* **mathNEWS** *Editor Handle from their mentor* **mathNEWS** *Editor.*

The way I interpret this is upon being raised to editor, a mentor editor betroths the new editor their handle. I imagine a ceremony. I imagine an altar where the editor-to-be lies. I imagine numerous candles flickering lower and lower as the existing editorial team chants incantations in languages ancient and unknowable around the altar where the editor to be lies. I imagine an unnatural darkness suffocating the room, the only light coming from the candles and the eerie red glow starting to emanate from the runes carved on to the walls, on the altar, and into the skin of the editors and editor to be. The candles are dying, but the red glow is getting brighter. The chanting stops, and the candles are suddenly extinguished as if by a sudden gust of wind. A deep guttural sound is heard, its origin unclear, the editors almost feel like it is coming from inside their heads. A primordial fear is felt by all, yet no one dares move. No one dares breathe. The guttural sound grows louder, impossibly so. One editor cracks under the pressure, taking half a step back and allowing a single gasp to escape before clamping their mouth shut. Time seems to warp. It is unclear whether seconds or years pass as the guttural wailing continues, louder and louder, the editors waiting in complete and all encompassing fear of what they can all feel imminently forthcoming. The tension is reaching a breaking point, the guttural noise is so loud that the entire cavern is shaking. Bits of dust are raining down from the ceiling. The runes on the walls are glowing brighter and brighter. The runes cut into the

editors' skin seem to be changing hue. First slowly, but then faster and faster. It hurts to look at. A high pitched chorus of ethereal voices sings out in praise and a bright light descends from on high, the darkness scampers away, back to its hiding place in the shadows. The cavern is trembling violently, small pebbles are raining down. The **mathNEWS** editors can feel the heat on their faces as the spirit of **mathNEWS** editorship eternal proclaims thus: "I christen thee neweditorED, rise now, go forth, and fulfill my will eternal. I, the incorporeal embodiment of all that has been edited promulgate it so." Larger rocks are beginning to fall. neweditorED rises, pulled upwards by a force unseen, but not unfelt. The writer they used to be is no longer visible in their eyes, they are now host to something far greater. The cavern collapses, crushing everyone inside.

neweditorED wakes up in their bed, having just had a pleasantly dreamless sleep. They remember nothing of what happened. The other editors also all wake, ready to go edit **mathNEWS** issues. Never again is the one editor who let a gasp escape seen. No one seems to notice this, as no one remembers anything about them at all.

At least, that's how I imagine that whole thing goes.

❦

K. Should **mathNEWS** *dissolve either voluntarily or involuntarily, the* **mathNEWS** *Editors at the time of dissolution shall open and drink the bottle of Raspberry Citrus Orbitz on the shelf, as a final reward for succeeding where previous* **mathNEWS** *Editors have failed. If the bottle of Orbitz is nowhere to be found, a replacement bottle must be procured at the* **mathNEWS** *Editor's own expense. Any external parties involved in the dissolution process are also invited to partake in the ritual.*

My biggest objection to this constitution is that there is no Turner Doomsday style soundtrack prescribed here. I suggest a version of "It's The End Of The World As We Know It" performed by the Trans-Siberian Orchestra, you know, for the subtlety of the situation.

aphf
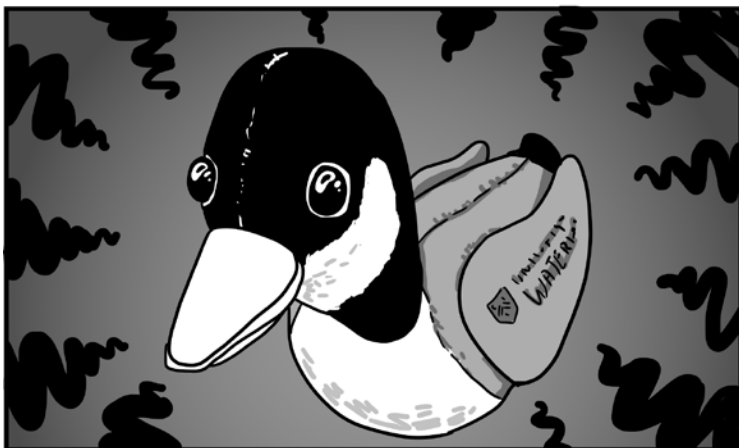
FRAMES OF REFERENCE
OR, SOME PEOPLE ARE NOT LIKE YOU

Sensations are very strange. Really, when you think about it, it's weird to describe how you feel in any real sense because it's always in relation to something else. How can you describe what something sounds like or smells like without reference to something else, or without using subjective qualities like good or bad? It's next to impossible.

That's part of why I like math, honestly. It's a way of boiling down the world into the basics, the things we can find out from our limited axioms, and seeing how far we can push those simple truths to explore a whole wider world of possibility. But even with math, we have our axioms as a frame of reference, and the only truth is really the one we all agree on.

Even when we stick to describing the physical locations of physical objects stripped of any sensation, physics also teaches us that frame of reference matters to determine quantities like time and distance. There is no truth in this world; everything is relative to where we set our starting point.

So then the question is where should you stick your point of reference, when should you move it, and at what times is it useful to do so? And again, that's really up to interpretation and situation. This world has so many questions, and while many people seem to be sure of their answers, there are other people who are just as sure of answers pointing in the complete opposite direction.

It all depends on what you value, and which experiences you cherish. Personally, I think that other people matter most, and so I plant my philosophical flag at a point where that position is self-consistent. Others will obviously view things differently, and my position has changed over my time in life.

I feel like so much of life is trying to reach a compromise on these positions; determining where we should go as a society, and where we should not be, as we all jostle each other around trying to pioneer new paths, going backwards, forwards, and in all directions.

Just never forget that everyone started from somewhere and try to understand their path to their current positions, especially if you're trying to persuade them to change their point of view. We're all just trying to find the spots that make the most sense to us, and while some people are more stubborn than others we all have a natural predisposition to think that our spot is the best unless convinced otherwise.

No matter the topic, everyone sees things differently. Keep that in mind. :)

Predap

THE DAY AFTER HALLOWEEN
THE HALLOWEEN CANDY GRAM IS A HALLMARK OF FRIENDSHIP AND SOCIAL COMPETENCE

Cleo: I know it's a middle school thing. But isn't it sad to have never received a Halloween candy gram from K to 12? Yesterday was the last Halloween before university…

Nat: Cleo, had we been friends in middle school, I would've gotten you one! *[Grins]*

Cleo: Thank you Nat. You are the best! Want some cookies?

Cleo finally opened her locker after redialing 3 times. As she pulled on the cookie box, an orange and black gift pouch fell out.

Nat: What's that? Looks like a ~candy gram~. *[Wink Wink]*

Cleo: From the student council. But why didn't I receive it yesterday?

Nat: I have noooo idea. *[Shakes her head vigorously]*

Cleo: *[Opens pouch]* KitKat, Coffee Crisp, Smarties, but no Aero? And there's a card. How nice!

Nat: What does it say?

```
═══════════════════════════════════════
Yesterday during second block…
☺: Student council candygram delivery for
'Sadako' (long hair, white dress, sullen face)!
═══════════════════════════════════════

The class:
🕸        👤🏫         🕷🕸

👤  👤  👤  👤  👤  👤  👤  👤
👤  👤  🤖  👤  👤  👤  👤  👤
👤  👤  👤  👤  👻  ✨  👤  👤
👤  🦄  👤  👤  👤  👤  👤  👤
───────────────────────────────────────
☺: Search for 'Sadako' returns NULL.
Meanings of NULL:
1. Value Unknown: 'Sadako' skipped class.
2. Value Does Not Exist: No one dressed up as
'Sadako'.
───────────────────────────────────────
```

Nat: Sadako from 'The Ring'. Isn't that you for every Halloween?

Cleo: Yes, except —

Nat: It can't be 'Value Unknown'. You never skip classes. They must've known if you didn't skip class and weren't actively hiding from them.

Cleo: Actually, I've skipped PE before… *[Looks away]*

Nat: I meant *real class*. You had English during second block yesterday.

Cleo: Yes, you're right. I was in class during the delivery.

First block was about to start, but since their lockers were close to the classroom, there was no need to rush. Cleo offered Nat a cookie and a box of Smarties while she brooded over what could have possibly gone wrong with the delivery.

Cleo: Smarties for the smarty? *[Shakes the Smarties box]*

Nat: *[Opens the box]* But why would you try to hide from them? That doesn't make sense either.

Cleo: I didn't hide. *[Breaks a KitKat]* Actually, I think I saw the delivery team, but they just looked around and left.

Time was ticking away. The hallway became empty as students were sorted into their classrooms. Nat and Cleo finished their last bites in the gentle humming of the vending machines beside the lockers.

Nat: Wait… *[Surprised]* That can't be… You've dressed up as Sadako for the past 6 Halloweens!

Cleo: That's the problem. Nobody's getting scared anymore, so I didn't dress up this year.

Nat: Finally… mystery solved! You could've just told me from the start!

Cleo: That's true. *[Glances up at the clock]* It's almost time—better rush to class!

Cleo put the cookie box away and closed the locker. She looked down at the card again then turned to Nat.

Cleo: I love the card. Thank you, Nat. *[Hugs Nat]*

Nat: Wait… How did you know!? *[Hugs back]*

Cleo: You're the only person in this school who knows the character is 'Sadako' —

Nat: OMG, I thought you broadcasted that to everyone!

Cleo: And my locker combination.

Nat: Okay, that makes sense…

They exchanged glances and burst into laughter. Just in time for Chemistry class.

Nat: Is there caffeine in Coffee Crisp?

Cleo: Don't know… Maybe we can ask Ms. S in Chem?

HAPPENINGS FROM ANOTHER WORLD, 1ST EDITION

FROM THE MONTH OF OCTOBER 2022...

Various Countries: In response to increased instability in Bromley, countries around the world have issued travel warnings, urged citizens to avoid all travel to the country, and set up flights to evacuate any citizens already in the zone. Joriskjo in particular organised chartered military flights to evacuate Joriskens, and officially downgraded its designation of Bromley to be an unstable, developing nation. It has also set up a Bureau to handle the expected increase of Bromlavian asylum-seekers to Joriskjo. Allendea has noted that its travel warning against Bromley has been in place for years.

Xiongjing, Bai Empire: The Fengyang Bai Emperor passed away in his sleep on October 10, sending the Empire into a month-long period of mourning. The Crown Princess immediately ascended to the throne as the Hexi Empress, and the new national era starts on January 1, 2023. The Fengyang Constitution has been suspended, and will be immediately replaced by the Hexi Constitution as soon as it is drafted.

Santa Elena, Barzona: The Coast Guard has taken custody of a Tempeiran man who fled his country and was living in the small rock of Islette Kelly. It turns out that there was a man living for at least a month on the islette, who arrived with a small boat, wood, building supplies, and food. The man was apparently not happy with the Tempeiran government and fled from the town of Água Tropicais and ended up in Barzona. The man was able to survive by collecting rain water, fishing and occasionally hunting down sea birds.

Bromley City, Bromley: Home Secretary Owen Kyle announced that the government would create a report on introducing a form of proportional representation to Bromlavian elections. This recent announcement follows major turmoil in the Bromlavian political system, spurring fears of further instability in the country.

Kingstown, Deodeca: Major renovations have been completed on Levi Gardens, the city's premiere hockey arena. During renovation work, the Kinsgtown Blizzard have been playing in Deodeca Air Arena, a newer venue built to host the team's minor league affiliate. The Blizzard are set to play their first game in the Arena on Wednesday, November 3.

Joratumo-Luusanjo, Joriskjo: A member of the Steward's council submitted a proposal to the legislature, seeking the removal of "secondary education diploma" as a voter eligibility requirement. Other councilmembers showed resistance to this measure, calling it "an illogical solution to a non-problem," and adding that "removing the voting intentionality condition would be more effective in this measure." Voting law is not outlined in the Jorisken constitution; the 1915 Voting Notice was enacted as a supplementary measure to improve public input in governance.

Bakdep, Kuehong: Kuehong state media announced the dismissal of three military chiefs and the chief assembly (the leader of the country's legislative chamber), in an apparent series of power struggles within the stratocracy. Accused of corruption and treason against the state, the four accused – Trí Quân Ngo, Lan Cúc, Đức Liêm Vân, and Le Van Xuan – were to be stripped of their ranks and privileges and trialled for their crimes, as announced in a "special executive order" issued by the country's military chief Le Van Kiet.

bin-Efos, Layr: The governments of Layr and Tamor have seen increasing tension over Layr's refusal to extradite a murderer who fled from Tamor. The murderer sought asylum in Layr, and the Layri government refused to cooperate with Tamor's governments until "processing [name]'s papers is complete." The diplomatic scuffle has resulted in worsening relations between the two countries.

Corem, Tamor: Citizens in Corem raise concerns over rising sea levels as events of swamp flooding occur at increasing rates and with increasing ferocity. Urban areas have been increasingly encroaching on the swamp lands that normally absorb the excess water, diminishing their ability to prevent floods.

Incubel, Tamor: A Deputy from the National Party, proposed in the Chamber of Deputies an act to ban "any socialist and communist ideology, symbol and apology in the whole national territory". The act has a low chance to pass; Maria Podel itself, leader of the National Party, reprimanded the Deputy and dissociated the party from the proposal.

And that rounds out all the Other World's news for this month. Hope you enjoyed this edition.

ES_vm

A HUMBLE RANKING OF COMMON HALLOWEEN CANDY BRANDS

AS TOLD BY A MASTER TRICK-OR-TREATER

CHOCOLATES

NESTLÉ

- **KitKat:** Nothing's more famous than a KitKat. The simplest iteration of a wafer chocolate bar. Its appeal endures. 8/10.
- **Coffee Crisp:** The best chocolate listed in this entire article. Not too sweet, crisp and airy, and has a unique, memorable flavour. 9/10.
- **Aero:** Perfectly serviceable milk chocolate. Its gimmick adds a playful textural touch in the mouth but not much else. 7/10.
- **Smarties:** Just not as good as M&M's. The candy shell is thicker and harder, and the shape is thinner and more oblong. Nevertheless, it's OK. 6/10.

HERSHEY'S

- **Reese's Peanut Butter Cups:** Decadent and rich. It does leave a thick coating of peanut butter in your mouth. 7/10.
- **Hershey's Cookies 'N' Creme:** Sweet and very milky. It's not really chocolate anymore… It's quite nearly something else. 6/10.
- **Oh Henry!:** My mother's favourite. Goes heavy on the peanuts, leaving them inside the bar whole, resulting in a bite with the right amount of chew that's not too overwhelming. 8/10.

CADBURY

- **Wunderbar:** Does not make much of an impression. A dense chocolate bar. Forgettable and not my first (or second, or third…) pick. 2/10.
- **Caramilk:** Not much to say about it. Simple and sweet with a two-ingredient formulation. 6/10.
- **Mr. Big:** Worse than the Wunderbar. The overwhelming presence of wafer makes one feel they are masticating on styrofoam. 1/10.
- **Crispy Crunch:** My mother's second favourite. Thin and crunchy without a wafer. The nougat can get stuck in your teeth. 7/10.

GUMMIES

MAYNARDS

- **Swedish Berries:** The nectar of the gods. Delectably fruity and sweet, its flavour is sublime. I can never tire of it. 10/10.
- **Sour Patch Kids:** It is sour indeed, but the sourness comes from a dusted crystal coating on top. I never liked sour gummies. 4/10.
- **Fuzzy Peaches:** All Maynards gummies have a pleasant, nigh perfect chew. The dusting of sour crystal simply presents an obstacle to the fruity, chewy goodness underneath. 6/10.
- **Fruit Mania:** The flavours are somewhat uninspired. It feels like a competitor to Mott's Fruit Flavoured snacks and their ilk. 5/10.
- **Sour Cherry Blasters:** Another sour gummy, but the punchy cherry flavour is a welcome arrival. 7/10.

SHIT-TIER

- **Twizzlers:** The mini "Nibs" are far better. The original versions are devoid of any flavour and are far too reminiscent of insulated cables. 0/10.
- **Tootsie Rolls:** Taste as if watered down and are unpleasantly chewy to a deep extent. 0/10.
- **Rockets:** Literal chalk. 0/10.

Finchey

N REASONS TO START KNITTING OR CROCHETING

- You can be more productive while not paying attention in class
- You can gift socks for Christmas without feeling unoriginal
- If you lose your beloved beanie, you can make an exact replica
- The time you spend being bored will decrease exponentially
- You can spend more money than you would buying a finished product

himugüegeli

"DUOLINGO IS JUST A MOBILE GAME"

Your eyes were kind,

But your words burned like hell.

A cool pen name

RATING EVERY FLAVOUR OF M&M'S I HAVE EATEN

Milk Chocolate: The classic M&M's. Sometimes I eat them one at a time and crunch each one, and sometimes I shovel them into my mouth and let them melt away into nothingness. If left unchecked, I will eat an entire bag. You might think that adding more things to M&M's will make them more enjoyable, but it also makes them bigger and hampers the ability to shovel them into your mouth without worrying about any of the consequences, like chewing. 10/10.

Peanut: Speaking from experience, these are the 2nd most common M&M type you'll find on Halloween. They're significantly larger than regular M&M's, possibly to accommodate the peanut but nobody knows for sure. Even though there are only like 4 in each of those Halloween-size packs, the peanut-chocolate combo makes it well worth it. And the crunch of the peanut perfectly complements the crunch of the M&M. 9/10.

Peanut Butter: Peanut butter is great and all, but this is no Reese's. The peanut butter itself is low quality and I'd prefer a non-butterized peanut M&M any day. Whenever I see these I have a moment of excitement upon reading the word "peanut," only for that to be shattered upon reading the word "butter". Don't ever mix these up with regular peanut M&M's or you shall feel deep regret. 4/10.

Fudge Brownie: The newest flavour added to the M&M's lineup, this one doubles down on the chocolate theme. You eat a chocolate M&M and bam! More chocolate. The only criticism I'd give is that brownie isn't as good as you'd expect when it's inside an M&M instead of fresh out of the oven. However, more chocolate ain't never hurt nobody. 7/10.

Pretzel: If you were to explain the idea of sweet and salty to someone who's never had it before, they'd probably be very confused. But if you're not living under a rock, these taste pretty good! Pretzels are lovely and crunchy and tasty, and they complement the chocolate very well. 8/10.

Caramel: These are the only kind of non-classic M&M that I will actively buy. They have all the benefits of regular M&M's and more. Since the caramel itself is a liquid, it offers little resistance when bitten into, but the outer shell more than makes up for that. It also melts away when you keep them in your mouth, so these pass the no-chewing test. And unlike the peanut butter M&M's, the liquid inside these actually tastes good and complements the chocolate perfectly. 10/10.

Crispy: In terms of texture, these are great. Crunch upon crunch is an incredible thing. However, I have zero clue what this aptly named "crispy" substance tastes like because there simply isn't enough of it to register. Whenever I eat these I feel like there's something there that I'm missing out on. If you want to taste whatever the crispy is supposed to be, go buy some Maltesers. 6/10.

Crunchy Cookie: I have definitely had both these and Crispy, but I legitimately have zero clue what the difference is. Go read the previous paragraph again. 6/10.

Almond: Like peanuts, almonds have been put into chocolate for as long as time itself. However, unlike the chocolate-peanut combo, the chocolate-almond combo is not greater than the sum of its parts. Almonds are ok. My mom likes them, so I guess I like them vicariously. 5/10.

Thai Coconut: In 2019, M&M's decided to take after Minecraft and hold a flavour vote. The choices were English Toffee, Thai Coconut, and Mexican Jalapeño. If you know me you'll know that I didn't dare eat the Jalapeño one. However, I looooove coconut! And I think that chocolate and coconut is a tried-and-true, yet sorely underrated combination. It made me so happy to see these on shelves, and had they won they likely would have entered my very exclusive club of flavours that I actually buy on a regular basis. But alas, some things were not meant to be. 10/10.

English Toffee: Don't get me wrong, I love toffee as much as the next guy. Scratch that, more than the next guy. However, I'm more of a toffee purist. I think the bold, sweet taste of toffee is best enjoyed on its own. While I bear no ill will towards these, I do think it's a right shame that they won over Thai Coconut. 8/10.

Minis: The mini M&M's are probably the most popular "mini" candy out there. Other "mini" candies are smaller versions of existing candies, and they tend to be picked up for convenience. They can be popped right into your mouth, don't have individual wrappers, etc. But mini M&M's don't have any of these benefits. So why are they so popular? If you're asking that question, go shovel them into your mouth right now. They're quintessential for anyone who measures candy by the mouthful. They even come in mouth-hole-sized tubes so you can pour them directly into your mouth for maximum enjoyment. Truly an amazing innovation. Beyond ideas. 10/10.

Smarties: In a conversation about M&M's, some bonehead will inevitably bring up this disgusting, vomit-inducing, scum of the earth candy. Seriously, they actually taste like vomit. I read something about how some chocolate is made with the same type of acid found in vomit. I could not make this shit up if I wanted to. I think the reason why they're a "Canadian thing" is because exporting them would be considered an international crime. Fuck you, Smarties. How darest thou stand amongst the greatest of the great when thou art the lowest of the low. 0/10.

someBODY

STAFF MEETING CALL THAT TOUCHING TIPS

creature_f

HOW I GOT MY COSTUME TOGETHER

Hey guys! I use Halloween as an excuse for amateur cosplay, and in that regard, I dressed up as Swain from *League of Legends* this year. I'll tell you how I put my outfit together as well as cost, and hopefully you all… learn something? I don't know I just wanna be proud of myself.

- White wig. Got this from like an off off off Broadway Party City. It was 60 bucks, but I got it last year when I went as Bard (from *League of Legends*), so it was no additional cost this year.
- Leather floor length coat. Got this for $20 at Black Market in downtown Toronto. It's a pretty trendy thrift store, so you guys should check it out and donate old but usable clothes as well!
- Thick black belt. This was also $20, but I got it from a flea market. In hindsight, I could've tried to look for cheaper options here.
- Red and black gloves. Got these from Dollarama for a price so negligible that I forget. Maybe $5 for both pairs?
- Black knee length boots for under $20 at a separate thrift store in East York (Toronto). There were other boots along the way but none so cheap or that fit half decently. I had to get women's shoes because they don't really make men's knee length boots.
- The rest of my outfit is just standard clothes that I got from Winners that are a part of my every day wardrobe (black jacket, black collared shirt, black jeans, and I guess black and orange socks but really any socks would work).

Not counting the wig expense (since it was last year), the whole thing was $65. Yes, a bit much for some people, but Walmart costumes go for around $30, so this isn't much more expensive and I get to go as who I wanted to be, rather than just a fixed set of choices! Hopefully I can continue the trend next year! Lastly, the costume itself (I know the glove is on the wrong hand; ignore my mistake please!):

Hope it looks good!

Xx_420SonicFan69_xX

YOU DIDN'T JUST TAKE THE L

you didn't just take the L, you took an M

the opposite of a w

Skit

WHO'S HEAD LETTUCE

ME, I'M HEAD LETTUCE

2.81 g/s

That's how much lettuce speed units I can zorp.

Feeling feisty? Think you can do better?

Well that's a distinct possibility but statistically unlikely.

Lettuce Club is a termly competition to eat at least 300g of Iceberg as quickly as you can gargagool. Slurping down lettuce soup. Some fuckin twitter think meme started this off and now lookit me. BMig Head Lettus on Campus, competeing in the "Head to Head," coulda been you but you couldnt slorble-gulp nearly fast enough.

Try again next term, too bad you probably only like lettuce, and not enough to shove it down your thraot with a tbootle of water. Science says you can't be a champion if you don't have water. [Jon Bois citation deleted]

ME, i'm the head of lettuce, I'm the one who likes it the mosth, and b y king Solomon rules that means I get YOUR lettuce. But, since i'm so nice, and im full, lucky you, i don't even need it, becuase Lettuce costs like $4 and i've don'e 6 coops.

I've the cali money to eat your lettuce and have no left overs, becaus e I'm the lettuce eater.

I've eaten your leettuc,e.

It's very wet.

Fuck its too wet.

The wet,

it's everywhere, my hydration levels, so high, skin so soft and hydrated via the normal process in the colon and direct sublingual absorption.

I may be Head Lettuce, but now I've become a detective in the crime of the centruy.

The case of who pissed my pants.

sqrt(cause)

> # If I could get a pet goat, I would.
>
> **BLAKE MADILL**

N REASONS TO FUCK A PUMPKIN

- one size fits all, carve your own pumpkussy
- stores cum, easy disposal!
- can vore your cumpkin pie afterwards
- jack-o-lantern more like jack-off-lantern
- multiple people can fuck at once (coop mode)
- wide range of firmness with options of cold and warm
- that curvature tho
- gender affirming
- you can't pumpkin pregnant (but can try)
- adding the latte to your pumpkin spice
- one of your few personal liberties under democracy

a decaying skeleton

A PSA THIS HALLOWEEN FROM YOUR FRIENDS AT mathNEWS

pumpkussy patrol

GOTTA LOVE PUBLIC HARASSMENT

yes the fact that i'm wearing a maid outfit *does* give you the right to yell profanity and homophobic slurs at me. love it. please continue to do it, i'm sure your friends think it's so cool.

kintsugi

kintsugi is the act of filling in pottery cracks with gold. i wanted to keep the theme, but golden and gildED both didn't feel quite right for this article.

[I CAN SAY A THING.]
FROM THE INCREDIBLE BRINK OF POISON

i can say a thing.
i can think a thought.
i can drink a drink.

right? yeah,
seems easy enough:

i can say a thing;
i can think a thought;
i can drink a drink;

sure.

but what about this:
what if i:
drink a drink
and then
think a thought.
would i think such a thought
had i not drank this drink?

i think (???)…

that drink i drank did
not
affect that thought i thank.
(i think.)

but what about this?:
what about this?:
suppose i
think a fleeting thought and
say a fleeting thing
but this
fleeting thing was not
a feeling that i real-
ly felt!
what about this? // how about that?

hmmm, had

i drank not that drink,,,
i would not have said
that think that i thank…
that thought not at all
a feeling i fall…

—(and thank you a lot,
my not having drank!)—

…but…but…but,,,
had i sank that think,,,

i drink i would have thought
to say the think i thank,
for i can say a think
and i can think a thought

wi-thout a feel—i brought
that fleeting feel i caught.

i said a thing
but wait can i
say a thing can i
say a thing can i
say a thing?

don't i ever lie
to i? don't i ever
think a thought and give
that thought a word but find
that word remains beyond
that thought? don't i ever
think about the think
that you might think about
on having heard that word
that lied myself to I?
don't i ever drink
a drought and live without
a fight against my fought?
don't i ever sick
of words that stick and stack?
within drink or without,
i sick of saying think
and sick of thinking thought
and think of things to say

to the Word…
to the Everyword…
the Everyword that hides
myself from all my me and I.

but i can say a *thing*,
and i *can* say a thing.
and though i never *get* to say a thing,
i'll *say* a thing i said to me today.

(i'll say it to you anyways)

☙

it was only on a whim
it was only on a whim
it was only on a whim
that i was let to live

χ

HOW TO DRAW A GOOSE

Step 1: Draw a goose

Step 2: Add detail

Step 3: Add a little more detail

Step 4: Add in some fun lighting and extra features

Bonus: If you'd like to make your goose scary, make them a CS student

Not a N*rd

N CATEGORIES OF THINGS I CAN TYPE IN STRANGE WAYS

- abcd —latin letters
- ひらがな —japanese characters
- 行方不明 —chinese characters[1]
- ιοτα —greek letters
- ∅⊆∀ℝ —math notation
- ↓⇔☞➤ —arrows
- ★✣✿✳ —stars
- 😀🌵☂🐦 —emojis
- ♠✿⬆☀ —dingbats
- ∭∮∇∂ —more math notation
- ŝíţă —diacritics (but only some of them)
- (; • ` д • ´) —kaomoji

別

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1. Of note: technically they are the simplified Japanese characters, called *shinjitai*. Simplified Chinese characters and non-standard Japanese characters may or may not be typeable.

MIDTERM RUNDOWN

Every two years since 1790, the United States gathers in a midterm election to determine the next step in its long, tortured path of democracy.

At stake this year: the right to choice for nearly 170 million women, the continued battle against illiberal authoritarianism, and an impending debt ceiling crisis.

This is sometimes referred to as an "off-cycle" election.

WHAT'S UP FOR ELECTION?

Quick American politics recap for those unfamiliar: midterm elections occur every four years, halfway between Presidential elections (also every four years). In these elections, the legislature, Congress is up for election, but the Presidency is not.

Or, as a quick summary:

House of Representatives (lower house, roughly proportional to population, 435 seats): **YES**

Senate (upper house, 100 seats, two per state) : **SORT OF** (a third of all seats are up for election, but the rest are not, long story)

Presidency (you know, Joe Biden): **NO**

Currently Democrats control the Presidency, House, and Senate (sort of, read the footnote).[1]

THE STAKES

ABORTION

The Supreme Court recently overturned *Roe v. Wade,* which opens the way for essentially any abortion restrictions a state government can pass.

If either party gains control in the midterms, they would be able to pass federal abortion restrictions that would affect every state in the country.

Republicans are largely in favor of stricter abortion regulations, with some in favor of a ban as restrictive as six weeks after conception.[2] Democrats, for their part, have committed to passing federal protections for abortion if they win control in the midterms.[3]

DEMOCRACY

I imagine most readers will agree: democracy is generally a Good Thing, at least if you like prosperity, lack of political violence, and the ability to make memes of your ruling class without the risk of bodily harm.[4]

Unfortunately, not everyone agrees.

As a quick recap, on the last episode of *America,* Donald Trump did not concede the 2020 election, despite having lost. He then incited a mob on January 6th to kill or harm his own Vice President and Congressional leadership in an attempt to overturn that election by force.

In 2022, Democrats and Republicans are divided on whether or not that was "very bad", or "understandable, really, under the circumstances".

While it is true that not every Republican denies the 2020 election results or supports the January 6th rioters, 199 Republican candidates this year are on record as denying the results of the 2020 election.[5]

This is where I do my very serious Political Science Person impression and say that democracy really survives on the willingness of losers to follow unwritten norms and concede, and not on the strength of the law per se.

As people in less democratic nations know well, the law is actually quite weak if you can gather enough people willing to do violence for you, or if you can find enough people willing to stand by while others do violence.

While Trump in 2020 didn't succeed, the (probable) victory of many pro-election conspiracy politicians makes it much more likely that a future Trump will.

ECONOMY

In a truly arcane constitutional procedure, the United States has a "debt ceiling" that limits the total national debt. Even if borrowing has been authorized in a Congressional budget, the debt ceiling must also be raised. If this limit is not raised, Bad Things could happen, such as a government shutdown, or a default on American debt.

Naturally, this makes it excellent bargaining material, and Congress is on track for another debt ceiling standoff, where the Republicans have pledged not to raise the debt ceiling unless they get spending cuts.[6]

These standoffs are not new to Washington. While a 2011 standoff led to a credit rating downgrade[7], each crisis has been resolved with a deal and with not with financial mayhem.

But you know, there's a first time for everything.

THE HORSE RACE

With those not insignificant issues in mind, who's going to win?

In general, the party of the President (the Democrats, under Joe Biden) does poorly in midterms. Chalk it up to the desires of the voters to counteract whoever has the Oval Office.

Historically, then, the winds are blowing against the Democrats, who, in a "normal" year, would likely lose both the House and Senate.

However, the aforementioned overturning of *Roe v. Wade* has driven some backlash against the Republican Party, and the Republicans have also fumbled the ball in a few crucial places, as we'll see.

THE SENATE

The Senate is, as of the time of writing, could go either way.[8] This is largely in part due to some poor Republican candidates in crucial states. The ones who are choking the most are:

- Dr. Mehmet Oz (Pennsylvania), an impossibly rich TV doctor who is from New Jersey and not Pennsylvania
- Herschel Walker (Georgia), a candidate who's railed against fathers abandoning their children, who also has more secret children out of wedlock than I have cans of Coke in my fridge.

Despite this, however, the races in those states are close, and don't be surprised if these two pull it out on election night.

THE HOUSE

The House is quite a bit more lopsided, with the Democrats sitting at around a 20% chance of victory by FiveThirtyEight's model.[9] With 435 seats in the House as opposed to 100 in the Senate, individual bad candidates like the ones above have less effect on the final outcome.

That's the race, basically. The most likely outcomes are either a Republican takeover of Congress, in which case Biden will be hard pressed to do anything meaningful with the rest of his term, or a Senate-House split, in which case Biden will be hard pressed to do anything meaningful with the rest of his term, except confirm judges (Senate votes only for them!).

If you, improbably, are American, can vote, and haven't yet, and can somehow get a mail ballot in by Election Day (Nov. 8th), get out and vote!

If you, more likely, do not fit that description, sit back and watch the show.

UW Unprint

1. The Democrats actually have only 50 seats in the Senate, *but* the Vice President breaks ties, *but* you actually need 60 seats to pass major legislation, *unless* it's certain kinds of budgetary legislation which needs only 50. Democracy!
2. https://www.usatoday.com/story/news/politics/2022/10/30/gop-nationwide-abortion-ban-midterm-elections/8168785001/
3. https://www.theguardian.com/us-news/2022/oct/18/biden-roe-v-wade-codify-democrats-win-midterm-elections
4. There's no citation for this.
5. https://projects.fivethirtyeight.com/republicans-trump-election-fraud/
6. https://thehill.com/blogs/blog-briefing-room/news/3699082-debt-ceiling-showdowns-are-ready-for-come-back-with-gop-majority/
7. ibid.
8. https://projects.fivethirtyeight.com/2022-election-forecast/senate/
9. https://projects.fivethirtyeight.com/2022-election-forecast/house/

TRYING TO EXPLAIN MAHJONG

There are four categories of tiles:

- Man (the number ones)
- Pin (the circle ones)
- Sou (the bamboo ones)
- Honours (winds and dragons)

There are four copies of each tile: 1 through 9 for the non-honours, the four cardinal wind directions, and the three dragons.

A hand consists of thirteen tiles, or fourteen in the instantaneous moment you trade a tile or win. How do you win? Yaku.

Yaku are win conditions that are met once you draw a tile that completes your current hand. Most often, a hand will consist of one pair and four groups of three: those groups can either be a triplet (three of the same tile) or a sequence (three consecutive non-honour tiles). For example, take the hand:

33777m234789p45s

Currently, I have a pair (33m), a triplet (777m), and two sequences (234p, 789p). I will make a fourth sequence if I draw a 3s or 6s. Woohoo! I can win!

Fuck you, no I can't. I don't have a yaku. If I had 678p instead of 789p, I would. The yaku in that case would be All Simples: a hand consisting of all non-terminal (1 or 9mps) and non-honour tiles. Sadly, that's a virgin yaku only worth 1 han.

What's a han? One aspect of the scoring system. There's also fu. Don't ask me about fu.

All Simples is a relatively easy yaku to obtain, so it isn't worth much. Rarer yaku are worth multiple han, with some super special *yakuman* equivalent to 13 han. A lot of the strategy in mahjong is knowing when to go for the big hands, and when to settle for a quick few han. Alas, the only way to learn mahjong is to just play it. A lot. And still not have all the yaku memorized after years.

ptkyr

BREAKING: MATHSOC PRESIDENT CALLS UPON UNIVERSITY, DEMANDS THAT MIDTERMS 'ACTUALLY HAPPEN IN THE MIDDLE OF THE TERM'

WATERLOO, ON — In the face of increasing unrest in the student body, Waterloo MathSoc President Evan Girardin called upon the university to ensure that midterms 'actually happen in the middle of the term', in a fiery speech given Monday night to a crowd of dozens.

"Our civilized academic life is built upon a fundamental truth," Girardin said, "that 'hell week' is only to last a single week! But Mathies of all ages, from 1A to 4B, are being faced with a grim reality — midterms lasting until the middle of November, or longer!"

"No other civilized school in the country would stretch its students this thin. In fact, at UofT, midterms are mandated to end before Halloween. And we have no evidence McMaster has midterms at all!"

Girardin gestured to an audience of overly interested math students. "We have heard your calls, my children. And I am asking — *demanding* — that the University respond."

Students interviewed by **mathNEWS** after Girardin's speech seemed to echo the spirit of the orator, if not the energy. One CS student told us, "This is the one break I get in the next 5 weeks. It's midterm to midterm to midterm for me, right until exams."

"People always tell me to 'touch grass'. But if I have so many midterms, how is that possible?"

Another math student shared similar sentiments. A Double Degree student told **mathNEWS** that their experiences at Laurier and Waterloo contrasted sharply.

"Honestly, I'm not sure what business students do. I don't think they have midterms. I don't think they have homework. I don't think they go to class," said the student, speaking on condition of anonymity, fearing that business students would kick the shit out of them.

Not all shared this sentiment, though. An Engineering student was sighted at the event, grumbling to himself about how "Actually, Eng has it a lot harder than Math," and how he was going to "own the heck out of these losers in the next ENGnews."

One student said "I wish there were more midterms." They did not respond to further questions.

World leaders have weighed in on Girardin's speech. US President Joe Biden expressed his unequivocal support for "Ethan Gigi," and Russian President Vladimir Putin was quoted as saying "обязательно читайте математические новости."

mathNEWS would have more on-the-ground reporting from the event, but our reporter had a midterm the next day, and had to leave early.

Dick Smithers

N HALLOWEEN COSTUMES SPOTTED AT math**NEWS** PROD NIGHT

- cat maid
- cat maid
- cat maid
- cat maid
- cat maid
- cat maid
- maid
- cat maid
- cat maid

creature_f

THE ACT IS DECLARED TO OPERATE NOTWITHSTANDING SECTIONS 2, 7 AND 15 OF THE CANADIAN CHARTER OF RIGHTS AND FREEDOMS AND THE ACT WILL APPLY DESPITE THE HUMAN RIGHTS CODE.

On Monday, October 31st, 2022, the Ontario Conservative government announced their intention to strip away Charter rights from the people of Ontario.

The Canadian Union of Public Employees (CUPE), which represents roughly 55,000 education workers in Ontario public schools (support staff, not teachers), gave notice of their intention to strike on Sunday after the Conservative government refused to offer a reasonable wage increase, reasonable staffing levels, or even to pay employees for all the hours they work. The average annual salary for the education workers CUPE represents is $39,000. These education workers include custodians as well as support staff that work in classrooms with students such as educational assistants and early childhood educators. The Ontario government responded by tabling legislation to force a contract onto the workers without their consent.

Since it's literally a violation of constitutional rights to force workers to accept a contract without even attempting to engage in a good-faith bargaining process (see British Columbia Teachers' Federation v. British Columbia, among others), Ford had to pre-emptively invoke the notwithstanding clause of the Charter which allows governments to just completely ignore Charter rights. Ford felt it necessary to ignore the Human Rights Code as well, probably because forcing someone to accept a work contract when they feel that they don't have safe working conditions is *pretty fucking inhumane.*

This isn't the first time Doug Ford has decided to trample on our rights. The Conservatives also invoked the notwithstanding clause to make changes to election financing rules that would advantage themselves while hurting their political opponents. Dougie also threatened to use the notwithstanding clause when a judge ruled that he couldn't redraw Toronto's municipal wards *in the middle of an election,* but since Dougie won that case on appeal, the notwithstanding clause wasn't used that time.

With the background information out of the way, let's go back to the present. Remember how I said that the workers here make an average of $39,000? Well especially with how high inflation is now, that isn't enough money for many of them, especially those working in schools in cities with a high cost of living. So basically, these workers don't have much to lose which is why they have decided to go ahead with their strike and exercise their constitutional rights despite Doug Ford's intention to strip them away. The Conservative government has proposed fining these workers $4,000 *every day,* despite the average worker who would be going on strike making only $39,000 *every year.* So clearly what these people

do is important work if it's worth overriding the Charter and issuing thousands of dollars fines every day per person, but the Ontario Conservatives *don't give a flying fuck about workers,* and *they don't respect workers.*

Because the Ontario government is refusing to even negotiate with workers to pay them a fair wage and guarantee safe working conditions, some schools may soon close. And if that happens, it will be entirely the faults of the Ontario Conservatives, those who voted for them, and those who couldn't be bothered to get off their ass and vote in the last Ontario election.

And if you're reading this and are worried about the inconvenience of school closures on your kids (although given that this paper's readership is mostly undergraduates, there probably aren't too many readers who fall into this group), you can calm down because the Waterloo District School Board doesn't include any CUPE workers. But even if it did, *if the work that these people do is so important that it would cause massive problems for you if they weren't working, then maybe they also deserve to get fucking paid properly for the crucial work that they do!*

Doug Ford is a piece of fucking shit

Further Reading:
https://s3.documentcloud.org/documents/23245447/
gov2022121e13-pdf-bill.pdf
https://www.cbc.ca/news/canada/toronto/
ontario-education-minister-news-conference-1.6635275
https://www.cbc.ca/news/canada/toronto/
ontario-education-cupe-strike-notice-1.6634686
https://cupe.ca/negotiate-dont-impose-cupe-ontario-ramps-
pressure-face-legislative-attacks-education-workers

EVERY SINGLE DAY SHOULD BE HALLOWEEN

Halloween is a day that is filled with potential. It's a perfect excuse for people to put on costumes, put on acts, and perform a version of them they want others to see. But that doesn't need to be the case! Why do people need an excuse to explore who they are anyway? We as a society need to have more acceptance for maids, hot dogs and bunnies running around on the streets doing their own business! Let's make every single day Halloween and make the world a better place :D

Not A Baby

prof**QUOTES**

AMATH 250: JOE WEST

66 Yes, it's slowing down. Just like I am with every passing year.

CO 370: MARTIN PEI

66 Have you ever thought you would see determinants again?

66 Oh, I might be able to finish early today. Let me drag this out.

66 When was the last time you saw proof by induction? Probably 2 years ago.

66 Does anyone know what the determinant is? There is a 1 in 3 chance of getting it right.

66 How do you rate this proof from 1 to 10? 7? The correct answer is always pi².

66 Did you do any work during Reading Week? Me neither.

66 My favourite math joke is "let epsilon be negative."

CO 456: DAVID JAO

66 Did I write "yellow" here? Yellow is a yucky colour. PURPLE.

66 …unfortunately, it is NP-complete.

CS 135: DAVE TOMPKINS

66 Today I'm going to use your dad because I've talked about your mom too much.

66 You need to forget about Java and start making out with Racket.

CS 241: GREGOR RICHARDS

66 Fairies aren't real (allegedly).

CS 241E: ONDŘEJ LHOTÁK

66 That's an interesting question, I should put that on an exam.

66 What midterm's on Friday? STAT? Oh, I hated st-… Okay…

CS 245E: PRABHAKAR RAGDE

66 The type of type is type.

66 They were just being sloppy, as mathematicians can do (when using pen and paper).

66 Degenerate is such a loaded word. Very judgmental!

66 When you're in prison, you don't need an efficient representation [of numbers] because you have years to figure out how many days are left.

66 You usually don't use "C" and "safety-critical" in the same sentence.

CS 246: ROSS EVANS

66 If someone's close to death, then it's OK to steal from them.

66 If you see a dead person, you might as well put some trash in their pocket since they're going to the crematorium anyways.

66 Excuse my language, but if I write a constructor, I expect that constructor to be fucking called.

66 Brad keeps getting mad at Ed and I because we keep calling some parts of this course trivia.

66 In CS 246, and in real life, you should only make friends if they can do something for you.

66 This is where all the people who take notes on their computer start to cry.

66 If you declare someone as your friend, they have access to your privates.

66 Geese… they are fickle creatures aren't they?

66 It's cause I'm toxic.

66 So true bestie.

CS 246E: BRAD LUSHMAN

66 Last week, we presented some dark analogies regarding theft and indifference towards objects about to be destroyed… The dark side of C++. but now we're going to see the light side of C++. the solution is friendship.

66 As soon as you make something your friend, then they have access to all of your secrets and can do anything they want with them.

66 You only want to make friends with them if they can do something for you.

66 This is not necessarily good life advice but it's good C++ advice: you don't want a lot of friends.

66 That's the alternative to answering: someone throws something at you.

66 Ah, lucky problem number 13, which could be called "If you've started question 3 of the assignment, you might've started too soon."

66 As far as I know, every student has a name.

66 Can you? Yes. Should you? No. Will we? Yes.

CS 343: PETER BUHR

66 Assignment 4 is up… if you care.

66 You and me are people with threads inside us.

66 This is called defensive lecturing, because if I don't do this, this is going to show up on Piazza and it will take three hours to un-confuse everyone.

66 You take your code, you rub it on your tummy, and you say, "Yeah, I feel three critical sections in there."

66 I was reading my CS343 notes [in the bathroom], and that's why I fell asleep.

66 People tell me after they've taken CS 343 that they are uncomfortable going into any bathroom with a lock, it's ruined their lives.

66 I'm studying, and I'm drinking coffee… and I'm drunk…

66 This is how you get immortality. Just be the first one to invent the perfect algorithm.

66 Your internet toaster has a $1.50 CPU inside of it. It does face recognition and knows how you like your toast and goes to the internet and finds new toasting algorithms…

66 To be perfectly honest, I think this is witchcraft.

66 All these textbooks say, "If Dekker had been a little smarter and put in another hour, he could have come up with Peterson's algorithm."

66 I don't understand, mathematicians like to make high priority 0, and low priority a really high number. It's just to confuse the rest of us.

66 You might wake up one morning and discover a 2-bit solution. If you do, you should publish that.

66 When you go to a bakery and go to the ticket machine to get your ticket, just like the bathroom in real life, they don't work.

66 It takes way more bits, but it's easy to understand — well, let's not say that. It's easier to understand.

66 The reason you would be wrong is… my shoe's untied.

66 Mary and Peter win the lottery, and what they want to do is give back to do is give back to CS. So they hire a full-time co-op student whose job is it to sit at the bathroom door and decide who gets to go in. Now I know you're sitting there thinking, "I've had way worse co-op jobs than that! In fact I would love to have that as a co-op job."

66 The reason I say this is because on some co-op term, you might have to port Linux to a toaster.

66 Rule 2 says you can't control the order and speed of execution. Hardware people say, "We *are* the order and speed of execution!"

66 Some people are nodding, some people are just nodding off…

66 You're never going to be able to go to a locked door without being paranoid for the rest of your life.

66 You go to a bakery and it says, "Now serving 27." Then you go get your ticket and it says 10406. You go to Tim's for a few days while your ticket number comes up.

66 In effect, the course is over. There is nothing more to learn. And, uh, people are starting to leave. Don't.

66 Prof: What must Sleeping Beauty get to wake up?
Student: A kiss.
Prof: Yes, you're right, a kiss. We got one romantic guy in the whole audience.

66 Unbeknownst to you, my office key says, "do not duplicate." That is a really powerful security device.

66 If you try and sneak out through the window and try to open the bathroom, you can't.

66 I'm doing all sorts of bad things here.

66 Do we have another problem? Of course we have another problem!

66 Now you would be thinking, "Wow, that was a lovely 75 minutes of my time wasted!"

66 Death. Taxes. Spinning. You can't live without them.

66 This whole course is about building more locks. […] We haven't even begun to build locks. We're going to do some serious lock-building here.

66 You don't want to kill the co-op student every time someone comes out of the bathroom. It's not cost-effective to do that.

66 You should all go to the Louvre. […] I always first go to the gift shop.

CS 370: CHRISTOPHER BATTY

66 This is just like students in class, who want to spend the minimal effort in class to get a grade that is acceptable.

66 *[wasp flies in front of projector]* Oh, we got a friend!

66 *[wasp flies towards student]* I'm not going to chase that thing, it's just going to be silly.

66 *[wasp flies in front of projector again]* Alright, where is it?

66 I'll try to be more interesting than a bug.

66 Any questions about these identities? Other than where they came from.

CS 458: SIMON OYA

66 If you break the cryptosystem but the sun dies, who really cares, right.

MATH 145: ANTON MOSUNOV

66 Congratulations everyone for passing the midterm, but I knew that would happen because everyone who would've failed already dropped the class.

66 Like the great philosopher Taylor Swift said: haters gonna hate hate hate, fakers gonna fake fake fake, and MATH 145 students who are ahead will stay ahead ahead ahead.

66 You guys are fine, but the engineers only care about applications.

MATH 245: RAHIM MOOSA

66 Matrices are a bad word in this course.

MATH 245: TY GHASWALA

66 It's hot being a cow.

MATH 249: STEPHEN MELCZER

66 Keep in mind this is a dictatorship, not a democracy.

66 This result looks crazy, but it's immediate if we do the right math.

PHYS 121: RICHARD EPP

66 Imagine you were naked in space with only an air tank.

66 Would you be willing to rip off your arm and throw it with all your might?

STAT 231: MICHAEL WALLACE

66 You know I like my contrived edge cases.

66 Before, I wanted to weigh all the geese in Canada… now, only the world will do.

STAT 240: AUKOSH JAGANNATH

66 What is dx… I was hoping to get through these 20 minutes without anyone asking me that…

66 Student: So why did we learn Riemann integration if it's useless?
Jagannath: I decline to answer. If this were America, I would plead the fifth.

66 It's like a real democracy: no one votes.

66 I feel like I just nerdsniped you all and was like "just ignore it, we'll come back to it." But just ignore it, we'll come back to it.

66 You don't actually learn math in high school.

66 *[about the midterm]* It's not the IMO.

N THINGS MY HIGH SCHOOL CHEMISTRY TEACHER SAID DURING CLASS

- "I only have 4 brain cells and they don't talk to each other."
- "There's a problem, and the problem is you."
- "School is the skeleton. You must add the flesh."
- "The most messed up kid I knew, his parents were both psychologists. They never should have had kids. That's almost as bad as having two principals as parents."
- "I almost failed kindergarten."
- "As opposed to being… What do you call it? A *dumbass*?"
- "I'm not sure if anyone could tell whether or not I could speak English when I was in kindergarten."
- "My nerve endings don't feel pain the same way as other people; I just get mad."
- "I fought this kid, and he put razor blades into his shoes and started kicking me. The next thing I remember, I have his face in my hand and I'm smacking his head against the curb."
- "I should be locked up, for sure."
- "Another guy I fought I didn't hear about for around a year until I found out he hung himself in jail. *[dead silence in the class]* It must've been out of embarrassment for losing."

naz

SOME INTERESTING DICE
FOR NERDS WHO LIKE MATH ROCKS

Have you ever been curious about dice? Sure they look cool and go clickety-clack when you throw them on your table, but we can always do better than boring, *normal* dice. Here's some fun varieties I found on Wikipedia.

POLYHEDRAL DICE

These are pretty common, and platonic solids are pretty cool I guess, but we can do better than limit ourselves to 20. If you dig hard enough you can find 60, 100, or even 200-sided dice. These just look like balls, though, so unless that's what you're into you could easily recreate them with a d6, a d10, and a d20. All that you have to do is us one as the "tens" dice and one as the "units" dice. So, say you rolled a 6 on a 20-sider and a 5 on a 10-sider. That would make 65, but you could get any number under 200.

SICHERMAN DICE

Do you want to use two 6-sided dice but want to be a cool hipster who's too good for normal dice? Well, if you take a 6-sided die with numbers (1, 2, 2, 3, 3, 4) and another with numbers (1, 3, 4, 5, 6, 8), you get the exact same distribution, so go nuts. The only thing that changes is the probability of getting a double, so you can troll your friends by making them play with these in Monopoly.

GO FIRST DICE

We've all been there: you're with the boys, about to play some fun game, and you just need to find out who needs to go first. You each roll and wait nervously for the dice to settle. And what do you see? All tied. Your roll again. Tied. You all go home disappointed and sad. To prevent this issue that everybody has certainly had, you could use a set of three 6-sided dice, numbered respectively (1, 5, 10, 11, 13, 17), (3, 4, 7, 12, 15, 16) and (2, 6, 8, 9, 14, 18). You might notice we can't have any ties, and it turns out that every player has an equal chance of getting the highest roll.

INTRANSITIVE DICE

Suppose you're too broke to buy a Switch, but you want to play Pokémon anyways. Instead of crying yourself to sleep, you could use a set of 3 dice: A red one numbered (3, 3, 3, 3, 3, 6), a blue one numbered (2, 2, 2, 5, 5, 5) and a green one numbered (1, 4, 4, 4, 4, 4). These are our Pokémon: if you roll with red, you will have a higher chance of beating blue but are expected to lose horribly to green. Green in turn loses to blue, and the cycle continues (yes I know this is the wrong way for Pokémon types but I didn't invent them). So, if your friends are still talking to you after the Monopoly stunt, you can mock their gullibility by making them pick first, then picking the supereffective type to blow them away.

GRIME DICE

These are the big-boy version of the last set. We have 5 dice:

- Red: (4, 4, 4, 4, 4, 9)
- Yellow: (3, 3, 3, 3, 8, 8)
- Blue: (2, 2, 2, 7, 7, 7)
- Magenta: (1, 1, 6, 6, 6, 6)
- Olive: (0, 5, 5, 5, 5, 5)

They again have a chain of dice beating each other, going with ascending word length. So, Red>Blue>Olive>Yellow>Magenta>Red. The kicker is, though, that if you ask to roll two dice instead, the chain completely reverses itself! So, we get Magenta>Yellow>Olive>Blue>Red>Magenta. And even after this, we have another chain, which remains fixed over the number of dice: Blue>Magenta>Olive>Red>Yellow>Blue (notice how it's alphabetical). So you can easily swap from one chain to another to one die to two dice whenever someone catches on.

shahabee

DERIVATIVES ETERNAL

I write this **mathNEWS** article in MC 4021. It is 4:00am. It is 9:00am. It is 25:60 am. I have been writing a test for the past 999,999 hours. I have become ethereal. The tests is on derivatives. Differentiate eternally.

I was once king of my fiefs, of my grades, of my days. But then! I took an arrow to the knee. Critically wounded yet cursed to write my finals. Math 137. I had no choice. I had to cheat.

They found out. 2 counts. And now I have been cursed.

999,999 hours. One question:

Find the ∞th derivative of e^{x1}

Desperation. Flabbergasted. Positively uncool. How am I supposed to take a derivative infinitely many times? I got to work, one derivative at a time. e^x. Again. e^x. Again. e^x. There is no end. e^x.

Derivatives Eternal. Don't cheat on your exams, buckyboos.

Sisyphus

Ø

a decaying skeleton

CUTLET COCKTAIL COLUMN #3
KONTEMPLATING THE KIR; FEATURING BLINCHIK

It's been a good while since the last Cutlet Cocktail Column, hasn't it? (Over three months??) Despite the long break, I'm back (again with blinchik) to review another cocktail. This time, we'll be talking about the Kir, a member of the Contemporary Classics category of IBA official cocktails. As cocktails go, the Kir is pretty simple and approachable; read on to learn more.

BACKGROUND

The Kir is a French cocktail, consisting of two ingredients: crème de cassis (a liqueur made from blackcurrants) and a dry white wine. Historically, the white wine used was specifically a Bourgogne Aligoté (a designation for white wine produced from the Aligoté grape variety in the French region of Burgundy), but nowadays other dry white wines are commonly used as well.

However, the Kir originally had another name, blanc-cassis (which ranks among rum and coke or gin and tonic for originality). It was named after Félix Kir, mayor of Dijon (for over twenty years!). Kir's tenure as mayor began in 1945, directly following the end of World War II. Kir, originally a priest, helped thousands of POWs escape from a camp, after which he was arrested and nearly killed. Later on, as mayor, he greatly promoted the town twinning movement, and frequently offered blanc-cassis to delegations from abroad to highlight the regional products of Aligoté and crème de cassis. Only in 1951, however, did he begin to grant the rights to use of his name to manufacturers of crème de cassis, ultimately resulting in his name being used for the cocktail as well.

Digging a bit deeper: how did blanc-cassis come about? In 1904, the mixture was ostensibly invented by a café waiter, and a different mayor of the city, Henri Barabant, tried it and evidently popularized it.[1]

Side note: cutlet recently visited the office of a wine importer and was told by one of their employees that the Kir was really invented as a use for Aligoté, which is supposedly poorly regarded as a wine to drink standalone. Is this true? Who knows!

(Credit to Wikipedia[2] for a lot of this information!)

RECIPE

Like the Clover Club, we had to make some choices when it came to following a recipe for the Kir. To quote the Wikipedia article for the Kir[2]: "The International Bartenders Association gives a recipe using 1/10 crème de cassis, but French sources typically specify more; 19th-century recipes for blanc-cassis recommended 1/3 crème de cassis, which modern tastes find cloyingly sweet, and modern sources typically about 1/5."

The crème de cassis we had was pretty sweet on its own, so we decided not to try the 1/3 proportion. Instead, cutlet had the 1/5 recipe and blinchik had the 1/10.

INGREDIENTS:

- 90 (or 80) mL white wine[3]
- 10 (or 20) mL crème de cassis[4]

PREPARATION

Add the crème de cassis to the bottom of the glass, then top up with wine.

REVIEW

Kir time. Something worth noting about the Kir is its similarity in construction to the mimosa: some amount of wine and some fruit-/berry-tasting component. Let's take a look at an adapted excerpt of our last review (see 149.6):

"It tasted exactly like what it is, an equal mixture of orange juice and sparkling wine. The orange juice tastes less strong than by itself and it bubbles and tastes a bit wine-ish, but the juice was still the primary thing that came through. Overall, it was a bit unimpressive."

We can draw some direct comparisons to our previous review by again tasting the ingredients alone as well as in the Kir. The crème de cassis as a drink on its own is too sweet, and the wine is a bit too dry. But the combination of the two is much better than either separately: the crème de cassis sweetens the wine, making it smoother to drink, and likewise the wine prevents the crème de cassis from causing a feeling of drinking basically berry-flavored sugar. The Kir is, in other words, a great example of the phrase "greater than the sum of its parts."

The different proportions we used did make some difference in sweetness, of course, but not so much that the description above fails to apply to both; instead, this shows a good range of give in the recipe that allows for tweaking the cocktail to the drinker's preference. Also, the main alcohol used isn't high-proof, allowing for a well-sized drink that doesn't hit too hard.

Overall, the Kir was an excellent experience, and we highly recommend trying it sometime.

ԇ

Hope you enjoyed reading (and hopefully the next Cutlet Cocktail Column will arrive sooner)! And as always, always drink responsibly!

cutlet and blinchik

1. https://www.lemonde.fr/festival/visuel/2017/07/26/
   du-blanc-cassis-au-kir-une-histoire-dijon-
   naise_5165144_4415198.html
2. https://en.wikipedia.org/wiki/Kir_(cocktail)
3. We used the Prosper Maufoux Bourgogne Aligoté 2020
4. Ours was homemade!! Made from the berries of blackcurrant
   bushes at home ^-^

4 INGREDIENT UPSIDE DOWN FRUIT COCKTAIL CAKE

INGREDIENTS

- 1 can No Name fruit cocktail in juice (398 mL)
- 2 tsp baking powder
- 1.5 cups all-purpose or cake flour
- ½ cup white granulated sugar

PREPARATION

1. Preheat oven to 350°F.
2. Grease a 8 inch round springform cake pan or 8 inch square cake pan with oil or butter. Line it with parchment paper (if you have it) and grease again.
3. In a medium bowl, mix baking powder, flour and sugar.
4. Drain the can of fruit cocktail directly into the bowl with dry ingredients. Get as much of the juice out of the fruit as you can.
5. Mix the batter. Should be pretty thick. Add 2 tbsp of water if you think it's too thick.
6. Arrange the fruit in the bottom of your cake pan as evenly as possible.
7. Pour the cake batter on top, and spread it out as evenly as you can, trying to cover the fruit evenly.
8. Bake for ~30 mins, until a toothpick comes out clean when you stab it in the middle.
9. Let rest in pan for ~10 minutes so that it sets up.
10. Remove from pan by flipping upside down and peeling off the parchment paper.
11. Let cool another 5 minutes before cutting in and enjoying.

Keeps well in the fridge for about two days and on the countertop for one.

If Doug Ford uses or threatens to use the non-withstanding clause for some absolutely batshit stupid reason one more time I'm going in the oven along with the cake. Do not challenge me on this.

yummyPi

N UNORTHODOX STUDY SPOTS

TRY THEM, I DARE YOU

- While in line for Subway or Teriyaki Experience at SLC.
- Outside your BU 111 Lab classroom at Laurier because you're a CS/BBA student and you accidentally misremembered the time at which the lab starts, leading to you studying RIGHT OUTSIDE this MANDATORY LAB for 20 MINUTES (I'm not upset) (I was counted absent).
- 4700 Kingsway, Burnaby, BC, Canada.
- On the floor outside the entrance to the Waterloo AI institute in near the bridge between DC and DC. Free outlets.
- The mining tunnel (ESC).
- Under one of the benches in the QNC (it's quite spacious).
- *A* mining tunnel.
- The Backrooms.
- During **mathNEWS** Production Night (they'll never know).
- While in line at DC Bytes — less effective, lines are shorter.
- null Island.
- Minecraft.
- Lumbridge.
- Under the staircase from the 1st to the 2nd floor in M3, right under the fire sprinkler.
- 22°14'46.7"N 114°10'35.0"E.
- On the ION Rail (use a clipboard to look cool).
- The 7th floor of MC.
- The 11th floor of DP.
- Under your bed in your dorm (unless there is no underside to your bed — do not attempt to study in a solid object).
- Under your roommate's bed (uwu).
- Become a worm and inhabit the earth. It's quite fun to work under the soil, amongst the roots.
- Become a dragon and inhabit the skies. It's quite fun to work in the clouds, amongst the planes.
- Become a crab and inhabit the seas. Crab rave. 🦀🦀
- The Sun. (It's uncomfortably warm, good for motivation.)
- Lying on the couches outside the Math CnD.
- The Void. (It's silent, good for concentrating.)
- Inside the CERN Particle Accelerator.
- DC library.

Wanderlust Union

HOW TO MAKE BAGELS (THE RIGHT WAY)

We've all seen those recipes where the authors just drone on and on, right? It drives me nuts. I can't stand it when these idiots always feel the need to insert themselves into what I'm trying to do. Just let me cook, OK? Anyways, here's a story about how I first made bagels (maybe you can get something from it).

As a kid, I always wanted to learn how to bake. Whenever I went to the bakeries in my neighbourhood, I could only think of how those bakers got to knead dough daily for their whole lives. I watched in envy as their hard-callused fingers moved with incredible grace. I felt nothing other than jealousy whenever I saw the fine fruits of their labours on those shelves. I would emulate them, and I would live up to that perfection. I had tried before to do something similar, — to make something of worth or something that I could consume — yet everything I tried only yielded hunks of sad black carbon, eternally mocking me.

When I was 12, the opportunity came to make bagels. Someone had sabotaged the bakery, and all their bagels had been stolen the day before. Coincidentally, my neighbours were moving away, and they had an extra bag of flour that they wanted to give away. I eagerly accepted. I took up the challenge. I would create. I would make the absolute mastery of mastery, the crème-de-la-crème, and the best bagels the world would ever see. And they would accept me. If I could not become a baker myself, I would make them make me become one.

I dedicated my life towards this mission, and I would not stop. I would not sleep. I scoured the internet for the ultimate recipe, and I waited to the end of the night until I found my ultimate goal. As the early-morning sun shone into my kitchen, I laid out the flour, the bowl, and the pot of water that would transition my dough to majestic bagels.

Fighting against the fatigue of a night of feverous research, I ripped open the bag of flour, and there emerged a cloud of snow. There was enough to create 50 bagels, and I would not stop until they were all laid out on my counter, steaming and ready to be sold. I hoisted up the bag of flour and poured the white powdery goodness into the bowl before me. I took out my measuring cups, and furiously, though with care, inserted the instrument into the dish of filtered water I had laid out before. I set it beside the bowl of flour, and my mind raced in anticipation.

I lifted up the perfectly proportioned bottle of oil and the container of measured-out water, and held them above the bowl of flour. My mind was dizzy as the blood rushed towards my hands in anticipation of the great pouring. I tilted, and the liquid poured forth. What was once a cloud, was now a blizzard, and as the flour wafted up, my room became white. I shoved my hands into it, and I was ready. Furiously, I continued. I kneaded, I mixed, and I pressed. And together, the ingredients formed together in the ritual I had set out to do. I had transcended, and the bagels comprised my life. My flesh was the bagel, and my hands joined the bagels before me.

I kneaded, I pressed, and I pressed some more. As I continued, it glistened, and the skin stretched out, cocooning the soft and beautiful flesh within. I laid it out on the counter, and it was ready to form. Without heed for my safety, I furiously cut it with my lame and split it into the 50 bagels that would be cooked.

I took the first bagel, plucking the straggling dough with my fingers and shoving it into the maelstrom boiling in the pot. Bearing the steam, the bagel entered the water, my fingers just above it, and the bubbles rose to consume it. My heart raced, and the first few droplets of water began to consume my fingers. Splatters of water cooked the dough, and with the dough, my fingers joined. I put my hand in further, fully enveloping it in the boiling water; together, my flesh and the dough became one. My fingers and the dough they had ceded to create would be formed together. The smell of roasting fingers joined with the wafting smell of bagel drifting from the pot. The taste was complete and formed, and the bagels had developed the flavour they had so desired.

All that was left was the next 49 bagels. I would bake, and I would be accepted. I was now a baker.

Years now after that, I make my bagels daily. My fingers have hardened together into dough-hardened calluses, as I had endeavoured they would — infused forever with the essence of the bagel, just like those bakers I had admired so. My life was complete.

foodlover420

A DECLARATIVE ENDORSEMENT OF THE ION LIGHT RAIL SYSTEM, PROVIDED TO ME BY A BULLET POINT FROM THE SLIDESHOW WHERE THEY ORIGINALLY PROPOSED THE NAME "ION"

Pronounced as "I on" — the name itself becomes a declarative endorsement.

ION? I on!

__init__

A PRETTY GOOD CHILI RECIPE

This version of Chili con Carne is one of the first dishes I learned how to make during the 2020 pandemic and seems to be the one that my family likes the most when I make it for them. I technically came up with this specific recipe myself, but it was the result of adapting and combining several different recipes, mainly those of Binging with Babish and You Suck at Cooking. The result is that this is a pretty even cross between "Texas Chili," which famously has no tomatoes or beans and is instead just large chunks of meat in a chili paste made of dried peppers, and the more common ground beef "Chili" one would find in restaurants across Canada and the US. This is a particularly long and labour-intensive process, so feel free to make any changes as you see fit. I can't promise that the result will be the same, though.

Serves: 8–10

Time: 2–3 hours

Ingredients:

- 6–8 ancho chiles
- 2–3 cascabel chiles (optional)
- 1 large yellow onion, diced
- 1 poblano pepper, diced
- 3 jalapeño peppers, diced
- 6 cloves garlic, minced
- 3 chipotle peppers in adobo sauce
- 1 kg stew beef or beef chuck, diced into small cubes
- Olive oil
- Salt and Pepper
- 1 can of diced tomatoes or 6–7 diced Roma tomatoes
- 3 tbsp tomato paste
- 2 cups of chicken stock
- 2 beef bouillon cubes
- Dried oregano
- Ground cumin
- Paprika (preferably hot, but any kind works)
- Cayenne pepper
- 1 tbsp brown sugar
- ½ lime
- 1 can kidney beans*
- 1 can black beans*
- 1 can pinto beans*

*Any of these can be replaced with 1 cup of dried beans, soaked and boiled for 25–30 minutes.

Directions:

1. Remove the seeds and stems from the dried chiles, then tear them into small pieces. Place the pieces in a dry pan and heat on medium for 2–3 minutes until warm.
2. Put the chiles in a blender, and blend on the highest setting for 1 minute or until pulverized.
3. Add ¾ cups of chicken stock and the chipotles in adobo, then blend again to form a thick chili paste.
4. Heat olive oil on high in a large pot and sear the beef in 2 or 3 small batches, one at a time (if too much beef is placed in the pot at the same time, it will steam instead of searing). Season with salt and pepper, remove each batch once seared.
5. Add more olive oil and sauté the onion, poblano, and jalapeños for 5–6 minutes, then add the garlic and cook for another 2–3 minutes.
6. Add the beef back to the pot and combine before seasoning with the spices. Reduce the heat to medium.
7. Add the tomatoes, tomato paste, chili paste, bouillon cubes, and chicken stock, and combine well before simmering on medium-low heat for 10 minutes.
8. Add the brown sugar, the juice from the lime, and the beans, then simmer on low for 1 hour. Stir every 15 minutes to prevent sticking or burning.
9. Serve hot or freeze to eat later.

I will most likely continue to publish recipes like this one when I can't come up with a more serious and profound article. Happy cooking!

yalevoylian

RACKET HATE AND LEAP PI DAYS

I was on train, on my way to [redacted], reading **mathNEWS** 150.2 when I found $((\lambda(\ /)(\ *\ /))(\lambda(+\ -)(\text{if}\ -\ -(+\ +\ \#t)))) \#f)$'s article. The first thing I noticed was their name. I wondered if this very intimidating piece of code with only 4 letters (6 if you consider λ) would actually work. I pulled out my laptop and typed it out in DrRacket. And as expected, it did not work. I started hating the person. But then after a minute or so, I discovered that I had misplaced a closing parenthesis. The discovery took me back to my usual Racket-hating self.

Enough about Racket. It's not a new topic and probably not the reason you are reading this article. Which reminds me, I calculated the next leap pi day. It starts at 04:28:17 on November 18, 2022. Now I know you are not going to just take my word. It'd be a shame if you did. Here's a link to the program that calculates all Leap PI days relative to 3:14, September 15, 2654: `https://cutt.ly/mBOdJtS`. A little word of warning: It's in Racket (might not wanna open it on your phone) and even though I tried to explain everything in comments, it was 3 AM and I did not want to look at it any longer.

STUFF THAT WAS RECOMMENDED TO ME 2
CONTINUED FROM THE PREVIOUS ISSUE

AMERICAN VANDAL S1/S2 (COMPLETED)

I don't usually watch TV shows, but this one I nearly watched in one sitting. Super interesting. It's a mockumentary of true crime documentaries in the form of a strangely high production value (explained in the second season) student-made video concerning the true culprit of a crime committed by a student of interest (phallic vandalism in the first season and anti-constipation in the second). The subjects of the crimes are always super juvenile, but this actually works in its favour; watching genuinely interesting developments and deductions come from crass roots like the specifics of penis drawing was actually pretty funny. (Sidenote: I don't think I've ever listened to as many variations of the word "penis" more than I ever have in the ~4 ish hours it took to watch the first season.) Suspects and players are introduced early. The characters and drama are believable and give good commentary behind the scenes. I liked the first season much more than the second though; I'm not a fan of seeing feces and the main characters seemed disconnected from the first season characters. Season 2 also barely gives any lampshading to the fact that Peter and Sam are basically CSI detectives in high school bodies. Overall though, a very surprising and enjoyable recommendation.

SENUA'S SACRIFICE (COMPLETED)

THAT'S A LOTTA DAMAGE HOLY SHIT I feel bad for this person. This is a part hack-and-slash, part puzzle, part exploration game about a girl named Senua with psychosis who goes on an average excursion to Detroit. Seriously though, this game is a dark fantasy hellscape based on Norse mythology which is equal parts terrifying and beautiful. It's absolutely stunning and you're going to need a good machine compared to everything else on this list. Most of the time you're finding runes in the environment to progress and listening to fun Norse story facts from your friend Druth, but you'll occasionally get ambushed by ambiguously real shadow Norse warriors, or run for your life from a shadow demon. This really helps keep the player on edge. Senua has psychosis and you're constantly listening to multiple voices in your head which sometimes helps, but mostly hinders, her confidence and abilities on her quest to bring back her dead lover. Along the way, you'll fight various figures of Norse mythology which are all trying to kill you, while slowly uncovering her backstory and motivations. I'm not going to reveal any of her backstory or the outcome of the journey, but I can confidently say it's fascinating and full of hardship. The sound design and visual effects are top class; effects feel satisfying, and the soundtrack is creepy and fits perfectly. Playing as Senua overcoming her darkness and rot was so engaging that I finished the entirety of the ~6 hour game in one session. Absolutely a fantastic recommendation.

HOLLOW HEART (COMIC) (COMPLETED)
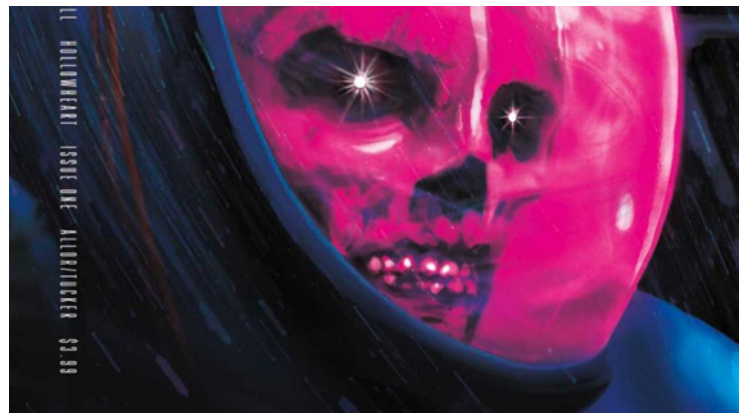
Short but sweet, this is a comic series about a sack of organs which used to be human in a mech suit called "El" being kept alive by the military for some indiscriminate purpose meeting an engineer named Mateo who treats him like a person. El obviously wants to escape, and from here it just gets extremely depressing. Mateo struggles with the nature of his job and El just wants to be free. This series deals with the cost of freedom and the ethics of experimentation for the sake of progress, and slowly develops into an extremely unorthodox relationship that mingles together with backstory to create an extremely sympathetic sack of organs in a mech suit. As far as visuals go, I don't usually read comics at all but I think the use of contrast is well done; there's a lot of differing colors and hues that look surprisingly well and create a nice mood for the characters. Very solid read overall.

GENSHIN IMPACT (ALREADY PLAYED)

Recommended by Jane

OK, not gonna lie, I don't think I even need to review this one; there's like a million reviews out there and I'm pretty sure most people at least know vaguely what this is, so I'm just going to give you some stuff I like about it. I'm AR 54 and stopped playing actively a bit after Inazuma came out (been thinking of playing more recently) so things might be a bit different but I liked mixing elements and messing with all the combinations the game has. There's a lot of interactions between character elements and the world, and I thought it was cool how many different team combinations you could have. Build variety is pretty high. Exploring an open world and seeing all the different structures and attractions was also a highlight (although the most treasure you're going to get is like 12.5% of a single gacha pull and 700 copies of the same weapon lol). I completely agree with the anti-whaling sentiment though; it's a good game with awful monetization, and it's perfectly reasonable to clear all the content with free characters. Overall, it's a fun time as long as you don't fall for the slippery slope that is gambling lol.

ONESHOT (ALREADY PLAYED)

Recommended by Edwin
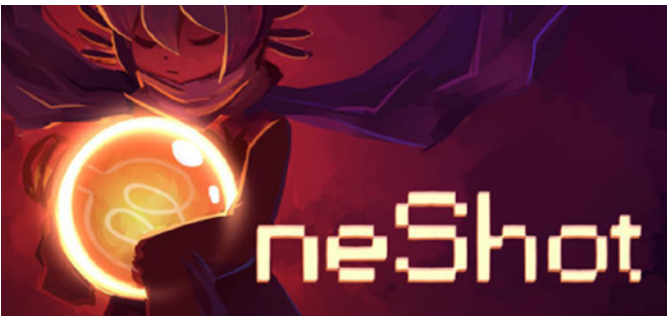
This is a top-down puzzle adventure game following a smol funny cat thing named Niko on a quest to restore the sun. (Disclaimer: I played this a while ago so I might be misremembering some things.) What sets this game apart is its usage of interaction for the player (you). There's a lot of meta elements that I thought were very cleverly used to tie into the game's narrative. The characters have a lot of charm, and I remember feeling really bad for Niko several times throughout the game. Another interesting feature is that originally the game was only supposed to be played once before disallowing further attempts, hence "Oneshot"; however, it was removed because the developers deemed it too harsh for a paid, full-length product (idk I just thought it was a cool detail). The tone and vibe of the world is generally dark and moody as reflected in the music and lighting, but has hints of energy here and there; this is really fitting considering the game deals with the lives of individuals without their sun. It's a super sweet and clever game with an ending that broke my soul. Good recommendation.

To be continued in the next issue.

I'm probably going to keep doing this until I run out of free time so if there's any recommendations you have, let me have them.

For the form:

1. just respond to the form with literally anything, and/or
2. give me an opinion about these games if you tried them or played them before, and/or
3. give me recommendations on what to play/watch/read.

`bit.ly/3C32Y09`

warrior1rules

wordGUESS

Hello! **wordGUESS** is a Wordle clone implemented as a series of **mathNEWS** articles. For instructions on how to play/how the game works, please refer to prior issues. Onto the results of this round!

- **enamour:** 👀👀👎👎
- **__init__:** 👎👎👍👀
- **grass:** 👎👀👎👎
- **Pikamon025:** 👍👎👎👎
- **John S. Street:** 👍👀👎👎
- **eternallypuzzled:** 👎👎👍👎
- **sherp:** 👍👍👍👍

You read that last one right — sherp is in fact our first winner, with an impressive score of 3/5! Congratulations! You win eternal bragging rights as the first **wordGUESS** solver in the history of **mathNEWS**, and other assorted honors and accolades.

To the others — stay determined! There's two more issues and two more guesses to go; I'm sure you can crack the code. See y'all next issue!

tendstofortytwo

YET ANOTHER YEARLY REMINDER

Here is another[1] yearly reminder for everyone regarding the total solar eclipse on Monday, April 8, 2024, where the path of totality in Canada will include parts[2] of Ontario, Quebec, New Brunswick, Nova Scotia, PEI, and Newfoundland.

Why am I reminding everyone when it is still about 1.5 years away? If the last great solar eclipse across the continent in 2017 is of any indication, I think it's best if everyone plans far, far ahead of time. I would advise people plan a year ahead at the very least. That now leaves you with about 6 more months to procrastinate.

You don't want to be the one who ends up trying to find a hotel room in or near the path of the eclipse amidst a 100%-rooms-booked situation like we saw happen in 2017 across the US. Even if there were rooms available, the prices became astronomical closer to the eclipse day, so to avoid that you should probably book rooms as much in advance as possible before all these hotels realize the significance of that date. If the news begins to mention the upcoming eclipse, it will already have been too late.

For out-of-province and international students, maybe you could schedule your terms so that you are in Waterloo, and thus near the path of the eclipse, in the Winter 2024 term. Hopefully final exams won't fall on that day. Although, April 8 does seem like it will be around the last day of classes for the Winter 2024 term. Unfortunately, the official academic calendar for 2024 hasn't been revealed yet.

I wish I could offer public transport tips this far out, but there are other writers who are much more familiar and know-ledgeable with public transport in Ontario than me. I'll leave it up to them. I'm sure the GO bus routes from Waterloo to Hamilton and/or Niagara Falls, which lie in the path of totality, will still be around in 1.5 years. However, I'm not sure if FedBus would work since it is so close to the end of the term. I'm not familiar with FedBus either. Perhaps there might end up being specific buses organized by clubs or some profs to see the eclipse too.

You also have plenty of time on the day. In Hamilton and Niagara Falls the eclipse will begin happening around 2pm and the entire process will last about 2.5 hours. The totality itself will start around 3:15pm. This is good news for those that like to sleep in, although it is still a good idea to head towards the path of totality early since you can definitely expect it to be busy. The opposite will be true too. You can expect it to be busy once the eclipse is over and everyone begins to leave all at once.

The only part that is completely up to chance will be the weather. There is no way anyone can plan for the weather this far out. It will just be up to luck on the day if the skies are clear or not.

I hope to be able to go and see the eclipse, though it will be after I graduate. For everyone else, I wonder if perhaps

math**NEWS** could plan something for this eclipse? *[Editor's Note: EOT idea?]*

boldblazer

1. The previous years' reminders were in 144.4 and 147.4.
2. Assuming a map from `timeanddate.com/eclipse/map/2024-april-8` is accurate enough, and I trust it to be so, it appears as though the path of total eclipse barely misses Toronto and the entire GTA area. In fact, it barely misses London, and Moncton too, but just about manages to include Hamilton, and about half of Montreal. The KW region is completely not in the path of the total eclipse. Any ships in Lakes Ontario and Erie will have amazing views of the eclipse (as long as they are far away enough from the shores of the GTA region). Anyone on the eastern half of PEI will need to go to the western half of PEI to be able to see the total eclipse. Only those in the very northern tip of Nova Scotia will be in the path of total eclipse. It seems the path in Newfoundland completely misses the population centres of St. John's and Corner Brook and instead squeezes in between. Places that lie in the direct middle of the path appear to be Gander, Niagara Falls, Sherbrooke, Miramichi, and Les Îles-de-la-Madeleine. Even if it turns out to barely miss many population centres, I doubt you would need to travel *that* far from those cities to see the total eclipse.

THE WILL TO DO

This morning, I was woken by the loud screeching of my phone reminding me that I better wake up. Usually, I would turn off the alarm and blearily get out of bed. But today, I switched it off and decided to sleep in and skip both of my morning lectures.

Why do I bother waking up in the morning? Why do I bother attending lectures?

A few hours ago, it was time for my CS tutorial, and I legitimately considered whether it was worth going. I finally decided that perhaps it was best that I go, only to spend the time in tutorial writing and re-writing this article.

It's strange because I've always been quite conscientious — doing my assignments on time, keeping up with lectures, the whole shebang.

But lately, I've noticed that I have very little motivation to do these things. On Saturday, I wrote a midterm after studying only half the content. My heart should've been racing, and I should've been panicking, but somehow it didn't bother me in the slightest.

Perhaps it's the effects of two study terms in a row, or perhaps I'm just becoming a real Waterloo student (dead inside).

John S. Street

TO THE FIRST YEAR DOUBLE DEGREES THAT ARE CONTEMPLATING DROPPING ONE OF THE DEGREES…

AN EX-MATH/BBA DD'S PERSPECTIVE ON DUAL DEGREE AS A WHOLE

Just do it. Don't look back. Hi, I *was* a BMath/BBA dual degree student, but after 1 year and 1 week (lol) in the program and 1 completed coop term, I decided to drop.

WHY?

Well for a multitude of reasons.

1. I value my time. After seeing that there were 9 midterms in 2A I yeeted tf outta Laurier and never looked back. Although I'm still a math student, the marginal increase in free time is a *dramatic* improvement over what I had before.
2. Fucking flexibility. Do you want to take that random philosophy course about Plato and Aristotle? Then take it, cuz YOU CAN. DDs can't fit it into their schedule nicely (although possible), and knowing that you can do that makes you feel much better.
3. DD is expensive. Math DD was $12000 for 2 terms which is approximately $60000 for 10 academic terms. That's insane compared to the Honours Math tuition of $8000 for 2 terms which is approximately $32000 for 8 terms. That's almost a 50% decrease in tuition cost. And to be frank, you'll end up with the same career whether you're in DD or not, so what's the point of staying if you aren't in love with the program in its entirety?

WTF DID YOU SWITCH INTO???

Well, I essentially switched to the exact same program but the single-degree version lol. Joint Math/Business Administration & Statistics. Probably gonna drop the stats major tho cuz of STAT 230 lol.

In terms of co-op recruiting, I'd confidently say it's no different. Employers don't give af what your degree is, rather they care about what you have on your resume. Have nice projects, case competitions, clubs, etc on there and you're solid. TBH, my second coop placement is really solid and I can guarantee you that I could have been in ARBUS and they would not have cared cuz of the actual experience I had on my resume. So if you're a Math DD and thinking of dropping into Math/BA, just do it and don't look back.

MY TWO CENTS

The BBA component is nice to have and Laurier DOES have a really good business program, especially if you're into traditional finance and whatnot. But UW also has really good AFM courses that you can take and be just fine. DD is a good talking point during interviews but it's very hard. If you're just too stressed out all the time, like I was, then switch to something more manageable. UW Math/CS is very diverse and you can take pretty much anything you want. Experiences > name of your program 95% of the time.

TL;DR

Trust the process.

miller

THE ROADMAP TO WAR WITH THE ENG KIDS

THE WAY FROM MC TO E7

(define (target Choose one eng kid that you hate as a target))

(define (roadmap-to-war target)

(

- Strategically wait until they are located in the E7 building
- Leave your spawn area in MC and sneakily make your way to the jungle (the tunnel connecting MC to DC)
- Let your instincts lead (whether this be the sharp metallic taste of your soon-to-be victim or Tim Hortons coffee)
- Somehow make your way to the second or third floor??? I can't remember but as you know, a part of the adventure is within the exploration itself (This part of the route is left as an exercise to the reader)
- Enter the tunnel
- Now we are in E3, enemy territory.
- At this point in time, we will add a guide on how to avoid the enemy minions (the eng kids)
- If by chance, you do spot an enemy, jump up and down to demonstrate the effect of gravity—the weakness of all eng kids: PHYSICS/ECE
- Then, you find the staircase with the little lights at the top
- Go through Linkedin bridge
- If you see an enemy, don't panic…just kill them (:
- VICTORY!
- See another new Eng kid…..

(roadmap-to-war new-eng-kid))

(roadmap-to-war vibey)

apple likes door

COOLING THE LAKE

Screams.

Astaroth would have lost track of time without them. Their regularity helped him stay focused. Presiding over the Pandemonic High Court of Appeal never required much mental effort. The screams were the only thing keeping his heart in it.

They died out. Astaroth pushed the oversized brimstone lever attached to his royal armrest back into position; with a great screeching, the round, vaulted courtroom's central trapdoor slowly sealed out the brilliant glow of the Lake of Fire bubbling below, returning the chamber to its regular crimson shadow. When the court's cacophony finally fell to silence, the colossal cast iron doors to the chamber creaked open, revealing a small form, naught but a silhouette of a hunched man dwarfed against the outer chamber's golden-orange light.

NAME? rumbled the grizzled cyclops directing tonight's inquisitions.

The man croaked out a name.

PROCEED.

With a gulp, the old man crept forward to the central trapdoor, and in a weak voice, pleaded.

"Sir, Mister Judge, sir, members of the jury, sirs, I think you've got the wrong man. I've been a devout Catholic all my life, you see. Was raised to respect God, prayed every night, always said Grace. I did all the right things, and, and I just don't see how I've ended up *here.*"

The courtroom fell to silence, and now Astaroth began to listen. Soon it began.

DID YOU… PRACTICE… LENT? groaned a rock-covered troll.

The man held his ground. "Mister Troll, I promise you I did, sir. Every year of my life."

The courtroom fell silent. A many-eyed beholder cried out,

YOU ARE TATTOOED!

The man met several of his eyes. "I do sir, many tattoos, but all of them devoted to God, that's condoned sir."

The deals-demon, of course, saw this as a challenge.

You've the eyes of a farmer. Have you ever… mixed your crops?

He had not. On the inquisition went, grilling the old man on every small detail of the Big Book. Astaroth zoned in and out of the conversation; the jury could be trusted to handle this themselves, they weren't wrong often. Finally,

You did go to church, yes? inquired a green-skinned goblin.

"Yes ma'am, every Sunday we went to church, me and my dear Maria, even through the pandemic we were there in the online—"

Astaroth pulled the lever. The trapdoor fell open. Screams.

The man should have known. The Lake would enjoy his bones, Astaroth was sure.

The jury's celebratory cacophony drowned out the screams as the trapdoor slowly resealed. Soon, the courtroom fell to silence again, and the next applicant was sent in. A young woman stood before the court, and the inquisition began again.

Did you wash your hands before and after eating? cried out a pale banshee. She had.

Did you practice astrology? croaked a broad-winged drake. She would never.

Were you slothful? snarled a night hag. She was not. She told the jury of the many small businesses she founded, the organizations she assisted, the charitable work she did in life. The woman was very proud. Too proud.

Astaroth pulled the lever. The trapdoor fell open. Screams.

Astaroth didn't revel in his work. Some thought his work even harmful—on the street corners of Pandemonium, a collective of succubi had taken to preaching that the High Court of Appeal was becoming overzealous in its rejections. They never gained much traction.

The courtroom reset, and the next applicant came in. The young man started his argument before reaching the trapdoor. The cyclops demanded that the man correct his mistake; he was kind enough to oblige. He tried then to continue his opening argument.

Astaroth pulled the lever. The trapdoor fell open. Screams.

It was ultimately the chimeras who took up the succubi's cause successfully. Rather than lament about human suffering, the chimeras noted that primarily-pure souls committed to the Lake of Fire tainted its flames, eventually beginning to cool the Lakeside capital city of Pandemonium if too many pure souls were cast in.

The next applicant failed to get through his opening argument before using a High One's name in vain.

Astaroth pulled the lever. The trapdoor fell open. Screams.

With enough careful conversation and swaying of public opinion, soon even the greater demons had grown concerned

with the rate of corruption of the Lake. The archdemons accepted mass casualties to the Blood War every day, but danger to their own citadels in the capital they could not abide. Lucifer had had no choice but to order Astaroth to address the concerns, lest he allow an uprising to emerge from the fear gripping the streets.

Another. Astaroth pulled the lever. The trapdoor fell open. Screams.

Fifteen more years, Astaroth pleaded. By 2035, he would rebuild the High Court to be more careful in its processing; it could be no sooner, the court was so stuck in its ways. Even the banshees ceased wailing when they heard his commitment; all demons of pandemonium were satisfied, save for the chimeras' incessant nattering about 'delay' and 'not nearly enough to cool the lake.' He ought to have them tossed into the Lake.

Astaroth pulled the lever. Screams.

Did they have a point? At the current rate, he was processing an average of one applicant every sixty seconds. If he multiplied that by sixty seconds per minute, sixty minutes per hour, thirty-six hours per day, then weeks, then months?

One more soul wouldn't corrupt the lake. Nor would two. Nor three. Why should the Lake be his concern anyway?

Astaroth pulled the lever.

molasses

COQ COMPILATION
IT'S NOT JUST THE STUDENTS THAT FIND THESE FUNNY

- No Coq is too hard for me.
- I was up all night grinding on my Coq.
- My Coq keeps on growing and it's even harder than it was yesterday.
- My Coq group and I were up all night last night banging out Coq questions.
- Sorry I couldn't submit my assigment last night, my Coq was too hard.
- My Professor says he'll fail me if I don't send him my Coq.
- I played with my Coq for hours but I couldn't finish.
- The satisfaction I get from finishing my Coq is immense.
- I wish my professor would give me more Coq.
- I took a picture of my Coq and put it on Piazza, but it was taken down.

(Context: "Coq is rooster in French" — David Jao)

An Aspiring Coqmaster

FUNNY JOKES
HAHAHA

- What do you call two guys that like math? *Algebros.*
- What do female mathematicians wear under their shirts? *Algebras.*
- What do math witches make in their pot in the woods? *Algebrew.*
- What do mathematicians do when they're on their computer alone in a dark room at night? *Algebrowse Reddit.*
- What do mathematicians use to make a sandwich? *Algebread.*
- What do you get for asking a question in piazza? *Algebroasted.*

i the instructors' answer, *where instructors collectively construct a single answer*

I cannot fathom why you would think you couldn't create your own helper functions.

- What do mathematicians do at pickup basketball? *Algebrick.*
- What's a mathematicians' favourite song? *Gangnam Style.*
- What's a mathematicians' favourite dance move? *Do the Gangnam Style.*
- What is it called when you make an account on chegg.com? *Algebreach of Policy 71.*
- What do you call your stepbrother that likes math? *Algebrotha from anotha motha.*
- What does a mathematician use to install packages on macOS? *Algebrew.*[1]
- What is a male mathematician's deepest desire? *Algebreally really really big penis.*
- What do you call a fight at DC? *Algebrawl.*
- What do you call a mathematician that calls french fries chips? *Algebritish.*
- What haunts a first-year CS students nightmares? *Algebracket.*[2]
- What is it called when you skip work to watch 3blue1brown? *Algebronchitis.*
- What is a caucasian mathematician's favorite meal? *Algebrunch.*
- What is a mathematician's favorite coming of age movie? *Algebreakfast Club.*
- What is a mathematician's favorite author? *Acclaimed literary artist okipullup.*
- What do you call someone who uses tabs instead of spaces? *Algebraindead.*
- What's a mermaids favorite type of math? *Algaebra.*
- What do you call two mermaids that like math? *Algaebros.*

okipullup

1. homebrew → https://brew.sh
2. Racket more like bracket amirite hahahahaha

SOME INFORMATION ABOUT DINK SMALLWOOD

Dink Smallwood is a role playing and adventure game where you guide the titular Dink on an adventure to destroy the forces of evil, gaining new weapons, magic, and items along the way. This may sound like a mundane example of a large class of video games, but it is not. *Dink Smallwood* sets itself apart from other similar games with a distinctive sense of humour and unusual options, sometimes bordering on the absurd. While the basic premise and mechanics of the game are nothing noteworthy, the flavour of the game is.

If you want to play *Dink Smallwood*, I would recommend using the free version licensed under the GNU GPL called FreeDink. It is available at `www.gnu.org/software/freedink/`.

In order to give you a taste of the elements of *Dink Smallwood* that I think make it worth playing, I am going to describe aspects of the game's story line. I will not reveal much, but, if you do not want any spoilers at all, please stop reading now. I will also briefly mention physical abuse; if you are uncomfortable with this, please stop reading.

One example of the game's odd humour is how it handles saving. Throughout the game world, there are odd looking machines placed on the ground that you can use to save. However, it is also possible for Dink to attack (but not destroy) these machines. If you make Dink do so, he says "Die, strange machine that doesn't belong here!" It is also possible to attack various items of furniture throughout the game. Most of the time, doing so will prompt Dink to say something funny.

An example of the game's humour which is more closely related to the actual story is that Dink eventually visits a town which worships ducks, which are present all over the town. When Dink learns of this, he actually turns to the player for a few seconds in incredulity. And for good reason: here is a group of people living and working in the same area who worship the waterfowl that live there. What an absurd concept. Thank Mr. Goose that we in the real world are not so ridiculous.

The game also gives the player many options that a standard role playing game would not. For instance, Dink can use his weapons almost anywhere, including to attack friendly NPCs like shopkeepers. Most friendly NPCs cannot be harmed by your attacks and will say various humorous things when attacked. However, some friendly NPCs will actually die if you attack them, and there is no way to undo this without loading an earlier saved game.

In addition, the game sometimes gives you the option to say mean or horrible things in dialogue. For instance, you can encourage your uncle to physically abuse your aunt. These choices do not usually have any real consequence for the rest of the game, though. Sometimes, Dink will even say something rude or inconsiderate outside of your control.

If any of this seems funny or interesting to you, you will probably enjoy playing *Dink Smallwood*. It is not a particularly long game, though there are several secrets which could take quite some time to find, if you care enough. There are also many player created supplementary adventures available to download and play, some of which are actually longer than the original game.

$$((\lambda(* \;/)(* * \;/))(\lambda(+ \;\text{-})(\text{if} \;\text{-}\; \text{-}(+ + \#t)))) \#f)$$

PEACELOVEMATH TAKES ON ICELAND

It's everyone's favourite remote writer with opinions on Iceland after having visited for 6 days!

Best things about Iceland:

1. Breathtaking nature. Absolutely beautiful, from waterfalls to volcanoes to geysers to glaciers to craters. Even saw seals swimming!
2. Hot springs! It's very cold, so this was a great way to warm up, and it's incredible how beautiful hot springs are and that they're naturally occurring.
3. Easy to convert Icelandic kroner to CAD, just divide by 100. My brain is just tired from converting Norwegian kroner to CAD by multiplying by 0.13.

Worst things about Iceland:

1. Especially in Reykjavik, hot water smells like sulphur, because of its geothermal origins, which isn't the most pleasant.
2. Some places are so remote, that the nearest grocery store is over an hour's drive away, which was really fun to figure out when we arrived at our hostel, less than an hour before grocery stores closed.

Sidenote about my trip: I unfortunately neglected to consider the reality of WaterlooWorks interviews when booking the trip, which resulted in my having to do an interview in the dark from our rental car while my friends stood freezing outside because we didn't get to our Airbnb in time. Somehow the interview went ok(?), rankings will tell all. Admittedly, my lack of planning is not the country of Iceland's fault.

Overall, a great trip! If you love nature, you'll love Iceland. I had a great time. I'm writing this from an Airbnb, listening to K-pop with some exchange student friends I'm traveling with, wine glass in hand. I haven't looked at my courses in probably a week. I hope everyone reaches this level of contentment someday.

peacelovemath

NEW UNIQUE_PTR
MUSINGS ON THE CS 246E MIDTERM

It doesn't do what you think it does. Right, I'm not dead by the way. That news article in 150.2 was fake. I made it up. You're so gullible. Anyway: back to it.

…Actually, hold on, I actually want people to read this one, so let me throw in some bait:

CS 246E MIDTERM EXAM ANSWERS FULL SOLUTION 100% CS 246E(ASY|XCRUCIATING|LEPHANT) ANSWER KEY FOR THE CS 246 (ENRICHED) MIDTERM EXAM FROM THURSDAY, OCTOBER 27, 2022, 4:30PM–6:20PM

Hello, CS 246E student dearest. Let's talk about `unique_ptr`.

Consider `unique_ptr<T>` for some type `T`. `unique_ptr<T>` is a *class* type. While its name is "unique pointer", and while it behaves a *lot* like a pointer, *it's not a pointer*. It's just a class we defined that has a name relating to the English word "pointer". We instantiate a `unique_ptr<T>` the same way we would instantiate any other class: something like this:

```
unique_ptr<T> t = unique_ptr<T>{new T{ ... }};
```

where the `...` represents some arguments we've decided to pass along to `T`'s constructor. `new T{ ... }` creates an instance of `T` on the heap and produces a pointer to that instance, so `new T{ ... }` has type `T*`. We pass along this pointer to the constructor for `unique_ptr<T>` which is, again, a class, and so `unique_ptr<T>{new T{ ... }}` returns a `unique_ptr<T>` with the relevant internal field initialised to that pointer we made with `new`.

Something to note before we move on is that we could've avoided this `new` business had we written this instead:

```
unique_ptr<T> t = make_unique<T>( ... );
```

This invokes the function `make_unique<T>` which forwards along its parameters to `T`'s constructor (or initialiser if not a class type), constructs it on the heap, and returns a `unique_ptr<T>` which wraps a pointer to that `T` instance that got allocated and constructed on the heap. To be clear, our `unique_ptr<T>` exists on the stack, though. Not the heap. It's on the stack.

Right. OK. So, consider the following snippet:

```
unique_ptr<T> t = new unique_ptr<T>{ ... };
```

Analysis: new `T{ ... }` returns a `T*`, where the pointed-to `T` is constructed with the given parameters represented by the ellipsis. Logically, then, **new** `unique_ptr<T>{ ... }` returns a `unique_ptr<T>*`, i.e., a *pointer to* a `unique_ptr<T>`, where the underlying `unique_ptr<T>` is constructed with the parameters passed in, represented by the ellipsis. In this case, those parameters will usually consist of one (1) `T*` which the `unique_ptr<T>` is meant to wrap.

Conclusions: new `unique_ptr<T>{ ... }` returns a `unique_ptr<T>*`. We declared `t` as a `unique_ptr<T>`. You fucked up.

Recommendations: ill-formed program; -2 points.

jeff

FOR ALL X IN PENGUINS, THERE EXISTS Y IN PENGUINS, Y IS A PENGUIN THAT I REALLY LOVE :D

hi hello hi hey everyone hiiiii :)))

penguins are my third favourite animal, but generally i think most people tend to harbour positive feelings towards them! so hopefully you're interested in hearing about two of my favourite penguins of all time! if you aren't pls don't tell me i'll cry my wife is already filing for divorce things are rough at home i might lose my job this is a cry for help i

penguin 1! the adelie penguin! or, the *adélie* penguin, if you're fancy schmancy. adelie penguins are the embodiment of POWER, BABY!!! standing at a towering 70 cm, they're sort of the goombas of the penguin kingdom. but, good things come in small packages! (always remember that, kings.) aside from their sleek, stout builds, and adorable white eyeliner, adelie penguins have some of the fiercest personalities among penguins and humans alike. if you're a seal or large seabird, beware. the adelies will kick your butt. or, at least they'll try to, before being devoured. but, at the end of the day, aren't we all just adelie penguins to the jaws of society?

penguin 2! the macaroni penguin! not to be confused with the subpar instant meal, kraft dinner macaroni and cheese. although, a macaroni penguin with cheese sounds both delicious and illegal. so uh, i don't have as much to say about these guys as i did the adelies. i think it's pretty self-explanatory why i think they're sick. they have a funny name and they have these funny feathers to rival guy fieri's classic frosted tips. so. yeah! macaroni penguins! B)

thanks for listening! or thanks if you skipped over this article to cheat on the gridword. you're no better than Her. Melissa. i still love you. tune in next week for my segment on frogs!

cheesy b

WHO AM I?
A LOW-EFFORT RESPONSE TO GOLDEN

"Who are you?" asked Golden, at the end of the article he submitted to the last issue of **mathNEWS**. A touching rhetorical question, he thought to himself, not expecting someone to give a response in earnest.

Unbeknownst to him, however, I really like answering questions. So much so that I will produce an entire article of my own to that end alone.

That doesn't mean I'll spend a whole lot of time on it, however.

So, uh, who am I…good question. Great question, even. Do I exist? Probably. Cogito ergo sum, right? And I have character traits…yeah, definitely…uh…I…actually, on second thought, I don't have any character traits other than being too quiet sometimes. Or maybe I just think I don't because I'm not introspective enough. Maybe that is a character trait?

At any rate, I suppose I'm what I do as well. I'm a mathematics student, an amateur writer, a gamer, a frequent nitpicker of online grammar, an excellent cook (consider this a formal challenge to a cook-off, Nick), and a very minor internet celebrity on account of having spent far too much time than is healthy in the UWaterloo 2027 Applicants Discord. I also composed music once, in the 9th grade. It was pretty bad.

I had hoped to come up with an article equally as insightful as my column in the last issue, but I unfortunately had no such luck. But hey, two mediocre articles are basically isomorphic to a single good one, right? Blake definitely showed us that proof once.

yalevoylian

HOW TO CHOOSE A MEMORABLE DISCORD PSEUDONYM FOR UWATERLOO SERVERS

- Have a first and a last name.
- First name should be 5 letters long and should refer to pop culture, maybe a popular artist you listen to who is surrounded by controversies at the moment.
- Last name should also be 5 letters long and should refer to something niche that only UWaterloo students would know, maybe an online platform used by the UWaterloo community.

Micah Omondi

A TRIP ABROAD: PREVIEW

I'm off term, and I haven't written much in this term of **mathNEWS**. That's because I haven't done a whole lot during my break. 12 months of university straight can deplete the energy reserves, and sometimes I'm too lazy to write.

However, I'm going on a trip in November. It's a long way from here, and I plan to do a bunch when I'm there. Watching a sport, visiting an island, and lots more. I plan on writing down my trip in the next two **mathNEWS** issues (as one issue will be written and released in the middle of the trip), so stay tuned for more from your friendly neighbourhood wewlad.

It's been a country I've always been interested in, and the decision was purely based on how relatively cheap some flight tickets were, and the fact that there was nothing planned for the off term. Depending on how good the trip goes, it might even influence where I might be after graduating.

I won't reveal the country I'm going to right now, but it will be revealed next issue! If you guess correctly and ping me on the **mathNEWS** Discord with that guess, ~~I'll block you~~ you'll win the pleasure of guessing a country correctly.

wewlad

One hint: n pregnva cebsrffbe va P&B vf sebz gurer, naq gnhtug zr ZNGU 135.

LOOKING 👀 FOR 4️⃣ PLATONIC CUDDLE FRIEND 🤗

must bee 🐝

- cozy 🛏️
- friendly 🤗
- not too hard 🧸
- likes fruity 🍎
- enjoys 😴 sleepy
- shower regularly!! ☺️ 🚿

enamour

MANIFESTING OPTIMISM
DESPITE THE FACT THAT THE WORLD SUCKS

I try to be someone who shares love with the world
I want to be someone whose acts of love better the world
I hope to be someone who loves the world

normalparameters

THE GIRL WHO FLEW TOO CLOSE TO THE SUN

how far can I go?

happily speaking, I've been successful all my life. truly, I cannot think of a time when I have failed, miserably. no but that's great! i don't think many people have the privilege to say that. on top of that, i really like being successful. it's always surprising. i mean, i never achieve my own standards. but people reward me, i guess that's alright. it's good for me. i've got a good life. but how far can i push my luck? i've been at waterloo three years now. i thought i wouldn't last that long. i thought i'd let myself breathe by now. i have been breathing! i thought i'd be okay with getting worse grades, having less friends, having a bad time, having a heartache. but it turned out alright! it's all alright. and nothing in my life is scary. but i keep making myself scared. i keep choosing scary things. should i stop pushing my luck? i think one day my chips will fall on the wrong side, my dice will land snake eyes, my license will expire oops go fish no luck buddy try again later, my foot will miss solid groud and i'll fall off the cliff, *burning*.

X-Student

TOP 10 B WORDS
YOU WON'T BELIEVE NUMBER 3

- Number 10: Burger
- Number 9: Burger King
- Number 8: Big Burger
- November 7: Borgir
- Number 6: Big Cheese
- Number 5: Bigger Cheese
- Number 4: Biggie Smalls
- Number 3: Three
- Number 2: Burger
- Number 1: hamBurger

Kanye Quest
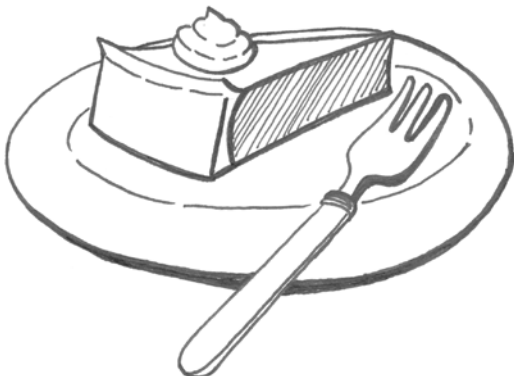
GRADUATE SCHOOL IS THE MOST BIPOLAR PROGRAM FOR ME

For context: I, the author, have done an undergraduate degree at the University of Waterloo. Having experienced many ups and downs, weird/bad situations and fun/good situations, and meeting various people has shaped the person who I am.

Problem is, some of those weird/bad situations are still in Waterloo. Because of this, these situations are coming back to haunt me, despite excellent opportunities as a Grad Student.

Now you might be wondering, why didn't I apply to another school? Well…

1. housing rental prices are expensive;
2. was late for the applications for other universities; and
3. inflation,

But hey, as long as I'm still alive, doing well and Bing chilling, I'm fine with this.

Ganiel, via ES_vm

EPISODE 46: BERNOULLI TRIALS + CALL FOR APPLICATIONS

Enjoy Episode 46 of the MathSoc Cartoons series: STAT 230 — Bernoulli Trials!

Want to see the next comic when it's released? Follow @mathsoccartoons on Facebook and Instagram! Want to see the next comic BEFORE it's released and provide feedback to help us out? Sign up to be a reviewer at https://bit.ly/mathsoc-cartoons-reviewer-signup! As always, feedback, suggestions, and fan art can be left on the MathSoc Cartoons Discord channel in the MathSoc server or sent to cartoons@mathsoc.uwaterloo.ca.

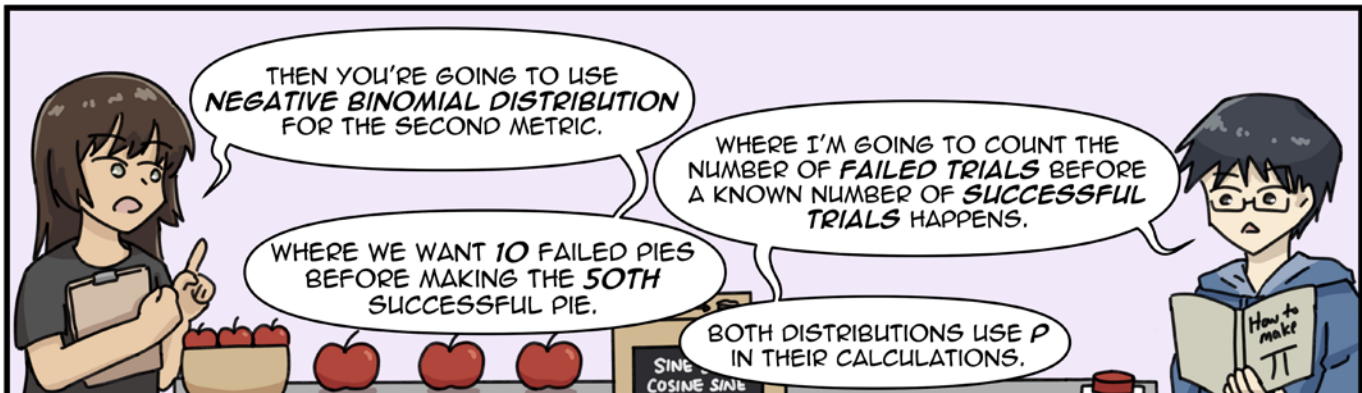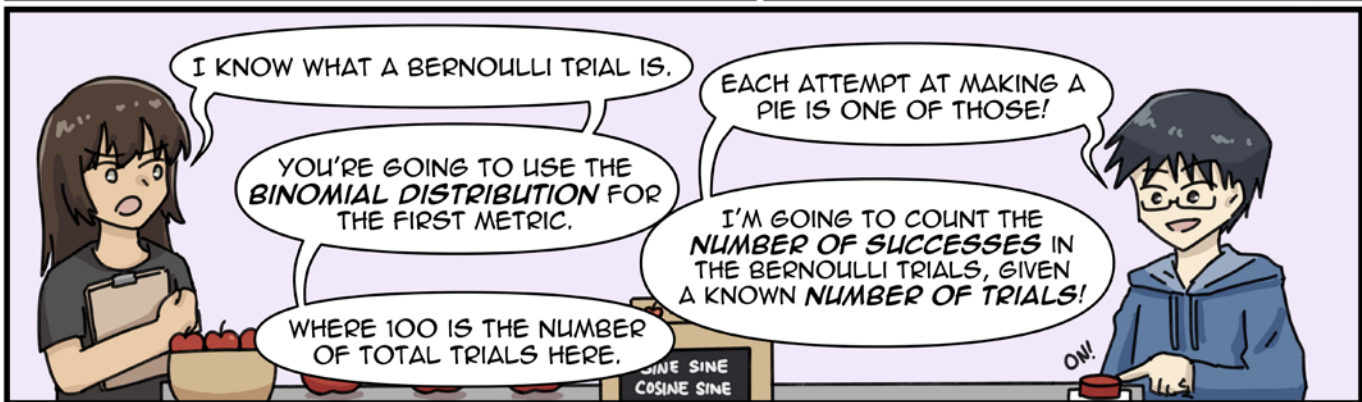Also: there's an opportunity open next term (Winter 2023) for 1–2 directors for the MathSoc Cartoons project!
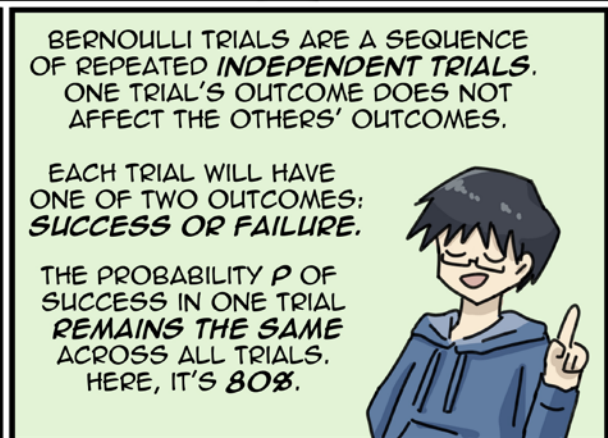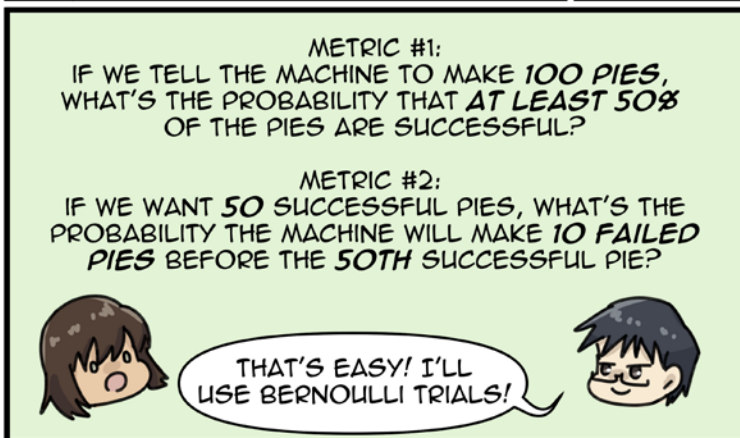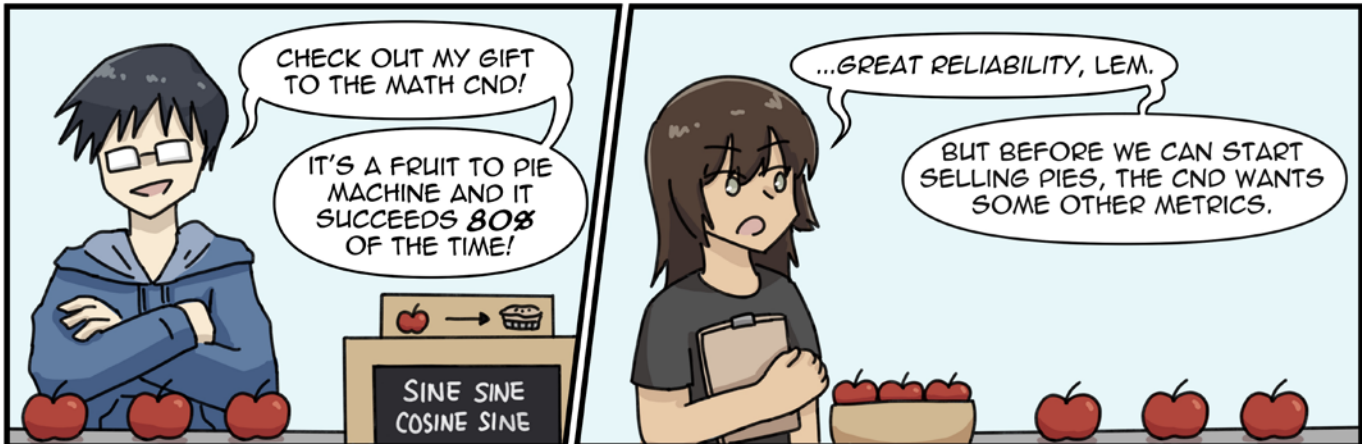
Are you interested in: 1) leading a team of writers/artists to create useful academic resources for math students; 2) developing valuable transferable skills; 3) being featured on the MathSoc website for your contributions?

Then send your resume to cartoons@mathsoc.uwaterloo.ca now! Deadline: Friday, December 2nd, 11:59 PM EST.
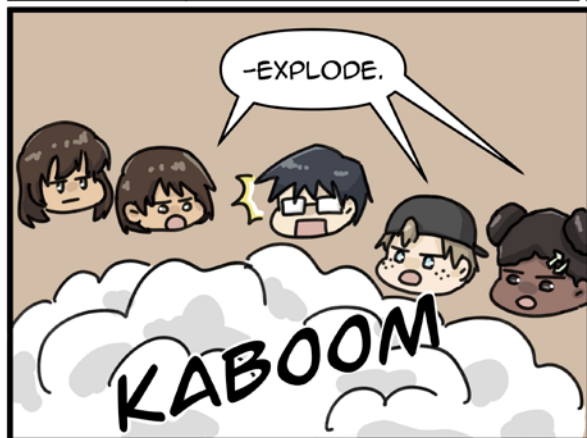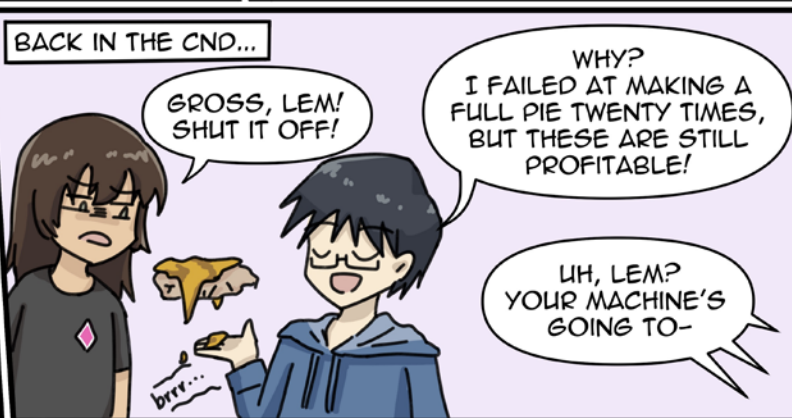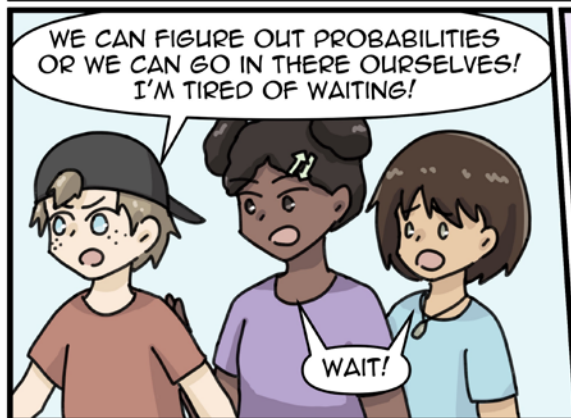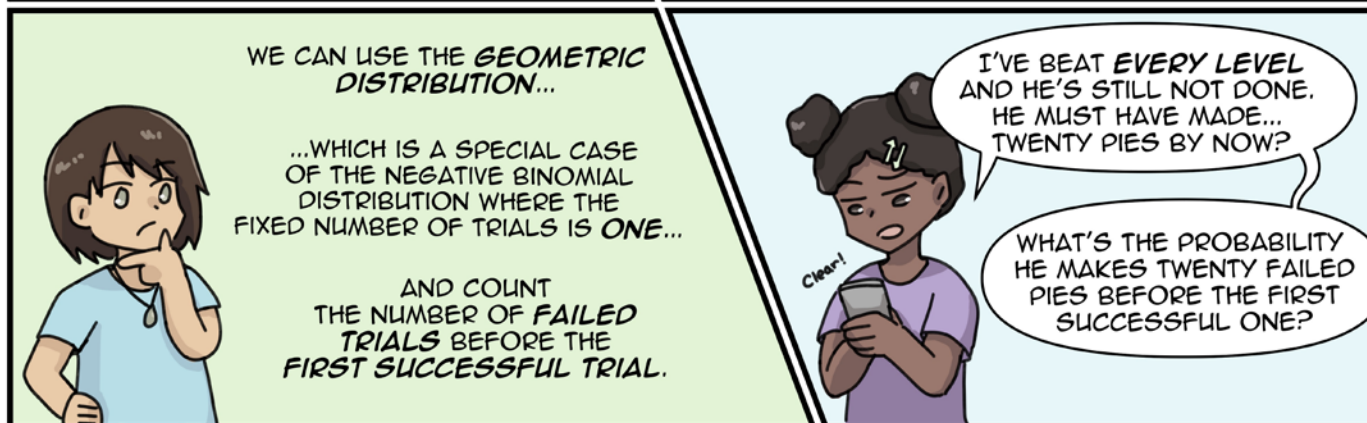
MathSoc Cartoons

STAT 230: BERNOULLI TRIALS　　　　STORY BY: GRACE FENG | ART BY: LISA WEI

STAT 230: BERNOULLI TRIALS

STORY BY: GRACE FENG | ART BY: LISA WEI

MEANWHILE, OUTSIDE THE CND...

COME ON, WHAT'S TAKING THEM SO LONG TO SERVE US?

LEM'S FAILING TO MAKE A SINGLE PIE.

WE CAN DO SOME CALCULATIONS WHILE WE WAIT?

THEA SAID THE MACHINE IS SUCCESSFUL 80% OF THE TIME AND EACH ATTEMPT AT MAKING A PIE IS A BERNOULLI TRIAL!

WE CAN USE THE *GEOMETRIC DISTRIBUTION*...

...WHICH IS A SPECIAL CASE OF THE NEGATIVE BINOMIAL DISTRIBUTION WHERE THE FIXED NUMBER OF TRIALS IS *ONE*...

AND COUNT THE NUMBER OF *FAILED TRIALS* BEFORE THE *FIRST SUCCESSFUL TRIAL*.

I'VE BEAT *EVERY LEVEL* AND HE'S STILL NOT DONE. HE MUST HAVE MADE... TWENTY PIES BY NOW?

WHAT'S THE PROBABILITY HE MAKES TWENTY FAILED PIES BEFORE THE FIRST SUCCESSFUL ONE?

Clear!

WE CAN FIGURE OUT PROBABILITIES OR WE CAN GO IN THERE OURSELVES! I'M TIRED OF WAITING!

WAIT!

BACK IN THE CND...

GROSS, LEM! SHUT IT OFF!

WHY? I FAILED AT MAKING A FULL PIE TWENTY TIMES, BUT THESE ARE STILL PROFITABLE!

UH, LEM? YOUR MACHINE'S GOING TO–

brrr...

–EXPLODE.

KABOOM

SUMMARY

BINOMIAL DISTRIBUTION: PROBABILITY OF THE NUMBER OF SUCCESSES GIVEN A KNOWN NUMBER OF TRIALS.

NEGATIVE BINOMIAL DISTRIBUTION: PROBABILITY OF THE NUMBER OF FAILURES BEFORE REACHING A KNOWN NUMBER OF SUCCESSES.

GEOMETRIC DISTRIBUTION: SPECIAL CASE OF THE NEGATIVE BINOMIAL. PROBABILITY OF THE NUMBER OF FAILURES UNTIL THE FIRST SUCCESS.

THE MATH CND: IS NOW OPEN. LEM IS NOT ALLOWED IN.

MATHSOC

MEF
Mathematics Endowment Fund

gridWORD

ANY gridWORD HEADS IN CHAT?
gridCOMMENT *150.4*

So there I was watching my favourite streamer, the bald man himself, Northernlion, when I get this email from the very cool **mathNEWS** editors with 11 **gridWORD** solutions!!! I am honestly super happy to see everyone doing so well at these, and I hope you all have fun doing them!

You all gave some great answers to last weeks **gridQUESTION** as well: "Who is your favourite professor?" There were so many answers this week so I'm really sorry I can't fit them all :(

- **Jason Cannon:** tied between Swamy and Mr. Goose
- **normalparameters:** Mr. Rogers (but actually, Ty Ghaswala)
- **Jeannie Z:** jerry wang
- **Kristina:** professor YouTube (*sent fish memes*)
- **Malia:** mr. goose man himself, Michael Wallace :)
- **Whiphid:** Steven Forsey of the Chemistry department. Paul McGrath is a close second
- **Rach:** My favourite prof is everyone except my cs prof who scheduled the midterm for 7–9pm on halloween >:(
- **cheesy b:** parents don't have favourite children (it's robert garbary)

- **Mike L:** I just got here so I can't say much but so far it's definitely David McKinnon (*sent cat jumping (lil homie)*)

Kristina, very cool fish memes by the way! Mike, I also really appreciate the cool vid of "lil homie" jumping, very cute!!! As far as a winner is concerned, cheesy b sent a personal drawing of my favourite discord emote, :rdjHug:, and a pepe. So cheesy b, go get your CnD gift card at MC3030 whenever you can! (also i love your penguin article 🥺)

I really love the sense of community we have here, even if I say it all the time, it's really uplifting to see everyone do the **gridWORD** each issue :)

This week, the **gridQUESTION** will be: "Who is your favourite streamer?" Please send solutions, answers and a pseudonym to mathnews@gmail.com, good luck everyone! See you next issue!!

Wink wonk

ACROSS
1. What a 33 down enjoyer hates*
5. Chopin piece
10. Social worker?
13. Object of many prayers
15. Of uncertain meaning
16. ___ few rounds (2,1)
17. In a cunning way
18. A greasy mathematician?
19. Kimono sash
20. As opposed to winter
22. Barbecue site
23. 40 winks
24. Like Omanyte in Pokemon
26. Remy's older brother from the film Ratatouille
28. Adolescent
29. Nazareth native
31. Do sums
32. Cream-filled pastries
34. Meaning adequate, originating from The Simpsons*
37. "Call!" (5,2)
38. Extinct flightless bird
41. Acted slowly or lazily
43. Filters
47. Bruce ____
48. Church tops
49. LAX info
50. Spicy lentil stew
52. What might go on a hamburger*
53. Chest protector?
54. Nearby
56. With all one's might
57. TV control: Abbr.
58. "Time is money," e.g.
59. To give rise to
60. U-turn from WSW
61. Slightly wet or damp*
62. Loch ___

DOWN
1. A type of tomato puree
2. Lit up
3. Got thinner
4. Pink fish
5. Adam madam
6. Brownish gray
7. Wrinkly fruit
8. Like Lennon and McCartney
9. Always, poetically
10. Sufferings
11. "___ playing allowed!" (2,4)
12. Capital of Taiwan
14. Howler
21. Fix, in a way
25. Swarmed
26. "___ Brockovich"
27. K follower
29. The coolest rapper, one might say
30. Package addressed to oneself, acroynm
33. Something a 1 across enjoyer might hate*
34. Goatee site
35. Film part
36. "The loneliest number"
37. Accounts ___
38. Odometer reading, in other words
39. Single-piece body garments for babies
40. Nods
41. Deviate
42. Land
44. A type of pistol when followed by a nine
45. Kind of center
46. Prehistoric man
48. Metal wastes
50. Extinct bird
51. Berry in diet pills
54. On the ___ (fleeing)
55. Allow

---

lookAHEAD

LAST ISSUE'S gridSOLUTION

¹O	²F	³T		⁴S	⁵I	⁶G	⁷M	⁸A		⁹A	¹⁰D	¹¹D	¹²S

(Crossword grid solution)

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

N NERDS WHO TRIED (AND FAILED) TO HACK MY SERVER

`http://99.250.29.1:5000/` (I promise there's a vulnerability uwu)

- Mayay
- admin
- betel
- "" *(x3)*
- dsf
- among us sussy balls
- \
- f
- hi **REDACTED** :)
- yo mama

snackimal fishmop

PUBLIC TRANSPORTATION SUCKS

The public transportation sucks in Canada. Imagine there are two cities both have a population more than 500 thousands that are only 55 km apart and there's no public transportation connecting them. No bus, no train, not to mention high speed rail. Well, there's actually no need to imagine it since it's actually happening.

This Saturday, I just found out there's no public transportation connecting Waterloo and Hamilton, and the only ways to travel from one to another is driving or take an Uber that costs a kidney. This sucks.

no_kidney_left